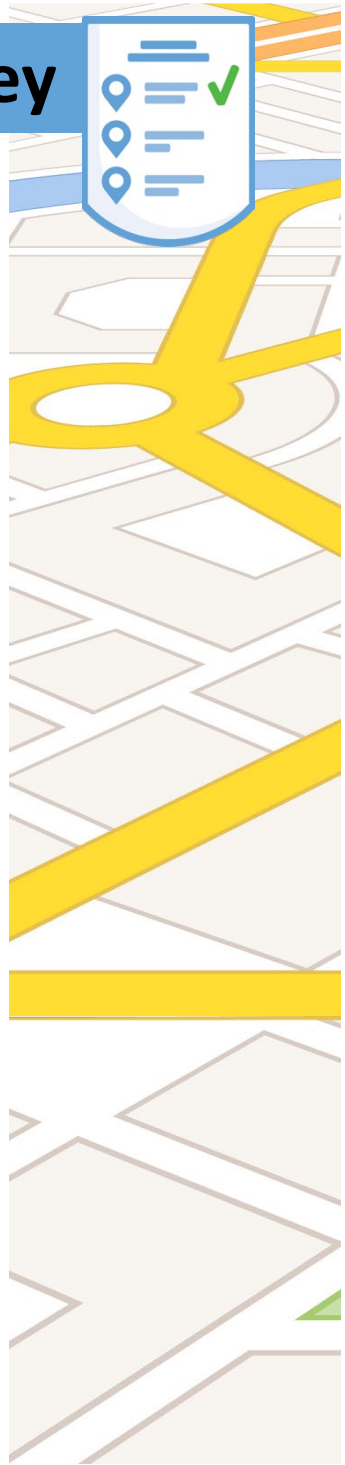
The Roadmap to Success:

Glycemic Management

HSAG HQIC

Preparing for Your Journey



Any successful journey begins with planning and preparation. Three key areas should be addressed before beginning any quality improvement or patient safety initiative.

Leadership Commitment

The success of a project can be determined by the level of commitment and support from leadership. It is important for hospital leaders to communicate a consistent, frequent message in support of the project. The executive project champion can establish accountability, dedicate resources, and break through barriers.

Project Champion

It is important to have a person(s) who is a significant influence with frontline staff, physicians, and other key personnel. Frequently, we think of a physician as a champion as they are instrumental in garnering provider buy-in and practice change. However, depending on the project, it can be any key personnel with the authority and skills to influence change, lead by example, and assist in essential messaging of the goals and vision for a project.

Multidisciplinary Project Team

The project team should consist of representatives from key areas throughout your facility with the skills, knowledge, and experience in their fields of expertise. A team member should possess strong communication skills, have a collaborative mindset, and show a commitment to change. It is vital to **have representation from frontline staff who will be impacted most by the change**. It is also important to keep the size of your team manageable. Remember, a team can have ad hoc members whose role is to provide expertise in a specific area for a short period of time.

For more information on team forming, access the following resources at www.hsag.com/hqic-quality-series:

- Quality and Safety Series Video on Team Forming
- Quality Improvement Workbook

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Science-Driven Prevention and Treatment—Step 1

Promote a multidisciplinary, coordinated, and systematic approach to inpatient glycemic management with input from frontline staff, nursing leadership, diabetes educators, and hospitalists—as well as departments of endocrinology, pharmacy, dietary, quality management, risk management, clinical education, case management, and laboratory.

Rationale: An adverse drug event (ADE) is an injury resulting from medical intervention related to a drug.[1] This includes medication errors, adverse drug reactions, allergic reactions, and overdoses. ADEs are among the most preventable causes of death in hospitals, and ADEs involving hypoglycemic agents comprise 57 percent of all ADEs, making this the largest drug class contributing to ADE-related harms. Fifty percent of all medication errors involve insulin—including one-third of all that are fatal—and approximately one-quarter of all safety incidents involving insulin result in patient harm. Rates of emergency department (ED) visits and subsequent hospitalizations for insulin-related hypoglycemia and errors were highest in patients 80 years or older, so it is important that, prior to discharge from the hospital setting, patients and families understand how they will safely administer insulin at home.[3]

	Strategies to Implement	Tools and Resources
☐	Screen patients with diabetes or a history of hyperglycemia on admission with A1C labs and monitor throughout hospitalization.	• Institute for Safe Medication Practices (ISMP) Medication Self-Assessment for High-Alert Medications: https://www.ismp.org/sites/default/files/attachments/2018-01/EntireAssessmentWorkbook.pdf • American Diabetes Association (ADA). Standards of Medical Care in Diabetes—2021: https://www.diabetes.org/newsroom/press-releases/2020/ADA-releases-2021-standards-of-medical-care-in-diabetes • Patient Safety Movement. Blood Glucose Management: https://community.patientsafetymovement.org/solutions/glucose-management-severe-hypoglycemia/
☐	Avoid sliding scale insulin regimens. Avoid use of insulin pens in the hospital to prevent ADEs and cross-contamination.	
☐	Develop and implement standardized protocols/order sets that include:[4,5] • Basal/bolus insulin with target glucose range identified for noncritically ill NPO (nothing by mouth) patients or those with poor oral intake. • Basal, prandial, and correction-treatment insulin with target glucose range identified for noncritically ill patients with adequate oral intake. • Specific goals based on patients' sensitivity to insulin[1] and clinical condition.[2] • Blood glucose monitoring using point-of-care testing (POCT). • Treatment of hyperkalemia. • Treatment of calcium-channel blocker overdoses with insulin. • Managing glucocorticoid therapy. • Monitoring and managing pregnant and post-partum patients with pre-existing diabetes. • Managing patients with symptoms inconsistent with current blood glucose value. • Communicating critical lab values.	

Promotion of Safer Care—Step 2

Educate providers and staff regarding standardized tools, protocols, and order sets.

Rationale: Glycemic ADEs can occur in patients with and without diabetes.

	Strategies to Implement	Tools and Resources
☐	Improve provider and staff knowledge regarding all standardized protocols, order sets, and use of specialized equipment for glycemic management. • Address knowledge gaps of providers and staff. • Educate staff regarding early signs and symptoms of hypoglycemia and hyperglycemia. • Use Tall Man Lettering (TML) to assist with differentiation of look-alike drug names. • Express combination insulins using the complete name and dose expression. • Have the pharmacist confirm appropriate insulin indication prior to verifying initial insulin orders.	• **Signs of hypoglycemia:** Shakiness, dizziness, sweating, hunger, fast heart rate, difficulty concentrating, confusion, irritability, anxiety, headache. American Diabetes Association: https://www.diabetes.org/search?keywords=hypoglycemia • **Signs of hyperglycemia:** high blood sugar, increased hunger or thirst, blurry vision, frequent urination, headache, fatigue. American Diabetes Association: https://www.diabetes.org/search?keywords=hyperglycemia • U.S. Food & Drug Administration. FDA List of Established Drug Names Recommended to Use TML: https://www.fda.gov/drugs/medication-errors-related-cder-regulated-drug-products/fda-name-differentiation-project
☐	Consider tracking the following metrics: • Blood glucose ≤50 • Blood glucose >50 and ≥70 • Blood glucose ≥180 • Diabetic ketoacidosis that is not present on admission • Administration of D50	

Tools and Resources:

- 5 Whys. https://www.hsag.com/en/hqic/quality-series/
- AACP. Medication Adherence Educator's Toolkit. https://www.aacp.org/sites/default/files/aacp_ncpa_medication_adherence_educators_toolkit_0.pdf
- AHRQ. Communication and Optimal Resolution (CANDOR) Toolkit. https://www.ahrq.gov/patient-safety/capacity/candor/modules.html
- AHRQ. How to Create a Pill Card. https://www.ahrq.gov/patients-consumers/diagnosis-treatment/treatments/pillcard/index.html
- AHRQ. Whole-Person Care Transitional Planning Tool. https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/systems/hospital/medicaidreadmitguide/mcaidread_tool9_trans_care.docx
- AHRQ. Working With Patient and Families as Advisors. https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/systems/hospital/engagingfamilies/strategy1/Strat1_Implement_Hndbook_508_v2.pdf
- American Diabetes Association—15. Diabetes Care in the Hospital: Standards of Medical Care in Diabetes. http://care.diabetesjournals.org/content/42/Supplement_1/S173
- American Diabetes Association. Diabetes Spectrum. (2005). Detection, prevention, and treatment of hypoglycemia in the hospital. https://spectrum.diabetesjournals.org/content/18/1/39
- Association of Clinicians for the Underserved (ACU)—Patient education materials. http://clinicians.org/our-issues/acu-diabetes-patient-education-series/
- BOOST. Project BOOST. Better Outcomes by Optimizing Safe Transitions Implementation Guide. https://www.hospitalmedicine.org/globalassets/professional-development/professional-dev-pdf/boost-guide-second-edition.pdf
- CDC. Self-Management Education: Learn More. Feel Better. https://www.cdc.gov/learnmorefeelbetter/programs/diabetes.htm
- Cleveland Clinic. Discharge Checklist for People with Diabetes. https://my.clevelandclinic.org/health/articles/11716-discharge-checklist-for-people-with-diabetes
- Cleveland Clinic. Hyperglycemia. https://my.clevelandclinic.org/health/diseases/9815-hyperglycemia-high-blood-sugar
- Disparities Solution Center. Addressing Disparities in Diagnostic Errors & Medication Safety in the Home. https://5536401f-20a1-4e61-a28e-914fb5dcef51.filesusr.com/ugd/888d39_deb78f570d574e29819c44682946f669.pdf
- IHI Global Trigger Tool for Adverse Events. https://oig.hhs.gov/documents/toolkits/933/IHI_Guidance_Document_-_Hospital_Trigger_Tool.pdf
- ISMP Medication Self-Assessment for High-Alert Medications. https://www.ismp.org/sites/default/files/attachments/2018-01/EntireAssessmentWorkbook.pdf
- Mayo Clinic. Diabetic hypoglycemia. Symptoms of hypoglycemia. https://www.mayoclinic.org/diseases-conditions/diabetic-hypoglycemia/symptoms-causes/syc-20371525
- MD Anderson Center. Hypoglycemia Management. https://www.mdanderson.org/content/dam/mdanderson/documents/for-physicians/algorithms/clinical-management/clin-management-hypoglycemia-web-algorithm.pdf
- Minnesota Hospital Association. Road Map to a Medication Safety Program. https://www.mnhospitals.org/Portals/0/Documents/ptsafety/ade/Medication-Safety-Roadmap.pdf
- National Institute of Diabetes and Digestive and Kidney Disease—Managing Diabetes. https://www.niddk.nih.gov/health-information/diabetes/overview/managing-diabetes/4-steps#page2
- Office of Disease Prevention and Health Promotion. National Action Plan for ADE Prevention. https://health.gov/our-work/national-health-initiatives/health-care-quality/adverse-drug-events/national-ade-action-plan
- Patient Safety Movement. Blood Glucose Management. https://community.patientsafetymovement.org/solutions/glucose-management-severe-hypoglycemia/
- Patient Safety Movement. Hand-off Communications. https://patientsafetymovement.org/wp-content/uploads/2016/02/APSS-6_HOC-7.pdf
- Preventing Adverse Drug Events: Individualizing Glycemic Targets Using Health Literacy Strategies is an eLearning course that teaches health care providers how to reduce hypoglycemic adverse drug events (ADEs) in patients with diabetes. https://health.gov/hcq/trainings/ade-diabetes-agents/Intro-Welcome/slide01.aspx (does not work with Internet Explorer) and https://health.gov/hcq/training-prevent-ade.asp
- SBAR. http://www.ihi.org/resources/Pages/Tools/SBARToolkit.aspx
- Society of Hospital Medicine. Multicenter Medication Reconciliation Quality Improvement Study (MARQUIS) Toolkit. https://www.hospitalmedicine.org/globalassets/clinical-topics/clinical-pdf/shm_medication_reconciliation_guide.pdf
- Teach Back. https://www.hsag.com/en/medicare-providers/care-coordination/teach-back/
- U.S. Food & Drug Administration. FDA List of Established Drug Names Recommended to Use Tall Man Lettering (TML). https://www.fda.gov/drugs/medication-errors-related-cder-regulated-drug-products/fda-name-differentiation-project

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  ADA. Living Standards Updates. http://care.diabetesjournals.org/living-standards
- AMA. Stepsforward™. Medication Adherence. https://edhub.ama-assn.org/steps-forward/module/2702595
- American Nurse. Quality improvement in action: revised critical blood glucose value. https://www.myamericannurse.com/quality-improvement-in-action-revised-critical-blood-glucose-value/?utm_source=sendinblue&utm_campaign=Nurseline_20210427&utm_medium=email
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