

# Promoting evidence-based practice: managing change in the assessment of pressure damage risk

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## Promoting evidence-based practice: managing change in the assessment of pressure damage risk

**Aims** This study set out to facilitate the development of evidence-based practice in the assessment of pressure damage risk to patients within a large acute hospital.

**Background** The importance of nursing practice being based on the best available evidence is emphasized in recent health policy. Meeting this objective is not easy as both individual and organizational factors create barriers to the implementation of research findings and the achievement of change.

**Methods** The study was based on an action research model. It comprised three stages: a review of the research evidence; a survey of qualified nurses' knowledge of risk assessment of pressure damage and an audit of record keeping, and a multifaceted approach to achieving change in which researchers, managers, practitioners and clinical nurse specialists worked together collaboratively.

**Findings** The findings from the survey and audit indicated a shortfall in nurses' knowledge of risk assessment of pressure damage and in their record keeping. The researchers, with the help of the clinical nurse specialist, built upon these findings by assisting practitioners and managers to take ownership of the need to base practice on the appropriate evidence.

**Conclusions** Achieving evidence-based practice is a complex undertaking that requires the development of an evaluative culture and a commitment by practitioners and managers to change practice. Researchers can play a valuable role in facilitating this process.

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## Introduction

During the past decade evidence-based practice has become a pervading theme of health policy in the United Kingdom. The research and development strategy for the NHS (Department of Health [DoH] 1991) stressed as its prime objective the need to 'ensure that the content and delivery of care in the NHS is based on high quality research relevant to improving the health of the nation' (p.2). Basing practice on sound evidence continued as a

key tenet of the wider policy agenda which encompassed the climate of cost-effectiveness of health care services (DoH 1994) and a renewed emphasis on quality of care in the recent White Paper on the future of the NHS in England (DoH 1997).

Highlighting the importance of research-based practice is not new. The nursing literature attests to numerous exhortations made over the past three decades to promote the implementation of research findings in practice. Yet, while research-based practice has been widely advocated,

only limited progress has been made. The reasons for this failure are complex and multifaceted. For example, individual practitioners may lack the knowledge and skills required to identify relevant research literature, evaluate its scientific rigour, determine the relevance of research findings and apply appropriate findings to practice (Lacey 1994; Rodgers 1994; Pearcey 1995; Kitson *et al.* 1996; McSherry 1997). Moreover, researchers have failed to make their findings and the implications for practice readily available to a wider audience (Hunt 1981; Mulhall 1997). However, it is also recognized that barriers to effective research utilization do not reside solely with the individual practitioner or researcher. Organizational factors have been identified as a major impediment to achieving research-based practice. In particular, lack of support from managers and doctors, problems with dissemination, difficulties in the management of innovations including the time necessary to implement change and resource constraints are all seen to militate against the successful implementation of research findings in practice (Hunt 1981; Closs & Cheater 1994; Caine & Kenrick 1997; Newman *et al.* 1998).

Clearly, achieving evidence-based practice is a complex undertaking which needs to take into account both individual and organizational factors. While individual practitioners have a responsibility to ensure the highest standards for their own practice (UKCC 1992), an organizational response is also necessary. Altering practice can involve policy changes, the development of evidence-based guidelines, clinical audit, educational input, and the effective management of change (von Degenberg 1996). Kitson *et al.* (1996) link these different processes together in describing a deductive approach to developing practice that involves three stages. First, the knowledge to inform practice must be generated by research activity, systematic reviews of published research and the development of clinical guidelines. This is followed by the implementation stage which needs to take account of organizational factors, the behaviour of individual practitioners and the role of a change agent. The final stage is that of evaluation which may comprise individual self-evaluation, clinical audit or evaluation research. Rather than view these stages as a linear process Kitson *et al.* stress the cyclical nature of this approach so that evaluation feeds into the generation of new knowledge to inform practice. While a deductive model is often advocated as a means of achieving evidence-based practice there are few accounts of how the principles underpinning the model may be applied in practice. This paper seeks to address this deficit by providing an account of the approach to promoting evidence-based practice taken in an English acute hospital NHS Trust.

## The background to the study

The study was initiated in 1996 in a large acute teaching hospital in response to discussions with the Chief Nurse about ways to develop an evaluative research culture among practising nurses and nurse managers. The Trust had established close links with the departments of nursing in two neighbouring universities, which involved the joint funding of academic/practice-based research posts. Consequently, a core team of three nurse researchers were available to work collaboratively with the Trust to develop an evidence-based culture for nursing.

It was decided that progress might best be achieved by focusing on one specific aspect of nursing practice of relevance to nurses working in a range of clinical specialities. This focus could then be used as a vehicle for addressing broader issues of evidence-based practice. The nurse managers suggested the topic of pressure damage as an area of particular relevance. This was especially pertinent at the time as the purchasing authority was requiring information on the incidence and prevalence of pressure damage as part of the quality monitoring for the contracting process.

The overall aim of the study was therefore to facilitate the development of evidence-based practice within a large acute teaching hospital with reference to the area of pressure damage. In recognizing that there was already a body of research literature on pressure damage, including a published systematic review (NHS Centre for Reviews & Dissemination 1995), it was decided to adopt a deductive approach. The study comprised three stages: a review of the research evidence, an appraisal of current knowledge and practice, and a multifaceted approach to achieving change. It was based on an action research model, which enabled the research team to work collaboratively with nurse managers and practitioners throughout the different stages of the project. This collaboration was supported by the part-time secondment of a staff nurse with an interest in research to work with the project team. In addition, the Trust's clinical nurse specialist with responsibility for skin care was co-opted to the team.

## Stage 1: a review of the current research evidence

The aim of the first stage was to determine the range and status of available evidence underpinning the selected topic. It was hoped that the findings from a systematic review of the prevention and treatment of pressure sores (NHS Centre for Reviews & Dissemination 1995) would form the basis of an appraisal of current practice and proposals for change. However, on close scrutiny, this

review and other recent literature on pressure damage (see, for example, Clark & Cullum 1992; Cullum & Clark 1992; Allcock *et al.* 1994; Land 1995) provided very little rigorous research evidence on which to consider basing or changing practice. The review did highlight the need to take account of the degree of risk of pressure damage for patient populations when considering the incidence and prevalence of pressure sores. The assessment of risk thus became the focus of the study. In view of the limited empirical evidence it became necessary also to rely on clinical judgement to determine what was considered to be best practice. To this end, the Trust's existing guidelines on the prevention and treatment of pressure damage became a useful source although it was recognized that these would need to be reviewed and updated on the basis of additional information gained through the literature review.

## Stage 2: a review of existing knowledge and practice

The second stage of the project comprised an assessment of existing knowledge and practice in relation to risk assessment and the prevention of pressure damage, and entailed a survey of nurses' knowledge and an audit of nursing records.

## Methods

A self-completion questionnaire was designed comprising 25 questions that were based on the Trust's guidelines for the management of pressure sores, topics covered by in-service training provided by the skin care specialist nurse and issues identified from the literature review. Six questions focused on areas of practice concerning risk assessment and 19 questions assessed nurses' knowledge of pressure damage prevention. The questionnaire was piloted with a small number of nurses and minor amendments made before distribution.

The sample comprised approximately 20% of the qualified nurses employed by the Trust and represented the various grades and levels of experience of staff in each of the 11 clinical directorates. Of the 275 questionnaires distributed, 255 were returned, providing an overall response rate of 87%. The range of response rates varied across the directorates from 60 to 100%.

In order to supplement the survey's findings and review current practice, an audit of the nursing records of a sample of patients from each of the clinical directorates was undertaken. The audit entailed examining documentation around three aspects of practice. Firstly, whether a risk assessment score had been recorded; secondly,

where in the documentation the risk of pressure damage was referred to; and thirdly, the frequency with which the risk of pressure damage was reassessed. A random sample of 100 patient records were reviewed. The number reviewed in each directorate reflected its relative size with a maximum of three sets of records being examined in any one ward or department. Data from the survey and audit were analysed by means of descriptive statistics.

## Findings

The findings of the survey identified considerable variation in qualified nurses' knowledge and practice of risk assessment and prevention of pressure damage with some noticeable deficits in relation to the prevention of pressure damage. With reference to practice, virtually all nurses (97%) indicated that they assessed patients for risk of pressure damage on admission to hospital or as soon as practicable after arrival and 85% identified the Waterlow Score Chart (Waterlow 1985) correctly as the standard tool used in the Trust. However, relatively few nurses (18%) acknowledged a change in a patient's condition as a significant reason for re-assessment of risk or indicated that they were aware that patients should be reviewed weekly (an organizational requirement) if their general medical condition had not changed (23%). These findings were endorsed by the audit of documentation.

The findings from the survey also demonstrated wide variation in nurses' knowledge of pressure damage. While some nurses were clearly knowledgeable, others demonstrated limited understanding, especially in relation to physiological factors and in response to technical questions. Most nurses recognized skin redness as an indicator of early pressure damage (74%), re-positioning as a simple way to alleviate pressure (73%) and that the sacrum (94%) and heels (82%) were the two most common sites where pressure damage occurs. However, questions addressing physiological processes were less well answered. For example, 93% of respondents failed to identify the capillary closure pressure above which pressure damage would be likely to occur. The nurses also had difficulty correctly identifying intrinsic and extrinsic factors predisposing to pressure damage. For instance, only 17% of respondents correctly identified external pressure as an extrinsic factor, and whereas 39% identified nutritional status correctly as an intrinsic factor, only 3% identified incontinence. Some of these poor responses appeared to be due to respondents not being able to differentiate correctly between intrinsic and extrinsic factors.

The audit of nursing documentation demonstrated a lack of consistency across wards and directorates in the

specific documents where details might be recorded. For example, these included the front sheet of the nursing notes which covered admission details, the care plan, evaluation sheet and Waterlow chart. There were also shortfalls in the accuracy of the information recorded. Although risk assessment charts had been completed in 85% of cases they were often unnamed or undated. Only 60% of patients had apparently been assessed for risk of pressure damage on admission and whilst 33% had been updated weekly, 58% showed no evaluation or updating during the patient's stay in hospital. Documentation was more likely to be up-to-date and accurate for patients with pressure damage where the skin care specialist had been involved. Some wards or departments suggested that risk assessment for pressure damage was not relevant in their area either because patients were there for a very short period of time or were not considered to be 'at risk', presenting these arguments as reasons for not completing what was recognized as required documentation for all patients.

### **Stage 3: achieving change through a multifaceted approach**

#### **Disseminating the findings**

The results of the survey of nurses' knowledge and the audit of record keeping identified aspects of practice relating to the assessment of pressure damage risk that merited change in the light of the best available evidence. In order to implement change there was a need to promote ownership of the findings more widely throughout the Trust. This required both a top-down and bottom-up approach. While the research team had identified the nature of the problem, addressing it required that the nurse managers were committed to taking the work forward within individual directorates. The first step, therefore, was for the research team to present the results of the study to the nurse managers from each directorate in order for them to decide on ways to disseminate the findings more widely and discuss their implications for nursing across the organization.

A variety of approaches were taken which included:

- offering individual nurse managers the opportunity to discuss the specific findings for their own directorate with the researchers;
- publishing a report of the study in the Trust's Practice Development Newsletter;
- presenting the findings at the Nursing Practice Development Group, a forum to which all nurses were invited;
- the researchers offered to meet with small groups of

staff to discuss the implications of the study for their area of work and how they might use the findings to change practice and enhance the quality of care.

#### **Facilitating change**

One member of the research team who held a joint University/Trust appointment with a specific remit to support the development of an evidence-based culture within the Trust, subsequently took a more active role in working with clinical directorates to facilitate changes in practice. As an illustration, the work undertaken within the Operating Theatre Directorate is outlined. This directorate comprised three specialist areas—the operating theatre department, general intensive care and the high dependency unit.

The impetus for change within this directorate arose from a concern by the nurse manager responsible for the Directorate and amongst other senior nurses, that the findings from the second stage of the study showed shortfalls in both nurses' knowledge and their record keeping. Following meetings between the researcher and Directorate staff, a decision was made to form evidence-based practice groups for each of the three clinical areas, comprising nurse managers, audit facilitators, the researcher, the skin care specialist nurse and practitioners. It was acknowledged that risk assessment of pressure damage was not systematically reviewed intra-operatively and consequently nursing interventions might be inappropriate following surgery. Each group therefore began working towards more integrated intra- and postoperative care for patients.

It was also recognized that the Directorate's clinical protocols in the area of assessment and prevention of pressure damage needed to be reviewed to ensure that they were based on the best available evidence. The groups subsequently carried out focused literature reviews specific to their area of practice which could then inform protocol development.

The audit of nursing records undertaken in Stage 2 was limited in that it had included only a small number of patient records. Moreover, by focusing solely on nursing records, the nurses' practice had not been observed and it was recognized that there may be discrepancies between the nursing records and actual practice. It was decided to extend the audit of assessment of pressure damage risk to provide a more accurate picture of current practice. The three groups subsequently undertook a comprehensive audit of documentation and one group also observed nurses as they delivered care. Nurses from the clinical area, the skin care specialist and audit facilitators were involved in data collection using criteria derived from

their literature search. The results of the audits were used alongside the literature to develop evidence-based protocols for the assessment of risk and prevention of pressure damage.

The evidence-based practice group for theatres also identified some ongoing research on theatre patients at risk of pressure damage whilst undergoing surgery (Scott 1996) and invited this researcher to present preliminary findings at a seminar for Directorate staff.

### Developing specialist roles

In addition to work at individual directorate level, consideration was given as to how the role of the clinical nurse specialist with responsibility for skin care could be enhanced to support evidence-based practice. According to Simpson (1988), the role of the clinical nurse specialist should be to engender expertise in other nurses. This perspective did not appear to be appreciated by nurses within the Trust. The skin care specialist nurse was generally perceived as the 'expert' and hence the only person able to make fundamental nursing decisions about pressure area care. The findings from Stage 2 suggested that the Trust needed a specialist nurse to provide expert advice, education and training for nurses in the workplace. The researcher has subsequently worked with the clinical nurse specialist in supporting the development of her skills in relation to accessing and implementing research and in exploring how the role can be expanded to form a more effective link between clinical practice and research. This has resulted in a revision of the staff training programme on the prevention of pressure damage, amending the Trust's clinical guidelines to ensure that they reflect the best available evidence and redefining the role of the skin care specialist to encompass organizational need (McCaffrey Boyle 1997).

One of the issues raised by responses to the questionnaire and audit of documentation was the apparent conflict created by clinical and organizational need for information about patients' risk status with reference to pressure damage. For example, ward-based staff found it difficult to reconcile recording patients' Waterlow scores to inform clinical care, which might involve the practical expertise of the skin care nurse, and the requirement to produce weekly prevalence and incidence figures for that same nurse which might seem to suggest poor quality care in local and national league tables. Nurse managers encountered similar dilemmas when trying to reconcile demands from purchasers for quarterly incidence figures, careful budget management in terms of the cost of equipment and quality of care for patients as reflected in the prevalence of pressure damage.

To address these problems, the skin care specialist nurse's role evolved to become more strategic. All information was channelled through this nurse and returns to the purchasing consortia were developed to reflect local information which was meaningful to the Trust. Additionally, each directorate began to record risk and collect prevalence and incidence data to meet its own needs, to reflect resources available for the task, and forward the results to the skin care specialist nurse for trust-wide collation which would not necessarily be comparative. It was anticipated that this bottom-up individualized approach would result in information that was both relevant and useful.

### Discussion

The stance taken to developing evidence-based practice was based on a deductive approach which assumed that recommendations for practice arising from research into pressure damage prevention could be implemented by an action research model to facilitate change. It appears to have met with a degree of success in that recognition of the need to review and change practice has been owned at both manager and practitioner level. Nurses within one directorate have begun to make substantial progress in revising their practice in order to ensure that it is based on appropriate evidence by drawing upon specialist clinical, audit and research support roles. However, change has not yet occurred across the Trust with some directorates still to address the implications arising from the findings of Stage 2 of the study.

The application of the deductive approach to developing evidence-based practice merits further consideration. The three stages of knowledge generation, implementation and evaluation (Kitson *et al.* 1996) have not been straightforward and a number of issues have arisen that warrant discussion.

Firstly, consideration needs to be given to the nature of the available 'evidence'. Although it is recognized that there are many areas of nursing practice where there is insufficient research evidence to inform practice, the area of pressure damage is considered by several commentators to have a substantial body of research upon which practice can be based (Hunt 1996). Indeed, it was the first 'nursing issue' to be included in a systematic review undertaken by the NHS Centre for Reviews and Dissemination, confirmation that there was a sufficient body of published research to warrant such an exercise.

It is all too easy to assume that where a substantial body of research exists, there will be definitive findings that can be applied to practice. However, as the systematic review of the prevention of pressure sores (NHS Centre

for Reviews & Dissemination 1995) highlighted the findings of much of the research were tenuous and inconclusive. For example, with reference to the different scales used to assess the risk of pressure damage, the bulletin concludes:

'Most scales have been developed in an *ad hoc* fashion: it is unclear which is the most accurate. There is little evidence that using a pressure sore risk scale is better than clinical judgement or that it improves outcomes' (p.2).

Moreover, although 30 randomized controlled trials evaluating the effectiveness of pressure-relieving interventions were identified, the studies were considered generally to be of poor quality and frequently too small to be informative. The review concluded that there is insufficient research evidence on the clinical or cost-effectiveness of different pressure-relieving devices to guide equipment choice, and called for further research in a number of areas associated with the prevention and treatment of pressure sores.

It needs to be acknowledged therefore that aspirations to achieve research-based practice may be thwarted not because there is an inadequate body of research on the topic, but because the studies are of an insufficiently rigorous nature or the findings are inconclusive. It is important that nurses recognize the limitations of the research base underpinning practice, and in aspiring to develop evidence-based practice also draw upon clinical judgement and patient preferences within an evaluative culture (Sackett *et al.* 1996) where the impact of nursing interventions on patient well-being are constantly reviewed and questioned.

The survey identified a shortfall in nurses' knowledge of risk assessment of pressure damage, a particularly salutary observation bearing in mind the essential nature of the topic to nursing care. It is of concern that some nurses are unable to identify the knowledge base that should inform their practice and questions are raised concerning the nature of care provided to patients at risk of pressure damage. However, the implications of this knowledge deficit for patient care are not entirely clear. Without observing nursing practice and exploring with nurses the rationale underpinning observed actions, it is difficult to draw firm conclusions of the effects of the knowledge deficit. For instance, when a nurse is observed to wash a bedfast patient who has been incontinent of urine and change the bed linen a variety of concerns may influence her actions, for example, seeking to alleviate the patient's embarrassment, promoting physical comfort, preventing skin excoriation as well as reducing the risk of pressure damage. The extension of the audit by the evidence-based practice groups to include direct obser-

vation of nursing practice was intended to address this limitation with Stage 2 of the study.

It was recognized from the outset that achieving organizational change in respect of evidence-based practice would be a complex process. Ownership of the problem by the directorate managers was seen to be essential to the success of the study. By focusing on a topic of relevance and feeding back specific findings to each directorate, it was hoped that the managers would be committed to addressing the implications arising from the study within their directorates. However, not all directorate managers responded enthusiastically and where they have demonstrated the least interest little progress has been made in reviewing practice. Caine and Kenrick (1997) stress the important role to be played by clinical directorate managers but observe that they generally fail to use their influence in the organization to facilitate the development of evidence-based practice.

As the study progressed the research team became increasingly aware of the implications arising from the essentially 'top-down' approach taken in the study. The problem of assessment of pressure damage risk had been identified as an issue of concern by managers and researchers, not by the nurses themselves. This highlighted the need to engender a sense of ownership among nurses of the implications of the findings for patient care. The team sought to achieve this by communicating the findings in a user-friendly format to the different stakeholders and providing the opportunity to discuss the implications of the study with groups of nurses who were keen to address the issues in their clinical areas. This enabled interested nurses to 'buy-in' to the study and, as indicated by nurses in the Operating Theatre Directorate, to address the issues raised by the study for their directorate. However, not all nurses have demonstrated the same degree of interest and there is a need to focus more specifically on clinical areas where little progress has been made.

The political nature of the project and the implications this raised for the nurses also needed to be acknowledged. Caine and Kenrick (1997) identify that clinical directorate managers tend to devolve responsibility for developing evidence-based practice to practitioners. By raising shortfalls in the knowledge and record keeping of nurses in relation to risk assessment of pressure damage, there was a risk that accountability for this aspect of care would be moved down the line to the nurses and unrealistic expectations placed upon them to change their practice without the necessary resources and supportive environment. In an attempt to overcome this, a core team of specialist nurses with expertise in skin care, research, audit and information were available to guide the evidence-based practice groups established in the directorate. However,

it is recognized that although nurses can seek to improve their own practice in relation to preventing pressure damage, they are also dependent on other services to provide appropriate care. For example, laundry, portering and catering services all impact upon the effectiveness of the measures nurses employ to reduce the risk of pressure damage occurring in patients intra-operatively. This is something that the evidence-based practice groups have begun to address.

Additionally, the study has highlighted the importance of taking a strategic approach to overcoming the barriers to developing evidence-based practice. While ownership of the problem by both managers and practitioners was crucial to achieve a change in practice, it was not sufficient. Appropriate support structures needed to be in place. This included experts in the areas of skin care, research, audit and information. Moreover, the study highlighted the important role that specialist clinical nurses might play in promoting evidence-based practice. However, it was recognized that such nurses may not have the necessary skills to promote evidence-based practice and need to be supported in developing this aspect of their role.

Finally, consideration needs to be given to the role of evaluation in the process of developing evidence-based practice. Kitson *et al.* (1996) identify evaluation, which they indicate includes audit, as the third stage of the deductive model, but point out that the findings from evaluation should feed into the generation of new knowledge and so create a cyclical process. However, the approach taken in this study was to integrate an evaluative element throughout each stage. Crucially, audit was used as a means of engendering recognition of a need to change practice among managers and practitioners, and continued to be used as a tool by the Operating Theatre Directorate staff to review their own progress. Moreover, the evaluative culture engendered within the evidence-based practice groups has provided a framework for peer evaluation through which practice is reviewed on the basis of new evidence obtained.

## Conclusion

This paper has provided an account of how one Trust has sought to promote the development of evidence-based practice through a collaborative venture between researchers, managers, practitioners and clinical nurse specialists. While some progress has been made in respect of developing practice in the area of risk assessment of pressure damage, it is important not to underestimate the complexity of achieving evidence-based practice. Careful consideration needs to be given to overcoming individual and organizational barriers to research utilization.

However, achieving evidence-based practice is not solely concerned with the implementation of research findings in practice. Indeed, as this study has demonstrated, the research base underpinning nursing interventions is often inconclusive. It is important therefore that an evaluative culture is engendered among nurses so they also draw upon clinical expertise and the patients' perspective where research evidence is lacking. Using audit as a mechanism to instil both ownership and accountability for practice is also important in promoting nursing practice based on the best available evidence.

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