Based on the growing healthcare concern caused by diabetes, the second annual North Carolina Clinical Laboratory Day on August 4, 2006, at Wake Technical Community College in Raleigh, focused on “The Diabetes Challenge: Diagnosis, Education, and Management.” The program — developed in partnership with the North Carolina Diabetes Prevention and Control Branch (NCDPCB) — was the culmination of the efforts of Laboratory Improvement, the training unit within the North Carolina State Laboratory of Public Health (NCSLPH), the primary organizer of the conference. Co-sponsors also included the Texas Health Foundation and the North Carolina Public Health Nursing Continuing Education Advisory Committee.

Modeled after last year’s inaugural event, NCSLPH’s goal was to offer an educational opportunity to engage health professionals in promoting a better understanding of diabetes and its impact on the health of a growing number of Americans. Attendees were challenged to share the information gained through their attendance to benefit the people they serve, supervise, or educate.

Leslie Wolf, PhD, followed the opening welcome by Marcus Plescia, MD, MPH, and chief of the North Carolina Division of Public Health, Chronic Disease and Injury Section. Wolf, director of the NCSLPH, formally acknowledged the event’s sponsors and exhibitors, and thanked them for their generous support, including a Gold Level sponsorship from HemoCue Inc., which provided funding to cover general costs of the program. She then introduced the first program speaker, Beverly Robertson.

**POC glucose-testing details**

Beverly Robertson, BS, MT(ASCP), MPH, is the point-of-care testing (POCT) coordinator for the University of North Carolina Health Care System. Her presentation, “How Sweet It Is: The Role of the Lab in Glucose Monitoring,” combined humor with the serious topic of laboratory tests for the detection and management of diabetes, including glucose, A1c hemoglobin, microalbumin, and cholesterol. The various test methods employed by self-monitoring glucose devices used by diabetics at home, point-of-care analyzers, and laboratory glucose assays, she pointed out, all use one of the following test methods: glucose hexokinase, glucose dehydrogenase pyrroloquinolinequinone (GDH-PQQ), glucose dehydrogenase nicotinamide adenine dinucleotide (GDH-NAD), and glucose oxidase reaction. She cautioned members of the audience to know what methodology their instrument uses for testing glucose. A frightening example she shared was that of a patient who was improperly medicated, based on an erroneous glucose result.

“We recently received a report of a patient who suffered irreversible brain damage following an aggressive insulin treatment that was given for elevated glucose readings,” Robertson explained. “Unfortunately, the elevated glucose readings were incorrect because the glucose-monitoring device — which was unable to distinguish between glucose and maltose — was reacting to the maltose in the intravenous immunoglobulin solution that the patient was receiving.”

Approximately 8,000 North Carolinians die each year as a result of diabetes, and its annual cost in hospitalization charges in the state exceeds $1.7 billion.

The glucose-monitoring system used in this case was the GDH-PQQ method, which cannot distinguish between the sugars glucose, maltose, galactose, or xylose. Robertson noted that point-of-care glucose testing is a trending tool — one that collects data over time and can alert users to certain reports. Its benefits are immediate interaction with the healthcare provider as well as increased patient satisfaction with healthcare services and improved patient compliance with clinicians’ recommendations. She cited
the American Diabetes Association (ADA) recommendation to use point-of-care testing for A1c hemoglobin, a measurement that would promote timely decisions on needed therapy changes.

**Informing diabetes patients**

Beth Silvers, RD, LDN, CDE, BC-ADM, is a dietician and diabetes educator for Gaston Memorial Home Health Care in Gastonia, NC. Silvers’ topic — “Teaching What They Do Not Want to Learn” — instructed participants on how to assess the patient’s knowledge about diabetes and his willingness to change lifestyle behaviors in areas recommended by the American Association of Diabetes Educators: healthy eating, being active, monitoring, taking medication, problem solving, healthy coping, and reducing risks. Silvers encouraged participants to actively listen as they begin an assessment of a patient’s knowledge about diabetes and his readiness to undertake change. She suggested asking open-ended questions about current lifestyle issues before presenting information to patients about diabetes. She addressed how to discuss with the patient the risk factors for complications from diabetes. After the basics of diabetes lifestyle changes are shared with him, Silvers noted that the patient should be allowed to set his own goals and to slowly absorb the education process.

**Diabetes strikes**

Joseph Konen, MD, MSPH, a medical and research specialist with Pfizer Inc. and chair of the North Carolina Diabetes Advisory Council, wrapped up the day’s program. Dr. Konen’s presentation, “Diabetes: What Is It and What to Do About It,” brought to light the seriousness of diabetes in North Carolina. Approximately 8,000 North Carolinians die each year as a result of diabetes, and its annual cost in hospitalization charges in the state exceeds $1.7 billion. His profound statement that obesity is the first chronic disease whose spread looks like an infectious disease epidemic shocked some attendees. According to Dr. Konen, obesity is often linked to type 2 diabetes, so that the co-existing mechanisms of diabetes and obesity have led to the coining of a new word “diabesity.” He described the current ADA criteria for diabetes and impaired glucose tolerance, differentiated between the major types — 1 and 2 — and reviewed disease-management recommendations, as well as current and future diabetes therapies.

**Supporting sponsors**

This year’s educational exhibitors included NCDPCB, NC-SLPH, North Carolina Area Health Education Centers, North

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Carolina Institute for Public Health, North Carolina Society of Clinical Laboratory Science, and Wake Technical Community College. The conference also featured vendor exhibits and numerous door prizes, including pedometers and the book “Diabesity” by internationally known authority on diabetes and obesity, Dr. Francine Kaufman.

Event participants also had the opportunity to gather information, watch product demonstrations, and take home free samples from the program’s 12 sponsoring vendors: Bayer Healthcare, Caligor, Hemocue, Infolab, Johnston Therapeutic Wound Healing Center, Kawasumi Laboratories America, Laboratory Supply Company, LifeScan, Medical Automation Systems, Novo Nordisk Pharmaceutical Industries, Smith’s Addressing Machine Service, and Vashaw Scientific. More than 150 people, including nurses, clinical-laboratory scientists, medical-office assistants, and diabetes educators attended the one-day conference, which offered continuing-education credits (6.0 contact hours). Planning for next year’s event has not yet begun, but the measure of success from the inaugural event and this first follow-up program make the likelihood of a third season quite positive.

Colleen Miller, BS MT(ASCP), is the laboratory improvement consultant at North Carolina State Laboratory of Public Health in Raleigh, NC, and a certified training specialist with the North Carolina Office of State Personnel.

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