

One Stone, Five Birds

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visit was only about 60% in the “organized chaos” of the practice, which includes 24 family medicine residents, 14 faculty members, more than 40 non-physician staff members, and which deals with 58,000 patient visits a year.

To make sure that patients did not slip through the cracks, the program began color-coding all the charts, assigning a bright yellow file folder jacket to any patient with diabetes.

“It’s a very low-tech thing to do, but it made a lot of difference,” he said. “You know when you’re walking down the hall and you see a yellow chart, you should start thinking about diabetes.”

A template for diabetes management was soon integrated prominently into the electronic medical records that are accessed by each staff member who scheduled visits or cared for patients. When a patient called for an appointment of any kind, it was evident if he or she was lagging behind schedule on recommended lab tests, specialty examinations, or any routine element of diabetes care.

Standing orders sent such patients to the laboratory prior to the scheduled appointment, so

that up-to-date results would be available to whatever physician the patient was scheduled to see.

Any test or examination that was still not current—an ophthalmologic examination, for example—was highlighted on the template in the patient’s yellow-jacketed chart.

“This is really powerful, because now, I not only know it’s a diabetic, I can look at that sheet, and even if it’s not my patient, I can get these things ordered.”

The reminders significantly improved physicians’ adherence to department guidelines for diabetes care, said Dr. Minter.

Coax Them In

Another important shortcoming identified in the chart review was the lack of follow-up with patients who didn’t come in for care of any kind.

A database query identified 469 patients whose most current hemoglobin A_{1c} was greater than 7%, and many of them had not been in for care in more than a year. Of 59 patients with HbA_{1c} measures greater than 10%, 30 were successfully contacted, including 8 who had not been seen in the center for more than a year.

A decision was made in early 2005 to actively pursue these patients, first with a letter and then through follow-up phone calls, to emphasize the need for regular diabetes care.

“You have to change the culture,” said Dr. Minter. “You can’t sit by the phone and passively wait for someone to call.”

Of the 469 patients, 250 were reached by nurses who had been designated to focus on patients with diabetes.

Appointments were scheduled and barriers overcome. If a patient balked at scheduling an appointment because of a high copay, the nurse or a part-time diabetes educator contacted a social worker and the billing department to arrange for assistance.

The focus on high-risk, elusive patients had the temporary effect of undercutting the practice’s on-paper performance measures. The percentage of patients with HbA_{1c} levels less than 7% slipped at first before it improved, Dr. Minter noted.

“These people hadn’t been in the office and were out of control,” he said. By early 2006, however, the percentage of patients meeting the HbA_{1c} goal “was doggone close to the upper confidence level.”

The number of obese patients in the practice appeared to increase, because the information

was now being entered into the medical records as never before.

Still, important measures started to improve in a dramatic fashion. For example, the target for LDL cholesterol is now being met in a percentage of patients that exceeds the group’s benchmark goal.

Other outcome measures have yet to improve, such as the percentage of patients with diabetes meeting targets for blood pressure. But, “we would expect this not to improve for some time,” said Dr. Minter.

Designate Specialists and Get Everyone on Board

Essential to the Washington Hospital’s success was buy-in from everyone in the family medicine program, Dr. Minter said.

Nine nurses were assigned to become diabetes coordinators, with responsibility for a specific group of diabetes patients in the database.

The nurses took seriously their responsibility to contact these patients and improve their care, greeting them when they arrived for appointments and taking pride in the patient’s progress, said Dr. Minter.

The hospital’s diabetes educator, Susan Pettit, spent 1 day a week in the primary care office, where she helped keep the program on target and provide feed-

back about strides that were being made.

In a striking demonstration of the pivotal role of nurses, Dr. Minter displayed charts that showed sudden dips in positive trends that occurred near the very end of the demonstration project.

The hiccups coincided with budgetary cutbacks that left the practice short of its normal nursing staffing.

“Almost all outcome measures dipped,” he said. “I’m using this as a stick with the CEO. Look, this is what we can do when we have the right kind of staffing, and this is what happens when we don’t.”

He also noted that it was interesting that insurance companies, eyeing the program’s improving bottom line, have been helpful in assisting the practice to implement changes and track its progress.

As an added bonus, improved performance on process and outcome measures spilled over into better care of nondiabetic patients as well as those with diabetes, Dr. Minter observed.

“If you do a good job with diabetes, you’re probably going to improve your numbers for coronary artery disease, renal disease, hyperlipidemias,” he said. “You’re killing four or five birds with one stone.” ■

In Tackling Type 2 Diabetes in Teens, Think Outside the Box

BY BRUCE JANCIN
Denver Bureau

KEYSTONE, COLO. — Efforts directed at lifestyle modification without concomitant drug therapy in adolescents with type 2 diabetes are “a waste of time,” Dr. Philip S. Zeitler said at a conference on the management of diabetes in youth.

The disease in teens differs in key ways from the classical form arising in middle age or later. Adolescents with type 2 diabetes are more obese.

They have more severe lifestyle abnormalities. While 90% of all diabetes cases are type 2, it’s mainly a disease of the elderly, and to a lesser extent of middle age. It’s a disease that’s largely the result of an unhealthy lifestyle: obesity, sedentary behavior, and a bad diet. Classically it takes decades and decades of these conditions before a person develops type 2 diabetes.

When type 2 diabetes arises in teens—that’s 2-5 decades earlier than in the majority of affected individuals—it’s believed to be because they’ve gotten an earlier start on obesity and sedentary behavior and are more extreme in their expression of these risk factors than older patients. These are kids who typically have missed out on the years of highly active running around all day that other kids experience. They have a diet heavily weighted to fast foods, snack foods, and convenience foods. The developmental course of their disease has been compressed due to more intense risk

factor levels than in older adults.

Being born to a mother whose pregnancy was complicated by diabetes is an additional potent risk factor for early-onset type 2 diabetes and associated disorders, Dr. Zeitler said in a later interview.

Comorbidities including sleep apnea, fatty liver disease, ovarian hyperandrogenism, and orthopedic issues appear to be more common than in adult type 2 diabetics, probably because of the teens’ more intense life-style abnormalities.

And of course adolescents live in families that often may lack social and economic resources and serve as “enablers” of the type 2 diabetic teen’s pervasively disordered lifestyle. They may not be ready to provide the sort of support needed for lasting change.

To these factors, add the developmental challenges intrinsic to adolescence, the powerful role peer pressure exerts, and the substantial likelihood that severe depression or other significant psychiatric issues may be present in the type 2 diabetic teen, and it becomes apparent that attempts at lifestyle change in this patient population need to be combined with effective drug therapy, according to Dr. Zeitler of the University of Colorado, Denver.

For specific pharmacologic options targeting blood sugar, one should start with metformin. For the moment, it’s the only approved drug for pediatric type 2 diabetes. It’s safe, effective, familiar, and at \$20-\$30 per month, relatively inexpensive. It results in weight loss, mildly improved lipid

profiles, and reduction in hirsutism and menstrual irregularities in females, as well as improved blood glucose control. Lactate acidosis has long been a theoretic worry, but a 40,000-patient metaanalysis showed no increase in risk even when metformin was prescribed despite contraindications (Arch. Intern. Med. 2003;163:2594-602).

Dr. Zeitler offered his personal treatment algorithm, which he termed “unscientific but rational”: Start metformin in new-onset nonketotic teens in relatively good control as defined by an HbA_{1c} of 10% or less. The dose is 500 mg/day, titrated as tolerated to 2,000 mg/day with increases of not more than 500 mg weekly. Also, introduce standard diabetes education with added emphasis on weight loss and lifestyle modification. In new-onset patients in poor control without acidosis, start metformin along with Lantus insulin at 15-30 units four times daily, weaning the patient off insulin as tolerated once control of blood glucose level

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is attained, he said at the conference sponsored by the University of Colorado and the Children’s Diabetes Foundation, Denver.

Acidotic patients are best managed as in type 1 diabetes until the acidosis is reversed. Then start metformin and insulin, later weaning off insulin as tolerated.

Dr. Zeitler readily turns to insulin because it works, it conveys a message that the youth has a serious illness worthy of treatment compliance, and preliminary evidence suggests early use of insulin may preserve beta-cell function. Other drug options have major drawbacks:

► **Thiazolidinediones.** Pediatric approval is anticipated despite lingering concerns about hepatotoxicity, but Dr. Zeitler does not expect this drug class to have a big impact on glycemic control. Type 2 diabetic teens tend to fall into two categories: those who respond well to metformin and lifestyle measures, and those who don’t—in which case adding a glitazone is insufficient. However, there may be beneficial nonglycemic effects of these agents that will create a place for them in the future.

► **Sulfonylureas.** Accentuated side effects in teens, especially hypoglycemia and weight gain, greatly limit their value. “I don’t use them anymore,” Dr. Zeitler said.

► **Metaglinide analogs.** These short-acting insulin secretagogues are in theory helpful in controlling postprandial hyperglycemia, but they have to be taken before meals and “compliance in these kids is generally horrendous,” he said. ■