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The doctors' challenge: How can we follow guidelines better?

IN THIS ISSUE of the *Journal*, Drs. Sinclair and DelVecchio summarize the rationale for screening for diabetic retinopathy and an increased role for internists and other physicians in making sure their patients get screening.

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The issue is tremendously important. Diabetic retinopathy is the leading cause of blindness in the developed world. Regular screening and early intervention reduce the risk of blindness and are recommended by multiple professional organizations.

Yet, as these authors point out, a substantial gap exists between evidence and clinical practice. At best, only about half of patients with diabetes undergo yearly screening as recommended.

The problem of physicians not adhering to guidelines is well known—and it isn't limited to diabetic retinopathy. For example, in spite of well-publicized guidelines and effective treatments for hypertension and hyperlipidemia, only a small percentage of patients reach their target blood pressure and lipid levels.¹⁻³ The same applies to other common chronic conditions. Adherence is poor even with noncontroversial guidelines such as those for handwashing.⁴

What can we do to close the adherence gap?

REASONS FOR NONADHERENCE

Many factors—in the physician, the patient, the health care system, and the guidelines

themselves—can contribute to nonadherence.⁵

Physician factors

Some physician factors are:

- Clinical inertia⁶ (not doing something even though the physician is aware that it is recommended)
- Ignorance of the guidelines (for example, Swales³ found that many physicians hold misconceptions about the relative importance of systolic and diastolic blood pressure, the need for more aggressive treatment in the elderly, and the need for improved physician-patient interaction.)
- Time and cost issues⁷
- Overestimation of personal adherence to the guidelines⁶
- Lack of necessary data that should be readily available (eg, the date of the last ophthalmology appointment or the ophthalmologist's recommendation for earlier follow-up)
- Lack of training or skills in quality-improvement processes⁶
- Disagreement with the guideline, or a perceived conflict between physician autonomy or individual expertise vs uniformity of care.⁸

Patient factors

Patient factors have been cited as the most common reason that physicians do not follow guidelines.⁹

To describe the sum of a patient's beliefs about his or her disease and its treatment, Janz

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and Becker¹⁰ coined the term *health belief model*. A patient's health belief model can be measured and given a point score. Cerkoney and Hart¹¹ found that, in a group of diabetic patients, there is a correlation between the patient's adherence to guidelines and his or her belief model score.

Systemic factors

The health care system can clearly affect how physicians adhere to guidelines. Some factors that can worsen adherence are:

- Reimbursement models that favor symptom-based care and procedural interventions as opposed to preventive care and educational interventions
- Lack of resources for patient and clinician training
- Lack of uniformity in payer policies.

Guideline factors

For some diseases (eg, hypertension), different organizations have issued different guidelines. A survey found that Canadian physicians differed widely on how they treated hypertension, and differed more widely on points of treatment on which the various guidelines differ.¹²

Encouragingly, another survey found that physicians seem to be swayed more by the strength of the evidence than by who is issuing the guidelines.¹³

■ SO WHAT IS THE ANSWER?

Sinclair and DelVecchio propose that the primary care physician and the ophthalmologist send each other standardized form letters to improve communication and thus bridge the adherence gap in retinopathy screening. They also define what they think are the proper roles of the different physicians.

The solution may not be so simple. Nevertheless, a variety of interventions can improve adherence to guidelines. With so many possible factors contributing to nonadherence, it is unlikely that any one solution will meet all needs. Different types of interventions may be needed for different guidelines and health care settings.

Renders et al¹⁴ reviewed 41 studies of diabetes management and concluded that multifaceted interventions can help. Examples were

computerized tracking systems, regular contact with the patients by nurses, and patient education. Of note, however, most of the studies looked at "process outcomes" (ie, adherence to guidelines), but not clinical outcomes such as blindness, myocardial infarctions, or deaths, which are what really matter.

Electronic medical records

New technology may provide solutions in certain settings.

A popular idea is the electronic medical record. Electronic systems can be designed with practice guidelines built in, so that the computer can prompt the physician what to do. The physician can override the computer's suggestion, however, so clinical decisions are standardized but still individualized.¹⁵

In the case of diabetic retinopathy, an electronic record system could generate reminders when a patient is due for screening.

Moreover, electronic medical record databases can identify patterns of adherence to guidelines and can help in designing interventions at points where the process of care breaks down.¹⁶ For example, adherence rates might be improved by auditing physicians with low rates of adherence, educating them, and giving them feedback.¹⁷

Another technological fix is telemedicine. In the case of retinopathy screening, nonspecialists could take photographs of the retinal fundus, which ophthalmologists could examine via computer.

Education for doctors and patients

Warner et al¹⁸ developed guidelines for managing acute appendicitis at their hospital, and their outcomes improved. To sustain the improvements long-term, however, they concluded they needed to identify key team members, keep monitoring adherence, and keep educating the doctors and nurses.

Clinician education needs to be active and individualized to produce a lasting change.¹⁹ Patient education is required to improve health-related outcomes. Nurses can play an important role in patient education or facilitating adherence to treatment.

The role of public education in increasing patient awareness of guidelines and their impact needs to be explored.²⁰

Barriers exist in physicians, patients, health care systems, and the guidelines themselves



Paying for quality

It would help to change the remuneration system to promote quality rather than quantity and to promote preventive care.⁷ Including cost-effectiveness data in the guidelines can help the clinician and patient make informed decisions.²¹

Driving this process should be large organizations that are subject to regulations. For example, payments to hospitals could be linked to accreditation, which in turn could be linked to adherence to guidelines, prompting the hospitals to improve their practice patterns.²² In addition, as guidelines become

accepted as standards of care, physicians and systems may improve if only to reduce their risk of being sued for malpractice²³ or to be included in networks or provider panels of health plans and large employers.

■ IT WON'T BE EASY

These interventions take a lot of time, effort, and money, and the benefits may not be seen for several years. Regardless, a combined organizational approach incorporating various appropriate strategies will be required to bridge the adherence gap.²⁴

■ REFERENCES

1. Egan BM, Lackland DT, Basile JN. American Society of Hypertension regional chapters: leveraging the impact of the clinical hypertension specialist in the local community. *Am J Hypertens* 2002; 15:372–379.
2. Feely J. The therapeutic gap—compliance with medication and guidelines. *Atherosclerosis* 1999; 147(suppl 1):S31–S37.
3. Swales JD. Current status of hypertensive disease treatment: results from the Evaluation and Interventions for Systolic Blood pressure Elevation: Regional and Global (EISBERG) project. *J Hypertens* 1999; 17(suppl):S15–S19.
4. Pittet D. Hand hygiene: improved standards and practice for hospital care. *Curr Opin Infect Dis* 2003; 16:327–335.
5. Keffer JH. Guidelines and algorithms: perceptions of why and when they are successful and how to improve them. *Clin Chem* 2001; 47:1563–1572.
6. Phillips LS, Branch WT, Cook CB, et al. Clinical inertia. *Ann Intern Med* 2001; 135:825–834.
7. McColl E, Smith M, Whitworth J, Seccombe G, Steele J. Barriers to improving endodontic care: the views of NHS practitioners. *Br Dent J* 1999; 186:564–568.
8. Mottur-Pilson C, Snow V, Bartlett K. Physician explanations for failing to comply with “best practices”. *Eff Clin Pract* 2001; 4:207–213.
9. Murphy J, Coster G. Issues in patient compliance. *Drugs* 1997; 54:797–800.
10. Janz NK, Becker MH. The Health Belief Model: a decade later. *Health Educ Q* 1984; 11:1–47.
11. Cerkoney KA, Hart LK. The relationship between the health belief model and compliance of persons with diabetes mellitus. *Diabetes Care* 1980; 3:594–598.
12. McAlister FA, Laupacis A, Teo KK, Hamilton PG, Montague TJ. A survey of clinician attitudes and management practices in hypertension. *J Hum Hypertens* 1997; 11:413–419.
13. Leape LL, Weissman JS, Schneider EC, Piana RN, Gatsonis C, Epstein AM. Adherence to practice guidelines: the role of specialty society guidelines. *Am Heart J* 2003; 145:19–26.
14. Renders CM, Valk GD, Griffin S, Wagner EH, Eijk JT, Assendelft WJ. Interventions to improve the management of diabetes mellitus in primary care, outpatient and community settings. *Cochrane Database Syst Rev* 2001(1):CD001481.
15. Morris AH. Decision support and safety of clinical environments. *Qual Saf Health Care* 2002; 11:69–75.
16. Metfessel BA. An automated tool for an analysis of compliance to evidence-based clinical guidelines. *Medinfo* 2001; 10:226–230.
17. Jamtvedt G, Young JM, Kristoffersen DT, Thomson O'Brien MA, Oxman AD. Audit and feedback: effects on professional practice and health care outcomes. *Cochrane Database Syst Rev* 2003(3):CD000259.
18. Warner BW, Rich KA, Atherton H, Andersen CL, Kotagal UR. The sustained impact of an evidenced-based clinical pathway for acute appendicitis. *Semin Pediatr Surg* 2002; 11:29–35.
19. Onion CW, Bartzokas CA. Changing attitudes to infection management in primary care: a controlled trial of active versus passive guideline implementation strategies. *Fam Pract* 1998; 15:99–104.
20. Wong ML. Can social marketing be applied to leprosy programmes? *Lepr Rev* 2002; 73:308–318.
21. Mason J, Eccles M, Freemantle N, Drummond M. Incorporating economic analysis in evidence-based guidelines for mental health: the profile approach. *J Ment Health Policy Econ* 1999; 2:13–19.
22. Young JB. Hospital-based systems to improve quality of care for heart-failure patients. *Rev Cardiovasc Med* 2002; 3(suppl 3):S36–S41.
23. Ransom SB, Studdert DM, Dombrowski MP, Mello MM, Brennan TA. Reduced medicolegal risk by compliance with obstetric clinical pathways: a case-control study. *Obstet Gynecol* 2003; 101:751–755.
24. Curry SJ. Organizational interventions to encourage guideline implementation. *Chest* 2000; 118(suppl 2):40S–46S.

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