

Clinical Practice Guidelines

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Background

Interest in clinical practice guidelines has existed for some 20 years in medicine, although there have been “guidelines” in many forms for many years. In medicine the main thrust for guidelines originated from the insurance industry. Professional bodies in the USA have become increasingly involved in guideline development to protect the integrity of their professional standing and demonstrate commitment to quality assurance¹. In Europe guidelines have been developed through consensus development conferences, to strengthen peer review and quality assurance². In Canada concerns include rising costs, significant variations in clinical practice and a lack of QA guidelines for the profession¹.

Of great importance in the development of guidelines are the rapid increase in technology advances, often before outcomes are known, increasing rate and number, increasing complexity of choice, known wide variations in clinical practice^{3,4}, increasing financial pressures and the need to establish the validity of clinical practice. Also of importance are the changes in our understanding of oral and dental diseases, changes in dental technologies, changes in expectations of our patients and increasing costs. To achieve high quality oral and dental care, we must determine what practices constitute quality care; monitor existing practices to compare them against accepted standards, and change the practice of dentists to ensure that the care delivered meets the standards.

The evaluation of evidence is becoming more complicated. It is no longer possible for individual dentists to analyze all the evidence in their heads, to determine accurately the outcome of the different options and to determine the patient’s preferences for the outcome.

What are Clinical Practice Guidelines (CPGs)?

The Institute of Medicine defines clinical practice guidelines as “Systematically developed statements to assist practitioners’ and patient decisions about appropriate health care for specific clinical circumstances”.⁵ Guidelines are also known as “parameters, practice protocols, practice standards, review criteria and preferred practice patterns”⁵.

Why have CPGs?

The Canadian Medical Association suggests that CPGs can be used to provide better health care through clarifying which care is appropriate; to form review criteria; promote utilization of more beneficial care; and to reduce liability⁶. All four of these are relevant to dental practice. The overarching reason to develop guidelines is to give a rational

basis for the development of standards, since it is assumed in legislation that public interest is best served where standards exist.

Both patients and dentists should find that having guidelines makes decisions simpler to reach and enhances predictability of clinical outcomes.⁷ By ensuring ready access to an agreed protocol for describing harms and benefits, ranking relevant options for care, the clinician can accurately consider the probabilities and degrees of benefit expected and communicate this information to patients.

The primary purposes for clinical practice guidelines are to assist clinical decision-making and to improve patient care, 'to clarify which care is appropriate and to form review criteria'⁶. They give dentists the information, processes and skills needed to maintain primary decision making responsibility. They do not remove the decision responsibility from the clinician.

Other purposes relate to their contribution to the practice of dentistry as an educational tool; as a source of guidance to aid clinical decision making; for quality assurance; to address appropriate use of rapidly changing technology; to develop better databases; to address financial pressures, the need to establish the validity of clinical care; and to improve the quality of care.⁷

Clinical practice guidelines will sift out the important information the dentists need to make sound clinical decisions. They will help rationalize the provision of oral health care. Making clinical decisions is an every day event for dental clinicians. As an example we may be presented with an early lesion and need to decide whether to restore it, apply preventive therapies or determine to watch it. These decisions and answers to patients are largely based on what we were taught, and our experience in practice since graduation. Thus our practice decisions are largely based on "expert opinion

How can guidelines help patients and practitioners?

There are challenges in dental practices on a daily basis, keeping up with new materials and techniques, running a small business while providing high quality oral health care to meet the needs of the patients in an efficient and effective manner. It is getting increasingly difficult to keep up with the journals we take, let alone those we do not get or see. Attending continuing education courses and conferences, annual meetings fills some of the gaps, but how can we be prepared and up to date on all aspects of clinical practice?

How can we respond to our patients when they ask questions based on clinical guidelines that they have found on the Internet? The Internet already allows those connected to have ready access to information in health sciences' libraries. The Cochrane Library maintains literature on specific subject areas including oral health, allowing collaboration and co-ordination of efforts. Our patients tap into this information. When they seek our services they come armed with their recently garnered knowledge

about our practices, treatment options and views on the need to provide specific modalities. This new generation of informed patients asks questions about the latest new test or technique and expecting their dentist to be able to discuss these as well as new options for dental care and new materials. Health professionals get bombarded with information. How do we sift through it all to determine what is scientific and proven efficacious (the ‘gold standard’) and which are inaccurate or at best unproven. This is where clinical practice guidelines can be our salvation.

There are already some clinical guidelines developed to assist dental practitioners daily in the provision of effective care. There is a need for reliable information, maintained. As these guidelines grows in number, with the amalgamation of the different initiatives and the cooperative sharing of these guidelines, we will have a library of dental and oral health care guidelines available for every practitioner. They will provide dentists with a way to answer any question and to maintain their high quality dental practice,

Developing Evidence-based Clinical Practice Guidelines

The evidence-based approach describes the best available scientific evidence and ties the resulting guideline to evidence. It estimates benefits and harms as well as costs and outcomes. Embedded in an evidence based methodology are several important principles, including the following:

- Developed with reliable methodology
- Derived from scientific literature
- Widely available to practitioners
- Developed by dental organizations
- Intended to be flexible, pointing to what should be done in the majority of similar situations
- Present probabilities, pointing to decisions that have high probability of correctness in a high proportion of similar cases
- Based on clinical expertise

Guidelines should also have desirable attributes (Table 1)⁴.

Table 1. Desirable Attributes of Practice Guidelines

Attribute	Explanation
Validity	Practice guidelines are valid if when followed they lead to health care and cost outcomes projected for them
Strength of evidence	Practice guidelines should be accompanied by descriptions of the strength of the evidence and the expert judgement behind them
Estimated outcomes	Practice guidelines should e accompanied by estimates of health and cost outcomes expected from the intervention in question, compared to alternative practices. Assessment of relevant health outcomes will consider patient perceptions and preferences

Reliability/reproducibility	Practice guidelines are reproducible and reliable if 1) given the same evidence and methods for guideline development, another set of experts produces essentially the same statements; and 2) given the same clinical circumstances, the guidelines are interpreted and applied consistently by practitioners (or other appropriate parties).
Clinical applicability	Practice guidelines should be as inclusive of appropriately defined patient populations as evidence and expert judgement permit, and they should explicitly state the population(s) to which statements apply.
Clinical flexibility	Practice guidelines should identify the specifically known or generally accepted expectations to their recommendations and discuss how patient preferences are to be identified and considered
Clarity	Practice guidelines must use non-ambiguous language, define terms precisely and use logical and easy-to-follow modes of presentation.
Multidisciplinary process	Practice guidelines must be developed by a process that includes participation by representatives of key affected groups. Participation may include serving on panels that develop guidelines, providing evidence and viewpoints to the panels, and reviewing draft guidelines.
Scheduled review	Practice guidelines must include statements about when they should be reviewed to determine whether revisions are warranted, given new clinical evidence or professional consensus (or lack of it).
Documentation	The procedures followed in developing guidelines, the participants involved, the evidence used, the assumptions and rationales accepted, the analytic methods employed must be meticulously documented and described

Source: Field and Lohr (1992).

Traditionally guidelines have evolved following practices in common use through textbooks and journal articles. The success of this approach is dependent on the assumption that decision makers can accurately perceive consequences of a practice and determine its use subjectively without explicitly examining the evidence that supports its use, estimating its outcome, or comparing its benefits harms and costs. The evidence-based approach to guideline development involves estimating the clinical effects of decisions and determining the extent to which benefits outweigh harm and outcomes are worth the cost⁸

The quality of dental care is determined by the quality of the decisions that determine what care the dentist provides and the quality of its implementation

A national process for guideline development in dentistry has been agreed upon and adopted by the Canadian Collaboration on Clinical Practice Guidelines in Dentistry (CCCD). There is a commitment to the development of evidence-based guidelines,

and recognition of the need for training in critical appraisal of the literature as well as the need for clear definitions of guidelines and standards of practice.

Guideline Process

A seven step process (Table 2) has been recommended, which is consistent with those used by others for developing guidelines.^{9, 10,11,12,13} It is important to consistently rate the evidence, defining the criteria for effectiveness such as the health service results in more good than harm, basing the judgement on well designed studies. The Canadian Task Force on the Periodic Health Examination (CTFPHE) has instituted a system for rating evidence and recommendations (Table 3)¹⁴ which is consistent with the tenets of evidence-based care

Table 2: 7 Step Guideline Process

	STEPS	COMPONENTS
1	Frame the Question	<ul style="list-style-type: none"> • Develop a protocol for ranking or choosing topics requiring development, in consultation with other organisations <ul style="list-style-type: none"> ➤ distribution of care services ➤ identified need/burden of illness ➤ prioritize the topics ➤ select outcomes • Adopt clear statement of the clinical problem and outcome. Definition of the clinical problem should be carried out in consultation with other organisations. • Once problem is identified, the solution should be evidence based and address consumption of resources
2	Assemble and Review the Evidence	<ul style="list-style-type: none"> • Perform a literature • Develop/adopt a method for critiquing the literature that can be distributed to participants, e.g. articles by Sackett <i>et al.</i> on how to read a review article, how to critically assess a clinical trial. • Offer workshops to address this area for individuals involved in the guideline development process. • Look at existing guidelines. • Develop/adopt a format which includes experts to summarize and appraise the literature so that it can be distributed to participants. For example, see "Summary Table, Chapter 36" (Canadian Periodic Health Examination: Lewis and Ismail).
3	Develop Evidence Based Preliminary Report (EBR)	<ul style="list-style-type: none"> • Carry out a review by someone trained in critical appraisal that has access to a dental expert to address dental questions. • Write an EBR using a rigorous methodology, which uses levels of evidence.

	STEPS	COMPONENTS
		<ul style="list-style-type: none"> • Generate a preliminary report with the supporting literature <ul style="list-style-type: none"> ➤ Chart ➤ recommendations (preliminary) ➤ record level of evidence
4	Review and revise EBR	<ul style="list-style-type: none"> • Establish an appropriate committee including but not limited to experts and non-experts, members of the public, representatives of the dental regulatory bodies, faculties of dentistry, and other dental organisations to review the document and prepare evidence-based recommendations. • Review and revise preliminary report based on the committee's comments, and • Develop draft guidelines • Disseminate the EBR and draft guideline widely for feedback and evaluation. • Revise the draft in the Committee, after receiving the feedback, and prepare Clinical Practice Guidelines (CPGs). • Document minority opinion
5	Publish new guideline	<ul style="list-style-type: none"> • Send CPGs to the CCD for consideration, adoption and publication.
6	Disseminate Guideline	<ul style="list-style-type: none"> • Disseminate the CPGs to dentists • Organise a progressive program of undergraduate and continuing education to disseminate the guidelines. <ul style="list-style-type: none"> ➤ Methods proposed: ➤ Continuing education ➤ Curriculum • Facilitate training and education as required e.g. through the CDA. • Generate feedback from the regulatory bodies based upon quality assurance evaluations.
7	Review the Guideline	<ul style="list-style-type: none"> • Review and update each guideline in a stated periodicity, following the 7 steps. • It is important to evaluate the guidelines using office review, evaluation of dental curricula and feedback from the dentists.

Table 3 Quality of Evidence

Quality of Evidence	
Level I:	Evidence from at least one properly randomized control trial (RCT)
Level II-1:	Evidence obtained from well-designed control trials without randomization
Level II-2:	Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one centre or research group
Level II-3:	Evidence obtained from comparisons between times or places with or without interventions. Dramatic results in uncontrolled experiments (such as results of treatment with penicillin in the 1940's) could also be included in the category
Level III:	Opinions of respected authorities based on clinical experience, descriptive studies or reports of expert committees
Classification of Recommendations	
A	There is good evidence to support the recommendation that the condition be specifically considered on a periodic health examination.
B	There is fair evidence to support the recommendation that the condition be specifically considered on a periodic health examination.
C	There is poor evidence regarding inclusion or exclusion of the condition in a periodic health examination, but recommendations may be made on other grounds.
D	There is fair evidence to support the recommendation that the condition be specifically excluded from consideration in a periodic health examination.
E	There is good evidence to support the recommendation that the condition be specifically excluded from consideration in a periodic health examination.

Dissemination and Adoption of Clinical Practice Guidelines

The dissemination of clinical practice guidelines is a complex and critical component of adoption and compliance. To ensure that there is professional buy-in, there needs to be wide consultation at the topic selection stage and again at the review of the draft Evidence Based Report and Draft Recommendations steps. This is more easily achieved with a 'captive audience' such as has been my experience in introducing clinical practice guidelines for Ontario Public Health Dental Programs, with the ability to provide training, maintain ongoing continuing education, monitoring the use of the guidelines and measuring compliance.¹⁵

Any guideline has to be acceptable at the clinical level, and not perceived as imposed from above. This can be achieved through the use of review panels, one internal and one external. These panels ensure that practical considerations are addressed and resolved as part of the process. Once disseminated. It is easier to adopt a practice

guideline that you have helped to create. Compliance occurs more readily too, when the guideline is well understood, and perceived as making the practice of dentistry easier for both the practitioner and the patient. Once there is consensus on the guideline, dissemination strategies must be developed, such as continuing education courses, presentations at conferences, articles in the widely read dental journals, following publication of the guideline to the dental profession.

The ongoing review and evaluation of clinical practice guidelines are two other important components. Guidelines cannot be static documents, especially in a field where there is a knowledge 'explosion' or a flurry of publications as has been the case with fluorides and fluoridation. Guidelines can cause conflict when a recommendation impacts heavily on the current practice of dentistry. Those of us committed to developing guidelines must also recognise that having guidelines do not guarantee change in practice nor should we expect that changes will necessarily influence patient outcomes or costs.

In conclusion clinical practice guidelines make it easier for dental professionals to practice at the patient level on a day to day basis, through the provision of an evidence-based analysis of current literature and recommendations which assist their decision making while maintaining their responsibility for these decisions.

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