

# Preventive Health Care for Diabetics

## *A Realistic Vision*

**I**N THIS ISSUE of the ARCHIVES, Kraft et al<sup>1</sup> report their results of a survey that assessed primary care physicians' practice patterns to detect diabetic retinopathy in patients. They found that primary care practitioners fall far short of the guidelines that have been suggested by the American Diabetes Association (ADA), Alexandria, Va. The results of this study by Kraft and colleagues<sup>1</sup> in Indiana almost certainly reflect national practice patterns and should not be surprising. With few exceptions, the vast majority of studies of preventive health care provision in primary care settings reveal deficiencies regardless of the aspect of preventive health care that is under scrutiny.<sup>2,3</sup> Even for widely accepted preventive items (eg, Papanicolaou smear, mammogram, and hypertension screening), preventive health care performance falls short of the goals dictated by health care policies.<sup>4-6</sup>

### *See also page 29*

Frankly, many practitioners have developed a kind of defensive denial with regard to preventive care practice. The demands of a practice are excessive, reimbursement for preventive care is inadequate, the list of potential preventive care activities suggested by one organization or another is unachievably large, and above all else, most patients come to see primary care providers because they are sick and express a limited interest in preventive health care. Thus, many practitioners will view this study of practice patterns for the detection of diabetic retinopathy with a sense of resignation rather than alarm. In fact, this study provides a useful example to trigger a review of the current state of preventive health care and to identify opportunities for change.

#### **TAKING THE FIRST STEP: SELECTING A PREVENTIVE HEALTH CARE POLICY**

The first step in successfully implementing preventive health care in a primary care setting is to define explicitly a personal, preventive health care policy. What tests will a physician recommend to all appropriate patients? What kind of counseling will a physician give to patients in each age group? Is screening for diabetic retinopathy, in fact, appropriate? With regard to the criteria that have been used for decades to analyze whether a disease is amenable to screening and that provide a framework for discussion of a retinopathy screening policy, the disease should be common, be serious, have a long asymptomatic period, have an

available acceptable test to detect the disease during the asymptomatic period, and be best treated during the asymptomatic period.<sup>7</sup>

#### **DIABETIC RETINOPATHY: HAVE PROVIDERS ACCEPTED THE NEED TO SCREEN?**

Is diabetic retinopathy common enough to warrant screening? On one level, the answer is clearly yes. As many as 20 million Americans have diabetes, and retinopathy develops in 60% of these patients. Twelve thousand diabetic Americans become blind each year.<sup>8</sup> From a societal viewpoint, an aggressive policy of screening and treatment appears to be worthwhile. From the perspective of an individual provider, however, actual experience provides a far different view. The burden of retinopathy disease disproportionately affects patients with insulin-dependent diabetes mellitus; an individual provider is likely to confront significant, premature visual loss in a patient with type II diabetes only once every few years.<sup>8</sup> The apparent "disease burden" that is related to retinopathy in patients with type II diabetes is dwarfed by the frequency with which physicians confront hypertension, hypercholesterolemia, and certain types of cancer (eg, breast cancer). Adequate frequency of a condition to justify screening in the population must be contrasted with the relative infrequency with which the individual provider confronts the significant morbidity that is related to this problem.

Clearly, experience dictates that examination of the dilated pupil in the primary care provider's office does not meet the criteria of acceptability. It is rarely performed and, one suspects, almost never as a routine screening test. Referral to an eye care specialist, on the other hand, superficially appears to be accomplished easily and to have no obvious inherent barriers. In fact, relatively few initial screenings require primary care providers to refer patients to another provider. The psychological response of ordering a mammogram and receiving a report provides more intrinsic reinforcement and satisfaction than a referral to an ophthalmologist. One can argue that this perceived difference is inappropriate, but it almost certainly exists and plays some role in discouraging referrals.

#### **IMPACT OF MANAGED CARE**

Finally, although managed care insurers may provide payment for ophthalmology care that does not affect the primary care provider's reimbursement (an

ophthalmology “carve-out”), this is not universal. More importantly, primary care providers may not know how various insurers handle this issue and may fear that a referral carries a financial disincentive.

Diabetic retinopathy illustrates that providers are affected by a wide variety of evidence- and experience-based and simple humanistic responses as they set their prevention policies. In addition to believing that a number of patients will benefit, providers have to view the test as acceptable. If providers believe a financial disincentive exists, the likelihood that they will consistently refer patients diminishes.

To summarize, when viewed from the perspective of the diabetes care subspecialist, the decision to refer all patients to an ophthalmologist appears to be profoundly simple! From their perspective, the problem appears to be remarkably common and almost universal for all their patients. To the primary care provider, the issue appears to be relatively tiny and has a small daily impact. When this issue is viewed relative to the 25 other interventions that have been recommended for all adults by the US Preventive Services Task Force,<sup>9</sup> understanding why some providers have not adopted the policy of universal referral becomes easier to understand.

#### FROM POLICY TO PRACTICE

The study by Kraft et al<sup>1</sup> primarily addresses the issue of provider policy. As the authors point out, self-reports of practice patterns generally overestimate actual performance and are probably best viewed as indicators of intent. The gap between good intentions and actual practice has been identified repeatedly.<sup>10,11</sup> The authors do discuss some of the following barriers that may intervene to block implementation of these interventions and that all contribute to the gap between actual and intended screening rates: insufficient time, inadequate reimbursement, lack of patient interest, competition with other health care agenda items, and provider forgetfulness.

#### PREVENTIVE HEALTH CARE PROVISION: A FLAWED MODEL

The model of how preventive health care happens in most US settings is fundamentally flawed. First, patients must decide to seek care. Among those patients who have identified primary care providers, only a fraction actually visit a physician each year. Those individuals who do not have an identified primary care provider are more likely to seek health care in a setting that provides exclusively disease-oriented, short-term care.

#### SELECTING A NARROW PREVENTION AGENDA

For most patients, the burden rests on the primary care provider to take advantage of patient-initiated visits to pursue a broad preventive agenda. The US Preventive Services Task Force has identified more than 20 items that should be addressed for all young adults; one must realize that the US Preventive Services Task Force guidelines are conservative! If one looked at every preventive item that some organization has recommended, more than

a hundred issues would be addressed. Finding the time to pursue each preventive intervention and motivate the patients to have an interest in preventive health care must all be accomplished in relatively short time frames—somewhere between 14 and 17 minutes per average visit.<sup>12</sup> When viewed in this context, the benefit of choosing a few, simple proved interventions becomes increasingly apparent.

#### PREVENTIVE HEALTH CARE AND DIABETES: A UNIQUE CHALLENGE

Most preventive health care systems have been designed to address only those items that are appropriate for individuals at average risk, although as several recent articles have pointed out, flexible systems that can be accommodated to the needs of individual patients based on individual risks are characteristics of ideal paper- or computer-based systems.<sup>13,14</sup> In fact, preventive health care in the diabetic patient poses unique obstacles and challenges.

#### The Domination of the Blood Glucose Level

In caring for patients with diabetes, providers devote most of their time and energies to the control of blood glucose levels even in those patients who are unlikely to achieve good control. The focus on the blood glucose level is not surprising. First, the Diabetes Control and Complications Trial Research Group results have strengthened the rationale for attempting tight control of the blood glucose level.<sup>15</sup> Second, the emphasis on the blood glucose level emerges, at least to some extent, from the fact that it is a continuous variable expressed as a number. Simply comparing the enthusiasm with which health care providers approach hypertension detection and treatment as opposed to counseling interventions (eg, cessation of smoking) that have been demonstrated to be equally cost-effective helps to illustrate the impact of conditions measured by a number. Numbers are something that one can grasp onto and attempt to manipulate. Other aspects of preventive health care for diabetes often cannot compete.

#### Fitting It All In

In fact, diabetic patients require a lot of care. Hypertension and hypercholesterolemia often coexist. Patients with diabetes who smoke are actually less likely to quit than persons without diabetes.<sup>16</sup> Alcohol intake, even at a moderate level, can complicate care. Despite the time and energy needed to address the control of the blood glucose level, hypertension, and the cholesterol level and the prevention of end-organ disease, individuals with diabetes should still receive the appropriate counseling and undergo screenings that are indicated for the general population. Finally, when complications do occur, particularly foot ulcers, they absorb a great amount of energy. Referral to ophthalmologists, instruction in self-care of the foot, and searching for microalbuminuria demand that primary care providers organize their approach to diabetic patients.

## Can Primary Care Providers Address All of These Needs Adequately?

The Diabetes Control and Complications Trial Research Group illustrated that the provision of care by a health care team consisting of nutritionists, nurses, social workers, and physicians can improve glycemic control and retard the development of complications. Realistically, most primary care providers do not have ready access to a diabetes health care team and must create their own loosely connected team. The assignment of responsibility to someone in the office to organize aspects of preventive health care for diabetic patients is an appealing solution, although, I suspect, a solution that has been infrequently adopted. One way to improve the likelihood that diabetic patients receive the full scope of appropriate preventive health care would be to consult a diabetes care professional whose sole task is to focus on these aspects of care. In some cases, an endocrinologist could serve this role. Once again, however, this approach is rarely chosen and generally will not be embraced by primary care providers, owing, in part, to potential financial disincentives. In short, few primary care providers are able to address the total care needs of the diabetic patient independently, and the benefits of a care team have been clearly shown. However, real and perceived barriers impede the provision of team-oriented care, and a search for additional solutions must continue.

### IMPROVING PREVENTIVE HEALTH CARE FOR DIABETIC PATIENTS: POTENTIAL SOLUTIONS

#### Suggested Actions for Organizations

Kraft and coworkers<sup>1</sup> point out the need for improved education, particularly with regard to the risks of retinopathy in patients with type II diabetes. Several authors have examined the ability of education to alter the care practices of practicing physicians, and the results have consistently shown either a short-lived impact or no impact on care.<sup>17,18</sup> Furthermore, as the authors indicate, directing educational efforts to practicing health care providers poses a weighty challenge. Most providers choose their own educational sources that may or may not ever address preventive health care issues for diabetic patients. For those providers who do read an article or hear a relevant lecture, the lesson is generally not reinforced. The infrequency with which the average provider deals with a patient with type II diabetes who suffers visual loss at a young age lessens the likelihood that his or her actual practice patterns will change in response to intermittent, infrequent educational exposures.

#### Education vs Marketing

A more promising approach to improving preventive health care for diabetic patients is to develop a consumer-driven marketing strategy. In this case, "consumers" of the strategy include both primary care providers and individuals with diabetes. Public education efforts that emphasize a simple catchy message encour-

#### Priority Health Maintenance Items for Patients With Diabetes\*

End-organ Disease	Highest Priority Intervention
Nephropathy	Strict hypertensive control, including an ACE inhibitor
Retinopathy	Periodic referral to an ophthalmologist
Coronary artery disease	Strict control of hyperlipidemia
Neuropathy	Strict control of glucose level
Foot disease	Instruction in self-care of foot

\*ACE indicates angiotensin-converting enzyme.

aging annual ophthalmological visits should be accompanied by materials for the primary care office. These can include wall charts that summarize recommendations for preventive care for diabetic patients, chart inserts that include guidelines for diabetic care, chart stickers that remind providers to refer patients to ophthalmologists, and preprinted prescription blanks that "order" 1 ophthalmological visit every year. The National Cancer Institute's "Five Fruits and Vegetables a Day" campaign illustrates the potential impact of this kind of marketing strategy. Slowly but surely, the public and providers have become increasingly aware of this good health practice.

#### Suggested Actions for Practitioners

Increasing adherence to one's preventive health care policies requires, above all else, a commitment of resources.<sup>19</sup> Practitioner time and staff time, as well as paper and computer materials, are required to implement a comprehensive preventive health care system. Usual, available preventive health tools are designed to promote interventions for all individuals and are not designed specifically for diabetic patients, but the practitioner does have the capacity to adapt existing preventive tools. For example, the flowcharts included in the "Put Prevention Into Practice" kits, which were designed by the federal Office of Health Promotion and Disease Prevention, Washington, DC, have intentionally been left blank to allow practitioners to add preventive health items that are appropriate for individual patients.<sup>20</sup>

One of the difficult problems in the preventive health care for patients with diabetes is that several preventive options are available for each end-organ problem. For example, in preventing morbidity from renal disease, strict hypertension control, prescription of angiotensin-converting enzyme inhibitors, and screening for microalbuminuria may all be worthwhile steps. Patients would probably be best served if each practitioner chose the single highest priority preventive health care item and included it on a flowchart. An example is provided in the **Table**.

The importance of a team effort in implementing all aspects of preventive health care cannot be overemphasized. Numerous studies have demonstrated that the provision of a reminder to the provider to address particular preventive items significantly increases the implementation of preventive care.<sup>21</sup> Although this is ideally done by a computer-generated prompt, manual systems can be implemented to provide this kind of a reminder. The assignment of a single member of the office staff to develop

expertise in diabetes care, including preventive items, may also be useful. The practitioner then only needs to remember 1 step (ie, to refer the patient to the staff member) to increase the likelihood that patients will receive appropriate preventive care.

### FINAL REMARKS

Kraft et al<sup>1</sup> have demonstrated that practitioners do not adhere to the ADA guidelines for the prevention of visual loss, which is related to retinopathy. The gap between the ADA recommendations and reported practice reflects, in part, a disagreement with the ADA guidelines themselves. This issue highlights the importance of designing guidelines that are evidence-based and that are likely to be viewed as acceptable. Dilution of the pupil for fundoscopic examination in the primary care setting for routine care clearly does not meet these criteria, and the ADA would be wise to abandon this guideline. The inclusion of it dilutes the potential impact of having a simpler, clearer message to refer patients periodically to an ophthalmologist.

Referral to an ophthalmologist initially appears to be implemented easily. In fact, of all the screening tests that are recommended in the new US Preventive Services Task Force guidelines, none of the tests specifically require referral to another physician. The perception of potential financial disincentives has a particularly adverse impact on referral rates. The ADA, and other interest groups, should actively lobby for universal insurance coverage for proved preventive care maneuvers.

Finally, practitioners can improve their provision of preventive care to diabetic patients by (1) explicitly defining their personal policy, (2) committing appropriate resources, (3) implementing a preventive health care system and adapting it to the needs of the diabetic patient, and (4) working with office staff to form a prevention health team.

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### REFERENCES

1. Kraft SK, Marrero DG, Lazaridis EN, Fineberg N, Qui C, Clark CM Jr. Primary care physicians' practice patterns and diabetic retinopathy: current levels of care. *Arch Fam Med*. 1997;6:29-37.
2. Mandel I, Franks P, Dickinson J. Improving physician compliance with preventive medicine guidelines. *J Fam Pract*. 1985;21:223-224.
3. Lewis CE. Disease prevention and health promotion practices of primary care physicians in the United States. *Am J Prev Med*. 1988;4(suppl 4):9-16.
4. Longman AJ, Saint-Germain MA, Modiano M. Use of breast cancer screening by older Hispanic women. *Public Health Nurs*. 1992;9:118-124.
5. Boring C, Squires TS, Heath CW. Cancer statistics for African Americans. *CA Cancer J Clin*. 1992;42:7-17.
6. Koss LG. The Papanicolaou test for cervical cancer detection: a triumph and a tragedy. *JAMA*. 1989;261:737-743.
7. Frame PS, Carlson SJ. A critical review of periodic health screening using specific screening criteria. *J Fam Pract*. 1975;12:29-36.
8. Ackerman SJ. Benefits of preventive programs in eye care are visible on the bottom line. *Diabetes Care*. 1992;15:580-581.
9. *Guide to Clinical Preventive Services: Report of the US Preventive Services Task Force*. 2nd ed. Baltimore, Md: Williams & Williams; 1996.
10. Woo B, Woo B, Cook EF, et al. Screening procedures in the asymptomatic adult. *JAMA*. 1985;254:1480-1484.
11. Belcher DW, Berg AO, Inui TS. Practical approaches to providing better preventive care: are physicians a problem or a solution? *Am J Prev Med*. 1988;4(suppl 4):27-48.
12. Wender RC. Barriers to effective skin cancer detection. *Cancer*. 1995;75(suppl):691-698.
13. Frame PS. Computerized health maintenance tracking systems: a clinician's guide to necessary and optional features. *J Am Board Fam Pract*. 1995;8:221-229.
14. Leininger LS, Finn L, Dickey L, et al. An office system for organizing preventive services: a report by the American Cancer Society Advisory Group on Preventive Health Care Reminder Systems. *Arch Fam Med*. 1996;5:108-115.
15. The Diabetes Control and Complications Trial Research Group. The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *N Engl J Med*. 1993;329:977-986.
16. Haire-Joshu D. Smoking cessation: a priority in diabetes care. *Diabetes Spectrum*. 1990;3:82-111.
17. Eisenberg J. Physician utilization: the state of research about physicians' practice patterns. *Med Care*. 1985;23:461-482.
18. Wennberg J. Dealing with medical practice variations: a proposal for action. *Health Aff (Millwood)*. 1984;3:6-32.
19. Carney P, Dietrich A, Keller A, et al. Tools, teamwork and tenacity: an office system for cancer prevention. *J Fam Pract*. 1992;35:388-394.
20. Dickey LL, Kamerow DB. The 'Put Prevention Into Practice' campaign: office tools and beyond. *J Fam Pract*. 1994;39:321-323.
21. Manley M, Epps RP, Husten C, et al. Clinical interventions in tobacco control: a National Cancer Institute training program for physicians. *JAMA*. 1991;266:3172-3173.

### Clinical Pearl

Higher serum vitamin D levels were inversely related to systolic and diastolic blood pressure ( $r=-0.42$ ) and triglycerides ( $r=-0.47$ ) in 34 middle-aged men. (*Am J Hypertens*. 1995;8:894-901.)