
Clinical Guidelines and Policies: Can they Improve Emergency Department Pain Management?

James Ducharme

The prevalence of pain in patients presenting to Emergency Departments (ED) has been well documented by both Cordell¹ and Johnston.² Equally well documented has been the apparent failure to adequately control that pain. In 1990 Selbst found that patients with long bone fractures received little analgesia in the ED³, and Ngai, et al., showed that the under-treatment of pain continued after discharge.⁴ In a prospective study, Ducharme and Barber found that up to one third of patients presented with severe pain and were often unrelieved at discharge.⁵ Even though specific patient subgroups appear to be at greater risk, all patients are potential victims of oligoanalgesia – the under-treatment of pain.⁶ Despite an ever increasing volume of research about pain in emergency medicine, dissemination of relevant information with widespread change in practice patterns has not been witnessed. Recent studies continue to affirm that pain management in the ED is suboptimal.⁷

Unlike the development of a clinical pathway (see Table 1 for definitions) or a protocol, both of which focus on specific care for a particular medical condition, altering attitudes toward pain management is much more difficult. While it can be agreed in general that severe pain should be controlled, it is difficult, if not impossible, to establish beforehand what degree of control is optimal for any one patient. Patient selected endpoints such as amount of pain relief or final pain score vary widely from individual to individual. Furthermore, physician (and nurse) disbelief in patient reporting of pain, opiophobia and fear of drug seeking are persistent subjective barriers resistant to objective recommendations.

In an effort to achieve a “pain free” ED, one of the options is to modify clinical practice with the implementation of clinical practice guidelines. Guidelines are best accepted when based on meta-analyses, or other high-quality data.⁸ Such research is still lacking in many areas of pain management and will continue to be lacking for the foreseeable future. Implementation of guidelines has been met with considerable resistance by physicians. There are concerns that guidelines may be established as a standard of care, placing physicians at legal risk if guidelines are not rigidly followed.⁹ These concerns arise because many clinical guidelines lack objective graded evidence, relying on “expert opinion.” Frequently, participants in guideline creation are re-

James Ducharme, M.D., is a Professor in Emergency Medicine at Dalhousie University in Canada. He is also the Clinical Director of the Department of Emergency Medicine at the Atlantic Health Sciences Corporation in Saint John New Brunswick Canada. He is co-editor of the recently published book *Pain Management and Sedation: Emergency Department Management*.

ceiving pharmaceutical funding, introducing a potential bias that may influence opinion and prevent objective interpretation of available data.¹⁰

Further resistance to guideline implementation may arise when national associations produce guidelines that conflict with each other. As an example, in one guideline discussing fever without a source in children, the American Academy of Pediatrics (AAP) and the American College of Physicians (ACEP) state that otitis media should not be considered a source of that fever.¹¹ Paradoxically, in its most recent guideline on otitis media, the AAP states that treatment for otitis media may be considered optional unless severe, as suggested by the presence of a fever greater than 38.5 degrees Celcius.¹² Distinct organizations may produce conflicting recommendations for the same topic, leaving the clinician uncertain which to follow.

In the following pages, an effort will be made to first review the guidelines and recommendations published by national emergency medicine associations that are related to pain management. Barriers to guideline implementation will be reviewed, hopefully allowing identification of ways to alter care. There will be discussion about the legal concerns toward guidelines that prevent their implementation, followed by the risks of relying on meta-analyses to develop such guidelines. Improving the (poor) dissemination of new medical information will also be discussed briefly. After identifying these barriers, methods that have succeeded in improving pain management in other areas of health care will be reviewed in an effort to identify how guidelines or pathways can be developed that will improve pain management in emergency medicine.

Historical Overview

In an effort to improve the approach to pain management, The Canadian Association of Emergency Physicians (CAEP) produced a consensus document in 1994.¹³ No formal guideline could be developed due to inadequate data and lack of randomized trials comparing treatment options. Instead, suggestions derived by a consensus group from available literature were proposed. These suggestions discussed both pain evaluation and management. A decade later, data still does not allow the production of an evidence-based guideline that could define a general approach to emergency patients in pain. Rather, more focused guidelines dealing with individual topics are required.

Three pain-related guidelines have been produced by ACEP. ACEP first produced a clinical practice guideline about chest pain in 1995.¹⁴ This guideline attempted to present an algorithmic approach that evaluated and treated patients for potential ischemic heart disease. The rigidity and complexity of the guideline

Table 1

Definitions

Policy: Policies are intended to promote/protect the health of communities or to develop interventions designed to prevent or treat disease at an individual level. They may be:

1. practice policy where change in treatment behavior is sought
2. service policy that attempts to establish resource allocation
3. governance policy that defines access to compensation or level of benefit⁵⁵

Practice Guideline: A systematically developed statement to assist in practitioner and patient decisions about appropriate health care for a specific clinical circumstance. They are intended to assist...in making health care decisions...and to serve as a foundation for instruments to evaluate practitioner and health system performance.⁵⁶ They are aimed at promoting both higher quality and more cost-effective health care by making the clinical knowledge generated through outcomes research available and more easily accessible.⁵⁷

Clinical decision rule: A clinical tool that quantifies the individual contributions that various components of the history, physical examination, and basic laboratory results make toward the diagnosis, prognosis, or likely response to treatment in a patient. Clinical decision rules attempt to formally test, simplify, and increase the accuracy of clinicians' diagnostic and prognostic assessments. Existing rules guide clinicians, establish pretest probability, provide screening tests for common problems, and estimate risk.⁵⁸

Clinical Pathway: Using accepted benchmark goals, a clinical pathway is a defined approach for a specific medical condition that is used to enhance outcomes and contain costs within a constrained length of stay.

Protocol: A medical protocol is an established rule for the medical or surgical treatment of a patient.

seemed to be deterrents: a year after publication almost half of emergency physicians were aware of its existence, yet only 12% felt it had modified their clinical practice.¹⁵ ACEP has also produced guidelines with respect to headache¹⁶ and non-traumatic abdominal pain.¹⁷ Within each of these guidelines specific questions have been answered, each answer based on graded evidence. The recommendations produced concentrated on the investigation and treatment of various illnesses causing headache, while in the policy discussing abdominal pain, only one paragraph reviewed the use of opioids for pain control. No specific recommendations for pain management have been made in any of the ACEP policies. In the headache policy, physicians were cautioned to not rely on response to medication as a diagnostic indicator.

The 1999 CAEP guideline for migraine management provided graded, evidence-based recommendations with respect to abortive medications.¹⁸ No recommendations for optimal treatment were (and still are not) possible due to an absence of comparative studies. In the same year CAEP also published the Canadian Emergency Department Triage and Acuity Scale

(CTAS).¹⁹ Pain evaluation, using a numerical rating scale, was integrated into CTAS. All patients with severe (a score of greater than seven, using a scale from zero to ten) visceral chest pain, abdominal pain or headache were expected to be seen by a physician within fifteen minutes of registering, while all other patients with severe pain had to be seen within thirty minutes. Unfortunately many nurses do not complete the pain scale, with less than 50% compliance in the author's department. Overcrowding further prevents emergency departments from meeting the time expectations established by these recommendations. Despite accreditation for Canadian emergency departments partially dependent on fracture response times established by CTAS, it is the author's experience almost no major ED has been able to successfully meet these pain-related expectations.

Similarly, the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) mandated pain evaluation at both registration and discharge.²⁰

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This recommendation was not evidence-based: there is inadequate evidence to say if such documentation improves pain management.²¹ It is also uncertain that such a "top-down" approach can succeed in changing the health care beliefs that are preventing better pain control at present.²²

Dr. Anne-Maree Kelly has attempted to initiate a nurse-driven approach to pain management in Australia.²³ Such an approach has not only shortened time to pain relief, but also converted the route of delivery from an intramuscular to an intravenous one. Although a nation-wide recommendation may not succeed, it is perhaps possible to successfully overcome recognized pain barriers with local initiatives such as these. Involving healthcare workers in developing their own policy on pain management may ensure buy-in.

In contrast, both ACEP²⁴ and CAEP²⁵ have produced practical clinical guidelines about procedural sedation. Recommendations about monitoring, patients at risk, and discharge criteria have been defined. While both caution against over-sedation, neither provide instructions with respect to medication dosing or endpoints. The apparent focus of both associations was patient safety and medicolegal concerns, rather than defining optimal medication usage for patient comfort. In the 2005 edition of its sedation policy, ACEP invited emer-

gency nurses to collaborate with physicians in the working group that drafted the document, while CAEP attempted to collaborate with the Canadian Anesthesiology Society in the preparation of theirs. The latter was willing to aid in identifying "problems, perspectives and controversial issues," but was unwilling to co-author the final guideline.²⁶

Guidelines Viewed as Standard of Care: Legal Concerns

Clinical practice guidelines are meant to aid in decision-making with respect to patient evaluation and care. Regardless of the final format, they are aimed at promoting both higher quality and more cost-effective health care by making the clinical knowledge generated through outcomes research available and more easily accessible.²⁷ Well written guidelines should provide some protection from liability: "in a just and rational world, physicians who follow peer reviewed professional guidelines will be held blameless when a patient has bad luck."²⁸ Our (medical) world is neither just nor rational, unfortunately; physicians remain afraid of being sued.

Increasing numbers of guidelines – with the largest repository at the National Guideline Clearinghouse (NGC) (www.guideline.gov/index.asp) – are slowly impacting the definition of the standard of care. Even so, courts will most likely treat practice guidelines as one piece of evidence in establishing the standard of care, rather than as a primary determinant.²⁹ In their ideal form, guidelines provide a framework for making decisions. Physicians have legitimate concerns that their discretion and judgment – essential in diagnosing and treating individuals – will be eliminated by rigid adherence to guidelines. A physician should neither be deemed negligent simply for departing from a guideline's recommendations nor be deemed innocent for adhering to them. Since it is questionable at best that a guideline could be considered standard of care for one particular patient, "not only is it not desirable for guidelines to be deemed conclusive, it is not remotely possible in practical terms."³⁰

Making use of guidelines to establish standard of care becomes more difficult when one recognizes the complexity of the situation. When using the search terms "acute pain" and "emergency medicine" at the NGC, 92 guidelines are found. Some have differing conclusions with respect to the same topic, while many rely on expert opinion due to lack of high quality scientific evidence. There are almost no systematic reviews related to pain evaluation and management. Even when evidence is available, interpretation of the data may vary, leading to discordant recommendations. Expert opin-

ion can be influenced in many ways: assumptions may be outdated or personal biases from clinical experience, self-interest or fatigue may be present. It seems therefore that “the veracity of practice guidelines cannot be accepted on face value.”³¹

Before establishing guidelines as a standard of care, other legal issues must also be considered. If there is more than one recognized course of treatment, most courts will allow some flexibility in what is regarded as customary.³² Standard of care becomes more uncertain when competing guidelines produced by different associations do not make similar recommendations. Conflicting recommendations may occur when different medical bodies disagree, but can also occur when medical recommendations conflict with healthcare organization guidelines more concerned with cost-saving approaches. This may also appear when policies consider societal needs ahead of personal ones. Another legal question may be how courts would rule if a guideline is modified by a particular institution. A smaller medical center, for example, may not be able to apply recommendations derived from tertiary-care academic studies without such local modification. Paradoxically, updating guidelines with new information is more feasible at a local level: many national association guidelines may not be renewed for years. The legal system should thus encourage the use of practice guidelines without discouraging individual judgment or local modification and interpretation. There needs to be a middle ground where physician judgment and the patient’s presenting symptoms can determine the treatment plan. Many times a guideline will be “too blunt an instrument...to establish a clear standard of care.”³³

Health Policy Development

When any specific health issue affects a substantial portion of a community, or involves the use of substantial common resources, it is a public health problem.³⁴ This can certainly be stated for pain in general and even more for pain seen in the ED. Up to 12% of patients in Canada have suffered high intensity back pain,³⁵ while greater than 70% of patients registering in the ED complain of pain as a primary symptom. Policy development becomes important for such widespread issues, especially when there is limited evidence of effectiveness, substantial evidence of adverse effects of treatment or poorly disseminated knowledge resulting in less than optimal care. In such situations, many patients may inappropriately receive therapy that is ineffective or deleterious, or both. In emergency medicine, information about pain is lacking in many areas. There is little formal research available on multi-dimensional assessment of pain in the acute setting. There is inad-

equate data supporting pain scoring as a clinical tool. Optimal analgesic usage derived from comparative studies does not exist in many areas. There is no literature describing the transformation of acute into chronic pain; and we do not know if aggressive pain management can prevent this transformation or only assures greater adverse effects. There are thus many areas of emergency pain management still lacking important information.

Policy development may direct research efforts or allocation of funding for system development to correct such inadequacies. It may also allow for statements that clarify which treatments may be ineffective and should not continue to be supported with public funding. Such policy should originate from high level research, although some remain convinced that policy making should continue to be predominantly based on experience rather than research-based knowledge.³⁶ Some of the reasons for not using evidence include:

1. available research evidence may be considered irrelevant. If one looks at Cochrane type meta-analyses, only randomized controlled trials are included as valid evidence. In developing such meta-analyses, all original data from available randomized trials – both published and unpublished – are collated. This data is then graded for quality and homogeneity, to ensure validity of combining data into one analysis about a specific topic. Other study models, such as retrospective or observational studies, are considered to be of too low a level of evidence to provide relevant or adequate data.
2. there may not be agreement of the interpretation of available research.
3. the social environment may not allow acceptance of available research information.

Transforming evidence into policy may be a “demanding task requiring intellectual rigor, discipline, creativity, clinical judgment and skill, organizational savvy and endurance.”³⁷ Intellectual rigor is often lacking, however, with many of those involved in policy development either unaware of all possible data or lacking in skills required to interpret data that is available. In one study 61% indicated that the executive summary was “the most important component of the systematic review, followed by the conclusion.”³⁸ Participants were unable to verify the conclusions of the systematic review, be certain that all pertinent studies were included, or ensure that the authors of the review correctly analyzed and interpreted the data from the original studies. The authors concluded that “there was a strong association between use of the reviews and the perception

that systematic reviews could overcome the barrier of limited critical appraisal skills.³⁹ It would seem essential to include people with such skills in the development of policy if we wish to succeed in incorporating the best evidence possible. Due to the gaps in knowledge, as well as the existing pain barriers, policy development at this point would probably be best oriented toward development of pain curricula in medical schools, and identifying and funding areas of pain research. Further policy could be directed toward improving the dissemination of new knowledge to the clinician.

Clinical Practice Guidelines: Incorporation into Professional Practice

Guidelines have been unable to modify and standardize practice to the extent expected. The problem appears to lie not with deficiencies of the guidelines themselves, but with the dissemination and acceptance of the information. "Modification of physician behavior has proven to be so daunting an undertaking that no durable resolution of this problem seems likely in the near-term."⁴⁰ There is an ever growing field of research studying interventions to improve professional practice; most interventions used have been shown convincingly to have little or no impact on (medical) behavior modification.

Continuing medical education strategies such as conferences have little direct impact on modifying professional practice, despite being the most popular learning method cited by practitioners.⁴¹ Table 2 lists the various interventions aimed at modifying clinical practice and their degree of effectiveness. It appears that guideline development and passive dissemination – via mailings, in publications or postings on websites – of the guideline is particularly ineffective. Many national associations have traditionally relied on such a passive

Table 2

Interventions to modify clinical practice among health professionals

Consistently effective

- educational outreach visits
- computerized reminders
- interactive meetings

Variably effective

- audit and feedback
- presentations by local opinion leaders
- local consensus processes (such as clinical pathway development)
- patient mediated interventions

Little or no effect

- educational materials, including clinical guidelines, electronic publications
- didactic educational sessions
- clinical guidelines and policies

approach to circulate new guidelines, with resultant poor awareness and utilization.

If we are to incorporate practice guidelines it appears that outreach visits are the most effective, albeit costly, method.⁴² The pharmaceutical industry uses this approach with great effectiveness. Trained people meet with physicians in their practice environment to discuss application of new information into their practice. They may also provide feedback on cases seen by the physician. Hospital working groups may incorporate guidelines into clinical pathways as an effective way of modifying clinical practice, but this is time-demanding and requires frequent reviews. Benchmarking of utilization and auditing of changes in patient outcomes is required to ensure local validity of such modifications, but many physicians are unwilling or unable to provide such a commitment, and are wary of others performing such auditing on their behalf.

Why are physicians so reluctant to incorporate new guidelines into their practice? Reasons are many, but include:

1. Complex packaging: guidelines that are lengthy or complex are almost certain to fail.
2. Social and medicolegal context: most Canadian emergency physicians are willing to embrace new guidelines whereas most American physicians are not.⁴³
3. Many guidelines rely on expert opinion due to lack of high quality evidence. Such opinion is felt to be biased, often by pharmaceutical ties.
4. Disagreement with guideline recommendations due to difference of interpretation of the available literature.
5. Physicians feel that a guideline either removes independent decision making, or fails to account for patient variance – the "art" of medicine.
6. Many published guidelines conflict in their recommendations, often because the originating organizations have different objectives in mind (e.g. optimal results versus least expensive).
7. Concern that guidelines may be established as a standard of care, placing physicians at legal risk if guidelines are not rigidly followed.⁴⁴

Unless these barriers are addressed, physicians will continue to avoid guideline usage. It may well be that for most clinicians, behavior modification may be impossible. Solutions may only be possible if started early in training, with medical school curricula addressing such attitudinal changes. Such changes could be aimed not just with respect to guidelines in general: attitude and knowledge toward pain management could specifically be targeted.

If improvement of pain is to occur, then there needs to be modification of the teaching of pain and pain management at the medical school level, continuing on through residency training.

Gallagher suggests that the use of computerized decision support systems may possibly allow incorporation of guidelines into the practice of present clinicians.⁴⁵ The system should enable clinicians to apply current evidence at the bedside. Those in existence deal most frequently with medication administration. They allow for cost effective care with minimal drug interactions while reducing medication errors and waste. Physician behavior is not permanently modified, for if such systems are removed, physicians rapidly revert to previous patterns. Imposition of a system does not assure education or understanding. In addition, they have not yet been shown to alter patient outcome, while increasing health care costs.⁴⁶ Even with such reservations and lack of validation, support systems are being widely implemented.

Successful Interventions that have Modified Pain Management

Despite the concerns expressed above, policies *have* succeeded in improving our approach to pain. The Agency for Health Care and Policy Research (AHCPR) – now known as the Agency for Healthcare Research and Quality – was very successful in the 1990's at formalizing approaches to patient care. In particular, its publication on low back pain allowed standardization of research and identification of interventions that did or did not work.⁴⁷ The AHCPR encouraged the establishment of Patient Outcome Research Teams, so that patient oriented results came to the fore.⁴⁸

The JCAHO recommendations for pain evaluation, while not evidence-based, have forced all emergency departments to at least consider the possibility of pain in all patients.⁴⁹ Research in the area of pain in emergency medicine is growing each year. Physicians have started to learn and accept that symptom relief does not preclude diagnosis, and is often as important. Donovan, et al., demonstrated many years ago that patient satisfaction was inexplicably high despite poor pain control, primarily because patients expected to suffer.⁵⁰ The shift of patients to alternative care practitioners – felt to be more empathetic – has transpired due to the perceived insensitivity of physicians toward symptom relief.⁵¹ More recently, patients have felt more empowered about their health care, so that poor pain management may translate into lower levels of patient satisfaction. With health care administration increasingly focused on patient satisfaction, system policy will aim to im-

prove any patient care deficiencies that result in sub-optimal satisfaction scoring. We can only hope that inadequate pain relief will be identified as one of those deficiencies.

JCAHO has also mandated standardized monitoring for procedural sedation, irrespective of where such sedation occurs in a hospital. In order to continue to perform procedural sedation, emergency physicians have established national guidelines. The old days of strapping down a child or telling a patient to “tough it out” have thankfully passed, due to such guidelines. It is now considered an integral part of emergency medicine practice to perform procedures safely and painlessly. It would seem that despite concerns that administration dictating care to physicians makes medical practice too rigid, in some instances patient pain management has improved only through such ventures. Further evidence-based guidelines seem justified from the above success.

How do we Further Improve Pain Management?

It appears that students entering medical school already have established viewpoints about pain and pain management.⁵² The current process of medical training may negatively reinforce attitudes toward pain management. With almost no education about pain in medical schools, attitudinal priorities are being established for diagnosis and treatment of disease, not symptom management. Medical schools expect to create physicians with a set body of knowledge but make little effort to account for pre-existing attitudes or cultural viewpoints. Individual psychological characteristics with respect to reluctance to prescribe opioids, and fears of patient addiction and drug regulatory agency sanctions are not addressed. If improvement of pain is to occur, then there needs to be modification of the teaching of pain and pain management at the medical school level, continuing on through residency training.

JCAHO policy has ensured the documentation of pain, but it does not educate health care workers, correct attitudes or remove existing barriers.⁵³ Despite linking such policy with accreditation, there is little evidence that such documentation has improved pain management and understanding in the ED. Skepticism of pain reporting will almost certainly nullify any value of documentation. It may be that more focused initiatives as seen with postoperative pain or back pain may

be more successful than a single guideline that cannot be expected to be applicable due to the widespread origins and duration of pain seen in the ED.

Recognition of surgeon inability (or reluctance) to manage pain resulted in the establishment of acute pain services in almost all hospitals. Similar poor pain management for vaso-occlusive crises in EDs has resulted in sickle cell day hospitals. In that setting patients receive more rapid and more effective pain control than in the ED. They also are admitted less often and stay for shorter periods.⁵⁴ Both solutions, while better for the patients, have not improved the pain management skills of those who were ineffectively managing patient pain. Removal of responsibility for pain management and failure to educate groups of physicians will probably result in other patients in their care continuing to receive suboptimal pain management. This has certainly been one of the reasons for the ongoing disagreement between surgeons and emergency physicians over pain control in patients presenting with abdominal pain.

Clinical practice guidelines appear able to provide at best a framework around which we can build individualized approaches to pain. While endpoints of pain control cannot be mandated, offer of pain control should be universal. Education about patient pain barriers will allow physicians to recognize and account for such barriers, ensuring the patient does not suffer needlessly. Furthermore physician attitudes toward self-reporting of pain, opiophobia and malingering need to be addressed. Only when these issues are addressed can steps to improve pain management be expected to gain widespread acceptance.

Further improvements will require policy that encourages research for areas lacking adequate evidence and more effective information dissemination strategies. Existing information could ensure better pain control in many aspects of emergency medicine if properly disseminated. This may require novel strategies given that current methods of disseminating information are for the most part unsuccessful. Until then, clinical guidelines will continue to be poorly used and minimally effective at modifying clinical practice. Improving pain management will thus be a slow process. It may well be that the greatest success will be achieved not from the top down, but from the bottom up: initiation of pain education early in medical school, with attention to student attitudes and biases. As these new physicians enter the clinical domain, they will pressure more senior physicians into modifying their attitudes and behavior, ultimately achieving optimal pain control for our patients.

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