

# Translating Clinical Guidelines Into Practice: Challenges and Opportunities in a Dynamic Health Care Environment

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**Clinical practice guidelines are evidence-based recommendations with the potential to improve population health, yet they remain inconsistently utilized. In this commentary we discuss barriers and drivers to implementing clinical practice guidelines. We also suggest ways to support their translation into practice.**

**A**t its conception, evidence-based medicine focused on informing clinicians of the evidence through the development of clinical practice guidelines, on the assumption that doing so would facilitate practice change. Proponents of high-quality care now recognize that simply developing guidelines is not enough. Instead, focus has shifted to accelerating the implementation of guidelines into practice by addressing the numerous barriers to adoption. Acknowledging that a discussion of translating guidelines into practice is complex, this commentary will focus on a few major factors hindering the translation of guidelines into practice, especially those related to implementation. We do not discuss when guidelines should be used but rather how to maximally implement them.

Not all recommendations are equal. The purpose of clinical practice guidelines, hereafter referred to simply as “guidelines,” is to give clinicians a concise description of the best scientific knowledge to date within a given practice area. These rigorous recommendations are based on expert analysis of systematic reviews and are best created by balanced, multidisciplinary teams in a transparent and methodical manner [1]. Clinical practice guidelines differ from other types of clinical recommendations, which have irregular levels of evidence-based rigor and lack consistent nomenclature between specialty societies. The American Academy of Pediatrics, for example, produces “policy statements” (expert opinions about systems of care) and “clinical reports” (non-comprehensive reviews of existing evidence about clinical care) [2]. Meanwhile, the American College of Physicians gives “guidance statements” (reviews of existing guidelines) and “best practice advice” (reviews of available evidence) [3]. While each of these can provide concise and valuable insight into expert opinion and existing literature, they lack the strength and rigor of guidelines. Clinicians

should consider recommendations of varying evidence levels differently. However, this nuance is frequently forgotten, and the names for different types of recommendations are often used interchangeably by the media and even by many providers [4, 5].

As the most rigorous guidance available, evidence-based guidelines have the potential to greatly improve the quality of care, yet they remain inconsistently implemented [6]. This poor uptake does not necessarily reflect clinicians’ lack of awareness of such guidelines [7]. Instead, incomplete implementation frequently results from clinicians’ or patients’ disagreement with recommendations, unsupportive working environments, or the complexity of the guidelines themselves [7-9]. As such, clinician education alone will not increase utilization. Addressing multifaceted barriers to implementation requires a multidimensional approach.

## Translating Guidelines Into Practice

Most delays and failures in translating guidelines into practice arise from one simple fact: guidelines tell us *what* the right things to do are, but they say little about *how* to do these things in our practice settings. Clinical care is delivered by teams with their own well-established approaches to delivering care. Therefore, to adopt new guidelines, clinical teams need the know-how and capacity to effectively and efficiently make changes in busy practice settings. This requires the ability to use implementation and improvement science, including quality improvement (QI) methods and change management strategies. It is vital that staff know how to use QI tools in both their daily work and in making major practice changes. In addition, clinical leadership has a critical role to play in driving and supporting continuous improvement, as well as creating an organizational culture that supports improvement and guideline adoption [10, 11].

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***Payment Systems: An External Driver***

While QI skills and leadership qualities affect a clinic's inherent ability to change, payment systems provide external incentive. Such systems can incentivize clinicians to adhere to evidence-based guidelines through novel reimbursement structures or through the use of quality metrics that assess guideline adherence. Many payers use pay-for-performance contracts that benchmark—and reimburse based on—resource utilization and preventive care delivery. Similarly, contracts may withhold reimbursement for

adverse outcomes, such as central line infections or urinary catheter-related infections. Evidence supporting or refuting these approaches is mixed, and more study is needed to determine which payment-related mechanisms are most effective and which should be abandoned [12]. Nevertheless, major change in the financing of health care is coming. Perhaps most notable is Medicare's rapid movement toward a value-based reimbursement model, in which payment will be based on the quality and cost of services rather than on volume. The Centers for Medicare & Medicaid Services

(CMS) recently announced plans to have half of all Medicare patients in such alternative payment models by 2018 [13].

### **Electronic Medical Records: Driver and Barrier**

The 2009 Health Information Technology for Economic and Clinical Health (HITECH) Act created monetary incentives to promote the adoption of electronic health records (EHRs) [14, 15]. Subsequent passage of the Patient Protection and Affordable Care Act of 2010 and later implementation of CMS's meaningful use program laid out specific criteria intended to improve both individual and population health by driving innovative and effective use of health information technology [15]. Developing and operationalizing these new systems is daunting, and progress has come slowly [16].

EHRs can offer tools that support integration of guidelines at the point of care. Clinical decision support tools offer the clinician personalized templates based on each patient's documented medical history. Data from EHRs can inform clinicians about how their practice compares with established standards or expectations. Searchable functions can also allow clinics to identify patients needing care (or inappropriately accessing care), thus allowing them to improve health care delivery on a population level. If implemented well, EHRs have the potential to yield time and financial gains while also supporting the delivery of the highest quality care to the right patient at the right time. However, much of this potential has yet to be realized. Configuring such changes is complex and expensive. Many functions require data to be entered correctly, and they demand maintenance and testing to assure they are operating as intended.

### **Barriers to Implementation**

Numerous barriers hinder widespread adoption of evidence-based guidelines. In addition to lacking QI skills and leadership support, practices may struggle to implement guidelines due to clinician hesitancy to change routine, difficulty navigating copious recommendations, and resistance by patients and families. Specifically, some doctors hesitate to adopt practice guidelines because of a dislike of "cook-book medicine," preferring personalized care based on their existing knowledge and specific patient context. This opposition stems from a misconception about the purpose of guidelines, as they intend to offer general guidance based in evidence, rather than strict rules to dictate care for every patient's situation. Applying the guideline to the individual patient represents the art of medicine, while the guideline itself focuses on the science.

Another major barrier making it difficult for clinicians to know which recommendation to follow is the sheer number of guidelines, especially when one considers all the other types of recommendation statements available [17]. Even those clinicians who are able to prioritize recommendations may struggle to do so when their health care systems do not adequately support practices in implementation plans.

In addition, patients' expectations do not always align with recommended practice. While population-level recommendations about prostate, breast, or cervical cancer screenings can change rapidly, patients' feelings about their own needs may lag behind, as these feelings reflect personal sentiments about screening and disease. Increasingly, campaigns to promote evidence-based care look to combat this mismatch by educating patients directly. For example, the Choosing Wisely program aims to limit unjustified care through outreach to both providers and patients [18].

## **Conclusions and Recommendations**

Numerous factors have hindered the translation of guidelines into practice, but there are positive forces on the horizon. The following are recommendations we hope will stimulate discussion and help to accelerate progress. These suggestions are neither comprehensive nor novel; however, we aim to make them actionable by adding thoughts on *who* might make changes and *how* they may do so. Where possible, we define opportunities for North Carolina to be a leader in these areas.

### **Recommendation #1**

Our first recommendation is to increase the use of evidence-based approaches to getting evidence into practice. At the state level, Community Care of North Carolina, the North Carolina Area Health Educations Centers (AHEC), and the North Carolina Institute of Medicine should continue to support and expand this work. Nationally, further support for guidelines should come from public and private payers, health systems, hospitals, provider networks, accountable care organizations, specialty societies, and other producers of guidelines. In terms of how to make changes, we recommend aligning incentives and providing education in various ways: by utilizing educational outreach by respected clinicians; by providing patients with the skills and confidence to actively engage in their care and advocate for best-practice care; by targeting early adopters and their social networks soon after new guidelines are released; and by implementing processes that speed adoption, including decreasing guideline complexity, clearly demonstrating their advantages over current practice, showing their compatibility with current practice, and giving visible examples of practices that are successfully using them [19].

### **Recommendation #2**

Our second recommendation is to greatly reduce the volume of clinical reports, best-practice advice, policy statements, and similar statements that lack a strong evidence base, in order to diminish confusion and to allow more resources to be devoted to implementing higher-quality guidelines [17]. This change can be made by specialty societies and other producers of such statements. Leaders of these groups must change expectations and reallocate resources. A publicly available rating system that focuses on

the overall rigor of the guidelines could help persuade leaders to make these changes sooner.

### **Recommendation #3**

Our third recommendation is to improve the integration of guidelines into EHRs and other health information technology systems, so that clinicians can effectively and efficiently make sound clinical decisions. Health systems, hospitals, provider networks, accountable care organizations, and EHR vendors can make this change by supporting and financing integration. EHRs will function optimally only when they can present clinicians and patients with user-friendly application of best-practice information at the point of care. Demonstrating the return on investment in these integration efforts will be vital to increasing use and fostering dissemination of evidence-based care.

### **Recommendation #4**

Our fourth recommendation is to promote the full adoption of the recommendations for better guidelines published by the National Academy of Medicine (formerly the Institute of Medicine) [1]. Again, this change can be effected by specialty societies and other producers of guidelines. Specifically, guideline development groups should be multidisciplinary, comprised of both methodologic and QI experts and the populations affected by proposed guidelines. Groups should conduct thorough external reviews, including pilot testing guideline implementation in representative target practice settings, and they should regularly monitor and update guidelines over time. Leadership of specialty societies must promote these changes, as some are doing currently (Joel Tieder, personal communication, April 28, 2015). A publicly available rating system that focuses on guideline quality based on the National Academy of Medicine's recommendations could speed such changes.

### **Recommendation #5**

Our fifth recommendation is to change the curricula of health affairs schools to incorporate high-quality QI and change management skills, so that our future workforce is better prepared to effectively and efficiently implement change in practice. This change can be effected statewide by all North Carolina health affairs schools and by AHEC, and nationally by other health affairs schools. Leadership of these groups should promote these curriculum changes. This can be accelerated by guidance from accrediting bodies, specialty boards, and other groups that influence curricula. Groups that rank schools could also accelerate curriculum change by addressing QI, thus potentially giving early adopters a competitive advantage in recruiting high-quality students.

### **Recommendation #6**

Our final recommendation is that Maintenance of Certification Part 2 and Part 4 activities should closely align

with release of new guidelines. This change could be made by the American Board of Medical Specialties' member boards. These boards should work closely with their related specialty societies and others producing relevant guidelines to align Part 2 and Part 4 activities with the release of the new guidelines. They should also strategically communicate this as a way to create awareness and agreement (Part 2) and to promote adoption of or adherence to guidelines (Part 4) [7].

## **Conclusion**

In summary, there are numerous challenges to the translation of guidelines into practice. A combination of complementary changes, including some we have addressed in this commentary, has the potential to enhance translation success in the future. We remain optimistic that there will be more opportunities for change as health care enters a transformative period driven by a heavy focus on value—that is, higher quality at lower cost. Guidelines offer the best evidence we have for improving quality and outcomes for specific conditions. In a value-driven health care environment, improving the translation of guidelines into practice will be imperative. **NCMJ**

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## **References**

1. Institute of Medicine. Clinical Practice Guidelines We Can Trust. Washington, DC: National Academies Press; 2011.
2. Pediatrics. American Academy of Pediatrics website. <http://pediatrics.aappublications.org/>. Accessed May 5, 2015.
3. American College of Physicians. Guidelines: ACP clinical recommendations. American College of Physicians website. [http://www.acponline.org/clinical\\_information/guidelines/](http://www.acponline.org/clinical_information/guidelines/). Accessed May 5, 2015.
4. Daniels SR, Greer FR; Committee on Nutrition. Lipid screening and cardiovascular health in childhood. *Pediatrics*. 2008;122(1):198-208.
5. Parker-Pope T. 8-year-olds on statins? A new plan quickly bites back. *The New York Times*. July 8, 2008. [http://www.nytimes.com/2008/07/08/health/08well.html?\\_r=0](http://www.nytimes.com/2008/07/08/health/08well.html?_r=0). Accessed June 28, 2015.
6. Committee on Quality of Health Care in America, Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st

- Century. Washington, DC: National Academies Press; 2001.
7. Pathman DE, Konrad TR, Freed GL, Freeman VA, Koch GG. The awareness to-adherence model of the steps to clinical guideline compliance. The case of pediatric vaccine recommendations. *Med Care*. 1996;34(9):873-889.
  8. Cabana MD, Rand CS, Power NR, et al. Why don't physicians follow clinical practice guidelines? A framework for improvement. *JAMA*. 1999;282(15):1458-1465.
  9. Francke AL, Smit MC, de Veer AJ, Mistiaen P. Factors influencing the implementation of clinical guidelines for health care professionals: a systematic meta-review. *BMC Med Inform Decis Mak*. 2008;8:38.
  10. Kotter JP. Leading change: why transformation efforts fail. *Harvard Business Review*. January 2007. <https://hbr.org/2007/01/leading-change-why-transformation-efforts-fail>. Accessed June 28, 2015.
  11. Collins J. Good to Great: Why Some Companies Make the Leap...and Others Don't. New York, NY: HarperBusiness; 2001:300.
  12. Carroll AE. The problem with 'pay for performance' in medicine. *The New York Times*. July 28, 2014. [http://www.nytimes.com/2014/07/29/upshot/the-problem-with-pay-for-performance-in-medicine.html?\\_r=2&abt=0002&abg=1](http://www.nytimes.com/2014/07/29/upshot/the-problem-with-pay-for-performance-in-medicine.html?_r=2&abt=0002&abg=1). Accessed June 28, 2015.
  13. Centers for Medicare & Medicaid Services. Timeline to phase in the value-based payment modifier. Centers for Medicare & Medicaid Services website. <http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Timeline.html>. Updated May 18, 2015. Accessed June 28, 2015.
  14. US Department of Health & Human Services. HITECH act. *Pub Law*. 2009;111(5):1-54.
  15. Blumenthal D. Wiring the health system—origins and provisions of a new federal program. *N Engl J Med*. 2011;365(24):2323-2329.
  16. DesRoches C. Progress and challenges in electronic health record adoption: findings from a national survey of physicians. *Ann Intern Med*. 2015;162(5):396.
  17. Belamarich PF, Gandica R, Stein RE, Racine AD. Drowning in a sea of advice: pediatricians and American Academy of Pediatrics policy statements. *Pediatrics*. 2006;118(4):964-978.
  18. Choosing Wisely. Patient-friendly resources. ABIM Foundation website. <http://www.choosingwisely.org/patient-resources/>. Accessed May 25, 2015.
  19. Rogers EM. *Diffusion of Innovations*. 5th ed. New York, NY: Free Press; 2003:576.