Glycemic Control in Non-Critically Ill Patients
Achieve tight glycemic control in non-critically ill patients with hyperglycemia.

Domain

Patient Care Processes:
Clinical processes that ensure delivery of high-quality care to individual patients

Aims

Effective:
An evidence-based practice that produces better outcomes than its alternative

Safe:
Delivery of care in a manner that minimizes any risk of harm to a patient

Process Attributes

$ Cost to Implement
The monetary resources required to implement this process

Moderate: In addition to the improvement effort, relies on additional personnel and/or technology

Time to Implement
The amount of time, from months to years, it will take on average to establish this process

1 to 2 years

Difficulty to Implement
The challenges of implementing this process

Moderately Challenging: Either involves multiple units or disciplines OR requires a substantial shift in culture and/or operations, but not both of these

Level of Evidence
The degree to which the actions in this process are supported by research and experience; based on the Cochrane scale

Some Evidence: Level III — Studies published with some control included
Details

Elements

- Routinely assess current processes and gaps in management of patients with diabetes and hyperglycemia, including barriers to change

- Agree on target glucose levels (e.g., \(< 180 \text{ mg/dL}\)) for different populations of patients in non-critical care settings, giving special attention to those with Type Diabetes; these may vary depending on the patient population and/or service area, and on local consensus

- Agree on protocols for management of patients with diabetes and hyperglycemia, including diet orders, point-of-care glucose testing, hemoglobin A1c testing, use of basal, nutritional, and correctional subcutaneous insulin, prevention and treatment of hypoglycemia, and appropriate use of consultant services, particularly for Type 1 diabetics

- Develop metrics for evaluation of glycemic control (e.g., patient-day weighted mean glucose, mean percent of glucose readings per patient between 70-180 mg/dL), hypoglycemia (e.g., percent patient-days with glucose \(< 70 \text{ mg/dL}\) and \(< 40 \text{ mg/dL}\)), insulin use patterns (e.g., percent of patients with hyperglycemia on basal-bolus insulin regimens), and other aspects of care

- Establish processes for measuring and reporting point-of-care glucose test results, insulin use, and other process measures (order set use, etc.)

- Develop order sets to facilitate compliance with protocols

- Develop and implement educational programs to teach principles, rationale, and management approaches consistent with above protocols to nurses, physicians, pharmacists, and allied personnel

- Refinement of order sets, protocols, policies, and algorithms based on results and feedback

- Institute high-reliability interventions, including reminders, assignment of responsibility to clinical personnel, and real-time reports of glucose control and process measures

Outcomes

- Harm: Decreased harm to patient (e.g., Harms per 100 patient days, as measured by the IHI Global Trigger Tool)
- Cost of Care: Decreased cost per inpatient case
- No Gap by Race, Ethnicity, or Language: No gap by race, ethnicity, primary language for key measures
- Reliability: Increased delivery of evidence-based care 100% of the time

Service Lines and Critical Functions

- Hospital Medicine, Adult
- Infection Prevention and Management
- Medication Management
- Nursing
- Surgical

Key Measures

- Mean percent of glucose readings per patient between 70-180 mg/dL
- Patient-day weighted mean glucose \(< 180 \text{ mg/dL}\)
- Percent of patient-days with any glucose \(< 70 \text{ mg/dL}\) and \(< 40 \text{ mg/dL}\)
Percent of patients with hyperglycemia on basal-bolus insulin regimen

Reasons and Implications

Importance for Patients and Families
Better detection and treatment of high blood sugar levels can reduce harm and improve care in hospitalized patients. This care may also lead to better management after hospital discharge by finding patients with unknown diabetes.

Requirement, Standards, Policies, and Guidelines

- American Diabetes Association

- National Quality Forum (NQF)
  Safe Practices for Better Healthcare 2009 Update
  Safe Practice 32: Glycemic Control

- The Joint Commission (TJC)

Financial Implications

- Expense reduction can occur due to decreased length of stay in the hospital.
- Expense increase can occur due to additional costs of program administration.

Prerequisites

None for this process

Resources

Additional Resources

- Society of Hospital Medicine Glycemic Control Resource Room

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