

**COMMON CLINICAL DIAGNOSES AND CONDITIONS****DIABETES MELLITUS****INTRODUCTION**

Diabetes mellitus, a disorder of glucose homeostasis, is increasing in incidence and prevalence in pediatrics. Although Type 1 diabetes is more frequently diagnosed in children, there has recently been a significant rise in the incidence of Type 2 diabetes, particularly among adolescents in certain ethnic groups. The increasing incidence of Type 2 diabetes parallels the increasing incidence of obesity in the population. In addition to the medical complications associated with this chronic disease, both forms of diabetes have profound social and emotional impacts on the child. Pediatric hospitalists frequently encounter both children with new-onset diabetes and known diabetics requiring hospitalization because of poor disease control, illness, or elective procedures. Pediatric hospitalists are often in the best position to provide both immediate care for children with diabetes as well as to coordinate care across multiple specialties when necessary.

**KNOWLEDGE**

*Pediatric hospitalists should be able to:*

- Compare and contrast the epidemiology and pathophysiology of Type 1 with Type 2 diabetes attending to differences in impairment of glucose regulation and occurrence of ketoacidosis.
- List common alternate causes of hyperglycemia, such as stress, drug, or steroid-induced hyperglycemia and give examples of situations in which insulin administration is indicated.
- Discuss the importance of completing a thorough review of systems and family history and a full physical examination in order to identify polyendocrinopathies.
- Describe the role of obesity in the metabolic syndrome and Type 2 diabetes.
- List and explain the laboratory tests used to determine the type of diabetes, assess glucose control, and identify complications or co-morbidities of diabetes (such as glutamic acid decarboxylase, insulin auto antibodies, islet cell antibodies, hemoglobin A1c, thyroid panel, and celiac panel).
- Describe the initial management of diabetic ketoacidosis (DKA), attending to fluid delivery, electrolyte monitoring, mental status assessments, frequency of repeated blood testing, and appropriate patient placement based on local facility services.
- Define criteria for escalating care in the context of severe acidosis, altered mental status, and effects of electrolyte disturbances.
- Summarize the approach toward management and education after stabilization of DKA.
- Discuss the importance of including cultural and ethnic practices when creating a diabetes management plan.
- Discuss potential complications that may result from treatment, including hypoglycemia and electrolyte imbalances
- Identify the co-morbidities commonly associated with both Type 1 and Type 2 diabetes.
- Describe the different formulations of and delivery systems for insulin.
- Review the principles of carbohydrate counting.
- Discuss short and long-term prognostic factors associated with complications of poor glucose control.

**SKILLS**

*Pediatric hospitalists should be able to:*

- Correctly diagnose diabetes and its complications by efficiently performing an accurate history and physical examination, determining if key features of the disease are present.
- Correctly recognize and determine the cause of DKA in the patient with known diabetes by efficiently performing an accurate history and physical examination and ordering appropriate diagnostic tests.
- Order appropriate diagnostic testing for patients with new onset diabetes or diabetes exacerbations.
- Implement an evidence-based treatment plan.
- Correctly order insulin doses and delivery systems (such as continuous infusion, subcutaneous, and others) and other classes of drugs used in the treatment of diabetes.
- Recognize and manage both hyperglycemia and hypoglycemia with particular attention to complications that may arise during treatment.
- Recognize the indications for escalating levels of care and promptly initiate appropriate actions.

## COMMON CLINICAL DIAGNOSES AND CONDITIONS

- Identify the indications for in hospital consultation and obtain prompt consultation with an endocrinologist or other subspecialist as appropriate.
- Access available support services such as social work, child life, nutrition, and others to ensure a comprehensive management approach.
- Clearly articulate discharge criteria and outpatient long term management strategies for patients and the family/caregiver.
- Coordinate care and education for patients and the family/caregiver with other healthcare providers.
- Coordinate care with subspecialists and the primary care provider and arrange an appropriate transition plan for hospital discharge.

## ATTITUDES

*Pediatric hospitalists should be able to:*

- Communicate effectively with patients maintaining awareness of the unique needs of pre-adolescent and adolescent age groups.
- Discuss the importance of a healthy lifestyle in promoting optimal disease management with patients and the family/caregiver.
- Recognize that acute and chronic psychosocial factors impact the ability of patients and the family/caregiver to appropriately manage the disease.
- Recognize the importance of the multidisciplinary team approach in the management of diabetes in children, including involvement of the primary care provider, endocrinologist, nutritionist, social worker, psychologist, child life, and school representative.
- Maintain awareness of local populations which may have multiple risk factors for diabetes
- Collaborate with subspecialists and the primary care provider to ensure coordinated longitudinal care for children with diabetes.

## SYSTEMS ORGANIZATION AND IMPROVEMENT

*In order to improve efficiency and quality within their organizations, pediatric hospitalists should:*

- Lead, coordinate or participate in the development and implementation of cost-effective, safe, evidence-based care pathways to standardize the evaluation and management for hospitalized children with diabetes.
- Work with hospital administration, hospital staff, subspecialists and community organizations to affect system-wide processes to improve the transition of care from hospital to the ambulatory setting.
- Lead, coordinate or participate in system-wide processes within the hospital to promote therapeutic safety and vigilance in the use of hypoglycemic agents.
- Lead, coordinate or participate in educational events to promote awareness of and familiarity with national guidelines for management strategies, new therapeutic and pharmacologic agents and the use of medical devices to improve and monitor glucose homeostasis.