Implementing the guidelines for the prediction and prevention of pressure ulcers

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Abstract

Since the late 1960s, guidelines for clinical care of a large number of diseases have been promulgated under a variety of guises by health care institutions and medical or specialty societies. They offer evidenced based practical guidance in the management of a health problem to institutions, clinicians and patients. In addition, they reduce variations in clinical practice, they reduce costs and they improve patient, clinician and institutional outcomes.

Many clinicians, however, remain sceptical of the real-life value of clinical practice guidelines (CPGs). The processes used to develop, disseminate and implement CPGs are critical to their successful adoption. Key factors in this process relate to the identification of the need for the CPG, a multidisciplinary approach to their development, gaining institutional and clinical leader support for their implementation, consulting with and educating staff and patients and having a well planned implementation strategy.

Pressure ulcers are acknowledged as a significant health problem within Australian health care settings. The Australian Wound Management Association (AWMA) has developed CPGs for the prediction and prevention of pressure ulcers. This paper will discuss the general attributes and benefits of CPGs, barriers to their adoption and key factors to successful dissemination and implementation. A practical approach for introducing the AWMA CPGs for pressure ulcers will also be outlined.

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Introduction

Clinical practice guidelines (CPGs) have proliferated over the last 20 years, primarily due to the perceived need to systematically review and condense accrued knowledge on a particular health issue, and secondly due to the need to provide evidence to support clinical decision making [1-3].

CPGs are systematically developed statements that help clinicians and their patients make appropriate health care decisions in specific clinical circumstances [4-7]. They provide the best evidence and recommendations for managing a particular problem and should be used in conjunction with patients and clinicians, expressed values and other relevant factors [8, 9].

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CPGs are seen as useful tools to eliminate unexplained or habitual variations in practice that are not supported by published evidence [7] and to help to reduce any associated morbidity or mortality through less than optimal clinical practice [4, 10-13]. They represent the clinical implementation of research and are applicable to clinical practice, preventative practice, diagnostic or prescribing practices across the spectrum of acute, chronic or community care. They are not prescriptive protocols or algorithms for care [8, 14, 15]. CPGs reportedly improve patient outcomes, reduce harmful clinical practices, reduce unnecessary use of goods and services, improve knowledge and promote continuity of the principles of care between institutions, clinicians, consumers, governing bodies and industry [16-20].

The process used to develop CPGs has been the subject of much debate and criticism [8]. Key components that influence successful adoption into clinical practice are the use of

transparent processes to review and analyse a problem, content that is clear and unambiguous, with evidence to support recommendations made [21], peer review of the CPG and a process for open debate and comment by clinicians, the public and consumers. Other desirable guideline attributes are that they be clinically applicable and flexible, reproducible, reliable and able to be validated [4, 15].

One of the most important and fundamental elements is the constituency of the group(s) that develops the guidelines. For guidelines to be seen as credible and representative of current clinical thinking, the group or groups must be convened of recognised leaders in a particular field, must be multidisciplinary, must have consumer representation and some propose should have industry representation. A well-defined marketing strategy for dissemination and implementation is also essential. Guidelines that do not fulfil these criteria have less likelihood of being adopted [2, 8, 22-25].

Additional factors that may lead to non-acceptance of CPGs are the knowledge, attitude and behaviour of clinicians, lack of consultation with clinicians, cost of changes in practice, reduced clinical autonomy and the perception that guidelines are a form of 'cook book' medicine. Local practices, local values and group norms and clinical conservatism have also been cited [12, 26-28].

Critical to effective implementation and realisation of the benefits of CPGs are institutional and executive support [29-31]. Equally important are the championship of opinion and clinical leaders [32] and access to adequate tools and resources for dissemination, implementation and education programmes. Incentives such as new equipment and attendance at conferences have been promoted as non-monetary strategies to encourage individuals or units to embrace CPGs [10, 32].

The introduction of CPGs has raised concerns amongst clinicians from a medico-legal perspective and the possibility that their very existence may increase a clinicians' susceptibility to litigation in cases of malpractice. Specialist societies, clinicians and patients that develop guidelines all have responsibilities to meet in respect to CPGs [2, 4].

In Australia, the concept of CPGs is gaining broad acceptance. There is an increasing number of reports on the effect of CPGs on patient outcomes, clinicians' knowledge and practices and the acceptance of CPGs in Australia. The National Health and Medical Research Council's (NH&MRC) guides to developing and implementing CPGs are referred to nationally and internationally [13, 33-36].

Pressure ulcers in Australian tertiary and community health care facilities remain a problem. The reported prevalence ranges from 4.5-19 per cent [37-51] and the incidence from 3.4-11 per cent [45, 52, 53]. The Australian Wound Management Association (AWMA) commenced development of comprehensive guidelines for the prediction and prevention of pressure ulcers in 1996 [5]. These guidelines, which have been subject to NH&MRC review, are now ready for dissemination. Other Australian groups have also developed pressure ulcer guidelines. It is not apparent, however, that these guidelines have been developed or assessed according to the rigorous methodology, evidence rating and peer review process advocated by the Australian NH&MRC [54-56].

Introducing CPGs is a significant undertaking. It requires many committed people, institutional support and resources, continuing education, evaluation, review and ongoing guideline modification [17, 57]. In particular, the process should involve practising clinicians and patients [16, 58]. The processes used to disseminate and implement CPGs have been known to have a direct relationship to the successful adoption of CPGs [35, 36]. The benefits of CPGs, barriers to their adoption, key factors for successful dissemination and implementation, and suggestions for an everyday approach to their introduction will be the subject of this paper.

Benefits of CPGs

CPGs are flexible tools; elements of which are derived from clinical medicine, research, quality improvement and an identified need for practice changes and better patient outcomes. They can be adapted to a variety of clinical settings and to individual patients [23].

Wide-ranging benefits have been attributed to the use of CPGs. They include improved outcomes for patients and benefits to institutions, clinicians and industry (Table 1). Over time, it is hoped that CPGs will increase clinicians' understanding of particular problems and this subsequently increased understanding will lead to sustainable positive changes in clinical practice [13, 15, 59].

Barriers to adoption of CPGs

Barriers to CPG adoption can be grouped into general factors and those that are specific to clinicians. General factors include a perception that guidelines are a 'cook book' approach to patient care and that they represent changes that may create additional work. If the content of the guidelines are disorganised, complex and lack methodological rigour, they are less likely to be referred to

Table 1. Benefits attributed to the use of clinical practice guidelines for different consumers.

Patient/client
• Evidence based care
• Improved diagnoses and treatment
• Improved quality of life
• Increased opportunities to participate in care
• Reduced variations in care
• Reduced iatrogenic injuries
• Reduced costs
• Degree of legal protection
Clinicians
• Accumulated body evidence based scientific knowledge
• Succinct diagnostic and treatment parameters
• Increased consensus in clinical decision making
• Increased continuity care between generalists and specialists
• Improved audit outcomes
• Degree of legal protection
• Increased collaborative practice opportunities
• Opportunities for further research
• Potential rewards
• More clearly defined practice roles
Institutions
• Improved standards of care
• Less admissions, re-admissions and increased throughput
• Less costs i.e. diagnostic and indiscriminate use resources
• Attract and retain staff
• Reputation for clinical excellence
• Reduced legal expenses and insurance premiums
• Opportunities for research
Industry
• Collaborative opportunities with institutions and clinicians
• Further research and development opportunities
• Clearer guidelines for therapeutic aids

and consumers will have less affinity with the recommendations that are made [15, 60].

If senior clinicians and opinion leaders are slow to recognise the value of a CPG, then this will compound the lack of institutional support [61]. The timing of guideline implementation is also seen as critical. If other changes or reviews are taking place, the introduction of CPGs will have to compete with these other projects.

Other general factors may include excessive cost of changes, lack of institutional support, lack of consultation with stakeholders and an under appreciation of the value of guidelines. Conflicting views over the legal status of CPGs may also hinder their development or implementation [14].

Three commonly described reasons why clinicians fail to adopt CPGs are their knowledge of the topic, their attitude to guidelines and their preparedness to change patterns of behaviour [27].

Knowledge relates to the number of CPGs that have been and are currently being produced, clinicians' awareness of their existence, their availability and the time it takes to read them. Clinicians also need to become familiar enough with their content in order to have the confidence to incorporate recommendations made into clinical practice [3]. The location of the guidelines, ease of access and the medium in which they are available in are common reasons given for non-use [60].

Attitudes that may hinder the adoption of CPGs revolve around disagreement with the content or disagreement that the predicted outcomes are achievable. Clinicians have reportedly expressed a lack of confidence in their ability to physically execute recommendations which are made. Some have described a lack of motivation to change or that they would, in the long-term, revert to previous behaviour [23, 27]. The perception that CPGs are cost containment tools and not quality improvement tools is a prevailing thought amongst medical and nursing students through to advanced practitioners in both professions [12, 33].

Clinicians who feel their clinical autonomy is threatened, that their ability to individualise patient care will be curtailed or that a CPG proposes the cessation of long established clinical behaviour (possibly learned as students) are less likely to sanction their use [8]. Discussion with peers and opinions cited within review articles have been deemed more relevant than information within CPGs [12, 32]. In situations where CPGs have been imposed with little or no staff consultation and with little opportunity to examine proposed guidelines and to

modify them to suit their own clinical environments, the guidelines have been less well received [29] and the potential outcomes have not been achieved [36]. Time limitations, poor patient compliance, lack of supporting infrastructure, materials and staff are examples of external and environmental barriers that also affect clinicians' attitudes and behaviour [27].

Implementing CPGs

Prior to introducing CPGs there are multiple general and key factors to be considered. General factors, which are summarised in Table 2, mainly relate to institutional characteristics [15, 23, 36]. Key factors to achieving successful dissemination and implementation are summarised in Table 3.

Implementing CPGs is a highly interactive process that must promote the aims and benefits of the CPG. Their mere availability alone does not lead to successful adoption. Incorporation of the above factors into a plan to introduce CPGs is more likely to ensure success [1, 10, 15, 19, 23, 28, 60].

Legal implications

Concerns have been raised that CPGs may lower or increase clinicians' susceptibility to litigation. Currently it appears that the judiciary itself has no firm answer to this dilemma [62]. Whether malpractice is an issue in the presence of a CPG for a specific problem is determined by whether or not the care provided met with prevailing practice standards [14]. Tito *et al.* [63] state that the "... evidentiary value of guidelines depends on their purpose, development, ratification, dissemination, use and whether they are current". The necessary elements of negligence in respect to duty of care, the breach of duty of care, and the nature and the cause of injury must also be clearly established [14, 64, 65].

Specialist societies that develop and endorse their CPGs have an obligation to ensure that the CPG is evidenced based, that it is regularly updated, and that the evidence rating is rigorously maintained [2, 4].

Clinicians are obliged to be aware of the existence of CPGs in general and, more importantly, those specific to their field of clinical practice. Where the evidence supports a change in clinical practice, all efforts should be made to effect the change. Failure to do so may lead to a finding of negligence [59].

It is also important that patients and caregivers are made aware of and have access to patient orientated formats of the CPG. These formats may assist patients and caregivers to increase their understanding of a health problem and better evaluate current and future treatment regimens on offer [8, 23]. Refusal without due cause by a patient or their caregiver to accept treatments which are recommended could nullify any litigious action attributed to care not provided.

Table 2. General factors to consider when implementing guidelines.

- The type of institution
- Culture and philosophy of the institution
- Services provided
- Catchment areas
- Nature and stability of the workforce
- Target population(s)
- Current projects in progress
- Economic climate
- Internal and external infrastructure
- Prevailing attitudes to CPGs

Table 3. Key factors to consider when implementing guidelines.

- Emphasising the benefits of adopting a CPG
- Presenting a business plan to the institutions' executive that identifies the
  - need for the CPG
  - potential for improved outcomes
  - dissemination and implementation processes to be used
  - resources required, inherent costs and cost savings and
  - timelines, evaluation and review processes
- Identifying supportive key clinical/opinion leaders within the institution whose opinions other people value highly
- Consulting with all staff to amend guidelines, where applicable, to suit the clinical setting
- Educating all stakeholders
- Institutional commitment encompassing all disciplines and departmental heads to which the guidelines are applicable
- Evaluation, review and ongoing modification of the guidelines

Economic factors

Detailed data on the cost of implementing CPGs and any resulting savings made in any health environment has not

been widely reported on [24, 65]. The cost of developing CPGs for lower urinary tract symptoms in men in Australia was reportedly $160,000 [34]. Potential cost savings from CPGs have been discussed in broad terms; these are linked to a more appropriate and less discriminatory use of diagnostic services, earlier detection and intervention and comparable treatment regimens between generalist and specialist clinicians; these combine to lessen the impact of a health problem. Improvements in the use of medical aids have been reported [11, 17].

Annual costs associated with pressure ulcers in the USA are $2.2-3.6 billion [66] and £320million-1billion in the UK [67, 68]. With regards to pressure ulcers in the USA, positive changes in clinical practice, prevalence and incidence after the introduction of guidelines for pressure ulcers have been reported. The authors reporting these studies have concluded that implementing pressure ulcer guidelines has not inflated the cost of care [69-72]. Cervo [11] estimated that the introduction of the Agency for Health Care Policy and Research guidelines for pressure ulcers in America would provide an annual saving of 3 per cent. Projected costs for introducing preventative strategies into the UK health system ranges from £180-755 million annually [68].

Little is known about the actual cost of preventing and treating pressure ulcers in Australia. Young [73], Davenport [47] and Carville [74] have estimated the cost of specific episodes of care in their clinical settings. In 1997, Woolridge stated that Australian expenditure on pressure ulcers was $350 million per annum [75]. Projections of cost for implementing the AWMA guidelines for pressure ulcer prevention in a given institution would need to be based on the costs of other similar hospital-wide projects.

Sources of potential funding for implementation of the AWMA guidelines would need to be investigated on a regional or institutional basis. Established research agencies such as the NH&MRC, state agencies and the private sector offer a variety of funding opportunities. Industry also allocates substantial resources for related research that is outcome based. Funding opportunities for academic institutions and industry to conduct combined research also exists.

Measuring improved quality of life is difficult from a financial perspective [68]. However, reduced incidence of pressure ulcers, improved time to healing of existing ulcers, decreased length of hospital stay, decreased opportunistic costs and decreased use of human and material resources are quantifiable [47, 74]. Measurement of these factors before and after the introduction of a CPGs for pressure ulcers would indicate whether or not patient or institutional outcomes have improved [11].

Putting pressure ulcer guidelines in place

Tasks that may assist individuals or institutions with the implementation of the AWMA's prediction and prevention of pressure ulcers can be grouped under a number of headings. These key headings, which are listed in Table 4, need to be viewed in context with the other general and key factors, which have been previously discussed.

Literature review

A short literature review that summarises pressure ulcer aetiology, prevalence and incidence nationally, accompanied by relevant institutional or health network data if it exists, should be circulated within the institution to raise awareness of the problem [11, 57]. In addition, the review should contain an outline of the AWMA guidelines for predicting and preventing pressure ulcers and the recommendations for changes to clinical practice. The benefits to clinicians and patients and the institution if these guidelines are adopted should be clearly identified and supported by the literature review [13, 15, 19].

Institutional data

Available data on the extent of the problem within an institution needs to be collated, whether this be from incident reports, incidence or prevalence surveys or just anecdotal evidence [57, 76]. Specific case histories of pressure ulcers that describe the impact on institutional and external resources should be highlighted. Existing pressure ulcer policies and procedures need to be summarised and compared to other

Table 4. Key steps to guideline implementation.

- Literature review
- Collate institutional data
- Gather support
- Identify resources required
- Develop and present business proposal
- Construct a plan of action
- Implement the plan
- Evaluate the plan
- Propose recommendations for change

local facilities. Comment needs to be made on the presence of any other CPGs within the institution and how they were implemented, received and what outcomes eventuated. This data should be prepared for the executives within the institution and be incorporated into a business proposal [10, 57, 77].

Gather local support

Securing support from key people within the institution will increase the likelihood of successful implementation. These key people can also assist with the development of a business proposal and the dissemination and implementation of the guidelines [1, 12, 32, 77].

Identification of resources required

An estimate of the human and material resources required to disseminate and implement the guidelines should be provided. Differentiation needs to be made between those resources currently available and those that would need to be purchased, particularly any additional educational aids or support surfaces. A projected budget would need to be developed [10, 15, 77].

Develop a business proposal

The business proposal should clearly state the need for implementing guidelines for pressure ulcers. The proposal should contain the literature review, the institutional data, the resources required, the associated projected costs and strategies for disseminating, implementing and reviewing the guidelines [1, 15, 17].

Plan for introducing guidelines

Clearly stated aims, objectives and outcomes for introducing these guidelines should be prepared [14, 22]. The proposed plan for introducing the guidelines should be comprehensive and logically structured to provide an overall picture of the implementation process from beginning to end. It should include factors such as the number of guidelines required and in what format, the roles and responsibilities of key players, the target population(s), the educational strategies, the timeframes involved and the subsequent review processes [5, 15, 78, 79].

Particular attention should be paid to the scope of the education programme. Education is acknowledged as one factor which is integral to successful implementation [1, 3, 32]. The programme should include components that are directed to managers, clinicians at all levels and patients. The content should address the underlying pathophysiology of pressure ulcers prior to examining the content of the guidelines [10, 64].

Implementation of the plan

Directing responsibility for overseeing implementation of the guidelines to an individual or group is essential. Ad hoc approaches and informal releases have been shown to be ineffectual [1]. Useful strategies to consider are the appointment of a multidisciplinary committee or appointment of a project nurse or clinical nurse consultant in wound care or tissue viability that may be jointly or individually charged with overseeing the implementation of the guidelines. The appointee(s) must have direct access to the hospital executive to ensure institutional support [29, 57, 61, 77].

Evaluation and review processes

Processes for evaluating the dissemination, implementation and adoption of the guidelines should be determined upfront. These processes need to commence at the start of the project and need to be continued for the duration of the project. All facets of the project need to be examined and feedback needs to be provided to all stakeholders at regular intervals. Recommendations for guideline refinements should be based on problems identified and the quality of the outcomes achieved [20, 77].

Discussion

CPGs for predicting and preventing pressure ulcers are being promoted by the AWMA in order to reduce the prevalence and incidence of pressure ulcers among Australian patients. Secondary benefits include increased awareness and knowledge of the problem, earlier and greater use of preventative measures and treatment that is evidenced-based. In addition, they should lead to reductions in patient morbidity and mortality, reduced costs and less indiscriminate use of pressure support surfaces and alternative therapies [5].

The efficacy of an intervention is usually assessed through the controlled environment of clinical trials using patients who have met entry criteria, who are monitored closely and who are compliant. Clinical effectiveness evaluates the outcome of an intervention in everyday clinical settings, with multiple stakeholders using the intervention amidst competing activities and demands on their time.

It is widely believed that rigorous randomised controlled trials to assess the efficacy of CPGs are less valuable than observational studies to assess clinical effectiveness in which guideline reproducibility, changes in clinician behaviour and changes in patient outcomes are more easily defined [7, 9].

Weingarten's [32] review of guideline effectiveness identified that 55 of 59 studies showed at least one positive change in the process of care and that in nine of 11 studies examining patient outcomes, improved care was demonstrated. Other authors have described significant improvements in clinical practice, preventative practice and the prescription of laboratory tests [4, 15, 18].

In relation to evaluations of pressure ulcer guidelines, reductions in prevalence have been recorded following the introduction of the American Health Care Policy Agency's prevention and treatment guidelines for pressure ulcers [11, 69-72, 80]. Locally, the Joanna Briggs Institute found no significant change in prevalence with the introduction of their guidelines in three Australian hospitals [43]. The methodological approach they used, elements of which have been criticised by other authors [81], to assess prevalence pre and post guideline intervention, may account for the low prevalence found in both instances. The authors, who are currently evaluating the AWMA's guidelines, have identified significant reductions in pressure ulcer prevalence pre and post guideline introduction.

In order to achieve positive outcomes from introducing guidelines, it is important to reinforce that their introduction is a positive measure and not a punitive one; it is not designed to correct actual or perceived deficits of care nor to bring individual clinicians into line [17, 32, 59, 80, 82]. The benefits to the patient, the carer, the clinician and the institution should be promoted. CPGs should be used in conjunction with an individuals' clinical skills, knowledge and judgement.

Whatever strategies are used to introduce CPGs, they should be well researched and shown to be sustainable. They should be presented at corporate level and should be widely circulated for comment. Approval of the concept by opinion leaders and their assistance in the implementation process has been shown to be a significant factor in successful implementation. The opportunity to review and critique proposed CPGs enhances ownership and adoption by all stakeholders [18, 28]. Mitchell postulates that if people have a better understanding of "what's in it for them" the level of compliance increases [17].

Education programmes that use opinion leaders, multi-media techniques, pocket guidelines and incentives to achieve improved outcomes have been cited as successful strategies. Academic detailing or one-on-one education sessions appear to motivate and engender longer lasting behavioural changes in clinicians, patients, carers and managers [1, 28, 62, 79, 83]. Revisiting the aetiology and pathophysiology of pressure related tissue injury is recommended to ensure that staff have a well-grounded knowledge base [10, 64].

CPGs are gaining increased importance as a legal aid in deciding malpractice claims. Cases being heard prior to development of a CPG for a health problem will be viewed within the context of the prevailing environment at the time of injury. CPGs will be referred to if it can be shown that the case in question occurred after development and implementation of the CPG [4, 62].

Evaluation, review and modifications of CPGs should be ongoing, multifaceted and a routine component of the quality assurance process. Revision should focus on problems identified, positive and negative reactions to the CPG, actual or potential benefits and modification of the CPG to suit changing clinical environments. Resources and associated costs also need to be evaluated. Reductions in costs may be measured against the following clinical indicators; length of stay, infection rates, prevalence and incidence data, incident rates and earlier discharge and readmission rates, patient satisfaction, and reductions in morbidity and mortality [10].

Great variations in the cost of treatment and prevention of pressure ulcers have been reported on in the USA and the UK [66, 67, 84]. When assessing reported cost reductions after the introduction of guidelines, other variables that could have affected cost outcomes such as increased staffing levels and the purchase of new equipment at the time of guideline introduction needs to be taken into consideration [68].

Unsuccessful implementation of CPGs has been associated with a lack of institutional support and consultation, poor planning and the prevailing attitudes of clinicians that CPGs hinder, not help, their clinical practice. In the absence of this support, the introduction of the CPG will not be favourably received, changes in clinicians' behaviour are unlikely to occur and expected outcomes will not be achieved [28].

The content of the guidelines, the extent of changes to policy and procedure and the implementation processes will all affect adherence to CPGs [79]. Having detailed knowledge of the content of the guidelines rather than a simple passing familiarity is a significant issue that needs be addressed through improved education.

Conclusion

CPGs are accepted as valid strategies for managing health problems. They have proven patient and institutional

outcomes in many health arenas. Education programmes that discuss the need for and contents of the guidelines are seen as critical elements for their successful adoption. The education programme must also address the current knowledge and skill mix of clinicians and patients and overall institutional needs. Executive officers should foster institutional-wide support to facilitate successful dissemination and implementation of guidelines within their institutions.

The AWMA's guidelines for predicting and preventing pressure ulcers have great potential to realise beneficial patient, clinician and institutional outcomes previously described. An evaluation of the effectiveness of these guidelines in reducing the prevalence of pressure ulcers and increasing clinicians' knowledge, currently being undertaken by the authors, has shown positive results.

The high prevalence of pressure ulcers in Australian health care facilities is a clear indication that there is a need for these guidelines to be introduced so that the problem be addressed in a systematic fashion, based on the available clinical evidence.

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