IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF ALABAMA

MICHAEL GADDIS, et al.	)	
	)	
Plaintiffs,	)	**CLASS ACTION**
	)	
	)	**CV-03-T-390-N**
vs.	)	
	)	
DONAL CAMPBELL,	)	
	)	
Defendant.	)	

REVISED SETTLEMENT AGREEMENT

WHEREAS on April 9, 2003, plaintiffs filed suit challenging the constitutional adequacy of the medical care provided to persons with diabetes by the Alabama Department of Corrections (ADOC); and

WHEREAS on July 11, 2003, the Court certified a class as consisting of all present and future inmates with diabetes who are or will be incarcerated in an Alabama Department of Corrections facility; and

WHEREAS the plaintiffs and defendant agree that it is in their best interests to resolve this lawsuit;

NOW THEREFORE the parties, by and through their respective counsel, hereby stipulate and agree to the following provisions:

A. DIABETES POLICIES AND PROCEDURES

1. The defendant will develop written policies and procedures (including nursing protocols) for the management and care of diabetic inmates in the ADOC. These policies and procedures will incorporate the provisions of this Settlement Agreement. Any medical

contractor who contracts with the ADOC to provide medical care to ADOC inmates must abide by these policies and procedures. The policies and procedures will be required to be included in the medical contractor's policies and procedures manual. The defendant shall also develop written policies and procedures for the ongoing training of medical and correctional staff in the recognition of emergent diabetic situations. All policies and procedures shall be reviewed annually and updated as necessary to be consistent with current ADA (American Diabetes Association) Standards. The current ADA Standards for correctional facilities are attached to this Settlement Agreement. The ADOC shall incorporate the relevant terms of this Settlement Agreement in any Request for Proposal for medical care submitted to potential vendors.

B. INTAKE SCREENING

2. Reception Screening: Immediately upon arrival, any inmate who identifies his or herself as an insulin-diabetic shall see a physician within 24 hours to confirm that the inmate needs to be on insulin and, if so, to ensure that the insulin is continued.

3. Intake Screening:

(a) Inmates entering the ADOC who are already diagnosed with diabetes shall have a complete medical history and a physical examination consistent with ADA Standards. As part of the required medical history, the defendant shall review the results of any fasting blood sugar measurement taken prior to placement in the ADOC that have been provided. The medical history should focus on the inmate's type of diabetes and, if the inmate is taking insulin, efforts should be made to differentiate between Type-1 diabetes and insulin-requiring Type-2 diabetes, in accordance with ADA Standards. The frequency of ketoacidosis as well as hypoglycemia shall be determined, as well as a history of severe hypoglycemia without

awareness (i.e., requiring the assistance of another person). A history of any known chronic complications associated with diabetes, including findings from the last dilated retinal examination, shall be determined.

(b) *Diagnosis of diabetes*: As part of its routine medical screening of all inmates entering the ADOC and as part of its annual physical examination of all inmates, the ADOC shall conduct a random plasma glucose test. If the random plasma glucose test reveals a glucose level of 200 or higher, the inmate will be given a second random plasma glucose test within 48 hours. If the second plasma glucose test also yields a glucose level of 200 or higher, the inmate will be diagnosed with diabetes. If, on the other hand, the second random plasma glucose test yields of glucose level of *less than* 200, the inmate will not be diagnosed with diabetes, but he or she will be given a confirmatory fasting plasma glucose test after the inmate arrives at his or her assigned facility. If the confirmatory fasting plasma glucose test reveals a glucose level of 126 or higher, the inmate will be diagnosed as diabetic.

(c) All diabetic inmates shall, within a medically reasonable period of time, receive a screening laboratory evaluation that shall include baseline laboratory studies consistent with current ADA standards. Currently, this shall include a hemoglobin A1C, HDL-cholesterol, triglycerides, total cholesterol, urine for microalbumin, urinalysis for protein and ketones, serum creatinine, thyroid stimulating hormone (TSH) when indicated, and EKG. A fasting LDL-cholesterol test will be performed at the first chronic care clinic that a diabetic inmate attends after they leave the reception center and are assigned to their permanent facility.

C. BLOOD SUGAR TESTING AND CONTROL

4. Treatment targets for both blood glucose and glycated hemoglobin shall be individually established for each diabetic inmate. Targets shall be as close as possible to those recommended by ADA Standards.

5. Diabetic inmates, particularly insulin requiring diabetics, shall be afforded the opportunity to have their capillary blood glucose (finger sticks) measured as often as necessary for adequate diabetes control. Diabetic inmates receiving insulin shall be afforded the opportunity to have their blood sugar (by capillary blood testing) measured prior to each dose (twice per day), with a medically necessary adjustment of the insulin dose based on the blood sugar result obtained at that time. High blood sugar found at other times shall be treated medically, including with an appropriate dose and type of insulin when medically necessary.

6. Diabetic inmates shall have the opportunity to have their baseline glycated hemoglobin (HbA1C) measured as a baseline at intake and every three months thereafter. If their glycolated hemoglobin level is normal, the interval of testing can be advanced to every 6 months. If test results are not in the target range for that patient, the medical staff shall review management to determine if modification is necessary to improve blood sugar control. Their management review shall be documented in the medical record.

7. Diabetic inmates who are compliant with their treatment, but who have inadequate blood sugar control despite routine interventions by facility professional staff, shall be referred to diabetes specialists for consultation and management.

8. Diabetic inmates shall have access to prompt treatment of hypoglycemia, and shall be provided with, or permitted to keep on their persons, glucose tablets and/or

appropriate snacks for use whenever they feel symptoms of hypoglycemia. The ADOC shall stock in the medical unit injectable glucagon for emergency treatment of hypoglycemia.

9. Diabetic inmates with high blood sugar and ketosis shall be afforded ready access to health professional staff at any time of the day or night, and provided with urgent medical management in an attempt to prevent dehydration, metabolic acidosis, and coma requiring hospitalization.

D. EYE EXAMS

10. Diabetic inmates shall be afforded the opportunity to receive an annual dilated retinal examination by an ophthalmologist or optometrist who is knowledgeable and experienced in the screening for diabetic retinopathy, cataracts, and glaucoma. Diabetic inmates found to be suffering from complications of retinopathy, cataracts, and glaucoma shall be referred for timely treatment to an ophthalmologist.

E. FOOT EXAMS

11. Diabetic inmates shall receive a medically appropriate foot exam with monofilament in accordance with ADA Standards initially and as part of a regularly scheduled and formal chronic care clinic. Diabetic inmates shall be provided appropriate footwear (i.e. shoes that fit and which are able to protect their feet from injury) by the ADOC, including special orthopedic footwear prescribed by a physician or nurse practitioner. Foot disorders shall be treated with timely referral for necessary specialty care, and appropriate follow-up by the facility's professional staff. Nursing procedures ordered by medical providers shall be provided on a schedule and frequency as ordered.

F. TESTING AND TREATMENT FOR KIDNEY DISEASE

12. Diabetic inmates shall have their urine protein tested annually with a microalbumin test, unless the test has been positive and they are medicated with an ACE inhibitor. Diabetic inmates with proteinuria, microalbuminuria, or other signs of kidney disease shall receive medically appropriate treatment, including ACE inhibitors, when medically indicated.

G. TESTING AND TREATMENT FOR HEART DISEASE

13. Diabetic inmates shall have the opportunity to have their fasting lipid levels tested in accordance with ADA and National Cholesterol Education Project Standards. Persons with high lipid levels shall be treated with appropriate medicine, including statins. Diabetic inmates with high blood pressure, dyslipidemia, and arterial obstruction shall be treated in accordance with ADA Standards for those diseases.

H. DENTAL CARE

14. Diabetic inmates shall be afforded the opportunity to have a cleaning by a dental practitioner at least once per year. More frequent cleanings shall be provided as medically needed to maintain healthy gums in some patients, and quadrant scaling with hand tools shall be provided as needed to treat established gum disorders.

I. PREVENTATIVE AND CHRONIC CARE

15. Insulin-dependent diabetic inmates shall be offered immunization against influenza annually (unless the serum is generally unavailable). Insulin-dependent diabetics shall be offered immunization against pneumococcus once and then repeated after age 64 if more than five years have passed since the first one.

16. Diabetic inmates shall be offered a full physical examination by a physician/nurse practitioner annually, and shall be enrolled in a regularly scheduled chronic-

disease clinic staffed by professionals with training and expertise in management of diabetes, and which follows detailed written protocols for routine assessment and care. Diabetic inmates with poor control of their blood sugar should be seen more often, as medically necessary, to improve their clinical control. The frequency of visits shall be as frequent as necessary for appropriate medical management of the inmate, but no less frequently than quarterly.

17. Diabetic inmates with numbness, pain, indigestion, dizziness, or other symptoms related to patients with nerve damage shall be offered necessary treatment and, when medically necessary, referral to appropriate specialists

J. DIET AND EXERCISE

18. All general population inmates with diabetes shall be afforded an opportunity for daily large muscle exercise of approximately a one-hour duration. Inmates in segregation shall be afforded an opportunity for daily large muscle exercise of approximately forty-five minutes duration.

19. The current ADOC menus for diabetic inmates, "Consistent Carbohydrate Diet" and "1800 Calorie Diet," will be revised to be in accordance with the most current standards for diabetic diets. These standards are included in the American Diabetes Association's *Evidence-Based Nutrition Principles and Recommendations for the Treatment and Preventions of Diabetes and Diabetes-Related Complications*, the American Dietetic Association *Manual of Clinical Dietetics*, and the *2003 Exchange Lists for Meal Planning*. Dietary/nutrient intake as referenced in these standards include:

a. Less than 10% derived from saturated fats.

b. Less than 300 mg dietary cholesterol per day.

c. Nutrient distribution of approximately 50% carbohydrates, 20% protein, and 30% fat.

d. Avoiding fructose as an added sweetener.

20. The ADOC will include at least two fruit servings per day. The term "fruit" is defined as fresh fruit, canned fruit (water-packed, juice-packed, rinsed or artificially sweetened), or one-half cup of 100% fruit juice.

21. The menus will be revised to ensure that the carbohydrate content of meals and snacks is consistent from day to day. (The carbohydrate content of each breakfast may be different from the carbohydrate content of each lunch, dinner and snack, but the carbohydrate content of each type of meal will be consistent from day to day.)

22. The commissary shall offer diabetic items for purchase by inmates such as sugar substitutes and sugar-free snacks. The commissary shall also sell instant glucose tablets for inmates who suffer from hypoglycemia.

23. When medically necessary, the ADOC shall provide diabetic inmates with individually-prescribed special diabetic meals, as ordered by a physician or nurse practitioner.

24. Diabetic inmates shall be provided meals and snacks during any trips outside of the facility, consistent with any special diabetic meals prescribed for the inmate within ADOC.

25. Inmates who are housed at work-release centers may eat meals outside of ADOC facilities. Any such meals shall not be governed by the provisions listed in paragraphs 19-24, above.

K. EDUCATION

26. The ADOC shall provide twice-yearly educational and nutritional classes for diabetic inmates. Such education shall be given by a knowledgeable diabetes educator and may be offered individually or to a group of diabetic inmates.

27. The ADOC shall make available and distribute to inmates printed self-care materials, including printed materials created by the ADA. If the supply of such materials is exhausted, it shall be refilled as soon as possible.

28. ADOC security staff shall be trained to recognize and treat hypoglycemia, and to recognize the symptoms and signs of other serious metabolic decompensation, and to refer the inmate for appropriate care. The medical unit shall stock, and appropriate staff shall be trained to administer, glucagons.

L. TIMING

29. Absent any unforeseen delays that are outside the control of the ADOC, the Defendant agrees to implement the new diabetes policies and procedures by November 6, 2003. Training of medical and correctional staff in the recognition of emergent diabetic situations shall be completed by December 31, 2003.

M. CONSULTING AND REPORTING

30. The contract monitor who is employed to monitor the contract between the ADOC and the contract medical provider shall monitor this agreement to ensure compliance. The contract monitor shall not be an ADOC employee.

31. For a two year period beginning on December 1, 2003, and ending on December 1, 2005, the contract monitor will report to plaintiffs' counsel his or her evaluation of the ADOC and contract provider's compliance with the terms of this agreement. This report shall include: (1) all monthly contract monitor reports, including the data upon which

the reports rely; (2) deficiencies found to exist by the contract monitor and any recommendations made by the contract monitor to correct these deficiencies; (3) the contract medical provider's written response to any cited deficiencies and details of any corrective actions that will be taken; (4) any notice by the ADOC that the contract medical provider has failed to perform adequate corrective actions or is in default of its contractual obligations; and (5) any other documents reflecting any evaluation by any entity of the care provided to inmates with diabetes.

32. The contract monitor's reports and any documents reviewed or information obtained during the monitoring period may be used by either party in an action to enforce the Settlement Agreement in court or in any new action brought by the Plaintiffs. Otherwise, any report by the contract monitor shall remain confidential.

N. DISCLAIMER OF LIABILITY

33. The Plaintiffs and Defendant expressly acknowledge and agree that this Settlement Agreement does not constitute an admission of liability by the Defendant or the ADOC.

O. ENFORCEMENT OF SETTLEMENT AGREEMENT

34. This Settlement Agreement is not a consent decree, and is not enforceable in federal court. In the event of non-compliance with any of the terms in this Settlement Agreement, the plaintiffs may only enforce the Settlement Agreement in state court, pursuant to 18 U.S.C. § 3626(c)(2)(B).

35. The Plaintiffs are not precluded from bringing a new action in federal court in the event of non-compliance with the terms of this Settlement Agreement. In the event that Plaintiffs' current counsel bring suit on any of the issues presented in this action before

December 1, 2005 (the end of the consulting and reporting period), the newly filed action will be considered a related case. All discovery that has been exchanged to date will be deemed to be part of discovery in any such new action. All documents provided to the contract monitor and all contract monitor reports that were written pursuant to para. 27 will be admissible in any such new action.

P. DISMISSAL

36. If the Court approves this Settlement Agreement, the current case will be dismissed without prejudice from federal court.

Q. NAMED PLAINTIFFS' RIGHT TO BRING SEPARATE DAMAGE ACTIONS

37. This lawsuit was brought for injunctive relief only. The Defendant agrees that the settlement of this lawsuit does not create the defense of res judicata or collateral estoppel as to any damage claims brought by any of the named Plaintiffs, and the Defendant agrees not to raise such defenses as to any claim for damages brought by any of the named Plaintiffs.

R. PLAINTIFFS' ATTORNEY'S FEES AND COSTS

38. The Plaintiffs waive all attorney's fees and costs associated with this lawsuit.

Agreed upon this 15th day of ~~October, 2003~~ January, 2004.

William Addison
Jane Brannan
Department of Corrections
P.O. Box 301501
Montgomery, AL 36130
(334) 353-3880

ATTORNEYS FOR DEFENDANT

Rhonda Brownstein
Grace Graham
Southern Poverty Law Center
400 Washington Avenue
Montgomery, AL 36104
(334) 956-8200

ATTORNEYS FOR PLAINTIFFS

Diabetes Management in Correctional Institutions

AMERICAN DIABETES ASSOCIATION

At any given time, over 2 million people are incarcerated in prisons and jails in the U.S (1). It is estimated that nearly 80,000 of these inmates have diabetes, a prevalence of 4.8% (2). In addition, many more people pass through the corrections system in a given year. In 1998 alone, over 11 million people were released from prison to the community (1). The current estimated prevalence of diabetes in correctional institutions is somewhat lower than the overall U.S. prevalence of diabetes, perhaps because the incarcerated population is younger than the general population. The prevalence of diabetes and its related comorbidities and complications, however, will continue to increase in the prison population as current sentencing guidelines continue to increase the number of aging prisoners and the incidence of diabetes in young people continues to increase.

People with diabetes in correctional facilities should receive care that meets national standards. Correctional institutions have unique circumstances that need to be considered so that all standards of care may be achieved (3). Correctional institutions should have written policies and procedures for the management of diabetes and for training of medical and correctional staff in diabetes care practices. These policies must take into consideration issues such as security needs, transfer from one facility to another, and access to medical personnel and equipment, so that all appropriate levels of care are provided. Ideally, these policies should encourage or at least allow patients to self-manage their diabetes. Ultimately, diabetes management is dependent upon having access to needed medical personnel and equipment. Ongoing diabetes therapy is important in order to reduce the risk of later complications, including cardiovascular events, visual loss, renal failure, and amputation. Early identification and intervention for people with diabetes is also likely to reduce short-term risks for acute complications requiring transfer out of the facility, thus improving security.

This document provides a general set of guidelines for diabetes care in correctional institutions. It is not designed to be a diabetes management manual. More detailed information on the management of diabetes and related disorders can be found in the American Diabetes Association (ADA) Clinical Practice Recommendations, published each year in January as the first supplement to *Diabetes Care*, as well as the "Standards of Medical Care in Diabetes" (4) contained therein. This discussion will focus on those areas where the care of people with diabetes in correctional facilities may differ, and specific recommendations are made at the end of each section.

INTAKE MEDICAL ASSESSMENT

Reception screening

Reception screening should emphasize patient safety. In particular, rapid identification of all insulin-treated persons with diabetes is essential in order to identify those at highest risk for hypo- and hyperglycemia and diabetic ketoacidosis (DKA). All insulin-treated patients should have a capillary blood glucose (CBG) determination within 1–2 h of arrival. Signs and symptoms of hypo- or hyperglycemia can often be confused with intoxication or withdrawal from drugs or alcohol. Individuals with diabetes exhibiting signs and symptoms consistent with hypoglycemia, particularly altered mental status, agitation, combativeness, and diaphoresis, should have finger-stick blood glucose levels measured immediately.

Intake screening

Patients with a diagnosis of diabetes should have a complete medical history and physical examination by a licensed health care provider with prescriptive authority in a timely manner. If one is not available on site, one should be consulted by those performing reception screening. The purposes of this history and physical examination are to determine the type of diabetes, current therapy, alcohol use, and behavioral health issues, as well as to screen for the presence of diabetes-related complications. The evaluation should review the previous treatment and the past history of both glycemic control and diabetes complications. It is essential that medication and medical nutrition therapy (MNT) be continued without interruption upon entry into the correctional system, as a hiatus in either medication or appropriate nutrition may lead to either severe hypo- or hyperglycemia that can rapidly progress to irreversible complications, even death.

Intake physical examination and laboratory

All potential elements of the initial medical evaluation are included in Table 5 of the ADA's "Standards of Medical Care in Diabetes," referred to hereafter as the "Standards of Care" (4). The essential components of the initial history and physical examination are detailed in Fig. 1. Referrals should be made immediately if the patient with diabetes is pregnant.

Recommendations

- Patients with a diagnosis of diabetes should have a complete medical history and undergo an intake physical examination by a licensed health professional in a timely manner. (E)
- Insulin-treated patients should have a CBG determination within 1–2 h of arrival. (E)
- Medications and MNT should be con-

Originally approved 1989. Most recent revision, 2003.

Abbreviations: CBG, capillary blood glucose; DKA, diabetic ketoacidosis; GDM, gestational diabetes mellitus; MNT, medical nutrition therapy.

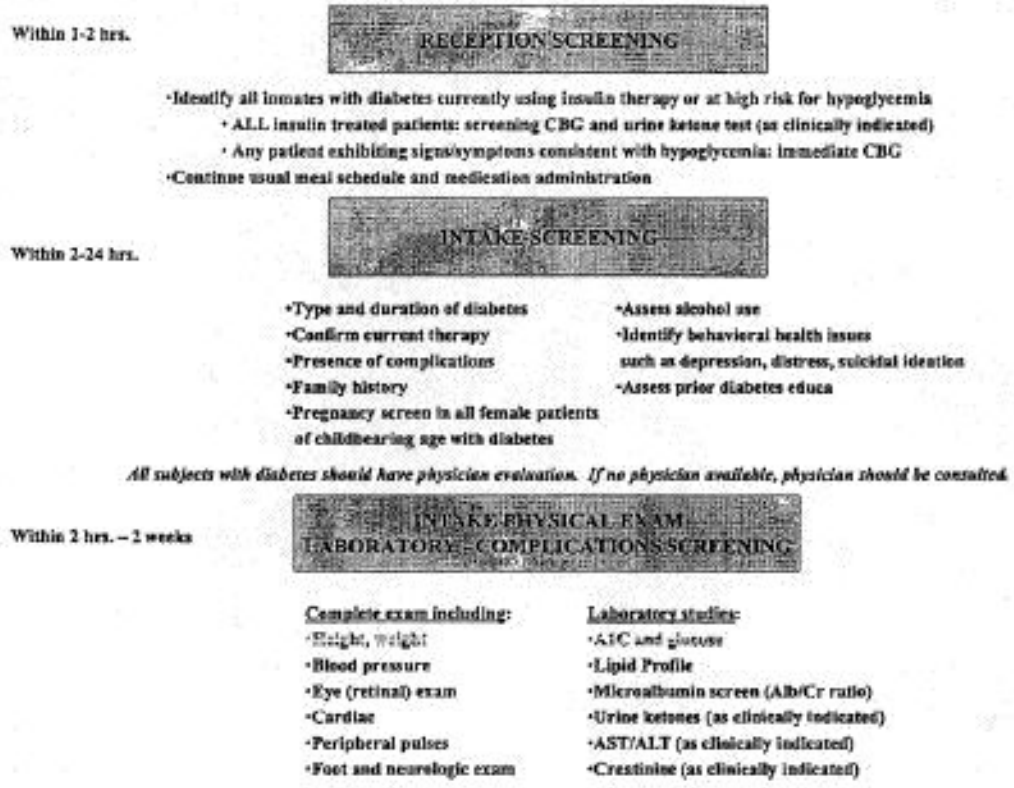

Figure 1—*Essential components of the initial history and physical examination. Alb/Cr ratio, albumin-to-creatinine ratio; ALT, alanine aminotransferase; AST, aspartate aminotransferase.*

tinued without interruption upon entry into the correctional environment. (E)

SCREENING FOR DIABETES

Consistent with the ADA Standards of Care, patients should be evaluated for diabetes risk factors at the intake physical and at appropriate times thereafter. Those who are at high risk should be considered for blood glucose screening. If pregnant, a risk assessment for gestational diabetes mellitus (GDM) should be undertaken at the first prenatal visit. Patients with clinical characteristics consistent with a high risk for GDM should undergo glucose testing as soon as possible. High-risk women not found to have GDM at the initial screening and average-risk women should be tested between 24 and 28 weeks of gestation. For more detailed information on screening for both type 2 and gestational diabetes, see the ADA Position Statement "Screening for Type 2 Diabetes" (5) and the Standards of Care (4).

MANAGEMENT PLAN

Glycemic control is fundamental to the management of diabetes. A management plan to achieve normal or near-normal glycemia with an A1C goal of <7% should be developed for diabetes management at the time of initial medical evaluation. Goals should be individualized (4), and less stringent treatment goals may be appropriate for patients with a history of severe hypoglycemia, patients with limited life expectancies, elderly adults, and individuals with comorbid conditions (4). This plan should be documented in the patient's record and communicated to all persons involved in his/her care, including security staff. Table 1, taken from the ADA Standards of Care, provides a summary of recommendations for setting glycemic control goals for adults with diabetes.

People with diabetes should ideally receive medical care from a physician-coordinated team. Such teams include, but are not limited to, physicians, nurses, dietitians, and mental health professionals with expertise and a special interest in diabetes. It is essential in this collaborative and integrated team approach that individuals with diabetes assume as active a role in their care as possible. Diabetes self-management education is an integral component of care. Patient self-management should be emphasized, and the plan should encourage the involvement of the patient in problem solving as much as possible.

It is helpful to house insulin-treated patients in a common unit, if this is possible, safe, and consistent with providing access to other programs at the correctional institution. Common housing not only can facilitate mealtimes and medication administration, but also potentially provides an opportunity for diabetes self-management education to be reinforced by fellow patients.

NUTRITION AND FOOD SERVICES

Nutrition counseling and menu planning are an integral part of the multidisciplinary approach to diabetes management in correctional facilities. A combination of education, interdisciplinary communication, and monitoring food intake aids patients in understanding their medical nutritional needs and can facilitate diabetes control during and after incarceration.

Table 1—*Summary of recommendations for adults with diabetes mellitus*

Glycemic control	
A1C	<7.0%*
Preprandial plasma glucose	90–130 mg/dl (5.0–7.2 mmol/l)
Postprandial plasma glucose	<180 mg/dl (<10.0 mmol/l)
Blood pressure	<130/80 mmHg
Lipids	
LDL	<100 mg/dl (<2.6 mmol/l)
Triglycerides†	<150 mg/dl (<1.7 mmol/l)
HDL	>40 mg/dl (>1.1 mmol/l)‡

Key concepts in setting glycemic goals:

- Goals should be individualized
- Certain populations (children, pregnant women, and elderly) require special considerations
- Less intensive glycemic goals may be indicated in patients with severe or frequent hypoglycemia
- More stringent glycemic goals (i.e., a normal A1C, <6%) may further reduce complications at the cost of increased hypoglycemia (particularly in those with type 1 diabetes)
- Postprandial glucose may be targeted if A1C goals are not met despite reaching preprandial glucose goals

*Referenced to a nondiabetic range of 4.0–6.0% using a DCCT-based assay. †Current NCEP/ATP III guidelines suggest that in patients with triglycerides ≥200 mg/dl, the "non-HDL cholesterol" (total cholesterol minus HDL) should be managed to achieve a level ≤130 mg/dl. ‡For women, it has been suggested that the HDL goal be increased by 10 mg/dl.

Nutrition counseling for patients with diabetes is considered an essential component of diabetes self-management. People with diabetes should receive individualized MNT as needed to achieve treatment goals, preferably provided by a registered dietitian familiar with the components of MNT for persons with diabetes.

Educating the patient, individually or in a group setting, about how carbohydrates and food choices directly affect diabetes control is the first step in facilitating self-management. This education enables the patient to identify better food selections from those available in the dining hall and commissary. Such an approach is more realistic in a facility where the patient has the opportunity to make food choices.

The easiest and most cost-effective means to facilitate good outcomes in patients with diabetes is instituting a heart-healthy diet as the master menu (6). There should be consistent carbohydrate content at each meal, as well as a means to identify the carbohydrate content of each food selection. Providing carbohydrate content of food selections and/or providing education in assessing carbohydrate content enables patients to meet the requirements of their individual MNT goals. Commissaries should also help in dietary management by offering healthy choices and listing the carbohydrate content of foods.

The use of insulin or oral medications may necessitate snacks in order to avoid hypoglycemia. These snacks are a part of such patients' medical treatment plans and should be prescribed by medical staff.

Timing of meals and snacks must be coordinated with medication administration as needed to minimize the risk of hypoglycemia, as discussed more fully in the MEDICATION section of this document. For further information, see the ADA Position Statement "Nutrition Principles and Recommendations in Diabetes" (7).

URGENT AND EMERGENCY ISSUES

All patients must have access to prompt treatment of hypo- and hyperglycemia. Correctional staff should be trained in the recognition and treatment of hypo- and hyperglycemia, and appropriate staff should be trained to administer glucagon. After such emergency care, patients should be referred for appropriate medical care to minimize risk of future decompensation.

Institutions should implement a policy requiring staff to notify a physician of all CBG results outside of a specified range, as determined by the treating physician (e.g., <50 or >350 mg/dl).

Hyperglycemia

Severe hyperglycemia in a person with diabetes may be the result of intercurrent illness, missed or inadequate medication, or corticosteroid therapy. Correctional institutions should have systems in place to identify and refer to medical staff all patients with consistently elevated blood glucose as well as intercurrent illness.

The stress of illness in those with type 1 diabetes frequently aggravates glycemic control and necessitates more frequent monitoring of blood glucose (e.g., every 4–6 h). Marked hyperglycemia requires temporary adjustment of the treatment program and, if accompanied by ketosis, interaction with the diabetes care team. Adequate fluid and caloric intake must be ensured. Nausea or vomiting accompanied with hyperglycemia may indicate DKA, a life-threatening condition that requires immediate medical care to prevent complications and death. Correctional institutions should identify patients with type 1 diabetes who are at risk for DKA, particularly those with a prior history of frequent episodes of DKA. For further information see "Hyperglycemic Crisis in Diabetes" (8).

Hypoglycemia

Hypoglycemia is defined as a blood glucose level <60 mg/dl. Severe hypoglycemia is a medical emergency defined as hypoglycemia requiring assistance of a third party and is often associated with mental status changes that may include confusion, incoherence, combativeness, somnolence, lethargy, seizures, or coma.

Signs and symptoms of severe hypoglycemia can be confused with intoxication or withdrawal. Individuals with diabetes exhibiting signs and symptoms consistent with hypoglycemia, particularly altered mental status, agitation, and diaphoresis, should have their CBG levels checked immediately.

Security staff who supervise patients at risk for hypoglycemia (i.e., those on insulin or oral hypoglycemic agents) should be educated in the emergency response protocol for recognition and treatment of hypoglycemia. Every attempt should be made to document CBG before treatment. Patients must have immediate access to glucose tablets or other glucose-containing foods. Hypoglycemia can generally be treated by the patient with oral carbohydrates. If the patient cannot be relied on to keep hypoglycemia treatment on his/her person, staff members should have ready access to glucose tablets or equivalent. In general, 15–20 g oral glucose will be adequate to treat hypoglycemic events. CBG and treatment should be repeated at 15-min intervals until blood glucose levels return to normal (>70 mg/dl).

Staff should have glucagon for intramuscular injection or glucose for intravenous infusion available to treat severe hypoglycemia without requiring transport of the hypoglycemic patient to an outside facility. Any episode of severe hypoglycemia or recurrent episodes of mild to moderate hypoglycemia require reevaluation of the diabetes management plan by the medical staff. In certain cases of unexplained or recurrent severe hypoglycemia, it may be appropriate to admit the patient to the medical unit for observation and stabilization of diabetes management.

Correctional institutions should have systems in place to identify the patients at greater risk for hypoglycemia (i.e., those on insulin or sulfonylurea therapy) and to ensure the early detection and treatment of hypoglycemia. If possible, patients at greater risk of severe hypoglycemia (e.g., those with a prior episode of severe hypoglycemia) may be housed in units closer to the medical unit in order to minimize delay in treatment.

Recommendations

- Train correctional staff in the recognition, treatment, and appropriate referral for hypo- and hyperglycemia. (E)
- Train appropriate staff to administer glucagon. (E)
- Train staff to recognize symptoms and signs of serious metabolic decompensation, and immediately refer the patient for appropriate medical care. (E)
- Institutions should implement a policy requiring staff to notify a physician of all CBG results outside of a specified range, as determined by the treating physician (e.g., <50 or >350 mg/dl). (E)
- Identify patients with type 1 diabetes who are at high risk for DKA. (E)

MEDICATION

Formularies should provide access to usual and customary oral medications and insulins necessary to treat diabetes and related conditions. While not every brand name of insulin and oral medication needs to be available, individual patient care requires access to short-, medium-, and long-acting insulins and the various classes of oral medications (e.g., insulin secretagogues, biguanides, α-glucosidase inhibitors, and thiazolidinediones) necessary for current diabetes management.

Patients at all levels of custody should have access to medication at dosing frequencies that are consistent with their treatment plan and medical direction. If feasible and consistent with security concerns, patients on multiple doses of short-acting oral medications should be placed in a "keep on person" program. In other situations, patients should be permitted to self-inject insulin when consistent with security needs. Medical department nurses should determine whether patients have the necessary skill and responsible behavior to be allowed self-administration and the degree of supervision necessary. When needed, this skill should be a part of patient education. Reasonable syringe control systems should be established.

In the past, the recommendation that regular insulin be injected 30–45 min before meals presented a significant problem when "lock downs" or other disruptions to the normal schedule of meals and medications occurred. The use of multiple-dose insulin regimens using rapid-acting analogs can decrease the disruption caused by such changes in schedule. Correctional institutions should have systems in place to ensure that rapid-acting insulin analogs and oral agents are given immediately before meals if this is part of the patient's medical plan. It should be noted however that even modest delays in meal consumption with these agents can be associated with hypoglycemia. If consistent access to food within 10 min cannot be ensured, rapid-acting insulin analogs and oral agents are approved for administration during or immediately after meals. Should circumstances arise that delay patient access to regular meals following medication administration, policies and procedures must be implemented to ensure the patient receives appropriate nutrition to prevent hypoglycemia.

Both continuous subcutaneous insulin infusion and multiple daily insulin injection therapy (consisting of three or more injections a day) can be effective means of implementing intensive diabetes management with the goal of achieving near-normal levels of blood glucose (9). While the use of these modalities may be difficult in correctional institutions, every effort should be made to continue multiple daily insulin injection or continuous subcutaneous insulin infusion in people who were using this therapy before incarceration or to institute these therapies as indicated in order to achieve blood glucose targets.

It is essential that transport of patients from jails or prisons to off-site appointments, such as medical visits or court appearances, does not cause significant disruption in medication or meal timing. Correctional institutions and police lock-ups should implement policies and procedures to diminish the risk of hypo- and hyperglycemia by, for example, providing carry-along meals and medication for patients traveling to off-site appointments or changing the insulin regimen for that day. The availability of prefilled insulin "pens" provides an alternative for off-site insulin delivery.

Recommendations

- Formularies should provide access to usual and customary oral medications and insulins to treat diabetes and related conditions. (E)
- Patients should have access to medication at dosing frequencies that are consistent with their treatment plan and medical direction. (E)
- Correctional institutions and police lock-ups should implement policies and procedures to diminish the risk of hypo- and hyperglycemia during off-site travel (e.g., court appearances). (E)

ROUTINE SCREENING FOR AND MANAGEMENT OF DIABETES COMPLICATIONS

All patients with a diagnosis of diabetes should receive routine screening for diabetes-related complications, as detailed in the ADA Standards of Care (4). Interval chronic disease clinics for persons with diabetes provide an efficient mechanism to monitor patients for complications of diabetes. In this way, appropriate referrals to consultant specialists, such as optometrists/ophthalmologists, nephrologists, and cardiologists, can be made on an as-needed basis and interval laboratory testing can be done.

The following complications should be considered.

- Foot care: Recommendations for foot care for patients with diabetes and no history of an open foot lesion are described in the ADA Standards of Care. A comprehensive foot examination is recommended annually for all patients with diabetes to identify risk factors predictive of ulcers and amputations. Persons with an insensate foot, an open foot lesion, or a history of such a lesion should be referred for evaluation by an appropriate licensed health professional (e.g., podiatrist or vascular surgeon). Special shoes should be provided as recommended by licensed health professionals to aid healing of foot lesions and to prevent development of new lesions.
- Retinopathy: Annual retinal examinations by a licensed eye care professional should be performed for all patients with diabetes, as recommended in the ADA Standards of Care. Visual changes that cannot be accounted for by acute changes in glycemic control require prompt evaluation by an eye care professional.
- Nephropathy: An annual spot urine test for determination of microalbumin-to-creatinine ratio should be performed. The use of ACE inhibitors or angiotensin receptor blockers is recommended for all patients with albuminuria. Blood pressure should be controlled to <130/80 mmHg.
- Cardiac: People with type 2 diabetes are at a particularly high risk of coronary artery disease. Cardiovascular disease risk factor management is of demonstrated benefit in reducing this complication in patients with diabetes. Blood pressure should be measured at every routine diabetes visit. In adult patients, test for lipid disorders at least annually and as needed to achieve goals with treatment. Use aspirin therapy (75–162 mg/day) in all adult patients with diabetes and cardiovascular risk factors or known macrovascular disease. Current national standards for adults with diabetes call for treatment of lipids to goals of LDL ≤100, HDL >40, triglycerides <150 mg/dl and blood pressure to a level of <130/80 mmHg.

MONITORING/TESTS OF GLYCEMIA

Monitoring of CBG is a strategy that allows caregivers and people with diabetes to evaluate diabetes management regimens. The frequency of monitoring will vary by patients' glycemic control and diabetes regimens. Patients with type 1 diabetes are at risk for hypoglycemia and should have their CBG monitored three or more times daily. Patients with type 2 diabetes on insulin need to monitor at least once daily and more frequently based on their medical plan. Patients treated with oral agents should have CBG monitored with sufficient frequency to facilitate the goals of glycemic control, assuming that there is a program for medical review of these data on an ongoing basis to drive changes in medications. Patients whose diabetes is poorly controlled or whose therapy is changing should have more frequent monitoring. Unexplained hyperglycemia in a patient with type 1 diabetes may suggest impending DKA, and monitoring of ketones should therefore be performed.

Glycated hemoglobin (A1C) is a measure of long-term (2- to 3-month) glycemic control. Perform the A1C test at least two times a year in patients who are meeting treatment goals (and who have stable glycemic control) and quarterly in patients whose therapy has changed or who are not meeting glycemic goals.

Discrepancies between CBG monitoring results and A1C may indicate a hemoglobinopathy, hemolysis, or need for evaluation of CBG monitoring technique and equipment or initiation of more frequent CBG monitoring to identify when glycemic excursions are occurring and which facet of the diabetes regimen is changing.

In the correctional setting, policies and procedures need to be developed and implemented regarding CBG monitoring that address the following.

- Infection control
- Education of staff and patients
- Proper choice of meter
- Disposal of testing lancets
- Quality control programs
- Access to health services
- Size of the blood sample
- Patient performance skills
- Documentation and interpretation of test results
- Availability of test results for the health care provider (10)

Recommendations

- In the correctional setting, policies and procedures need to be developed and implemented to enable CBG monitoring to occur at the frequency necessitated by the individual patient's glycemic control and diabetes regimen. (E)
- A1C should be checked every 3–6 months. (E)

SELF-MANAGEMENT EDUCATION

Self-management education is the cornerstone of treatment for all people with diabetes. The health staff must advocate for patients to participate in self-management as much as possible. Individuals with diabetes who learn self-management skills and make lifestyle changes can more effectively manage their diabetes and avoid or delay complications associated with diabetes. In the development of a diabetes self-management education program in the correctional environment, the unique circumstances of the patient should be considered while still providing, to the greatest extent possible, the elements of the "National Standards for Diabetes Self-Management Education" (11). A staged approach may be used depending on the needs assessment and the length of incarceration. Table 2 sets out the major components of diabetes self-management education. Survival skills should be addressed as soon as possible; other aspects of education may be provided as part of an ongoing education program.

Ideally, self-management education is coordinated by a certified diabetes educator who works with the facility to develop polices, procedures, and protocols to ensure that nationally recognized education

Table 2—*Major components of diabetes self-management education*

Survival skills	Daily management issues
• Hypo-/hyperglycemia	• Disease process
• Sick day management	• Nutritional management
• Medication	• Physical activity
• Monitoring	• Medications
• Foot care	• Monitoring
	• Acute complications
	• Risk reduction
	• Goal setting/problem solving
	• Psychosocial adjustment
	• Preconception care/pregnancy/gestational diabetes management

guidelines are implemented. The educator is also able to identify patients who need diabetes self-management education, including an assessment of the patients' medical, social, and diabetes histories; diabetes knowledge, skills, and behaviors; and readiness to change.

STAFF EDUCATION

Policies and procedures should be implemented to ensure that the health care staff has adequate knowledge and skills to direct the management and education of persons with diabetes. The health care staff needs to be involved in the development of the correctional officers' training program. The staff education program should be at a lay level. Training should be offered at least biannually, and the curriculum should cover the following.

- What is diabetes
- Signs and symptoms of diabetes
- Risk factors
- Signs and symptoms of, and emergency response to, hypo- and hyperglycemia
- Glucose monitoring
- Medications
- Exercise
- Nutrition issues including timing of meals and access to snacks

Recommendations

- Include diabetes in correctional staff education programs. (E)

ALCOHOL AND DRUGS

Patients with diabetes who are withdrawing from drugs and alcohol need special consideration. This issue particularly affects initial police custody and jails. At an intake facility, proper initial identification and assessment of these patients are critical. The presence of diabetes may complicate detoxification. Patients in need of complicated detoxification should be referred to a facility equipped to deal with high-risk detoxification. Patients with diabetes should be educated in the risks involved with smoking. All inmates should be advised not to smoke. Assistance in smoking cessation should be provided as practical.

TRANSFER AND DISCHARGE

Patients in jails may be housed for a short period of time before being transferred or released, and it is not unusual for patients in prison to be transferred within the system several times during their incarceration. One of the many challenges that health care providers face working in the correctional system is how to best collect and communicate important health care information in a timely manner when a patient is in initial police custody, is jailed short term, or is transferred from facility to facility. The importance of this communication becomes critical when the patient has a chronic illness such as diabetes.

Transferring a patient with diabetes from one correctional facility to another requires a coordinated effort. To facilitate a thorough review of medical information and completion of a transfer summary, it is critical for custody personnel to provide medical staff with sufficient notice before movement of the patient.

Before the transfer, the health care staff should review the patient's medical record and complete a medical transfer summary that includes the patient's current health care issues. At a minimum, the summary should include the following.

- The patient's current medication schedule and dosages
- The date and time of the last medication administration
- Any recent monitoring results (e.g., CBG and A1C)
- Other factors that indicate a need for immediate treatment or management at the receiving facility (e.g., recent episodes of hypoglycemia, history of severe hypoglycemia or frequent DKA, concurrent illnesses, presence of diabetes complications)
- Information on scheduled treatment/appointments if the receiving facility is responsible for transporting the patient to that appointment
- Name and telephone/fax number of a contact person at the transferring facility who can provide additional information, if needed

The medical transfer summary, which acts as a quick medical reference for the receiving facility, should be transferred along with the patient. To supplement the flow of information and to increase the probability that medications are correctly identified at the receiving institution, sending institutions are encouraged to provide each patient with a medication card to be carried by the patient that contains information concerning diagnoses, medication names, dosages, and frequency. Diabetes supplies, including diabetes medication, should accompany the patient.

The sending facility must be mindful of the transfer time in order to provide the patient with medication and food if needed. The transfer summary or medical record should be reviewed by a health care provider upon arrival at the receiving institution.

Planning for patients' discharge from prisons should include instruction in the long-term complications of diabetes, the necessary lifestyle changes and examinations required to prevent these complications, and, if possible, where patients may obtain regular follow-up medical care. A quarterly meeting to educate patients with upcoming discharges about community resources can be valuable. Inviting community agencies to speak at these meetings and/or provide written materials can help strengthen the community link for patients discharging from correctional facilities.

Discharge planning for the patients with diabetes should begin 1 month before discharge. During this time, applica-

tion for appropriate entitlements should be initiated. Any gaps in the patient's knowledge of diabetes care need to be identified and addressed. It is helpful if the patient is given a directory or list of community resources and if an appointment for follow-up care with a community provider is made. A supply of medication adequate to last until the first postrelease medical appointment should be provided to the patient upon release. The patient should be provided with a written summary of his/her current heath care issues, including medications and doses, recent A1C values, etc.

RECOMMENDATIONS

- For all interinstitutional transfers, complete a medical transfer summary to be transferred with the patient. (E)
- Diabetes supplies and medication should accompany the patient during transfer. (E)
- Begin discharge planning with adequate lead time to insure continuity of care and facilitate entry into community diabetes care. (E)

SHARING OF MEDICAL INFORMATION AND RECORDS

Practical considerations may prohibit obtaining medical records from providers who treated the patient before arrest. Intake facilities should implement policies that 1) define the circumstances under which prior medical records are obtained (e.g., for patients who have an extensive history of treatment for complications); 2) identify person(s) responsible for contacting the prior provider; and 3) establish procedures for tracking requests.

Facilities that use outside medical providers should implement policies and procedures for ensuring that key information (e.g., test results, diagnoses, physicians' orders, appointment dates) is received from the provider and incorporated into the patient's medical chart after each outside appointment. The procedure should include, at a minimum, a means to highlight when key information has not been received and designation of a person responsible for contacting the outside provider for this information.

All medical charts should contain CBG test results in a specified, readily accessible section and should be reviewed on a regular basis.

CHILDREN AND ADOLESCENTS WITH DIABETES

Children and adolescents with diabetes present special problems in disease management, even outside the setting of a correctional institution. Children and adolescents with diabetes should have initial and follow-up care with physicians who are experienced in their care. Confinement increases the difficulty in managing diabetes in children and adolescents, as it does in adults with diabetes. Correctional authorities also have different legal obligations for children and adolescents.

Nutrition and activity

Growing children and adolescents have greater caloric/nutritional needs than adults. The provision of an adequate amount of calories and nutrients for adolescents is critical to maintaining good nutritional status. Physical activity should be provided at the same time each day. If increased physical activity occurs, additional CBG monitoring is necessary and additional carbohydrate snacks may be required.

Medical management and follow-up

Children and adolescents who are incarcerated for extended periods should have follow-up visits at least every 3 months with individuals who are experienced in the care of children and adolescents with diabetes. Thyroid function tests and fasting lipid and microalbumin measurements should be performed according to recognized standards for children and adolescents (12) in order to monitor for autoimmune thyroid disease and complications and comorbidities of diabetes.

Children and adolescents with diabetes exhibiting unusual behavior should have their CBG checked at that time. Because children and adolescents are reported to have higher rates of nocturnal hypoglycemia (13), consideration should be given regarding the use of episodic overnight blood glucose monitoring in these patients. In particular, this should be considered in children and adolescents who have recently had their overnight insulin dose changed.

PREGNANCY

Pregnancy in a woman with diabetes is by definition a high-risk pregnancy. Every effort should be made to ensure that treatment of the pregnant woman with diabetes meets accepted standards (14,15). It should be noted that glycemic standards are more stringent, the details of dietary management are more complex and exacting, insulin is the only antidiabetic agent approved for use in pregnancy, and a number of medications used in the management of diabetic comorbidities are known to be teratogenic and must be discontinued in the setting of pregnancy.

SUMMARY AND KEY POINTS

People with diabetes should receive care that meets national standards. Being incarcerated does not change these standards. Patients must have access to medication and nutrition needed to manage their disease. In patients who do not meet treatment targets, medical and behavioral plans should be adjusted by health care professionals in collaboration with the prison staff. It is critical for correctional institutions to identify particularly high-risk patients in need of more intensive evaluation and therapy, including pregnant women, patients with advanced complications, a history of repeated severe hypoglycemia, or recurrent DKA.

A comprehensive, multidisciplinary approach to the care of people with diabetes can be an effective mechanism to improve overall health and delay or prevent the acute and chronic complications of this disease.

Acknowledgments— The following members of the American Diabetes Association/National Commission on Correctional Health Care Joint Working Group on Diabetes Guidelines for Correctional Institutions contributed to the revision of this document: Daniel L. Lorber, MD, FACP, CDE (chair); R. Scott Chavez, MPA, PA-C; Joanne Dorman, RN, CDE, CCHP-A; Lynda K. Fisher, MD; Stephanie Guerken, RD, CDE; Linda B. Haas, CDE, RN; Joan V. Hill, CDE, RD; David Kendall, MD; Michael Puisis, DO; Kathy Salomone, CDE, MSW, APRN; Ronald M. Shansky, MD, MPH; and Barbara Wakeen, RD, LD.

References

1. National Commission on Correctional Health Care: *The Health Status of Soon-to-Be Released Inmates: A Report to Congress.* Vol. 1. Chicago, NCCHC, 2002
2. Hornung CA, Greifinger RB, Gadre S: *A*

Projection Model of the Prevalence of Selected Chronic Diseases in the Inmate Population. Vol. 2. Chicago, NCCHC, 2002, p. 39–56
3. Puisis M: Challenges of improving quality in the correctional setting. In *Clinical Practice in Correctional Medicine*. St. Louis, MO, Mosby-Yearbook, 1998, p. 16–18
4. American Diabetes Association: Standards of medical care in diabetes (Position Statement). *Diabetes Care* 27 (Suppl. 1): S15–S35, 2004
5. American Diabetes Association: Screening for type 2 diabetes (Position Statement). *Diabetes Care* 27 (Suppl. 1):S11–S14, 2004
6. Krauss RM, Eckel RH, Howard B, Appel LJ, Daniels SR, Deckelbaum RJ, Erdman JW Jr, Kris-Etherton P, Goldberg IJ, Kotchen TA, Lichtenstein AH, Mitch WE, Mullis R, Robinson K, Wylie-Rosett J, St Jeor S, Suttie J, Tribble DL, Bazzarre TL: American Heart Association Dietary Guidelines: revision 2000: a statement for healthcare professionals from the Nutrition Committee of the American Heart Association. *Stroke* 31:2751–2766, 2000
7. American Diabetes Association: Nutrition principles and recommendations in diabetes (Position Statement). *Diabetes Care* 27 (Suppl. 1):S36–S46, 2004
8. American Diabetes Association: Hyperglycemic crisis in diabetes (Position Statement). *Diabetes Care* 27 (Suppl. 1):S94–S102, 2004
9. American Diabetes Association: Continuous subcutaneous insulin infusion (Position Statement). *Diabetes Care* 27 (Suppl. 1):S110, 2004
10. American Diabetes Association: Tests of glycemia in diabetes (Position Statement). *Diabetes Care* 27 (Suppl. 1):S91–S93, 2004
11. American Diabetes Association: National standards for diabetes self-management education (Standards and Review Criteria). *Diabetes Care* 27 (Suppl. 1):S143–S150, 2004
12. International Society for Pediatric and Adolescent Diabetes: *Consensus Guidelines 2000: ISPAD Consensus Guidelines for the Management of Type 1 Diabetes Mellitus in Children and Adolescents*. Zeist, Netherlands, Medical Forum International, 2000, p. 116, 118
13. Kaufman FR, Austin J, Neinstein A, Jeng L, Halvorson M, Devoe DJ, Pitukcheewanont P: Nocturnal hypoglycemia detected with the continuous glucose monitoring system in pediatric patients with type 1 diabetes. *J Pediatr* 141:625–630, 2002
14. American Diabetes Association: Gestational diabetes mellitus (Position Statement). *Diabetes Care* 27 (Suppl. 1):S88–S90, 2004
15. Jovanovic L (Ed.): *Medical Management of Pregnancy Complicated by Diabetes*. 3rd ed. Alexandria, VA, American Diabetes Association, 2000