Medical Directive

Title: DM Medication Management **Number:** CBFHT 11

Activation Date: April 1, 2021 **Review due by:** April 1, 2024

Sponsoring/Contact Person(s)
(name, position, contact particulars):

Maria Rumeo-Lisi, RD (289) -499-2239 ext. 232
Trina Virgo, Administrative Assistant (289) -499-2239 ext. 221
Bryanna Tibensky, RPh (289)-499-2239

Order and/or Delegated Procedure:

Appendix Attached: ☒ **Yes** ☐ **No**
Title: Appendix 1, Appendix 2, Appendix 3, Appendix 4, Appendix 5

Registered Dietitians (RD's, CDE) and the Pharmacist (R Ph), Health Educator (CDE) or any health care provider with CDE designation, within the Central Brampton FHT may perform and/or initiate the following Controlled Acts and Procedures:

1. Prescribe diabetes monitoring devices and supplies (see Appendix 5).
2. Prescribe diabetes Syringes, Needles, and Insulin Pen Device supplies for the purpose of administering insulin.
3. Perform Capillary Blood Glucose Monitoring (CBGM testing) (see Appendix 5)
4. Adjust, hold, and discontinue anti-hyperglycemic agents (see Appendix 1, Appendix 3)
5. Adjust, hold, and discontinue insulin (see Appendix 1, Appendix 3)
6. Start long, short or intermediate acting insulin (after discussion with MD) (see Appendix 1, Appendix 2, and Appendix 3)
7. Start oral antihyperglycemic agents (see Appendix 1, Appendix 2, and Appendix 3)
8. Phone or write a prescription as per usual standard after discussion with family physician or on call physician
9. Manage untoward outcomes (see Appendix 4)

Recipient Patients:

Appendix Attached: ☐ **Yes** ☒ **No** **Title:**

1. Patients of the Central Brampton FHT family Physicians >18 years of age who have been diagnosed with type 2 Diabetes.

Authorized Implementers:

Appendix Attached: ☒ **Yes** ☐ **No**
Title: Appendix 6 : Implementer Approval Form

1. Central Brampton FHT Registered Dietitians (RD's, CDE)
2. Central Brampton FHT Health Educator (CDE)
3. Central Brampton FHT Pharmacists (RPh)

Following review of this directive, the attached 'Implementer Approval Form' (Appendix 6) must be signed by the FHT member indicating acceptance of this medical directive.

Indications:

Appendix Attached: ☐ **Yes** ☒ **No**

1. Verbal consent received from the patient and or substitute decision maker
2. Known Type 1 or type 2 Diabetic patients with a confirmed diagnosis, and prescription on file written by the family physician that identifies a target blood glucose range.

Contraindications:

1. No verbal consent from patient or substitute decision maker to implement this medical directive.
2. Gestational Diabetes
3. Insulin Pump Therapy
4. Patients <18 years of age
5. Allergy or contraindication to prescribed medication (see Appendix 4)
6. Patients who have been identified by the Physician as not being a candidate for management under this medical directive.

Consent:

Appendix Attached: ☐ **Yes** ☒ **No**

1. Verbal consent to be received from patient and/or substitute decision maker prior to the implementation of care.

Guidelines for Implementing the Order / Procedure:

Appendix Attached: ☐ **Yes** ☒ **No**

1. Verbal consent is to be received from patient and/or substitute decision maker.
2. Patients chart is reviewed for most recent laboratory investigations, appropriate laboratory tests are requested.
3. Review Physician's orders for antihyperglycemic medication type, dose, and frequency previously prescribed.
4. Instruct patient as to indications for medication adjustments, make adjustments, and provide patient health teaching.
5. Establish follow up communication plan and provide written instructions for dose adjustments.
6. Communicate with family physician using e-form and/or consult note describing details RE: medication changes and note in patients EMR record.

Documentation and Communication:

Appendix Attached: ☐ **Yes** ☒ **No**

1. Documentation in patient's EMR needs to include the date, time, name and number of the directive, name of the implementer, name of the physician authorizer responsible for the directive and details regarding any dose adjustments made (medication type, dose, and frequency).
2. Any patient education provided, concerns disclosed by patient or noted by care provider as well as response to treatment.
3. Documentation RE: follow up plan to patients individualized care plan.
4. Document any prescriptions issued for monitoring devise, or supplies and teaching given in relation to such.

Review and Quality Monitoring Guidelines:	**Appendix Attached:** ☐ **Yes** ☒ **No**

1. If any party to this directive identifies quality issues relating to patient care they should be directed to the Lead Physician and or Executive director of CBFHT. Follow up to any identified concerns will be the responsibility of the Lead Physician and or Executive Director of CBFHT.
2. Quality indicators will be reviewed and changes made prior to medical directive renewal, and as otherwise deemed necessary.

Administrative Approvals (as applicable):	**Appendix Attached:** ☐ **Yes** ☒ **No** **Title:**

Not Applicable

Approving Physician(s)/Authorizer(s):	**Appendix Attached:** ☒ **Yes** ☐ **No** **Title: Appendix 7**

Physicians listed on the Authorizer Approval Form (see Appendix 7 for attached list).

Appendix 1

List of Medications Included in this Directive

(Implementation to follow the most recent Canadian Diabetes Association Guidelines– see section Pharmacologic Glycemic Management of Type 2 Diabetes in Adults, http://guidelines.diabetes.ca/cpg)

Oral Antihyperglycemic Agents:

Metformin
Glyburide
Gliclazide
Glimepiride
Repaglinide
Nateglinide
Pioglitazone
Rosiglitazone
Acarbose
Sitagliptin
Saxagliptin
Alogliptin
Linagliptin
Canagliflozin
Dapagliflozin
Empagliflozin
Ertugliflozin

Insulins:
Rapid-Acting: Lispro, Aspart, Glulisine
Short-Acting: Humulin R, Novolin Toronto
Intermediate Acting: Humulin N, Novolin NPH
Long-Acting: Detemir (Levemir), Glargine (Basaglar, Lantus, Toujeo), Degludec (Tresiba)
Pre-Mixed:
- NovoMix (aspart/aspart protamine) 30/7-
- Humalog Mix (lispro/lispro protamine) 25/75, 50/50
- Novolin (Toronto/NPH) 30/70, 40/60, 50/50
- Humulin 30/70

GLP-1 Agonists:
Liraglutide
Exenatide
Lixesenatide
Semaglutide
Dulaglutide

Products with combinations of the above medications

Appendix 2

Summary of Therapeutic Notes for Oral Antihyperglycemic Agents/Injectable Agents (CDA):

Key Adverse Effects:
- Gastrointestinal upset, loose bowels (biguanide, alpha glucosidase inhibitor, GLP-1 analogs)
- Hypoglycemia (secretagogues – less with gliclazide, glimepride, nateglinide and replaglinide than with glyburide)
- Edema, fluid retention (insulin sensitizers)
- Moderate weight gain (insulin secretagogues, insulin sensitizers)

Key precaution/contraindications:
- Hepatic disease (glyburide, biguanide, insulin sensitizers, DPP4I, GLP-1 analogs)
- Significant renal insufficiency (biguanide, sulfonylureas, DPP4I. GLP-1 analogs)
- Significant cardiac failure (biguanide, insulin sensitizers, DPP4I, GLP-1 analogs)

Appendix 3

Notes:

1. The RPh, or RD will adhere to the Indications and Contraindications outlined in this medical directive.
2. The usual total daily requirement ranges from 0.5-1 unit per kg of body weight.
3. Most patients new to insulin are started at 0.1 – 0.3 units per kg/d or 5-10 units QHS however, individual consideration (e.g. during pregnancy) needs to be assessed. Those patients who are hypoglycemic unaware, or have a fear of insulin-induced hypoglycemia can be initiated on a smaller dose.
4. Under certain circumstances patients may need insulin adjusted greater or less than evidence-based recommendation of 5 –10% total daily dose (TDD) (please see Table 3: Factors that Affect Glycemic Levels (p.6)).
5. Determine a plan for the frequency of communication with the RPh, or RD for further adjustments. Adjust insulin by 5-10% of total daily dose (TDD) and adjust every 3-4 days. Alternatively, for basal insulin, one can increase the dose by 1 u daily until fasting plasma glucose target is reached. Change one type of insulin at a time unless this change could cause hypoglycemia then adjust accordingly.
6. In the event a patient has high and low CBGM results, always adjust insulin for hypoglycemia first.

Guidelines for Insulin Adjustment with basal/bolus regimen:

1. If a patient's capillary blood glucose trends too low or high, adjust insulin. Correct low blood sugars first.
2. Patients on basal/bolus regimen must be motivated and cognitively able to identify glucose patterns per CBGM results.
3. Patients will attend an individual session or group session with the R Ph, or RD to learn the concepts of basal/bolus.
4. Initiation of basal/bolus regimen per the physician insulin recommendation: a. When Humulin N/NPH is used as the basal dose, it usually represents approximately 40% of the total daily dose (TDD) with the remaining 60% of the TDD as short or rapid insulin divided through the day to match food intake. b. When Glargine/Detemir is used as the basal dose, it usually represents approximately 50% of the TDD with the remaining 50% of the TDD as short or rapid insulin divided through the day to match food intake.
5. A follow up appointment with the R Ph, RD, or physician is usually arranged in approximately 2-4 weeks to assess the patient's ability to manage glucose levels and to ensure appropriate insulin dose adjustments have been made by the patient. Patient is encouraged to document CBGM results QID for 2-4 weeks and bring results to the appointment. If needed call RN, RPh, Interprofessional Guide – Medical Directive &/or Delegation Template Page 22 RD, or physician if blood sugars outside of target discussed or if patient uncertain as to appropriate adjustment of insulin.
6. Using CBGM results, identify the insulin action that influences the set of blood sugars (refer to Clinical Considerations for Insulin Adjustment p.19-20). Change identified insulin dose by 5 to 10 % of TDD for 2-3 days and then reassess CBGM again for further adjustments needed to attain target blood glucose.

Appendix 4

Management of Untoward Outcomes

Hypoglycemia

Hypoglycemia is a low blood glucose level, usually below 4.0 mMol/L, but symptoms may occur with slightly higher glucose levels if the patient has long standing hyperglycemia. These symptoms include dullness, headache, irritability, trembling, shaking, dizziness, perspiration, hunger, pale skin, weakness, drowsiness, personality change, fast heart rate, and numbness to lips or tongue. Hypoglycemia is relieved with administration of fast-acting carbohydrates. Severe hypoglycemia can be treated with Basquami which is a nasal spray that can be used or Glucagon taken subcutaneously when the patient is non-cooperative or unable to ingest carbohydrates.

Controlled Act or Procedures Included in this Medical Directive:

If the patient's physician will prescribe a Glucagon kit, the RPh or RD will provide the following education to the patient's spouse or family regarding the administration of Glucagon in order to ensure that the patient's family/ support person is familiar with its use prior to a hypoglycemic emergency:

1. For adults give 1 mg (1 unit) by subcutaneous, or IM injection.
2. Preparation and administration directions for Glucagon:
    a. Dissolve the lyophilized Glucagon with the accompanying diluents.
    b. Glucagon should not be used at concentrations greater than 1 mg/mL (1 unit/mL).
    c. Glucagon solution should not be used unless it is clear and has a water-like consistency.
    d. Give injection into the same area as insulin is injected
    e. Turn patient on their side since vomiting may occur

3. The patient will usually awaken within 15 minutes
4. Call 911 for emergency assistance.

Rebound Hyperglycemia

Rebound Hyperglycemia results from a hypoglycemic episode. Symptoms of nocturnal hypoglycemia include night sweats, nightmares, restless sleep, and waking with a headache. If rebound hyperglycemia is occurring, the patient will awake with a blood sugar level higher than the bedtime reading. The patient should be instructed to test their blood glucose level at 0300 for 2-3 nights in a row. If the patient is symptomatic, an insulin adjustment is required.

The Rebound Hyperglycemia can happen at any time. This phenomenon is usually related to the effect of an insulin peak, which lowers the sugar abruptly. Consideration of dietary intake is required.

Allergy to Insulin

Allergic reactions to insulin can occur in a few patients. These reactions should be discussed with the physician.

Appendix 5

TABLE 1

Indications/Contraindications for Prescription of Diabetes Supplies

Controlled Acts and Procedures	Indications	Contraindications/Considerations/ Process for Implementing Procedure
Prescribing diabetes supplies including glucometers, lancets and test strips at point of care	- To assess glycemic control in response to oral antihyperglycemic agents, insulin and lifestyle management, quality control activities and patient teaching. - The results are used to determine if a patient is euglycemic, hyperglycemic or hypoglycemic so appropriate interventions and education can occur.	- The patient or substitute decision maker refuses to monitor capillary blood glucose. - The patient is unable to monitor capillary blood glucose due to physical or cognitive limitations. - Consideration should be given to patients who are unable to monitor due to financial constraints.

TABLE 2

Indications/Contraindications for Performing Capillary Blood Glucose Monitoring at point-of-care

Controlled Acts and Procedures	Indications	Contraindications/Considerations/Process for Implementing Procedure
Perform Capillary Blood Glucose Monitoring point-of care testing.	- To perform blood glucose/glucometer check. - To assess glycemic control in response to oral antihyperglycemic agents, insulin and lifestyle management, quality control activities and patient teaching. - The results are used to determine if a patient is euglycemic, hyperglycemic or hypoglycemic so appropriate interventions and education can occur.	- The patient or substitute decision maker refuses to consent to the procedure - The patient's fingers are sore or the skin on the fingertips is compromised or infected. - Gently apply pressure to the site with tissue/cotton ball until bleeding has subsided. Apply band aid if required.

Appendix 6
Implementer Approval Form

Title and Number of Directive/Delegation: DM Medication Management

CBFHT Medical Directive # 11

Name of Implementers	Signature	Date

Appendix 7
Authorizer Approval Form

Title and Number of Directive/Delegation: DM Medication Management

CBFHT Medical Directive # 11

Name of Physicians or Authorizers	Signature	Date