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Narrative Review

The Use of Clinical Practice Guidelines in Hospital: A Narrative Review

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Abstract

Background: Clinical guidelines have been the key resource for clinicians around the world to guide clinical care. The ways in which these guidelines are written and promoted to clinicians predict their uptake in day-to-day practice. We sought to evaluate the factors that determine good clinical guidelines and their uptake among medical practitioners.

Results: Key predictors of guideline uptake include clinician intrinsic factors such as awareness, familiarity, disagreement, and inertia of practice. Extrinsic factors pertaining to the patient and health system also predict guideline uptake. While significant benefits have been shown in the literature by virtue of guidelines, there are minimal disadvantages.

Conclusion: There are many factors involved in predicting the use of clinical guidelines in practice. It is essential to identify these and continue to support their use, as appropriately designed clinical practice guidelines can provide immense benefits to all those involved in the health system.

Keywords: Clinical Guidelines; Evidence Based Practice; Implementation; Adaptation; Quality of Care

Introduction

Field and Lohr (1990) describe clinical guidelines as "systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances".[1] In the majority of situations, guidelines that promote proven interventions while deterring ineffective ones have been proven to reduce morbidity and mortality while improving quality of life.[2]

Through implementation of guidelines, the aim is to improve quality of care by reducing inappropriate treatment variation and ensuring translation of effective treatment advancements to everyday practice.[3] The rate with which patients with identical clinical problems receive heterogenous care depending on health service and clinician is on the decline, in keeping with implementation of clinical guidelines. However, guidelines produced from different sources often conflict in recommendation, which can be confusing for those implementing care at the frontline. Moreover, clinicians may unknowingly follow guidelines that have not undergone rigorous review. Hence, it is of utmost importance that the best guidelines are available for uptake, with minimal variation in recommendation.

In this narrative review, we explore the importance of appropriate clinical guideline evaluation, the factors predicting uptake of guidelines among clinicians, and the benefits and shortcomings of guideline usage as explored within the literature.

Method

A thorough review of PubMed and Scopus assisted identifying the key literature surrounding clinical guidelines. Key search terms included: *clinical guidelines*, *guideline uptake*, and *guideline implementation*. All studies and reviews were limited to those in English.

Discussion

Evaluating clinical guidelines

In the last two decades, the number of clinical guidelines worldwide has increased exponentially. The sources for these guidelines vary, ranging from statements from individual medical societies to local and federal government health policy updates.[4] As may be expected, not all guidelines are compiled using the same methodology. Qaseem and colleagues'[5] recommendations for international standards for clinical practice guidelines outline11 key components:

1. A guideline development panel should include diverse and relevant stakeholders, such as health professionals, methodologists, experts on a topic, and patients;
2. A guideline should describe the process used to reach consensus among the panel members and, if applicable, approval by the sponsoring organization. This process should be established before the start of guideline development;
3. A guideline should include disclosure of the financial and nonfinancial conflicts of interest for members of the guideline development group. The guideline should

also describe how any identified conflicts were recorded and resolved;
4. A guideline should specify its objective(s) and scope;
5. A guideline should clearly describe the methods used for the guideline development in detail;
6. Guideline developers should use systematic evidence review methods to identify and evaluate evidence related to the guideline topic;
7. A guideline recommendation should be clearly stated and based on scientific evidence of benefits; harms; and, if possible, costs;
8. A guideline should use a rating system to communicate the quality and reliability of both the evidence and the strength of its recommendations;
9. Review by external stakeholders should be conducted before guideline publication;
10. A guideline should include an expiration date and/or describe the process that the guideline groups will use to update recommendations;
11. A guideline should disclose financial support for the development of both the evidence review as well as the guideline recommendations.

The National Health and Medical Research Council (NHMRC) has also proposed a similar list of key aspects of a good clinical guideline.[6]

Clinicians or other health practitioners should take these components into consideration when evaluating a guideline presented to them. Brouwers et al. have made the critical evaluation of guidelines even more objective and systematic through the development of the AGREE and subsequent AGREE II guideline evaluation tool.[7] Consisting of 23 key items organised within six domains (scope and purpose, stakeholder involvement, rigor of development, clarity of presentation, applicability, and editorial independence), an overall numerical assessment can be made to judge the applicability of the guideline to ones personal practice.

How well do clinicians adopt guidelines?

The earliest evidence assessing the use of clinical guidelines can be sourced back to a study published by Lomas and colleagues in the New England Journal of Medicine (1989).[8] In an evaluation of obstetrician uptake of a new guideline regarding the use of caesarean sections, it was found that a statistically significant 11% change in practice habits was present. Interestingly, while over 80% of obstetricians where aware of and agreed with the guidelines, only 67% showed good understanding of the content of the recommendations.

Subsequent evaluations of various clinician groups have demonstrated variable adoption of guidelines. Brand et al. assessed the adherence of 150 American cardiologists to guidelines published by the American College of Cardiology regarding beta-blocker therapy in patients post-myocardial infarction. Amongst other findings, a key result was that of all their patients eligible for beta-blocker therapy as per the guidelines, only 48% were treated. Hayward and colleagues qualitatively assessed Canadian physicians' attitudes (n=1878) regarding clinical guidelines[9] and demonstrated that 48% either never or only yearly used clinical guidelines to guide patient care. However, a systematic review by Farquhar et al. which evaluated 30 studies encompassing 11 611 responses from clinicians with regard to their views on guidelines, showed that 75% of responses agreed that guidelines were a helpful source of advice.[10]

Evidence pertaining to clinical guideline use by Australian doctors is sparse. In a 2015 study by Basedow et al.,[11] they assessed a sample of general practitioners (n=79) from New South Wales and South Australia with focus to their familiarity with the Royal Australasian College of General Practitioners' osteoarthritis guidelines. While 94% supported that guidelines should aid decision making in practice, guideline familiarity was poor, with most respondents either not aware of it (30%), had never used it (19%), or rarely used it (34%).

The variability in uptake of guideline usage in different medical communities begs the question: *what factors predict compliance with clinical practice guidelines amongst medical practitioners?*

Cabana and colleagues[3] conducted a systematic review with the objective of identifying barriers to guideline adherence by clinicians. Among the 76 studies included for analysis, seven key barriers were identified and further investigated: 1) lack of awareness; 2) lack of familiarity; 3) lack of agreement; 4) lack of self-efficacy; 5) lack of outcome expectancy; 6) inertia of previous practice; and 7) external barriers.

Lack of awareness can be a natural consequence of the exponentially growing body of literature. In 78% of the surveys exploring lack of awareness, at least 10% of respondents were unaware of the guideline. Simply being aware of a guideline does not infer close familiarity. Originally flagged by Lomas et al.,[8] Cabana showed that lack of familiarity was stronger than lack of awareness, with 90% of surveys having at least 10% of responders being unfamiliar with the relevant guideline.

Lack of agreement with guidelines can be with regard to the specific guideline or guidelines in general. Disputes with specific guidelines cited included misinterpretation of the constituent evidence and a lack of generalizability of the guideline. Objection to guidelines in general were: guidelines oversimplified treatment, reduced physician autonomy and reduced flexibility. Farquhar et al.[10] further investigated to show that in evaluation of 12 surveys, 34% (95% CI: 22-47%) of clinicians believed that guidelines reduced autonomy or oversimplified medicine. Moreover, they showed that from among 19 surveys, 30% (95% CI: 23-36%) of responders felt that guidelines were impractical and too rigid.

Self-efficacy describes the belief that one can perform an intervention. It influences the efficacy of the outcome despite poor initial response; and poor self-efficacy by physicians has been linked to poor adherence to therapy.[12] Of the surveys reviewed by Cabana, 68% reported preventive health education and counselling as guidelines of particular concern for guideline adherence. This can be exacerbated by lack of outcome expectancy or lack of belief in the recommendation outlined to make clinically significant changes for patients. Guidelines pertaining to alcohol abuse and smoking cessation are particularly perceived by practitioners to be unlikely to yield any benefit.

Inertia of previous practice was much less regularly assessed in surveys; however, in those that did (14/76 surveys), over 20% of respondents reported this as a barrier towards guideline uptake. It suggests that individual, experiential/ anecdotal evidence still bears strong in some practitioners regardless of what may be published in guidelines. Cabana explored this idea, identifying that the psychological stage of change for practitioners was an important consideration for guideline implementation strategies.

Three main external barriers to guideline adoption were described: guideline related, patient related and environmental barriers. The major guideline related complaint was the inconvenience or difficulty of use of the recommendations – a sentiment that was mirrored in a more recent survey of Australian general practitioners as well.[11]

Inability to reconcile patient ideals with guideline recommendations was another identified impediment to guideline adherence. Patient-centred therapy is the paradigm of modern medicine and Montori et al.[13] eloquently summarised: "guideline panellists must recognize, with humility, the challenges they face in working often without access to informed patient preferences and acknowledge that their recommendations should rarely assume uniform patient values and contexts in favor of a particular course of action". Environmental barriers include lack of consultation time, lack of specialist referral facilities and equipment, which are often due to issues of finance and infrastructure.

Hence, a "differential diagnosis" of predictors of guideline non-compliance can be considered when assessing the assimilation of any one guideline into day-to-day medical practice. It is these factors that ought to also be considered when guideline panellists create recommendations. Furthermore, some newer issues have been highlighted in the literature for panellists, including: updating of guidelines, enhancing guideline implementation and accounting for comorbidities.

A recent publication by Neuman and colleagues[14] investigated the durability of clinical guidelines over time by comparing class I recommendations in the American College of Cardiology/American Heart Association guideline updates. Among indexed recommendations, only 80% (95%CI: 76.6-83.1%) were retained in the subsequent update, with most variability occurring in recommendations based on non-randomised data. Hence, keeping guidelines up-to-date, as well as ensuring recommendations were based on randomised data where possible was highlighted as paramount.[15] Situations necessitating the updating of a clinical practice guideline include identifying whether there were any changes in the:

- Evidence on the existing benefits and harms of interventions;
- Outcomes considered important;
- Available interventions;
- Evidence that current practice is optimal
- Values placed on outcomes; or,
- Resources available for health care.[16]

Shekell et al.,[16] also identified that guideline implementation may not be optimal worldwide, and offered some strategies to support guideline uptake. These included: a priori identification of barriers prior to guideline writing, using behaviourally specific language, using multiple formats for dissemination tailored to the target practitioners, developing educational resources adapting in new content, and using data collection tools such as audits.

Furthermore, a third issue identified by Shekell was the impact of comorbidities in developing guidelines. As evidenced by Basedow[11] in their study of Australian general practitioners, lack of consideration of comorbid conditions in osteoarthritis guidelines meant that they ignored the guidelines altogether and instead relied on personal experience to guide their practice. Shekell proposed the consideration of epidemiological evidence surrounding comorbid conditions of target patients. By understanding other conditions that patients may have, panellists should be able to pre-empt treatment dilemmas and cater for these situations in the guideline text.

Advantages and Disadvantages of Clinical Practice Guidelines

The benefits and harms of guidelines can be divided into those affecting the patient, the practitioner, and the health system.[17] The primary benefit for patients are in health outcomes, especially in recommendations based on strong (Class A, Level I) evidence. Other benefits such as consumer versions of guidelines can help patients better understand their medical condition and relevant treatment regimes. Furthermore, clinical guidelines often guide public policy, hence more widespread implementation and benefit for a wider patient group can become possible.

The primary benefit for practitioners is the improvement in the quality of clinical decision-making. Further, they can serve as a reliable tool for promoting patient adherence to a treatment regime, resulting in superior patient outcomes if

quality assessment is done. Those seeking further research opportunities can benefit from the spotlight that evidence based guidelines bring to key clinical questions that need to be answered. Finally, in medicolegal disputes, supportive guidelines can prove to be a powerful ally.[18]

Through good implementation of clinical guidelines, healthcare systems can largely benefit from improvements in treatment efficiency. The translational fiscal benefits, reduction in hospitalisations,[19] and reduction in further interventions can all work to improve funding and image.

The harms in clinical practice guidelines are less stated in the literature and are unlikely to outweigh the benefits. Nevertheless, some serious hypothetical harms can come to patients at the hand of poorly compiled or inadequately updated guidelines. Inflexible guidelines that do not focus on comorbidities and psychosocial patient wellbeing can cause harm.

As a consequence, these harms can affect the practitioner involved through providing inaccurate evidence and resultant poor patient outcomes. Inaccurate guidelines developed with ulterior economic motives can have serious medicolegal consequences if used as evidence contrary to clinical decisions made by a practitioner. Although it is helpful to have guidelines to guide care, when there are many medical societies with similar representations, contradicting guidelines may be published.

Conclusion

Through this narrative review we have explored the evidence base pertaining to clinical guideline development, usage and implementation. It is quite clear that appropriately designed clinical practice guidelines can provide immense benefits to everyone involved in the health system. However, there are major barriers to uptake guidelines by practitioners – some of which can be attributed to the practitioners themselves, but also others that are due to substandard guideline quality. Through a rigorous literature review, impartial analysis of evidence and consideration of the holistic wellbeing of the patient, good guidelines can play a major role in improving patient outcomes.

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Authors' Contribution

All authors pass the four criteria for authorship contribution based on the International Committee of Medical Journal Editors (ICMJE) recommendations.

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