

Patient Self-Management of Diabetes Care in the Inpatient Setting: Pro

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Abstract

Patients should be allowed to manage their diabetes in the hospital. Diabetes mellitus is a common and sometimes difficult to control medical issue in hospitalized patients. Oftentimes patients who have been controlling their diabetes well as an outpatient are not allowed to continue this management on the inpatient setting, which can lead to hypo- and hyperglycemia. Involving the patient in his or her diabetes care, including self-management in select patients, may provide a safe and effective way of improving glycemic control and patient satisfaction. This may particularly benefit the dosing and coordination of meal-time

Keywords

self-management, inpatient, diabetes

Each year people with diabetes account for millions of inpatient days. Many of those patients are on insulin therapy having successfully managed their diabetes in the outpatient setting. Once admitted to the hospital, most have their diabetes care taken over by the admitting team. Patients' knowledge of their diabetes care may be ignored or not assessed. Outpatient physiologic insulin regimens are often replaced with sliding scale insulin given only when blood glucoses are elevated. This has led well-controlled patients to experience diabetic ketoacidosis or hyperglycemic crisis.¹

One particular challenge in the inpatient setting is coordinating blood glucose monitoring, ingestion of food, and insulin administration. Blood glucose monitoring is usually at set times: before meals, at bedtime, and sometimes during the night. Unlicensed assistive personnel or nurses may do this monitoring. Hospital meals may be scheduled at specific times or available as food on demand. Insulin is given by the nurse caring for the patient (or a medication nurse) based on an ordered time. Ideally, blood glucoses should be checked no more than 30 minutes before meals. Rapid-acting insulin should be given 10–15 minutes before the meal and no more than 20 minutes after the first bite of the meal. Although critical to optimizing blood glucose control, the coordination of these activities among 3 different health care team members can be difficult to achieve. In the best situation the activities may be well planned and coordinated; however, hospital nurses can testify to how the best made plans can be quickly derailed by emergent situations. For patients effectively managing their meal-time insulin at home, the lack of coordination can be a particularly frustrating and sometimes a

frightening experience, should it ultimately result in profound hypo- or hyperglycemia.

Current guidelines from the American Association of Clinical Endocrinologist (AACE), the American Diabetes Association (ADA), and the Endocrine Society are to administer basal, bolus, and correction insulin therapy in the hospital based on the physiologic needs of the patient.^{2,3} Though this is most often managed by the primary team, the Joint Commission and ADA recommend that patients who are able, be allowed to self-manage their diabetes while hospitalized.^{4,5} The American Society of Health-system Pharmacists provides some general guidelines from literature reviews.⁶

Most of the literature supporting self-management of diabetes in the hospital is among patients on continuous subcutaneous insulin infusion (CSII), or insulin pump.^{7,8} Cook et al. found fewer episodes of hypoglycemia and severe hyperglycemia among patients who continued on CSII compared to those whose pump was discontinued during hospitalization.⁷ The

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ADA supports patients continuing CSII as long as they are physically and mentally able to manage their pump, and are being cared for in a hospital with appropriate personnel and policies in place.⁴

Literature regarding self-management with insulin injections by patients is sparse, resulting in less clear guidelines. Determining which patients are candidates is very important. Discussion with the patient, and review of outpatient records, and discussion with the patient's outpatient diabetes care providers as available, will provide a start for determining appropriateness of self-management. Patients' knowledge should be assessed to determine their diabetes self-management competence. Patients with identified knowledge deficits, baseline poorly controlled diabetes, or an inability to manage their diabetes due to current illness or medication side effects are not candidates for self-management in the hospital.⁴ In addition, hospitalization provides an opportunity to address diabetes knowledge gaps.^{5,9-11}

Patients with the knowledge and physical ability should be allowed to self-manage when possible; these are often patients with type 1 and type 2 diabetes well controlled on basal bolus insulin as an outpatient.^{4,5} Patients self-managing their diabetes may have the best ability to ensure appropriate coordination of blood glucose monitoring, insulin administration, and consumption of nutrition.

For inpatient self-management to be effective and safe, a hospital policy must be in place and the patient must agree to follow the policy.⁴ Documentation of what the patient is allowed to do (by provider order) and what the patient is actually doing (by nursing notes) is vital to keep a clear record and determine changes needed in care.⁴ Because policies requiring the use of hospital meters and/or nursing to store insulin may be a barrier to the patient effectively coordinating care, guidelines with the minimal number of blood glucose tests using hospital meter and nursing documentation of patient administration of insulin along with defined policies with patient agreement allow for patient flexibility while covering liability.

For institutions without policies, allowing patients to request monitoring and dictate their insulin doses may improve their inpatient glycemic control. This is particularly important for patients with diabetes who administer rapid-acting insulin based on insulin to carbohydrate ratio. For example, orders may be written for rapid-acting insulin based on the patients' insulin to carbohydrate ratio, and patients can request the appropriate dose of insulin after assessing the amount of carbohydrates they plan to eat with the meal.

Clearly, circumstances of the inpatient setting are not the same as that of outpatient. The patient may have an infection or alterations in diet or activity, or be on medications significantly impacting glucose control. The primary team or a diabetes specialist must be involved in the ongoing diabetes care in collaboration with the patient. Patients often know more about their diabetes and insulin management than nursing and medical staff and must be involved in their own care with guidance from knowledgeable providers.^{9,12-15} Such

collaboration has been demonstrated to be effective in the outpatient setting.¹⁶⁻¹⁸

Additional research and guidelines are needed; however, in the interim guiding patients through the unique circumstances of the inpatient setting, incorporating their knowledge and abilities in caring for their own disease, and providing a structure for clear documentation could provide safe and effective glucose control for many inpatients with diabetes. Further research and guidelines are clearly needed to provide better direction of best practice in inpatient diabetes self-management.

Abbreviations

AACE, American Association of Clinical Endocrinologist; ADA, American Diabetes Association; CSII, continuous subcutaneous insulin infusion.

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