

PROVINCIAL DIABETES INPATIENT MANAGEMENT INITIATIVE IMPROVED GLYCEMIC MANAGEMENT IN HOSPITAL

PROJECT BULLETIN - FALL 2016

1 in 5 adult patients admitted to hospital in Alberta has diabetes. When compared to their non-diabetic counterparts, patients with diabetes have longer hospital stays.

BACKGROUND

The DON SCN is leading a provincial initiative with the goal of improving and standardizing how patients with diabetes are cared for in Alberta's hospitals.

This is a multipronged quality improvement initiative, in collaboration with AHS provincial Pharmacy, AHS provincial Nutrition and Food Services, and the Zone operational areas.

It involves a multidisciplinary approach to diabetes management, with the patient and family as key team members.



IN THIS ISSUE UPDATES FOR

**Basal Bolus
Insulin Therapy
(BBIT)** Pgs.
2-4

**Insulin Pump
Therapy (IPT)** Pg.
4

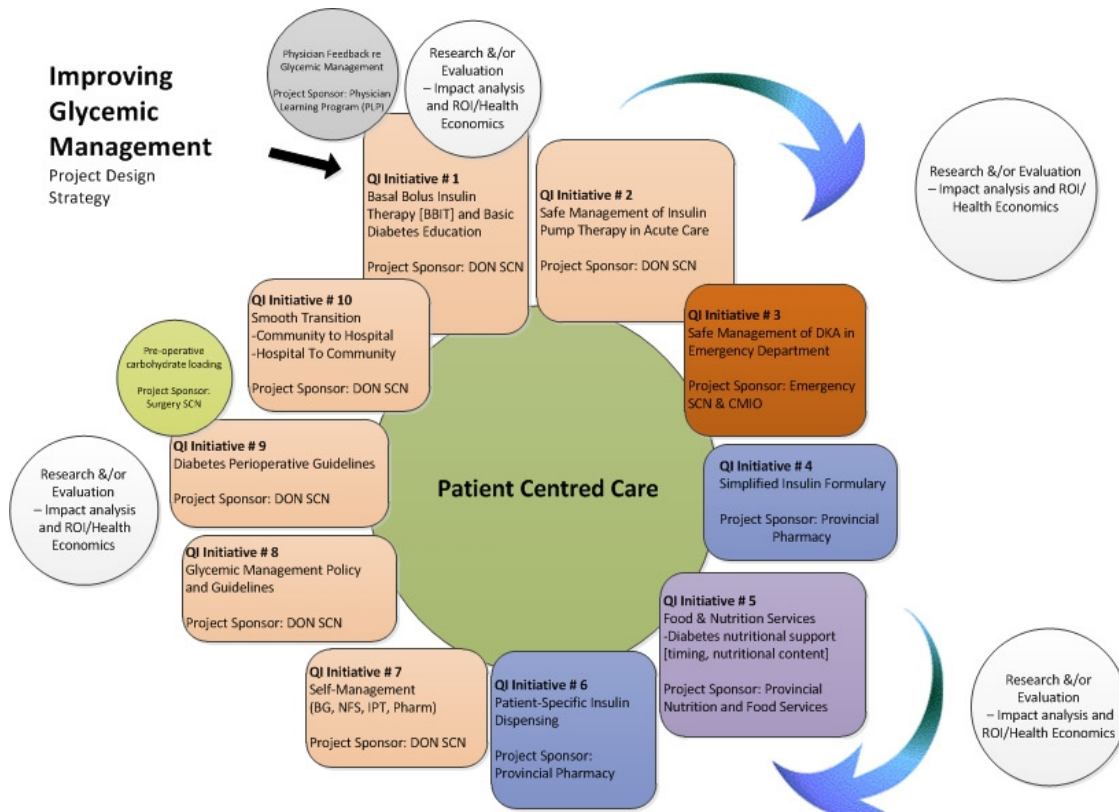
**Diabetic
Ketoacidosis
(DKA)** Pg.
4

**Reducing Insulin
Errors** Pg.
5

**Inpatient
Glycemic
Management** Pg.
5

**Point of Care
Testing** Pg.
5

**Nutrition and
Food Services** Pg.
6



EVIDENCE

Hyperglycemia (high blood sugar) increases the risk of complications including: post-operative infections, pneumonia, diabetic ketoacidosis (DKA), and delays wound healing.

Literature suggests that patients with diabetes experience hyperglycemia over 1/3 of the time when they are in hospital. Alberta data is consistent with this figure; with hyperglycemia experienced approximately 36% of the time blood sugars are tested.

Improving blood sugar control in hospital has been associated with shorter length of stay in hospital and decreased rates of readmission.



National Guidelines recommend blood glucose targets of 5-10 mmol/L for patients with diabetes in hospital.

For more information visit the Canadian Diabetes Association (CDA) Clinical Practice Guidelines (CPGs) for In-Hospital Management of Diabetes @ <http://guidelines.diabetes.ca/Browse/Chapter16>

IMPLEMENTATION AND SUSTAINABILITY OF BASAL BOLUS INSULIN THERAPY (BBIT) AND IMPROVED GLYCEMIC MANAGEMENT

BBIT is a way of ordering multiple daily injections of subcutaneous (sc) insulin that better replicates how our body naturally produces insulin.

BBIT is a proactive approach that allows clinicians to customize insulin regimens based on the unique insulin needs of each patient. It also minimizes the fluctuations in blood glucose levels, reduces episodes of both hyperglycemia and hypoglycemia, and supports keeping a patient's blood sugars within the target range of 5-10 mmol/L. BBIT has been shown to be an effective way to manage patients' diabetes during their hospital stay, and is similar to how many patients manage their diabetes in the community.



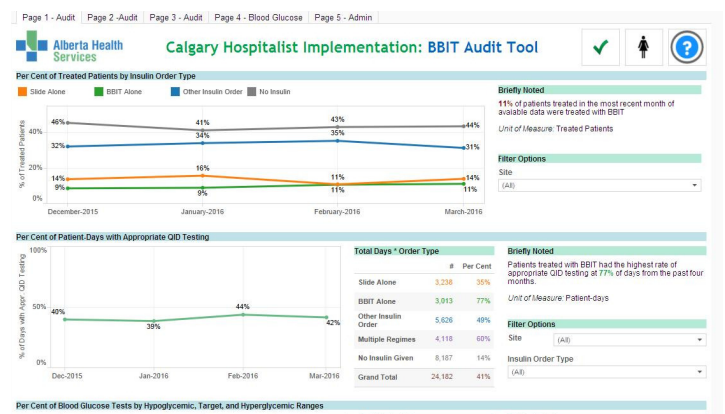
Graphic by Stephen Webster
RN, Unit 61, FMC

Sliding Scale Insulin (SSI) continues to be commonly used in the treatment of diabetes within the inpatient setting. Unfortunately, the use of the "sliding scale" regime treats hyperglycemia after it has occurred. It is not individualized to the patient and can result in large blood glucose fluctuation throughout the day. These fluctuations make the patient feel unwell, and increase morbidity, mortality and length of stay. SSI does not align with current practice guideline recommendations.

AUDIT DATA TO SUPPORT THE UPTAKE AND SUSTAINABILITY OF BASAL BOLUS INSULIN THERAPY AT EARLY ADOPTER SITES

An audit tool, consisting of several indicators, has been created to support early adopter sites in the uptake and sustainability of the clinical practice change to basal bolus insulin therapy.

Shown right is a sample of a few of the indicators populated in Tableau for front line clinicians to access and utilize with their teams.



BBIT (CONT'D)

EARLY ADOPTER SITES



Canmore Hospital and Oilfields Hospital in Black Diamond (2 rural sites in Calgary Zone) were the first early adopter sites, both implementing at the beginning of this year.

Chinook Regional Hospital, in Lethbridge implemented BBIT and improved glycemic management across their site in April 2016.

All 3 hospitals have identified PHYSICIAN, NURSING, PHARMACY AND ADMINISTRATIVE champions to work collaboratively to support the implementation of this clinical practice change. Each site is currently collecting data that will populate an audit tool in Tableau, so the teams can see the outcomes of their practice changes.

The above 3 early adopter sites will also be providing feedback on the provincial BBIT order set and the accompanying blood glucose record. These 2 forms will then be revised (if necessary), and made available for provincial ordering at the end of September.

PARTNERING WITH CALGARY ZONE HOSPITALIST PROGRAM

Every day in Calgary, the Hospitalists care for over 800 patients in the hospital. These clinicians have expressed an interest in glycemic optimization. The multidisciplinary site champions, connected to the Hospitalist program, across four sites in Calgary came together for a Train the Trainer (TTT) day on April 8th, 2016 at the South Health Campus auditorium. The site specific teams have been busy over the past few months educating their peers and collaborating on their implementation strategies.

The DON SCN provincial team is excited to be working with and supporting the Calgary Zone Hospitalist group in their **Glycemic Optimization initiative**.

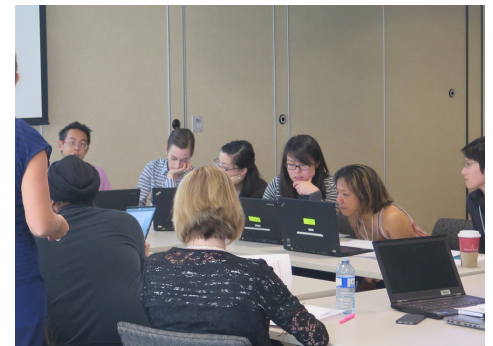


Multidisciplinary champions from hospitals within the Calgary Zone gathered to learn more about the reimplementation of basal bolus

*Great day! THX very much.
I'm a convert to BBIT. 😊*



Dr. Karmon Helmle (Endocrinologist) and Kelly Mrklas (Knowledge Translation Scientist) discuss solutions to identified barriers to the implementation of this clinical practice change



Learning Together! Calgary clinicians learn how to enter BBIT orders into Sunrise Clinical Manager

Thanked! this workshop was very useful, informative, and interesting!

*Great Good presentation of the why!
Thanks*

BUILDING OTHER PARTNERSHIPS

EDMONTON ZONE

The DON provincial team has connected with both the Covenant and AHS sites in Edmonton Zone, and is looking forward to collaborating to improve glycemic management at their respective sites.



The provincial diabetes inpatient management team has partnered with the CoACT initiative to be aligned at the unit level. There are many CoACT elements that support the implementation of

improved glycemic management. Our two teams are now formalizing the intersections of our initiatives, so these can be shared with new operational teams considering the implementation of BBIT and improved glycemic management. Both initiatives also focus on a multidisciplinary approach to care, with the patient as a key member of the multidisciplinary team, in the centre of the planning of the care being provided.

E-SIMULATION

We are pleased to be working with AHS E-Simulation to explore opportunities for the multidisciplinary team to use simulation to support changes in practice that will improve glycemic management for patients in hospitals with diabetes.

SAFE MANAGEMENT OF INSULIN PUMP THERAPY IN HOSPITAL

The safe management of insulin pump therapy (IPT) in hospitals is another aspect of the DON SCN provincial diabetes inpatient management initiative. The focus of this initiative over the coming year will be on implementation of new provincial guidelines at all hospitals in Alberta caring for patients that manage their diabetes with an insulin pump.

To introduce the new guidelines, forms and directions for self-management of IPT in hospital, a webinar was hosted on April 28 2016 by Dr. Julie McKeen (Endocrinologist in Calgary Zone and Physician Lead on the provincial diabetes inpatient management initiative) and Isabelle Emery (Patient Advisor, DON SCN).



Click here to access the guidelines.

The recording of the webinar can be accessed by clicking here.

Guidelines for the Safe Management of Insulin Pump Therapy in Hospital

Diabetes Obesity Nutrition Strategic Clinical Network

SAFE MANAGEMENT OF DIABETIC KETOACIDOSIS (DKA) IN THE EMERGENCY DEPARTMENT

The Emergency SCN, along with the Chief Medical Information Office, have created a comprehensive document for the **Safe Management of (Adult) DKA in Alberta Emergency departments.**

This is a provincial Clinical Knowledge Topic created as part of the collaborative initiative between AHS Clinical Knowledge & Content Management (CKCM) and the Strategic Clinical Networks™ (SCN).

This initiative aims to develop provincial clinical guidance and practice standards to be enabled by the future AHS Provincial Clinical Information System solution.

For AHS employees; the DKA document can be found on the Clinical Knowledge & Content Management (CKCM) Service webpage on Insite, under Knowledge Topics.

SIMPLIFIED FORMULARY AND PATIENT SPECIFIC DELIVERY OF INSULIN IN HOSPITAL

Provincial pharmacy is leading two quality improvement initiatives:
(i) Simplified Insulin Formulary and (ii) Patient Specific delivery of Insulin.

Both initiatives will support reducing errors associated with the use of insulin - consistently one of the top 3 causes of medication errors in hospitals.

Over the past year AHS Pharmacy has supported all the AHS hospitals in their transition to the new formulary. They have also supported most sites in their implementation of patient specific delivery, primarily the transition to disposable insulin pens.



AHS staff can find more information on InSite, by searching Diabetes Management.

PROVINCIAL (ADULT) INPATIENT GLYCEMIC MANAGEMENT POLICY AND PROTOCOLS FOR HYPO AND HYPERGLYCEMIA MANAGEMENT

A provincial multidisciplinary working group, with representation from AHS and Covenant, across 5 Zones, has been meeting bi-weekly since March 2016 to create provincial documents that will support improved glycemic management in hospital. The glycemic management policy aligns with national standards, and outlines strategies for supporting patients to achieve their glycemic targets.

The protocols for hypo and hyperglycemia management aim to support staff in early recognition and treatment, to prevent negative outcomes for patients. Thank you to the working group for their time and invaluable input.

The documents that have been created to date will be sent for consultation with numerous stakeholders in the Fall, before being put forward to the AHS Executive Leadership Team for approval.

COLLABORATING WITH PROVINCIAL LAB POINT OF CARE TESTING (POCT) NETWORK

The provincial inpatient management team is pleased to be collaborating with the provincial POCT Network on a number of fronts. The POCT Network has oversight of the glucose meters used in all hospitals across Alberta.

Currently a pilot is being conducted at Chinook Regional Hospital, in which additional alerts are added onto their glucometers. The alerts are set at **3.9mmol/L** to support early treatment of a patient with hypoglycemia, and at **18.1mmol/L** to support early intervention for a patient with hyperglycemia.

These alerts are in addition to the alerts that are currently present on all glucometers to alert providers when the patient's blood sugar is critically high or critically low.

The additional alerts are aligned with the provincial BBIT order set, and also with the provincial policy and accompanying protocols for hypo and hyperglycemia management that are being developed.

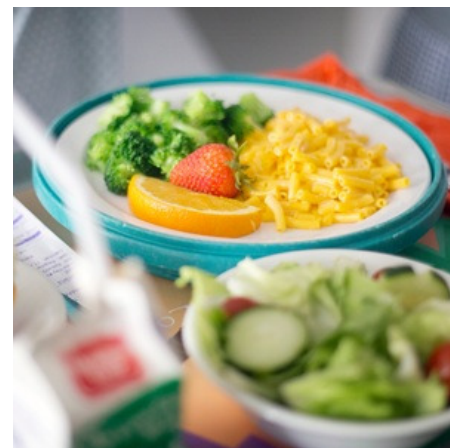
The pilot at Chinook Regional Hospital in Lethbridge will inform the addition of alerts at other hospitals throughout the province.

IMPROVING FOOD AND NUTRITIONAL INFORMATION FOR PATIENTS MANAGING THEIR DIABETES IN HOSPITAL

Submitted by Janet Nielsen, RD
Program Lead, Standards and Practice, Nutrition Services

Nutrition and Food Services (NFS) has participated in the Provincial In-Patient Diabetes Management Initiative of the DON SCN since its initiation. Primarily, NFS has been focused on improving the patient's ability to properly control their diabetes by ensuring appropriate menus and menu choices for patients or residents with diabetes. This has involved a multi-pronged approach based on the best evidence and a survey of adult in-patients with diabetes carried out by the DON SCN in summer 2014 that indicated the following themes related to diet:

- Some patients wanted carbohydrate information to help them manage their diet.
- Many patients EXPECTED sugar free foods and no juice.
- Patients didn't agree that a regular diet that is well planned can meet the needs of those with diabetes ... they believed that they needed a "special" diet e.g. sugar free foods.



NFS currently has menus tailored for patients with diabetes. Steps have been taken to address the issues identified resulting in changes to patient menus at hospitals across the province.

- Juice has been removed as a standard item for all patients with diabetes, although it can be chosen if a patient wishes it or is eating poorly.
- Diet yogurt and diet pudding choices will become available for patients in the fall of 2016.
- Most sweet or baked desserts will not be provided to patients with diabetes. For example, orange citrus cake and angel food cake with strawberry compote were removed as standard choices on the menu for dessert.
- Artificial sweeteners, diet jams and diet syrup continue to be available.

The main focus has been to provide carbohydrate information to patients who have the knowledge and ability to count their "available carbohydrate" and match it to their insulin. Different tools have been developed for sites without and with computerized menu systems as follows:

- For sites **without** computerized Menu Software (mainly smaller sites), a paper based document titled, "*Carbohydrate Content of Foods Served in Hospital*", was developed. It indicates the available carbohydrate values of menu items in the portion sizes served in the hospital. This document will shortly be added to InSite as a link from the Nutrition & Food Services Education page, as well as linked as a resource on DON SCN webpage.
- For sites **with** computerized menu software (mainly larger sites), providing available carbohydrate values as information on the menus was not as easy as expected. There were limitations of the software itself and the menu documents provided to patients lacked sufficient space. But with some adaptations, it was determined that available carbohydrate for most menu items could be added to the menus that patients receive to choose their food and on the tray tickets provided with the meals. Implementation of the use of available carbohydrate on tray tickets will occur shortly in a staggered fashion for Calgary Zone. Evaluation of the tools is planned for 2017.

For more information, contact Janet Nielsen, RD, Program Lead, Standards and Practice, Nutrition Services at janet.nielsen@ahs.ca.

For more information about the DON SCN provincial diabetes inpatient management initiative; please contact us at:

DIABETESOBESITYNUTRITION.SCN@AHS.CA

Content provided by Glenda Moore, Manager, DON SCN and Project Lead for the Diabetes Inpatient Management Initiative.