Title: Diabetes Management in Adults Medical Directive

Number: C-FHT 01
Activation Date: *Review due by:*

Sponsoring/Contact Person(s): ***Kathleen Whittaker, Program Manager***
(Name, position, contact particulars) *905.632.8007 ext 108*
kathleen.w@carolinefht.ca

Order and/or Delegated Procedure:	Appendix Attached: Yes No Title(As listed below)

The medical directive of Diabetes Management in Adults is relevant to the adult prediabetes and diabetes patient population under the medical responsibility of family physicians of the Caroline Family Health Team.

The Registered Dietitian (RD) have authorizations as outlined in this medical directive and are authorized to implement the following directives when all the conditions in the attached companion appendices/directives are met:

1. Perform Controlled Acts and Procedures (Appendix I)
2. Oral Anti-hyperglycemic Agents (Appendix II)
3. Insulin (Appendix III)
4. Requisition of Laboratory Investigations (Appendix IV)
5. Prescribe diabetes supplies and performance of capillary blood glucose monitoring at the point of care (Appendix V)

Recipient Patients	Appendix Attached: Yes No Title(As listed below)

1. Patients rostered to Caroline Family Health Team Physicians who have signed their approval for use of the Diabetes Management in Adults Medical Directive
2. Patients have been diagnosed with prediabetes or diabetes
3. Patients have given informed consent

Implementer Approval Form

Title and Number of Directive/Delegation: Diabetes Management in Adults – C-FHT 01

Name of Implementers	Signature	Date
Lauren MacDonald RD, CBE, CDE		
Christina Demirkok MHSc, RD, CDE		

Authorizer Approval Form

Title and Number of Directive/Delegation: Diabetes Management in Adults – C-FHT 01

Name of Authorizer	Signature	Date
Dr. Lori W Chalklin		11/5/21
Dr. G Stephen Duncan		April 1/21
Dr. Alicia Gallaccio		JNE 8/21
Dr. Helena Liu		May 14, 2021
Dr. Dana Pintea		May 24, 2024
Dr. Robert Tohn		March 31/21
Dr. David Wallik		March 29/21
Dr. Kimberley Anne Walsh		~~April~~ May 6 '21
Dr. R Christopher Williams		APRIL 5/21
Dr. S. Charman		May 11/24

Authorized Implementers:	Appendix Attached: Yes No Title Appendix 2 Authorized Implementers – C-FHT DEP Registered RD

1. DEP RD working with C-FHT Family Physicians who have agreed to the Medical Directive
2. Health Care Professionals (HCP) stated above have authorization from Caroline Family Health Team Physicians, who have signed off approval for use of the Diabetes Management in Adults Medical Directive, and competencies to fulfill this Medical Directive
3. All HCP's members applying the Medical Directive are members of the C-FHT
4. All HCP's practice according to the most current Canadian Diabetes Clinical Practice Guidelines
5. All HCP's must complete a certification process to determine competencies in diabetes management. HCP's will only have authority to implement controlled acts and performances applicable to their level of certification

Indications/Contraindications	Appendix Attached: Yes No Title

1. In general, each action/procedure under each directive will be implemented in the context of the existing physician-patient relationship and as part of the medical diagnosis and plan of care established by the physician. These actions/procedures will be implemented without specific prior discussion (but as part of the plan of care) as per the indications and contraindications for each of the directive.
2. In order to perform this directive, the RD must be a Certified Diabetes Educator
3. In implementing the directives, the RD will:
    a. Ensure that a physician from the practice or on-call is available for consultation at all times and/or is updated via the EMR immediately
    b. Clinical considerations for oral anti-hyperglycemic agents/GLP-1 agonist injectable/insulin adjustment.

       Ensure the following is assessed and taught prior to adjusting, holding or discontinuing oral anti-hyperglycemic agents, GLP-1 agonist injectable, or insulin (if applicable):
        i. Proper use of glucose meter (coding of meter, proper meter technique, proper storage of strips, use of high/low solutions, and monitoring of expiring meter strips) and frequency of Capillary Blood Glucose Monitoring (CBGM). Alternatively, propose the use of a Flash Glucose Monitoring System (FGM) or Continuous Glucose Monitoring System (CGM) as methods for increasing self-efficacy of self-monitoring blood glucose. The patient must agree to comply with the frequency of CBGM/FGM/CGM and its documentation in order to establish pattern management
        ii. If applicable, ensure that the patient is taught the proper dose and administration timing for taking the prescribed oral anti-hyperglycemic agent(s)
        iii. If applicable, the proper storage of insulin or GLP-1 agonist, injection site rotation, assessment of lipodystrophy, monitoring of appropriate timing of insulin or GLP-1 agonist injection, insulin action, and expiry of insulin or GLP-1 agonist. Proper use of insulin or GLP-1 agonist pens and tips (changing, depth and priming)
        iv. Individualized diet regarding carbohydrate consistency or appropriate carbohydrate flexibility (i.e. appropriate use of basal/bolus), meal balance (i.e. effect of macronutrients, glycemic index, fibre on blood glucose) and alcohol consumption, or need for revision of the diet if gastrointestinal issues exist (i.e. gastroparesis)
        v. Effect of activity (type, duration and timing) on blood glucose.
        vi. Effect of other medications such as Beta-blockers, clonidine, guanethidine and reserpine may alter hypoglycemia awareness of symptoms.
        vii. Patients understanding of hypoglycemia such as signs and symptoms, testing, appropriate treatment and carrying fast-acting carbohydrate, as well as safe driving guidelines. In addition, the differences between mild, moderate and severe hypoglycaemia and the appropriate treatment given the level of severity. Individual blood glucose targets may be necessary for those individuals who have hypoglycemia unawareness, the elderly or those who are professional drivers.
        viii. Patient's knowledge re: sick day management (SADMANS), ketone testing (Type 1DM), effect of stress and sleep on blood glucose.
    c. Sick Day Management: The primary goal is to prevent hospitalization. Sick day management should be discussed at diagnosis and reviewed on an ongoing basis, either individually and/or in group sessions. Patients should be instructed to:
        i. Continue to take insulin and/or oral anti-hyperglycemic agent(s) unless otherwise instructed by the physician or health care provider.
        ii. For Type 1 diabetes, take bolus insulin in relation to carbohydrate intake and/or blood sugar and/or ketone readings (refer to Table shown below)
        iii. For Type 1 diabetes, test blood sugars every 4 hours

iv. For Type 1 diabetes, test ketones if blood sugars are above 13 or symptoms of diabetic ketoacidosis (abdominal pain, nausea) (refer to table 3)

v. If unable to eat the usual carbohydrates consumed, substitute carbohydrate containing fluid approximately 10-15 grams of carbohydrate every 1-2 hours and encourage the consumption of non-carbohydrate containing fluids

vi. Not to exercise if blood glucose is high (14mMol/L) and ketones are present, vigorous activity may cause blood glucose levels to rise even further.

vii. If concerned, see a physician, and/or contact the physician on-call in the off hours if any of the following persist.

- Elevated pre-prandial blood glucose (14mMol/L) that is not responding to sick day management interventions
- Ketones (moderate-large)
- Persistent diarrhea
- Vomiting
- Fever above 37.5°C (100°F)

viii. Seek immediate medical attention by going to the Emergency Department if things are deteriorating or any of the following occur:

- Shortness of breath, or respiratory difficulty

Table 1: Recommended Targets for Glycemic Control (Canadian Journal of Diabetes, 2018, S42-46)

A1C (%)	FPG/preprandial PG	2-hour postprandial PG
<7.0*	4.0 – 7.0	5.0 – 10.0 (5.0 – 8.0, if A1C target not being met)

- A target A1C of ≤6.5% may be considered in some patients with type 2 diabetes to further lower the risk of nephropathy, but this must be balanced against the risk of hypoglycemia and increased mortality in patients who are at significantly elevated risk of cardiovascular disease.
- A1C=glycosylated hemoglobin, FPG= fasting plasma glucose, PG=plasma glucose

Table 2: Suggested algorithm for Sick day management with blood ketone testing in Type 1 Diabetes (Leadership Centre for Diabetes, 2002)

Blood Glucose (mMol/L)	Blood Ketones (mMol/L)	Action Needed
Less than 3.9	None	No extra insulin. Instruct to decrease dose of pre-meal insulin as directed. If vomiting, instruct to contact health care team.
4.0-16.0	Less than 0.6	Use usual insulin dose (and scale) as for non-sick days.
4.0-16.0	Greater than 0.6	Take a 10% of total daily dose supplement of rapid/fast acting insulin in addition to usual baseline insulin doses.
Greater than 16.0	Less than 0.6	Take a 10% of total daily dose supplement of rapid/fast acting insulin in addition to usual baseline insulin doses.
Greater than 16.0	Greater than 0.7-1.4	Take a 15% of total daily dose supplement or rapid or fast acting insulin, in addition to usual baseline insulin doses.

Greater than 16.0	Greater than 1.5-3.0	Take a 20% of total daily dose supplement of rapid or fast acting insulin, in addition to usual baseline insulin doses SEEK MEDICAL ATTENTION

Table 3: Factors that Affect Glycemic Levels (adapted from Mertig, 2007)

Factors that increase Glycemic levels	***Factors that decrease Glycemic levels***
Inadequate dose of oral antihyperglycemic agents	***Elevated dose of oral antihyperglycemic agents***
Lifestyle Factors . Overeating, especially carbohydrates . Significant weight gain . Decreased physical activity . Caffeine (high dose)	Lifestyle Factors . Skipping a meal or decreasing carbohydrate intake after taking oral antidiabetic agent(s) . Significant weight loss . Increased physical activity, hypoglycemia can occur even several hours later
Medications . Corticosteriods . Danazol . Diuretics . Sympathomimetic agents (i.e epinephrine, salbutamol, terbutaline) . Isoniazid . Beta blockers . Phenothiazine derivatives . Somatropin . Estrogens . Progestrogens (i.e. oral contraceptives) . Niacin (high dose) . Quinolones Chemotherapy or steroids, nephropathy, postoperative recovery, infection, PEG feeds, TPN or end of honeymoon stage (transient remission)	Medications . Oral antidiabetic medications . ARB's . ACE inhibitors . Disopyramide . Fibrate . Fluoxetine . MAO inhibitors . Propoxyphene . Salicylates (high doses) . Somatostatin analog (i.e. octreotide) . Sulfonamide antibiotics . Beta Blockers . Quinolones Newly diagnosed Type 1 in the honeymoon stage
Hormones . Stress hormones (adrenaline) . Growth hormone . Cortisol . Pregnancy hormones (2^{nd} and 3^{rd} trimesters . Hormones during menses . Estrogen	Hormones . Pregnancy hormones (1^{st} trimester)
Emotions	Emotions

. Anger . Depression . Fear . Panic . Stress	. Stress management
Other . Excessive sleeping	Other . Alcohol (without food) . Heat and humidity . High altitude . Intense brain activity . New and unusual surroundings . Socializing . Stimulation environment
Consent 1. Patients of C-FHT Family Physicians 2. HCP obtains verbal patient consent prior to the implementation of care 3. HCP fully explains risks, benefits and insulin regimen alternatives prior to initiating insulin 4. Indicate in chart note patient understands is agreeable to the plan Guidelines for implementing the Order/Procedure: As per attached directives	
Documentation and Communication: 1. Documentation of the patients BG pattern, current medications, dietary/activity patterns, most recent blood work, other relevant subjective and objective data, self-management skills and learning needs, clinical findings and the plan of care will be included in the medical record. Response to the procedure or directions provided by the RD will also be documented 2. The physician will refer to the documentation in the medical record by the RD	

Review and Quality Monitoring Guidelines:

1. The following processes will be used to address appropriate, untoward or unanticipated outcomes resulting from implementation of the medical directive
   a. The staff member who identifies any inappropriate, untoward or unanticipated outcomes resulting from directive implementation will immediately notify the most responsible physician and his/her Program Manager. The Program Manager , in collaboration with the signing physician/authorizing HCP, will immediately trigger an ad hoc review
   b. The medical directive will be reviewed routinely one year after initial activation and then annually thereafter with addendums included if needed.
   c. This medical directive can be placed on hold if routine review processes are not completed, or if indicated for and ad hoc review. During the hold, staff cannot perform the procedure under authority of the directive and

must obtain direct, patient specific orders for the procedure (s) until it is renewed. The Program Manager will notify staff of any hold on the directive.

d. Upon renewal of the directive, the RD will be authorized to implement the directive upon and in accordance with the renewed directive.
e. The inability for the RD to successfully complete the CDE re-certification process will mean that the staff person does not have the authority to function under this directive.

Administrative Approvals (as applicable)	
Approving Physician(s)/Authorizer(s)	

Appendix I: Performed Controlled Acts and Procedures (CAPs)

CAPs will be performed by the RD. The staff member will implement these as part of the medically established plan of care, without specific discussion with the physician.

Clinical reasoning process will be applied to each patient presentation to guide the appropriateness of the procedure. When the patient's condition is unstable, immediate physician involvement is required

Table 1: List of CAPs Implemented Under this Directive

List of Controlled Act and Procedures
- Adjust, hold and discontinue Oral Antihyperglycemic agent(s) or GLP-1 agonist - Start Oral Anit-Hyperglycemic agents or GLP-1 agonist (Appendix II)
- Adjust, Hold, and discontinue basal Insulin - Start basal Insulin (Appendix III)
- Adjust, Hold and Discontinue Intensive Insulin Therapy - Start Intensive Insulin Therapy (Appendix III)
Requisition of Laboratory Investigations · Specifically; Creatinine, Glucose Fasting, Glucose Random, TSH (*if symptomatic*), A1c, Cholesterol, Triglycerides, HDL-Cholesterol, LDL-Cholesterol, ACR, Microalbumin, 75g 2h OGTT, ALT, Creatine Kinase, Sodium, Potassium, CBC and differential, Vitamin B12, ALT, ALP
Prescribe diabetes supplies (glucometer, flash glucose monitoring and continuous glucose monitoring devices, glucometer strips, lancets, needles for insulin or GLP-1 agonist pens) (Appendix V)
Perform Capillary Blood Glucose Monitoring (BG) (Appendix V)

Appendix II: Oral Antihyperglycemic Agents

CAP's under this directive will be implemented by the RD with a CDE certification

All oral anti-hyperglycemic agents (OAA) can be adjusted, held, discontinued or implemented at the time of the visit by the RD as part of the medically established plan of care, without specific discussion with the physician.

Note: Medications discontinued or placed on hold should be reviewed within 24-48 hours by the RD in collaboration with the physician. Communication can be done in-person, over the phone, via the EMR messaging system.

TABLE 1: List of Medications Implemented Under this Directive with Detailed Indications/Contraindications

	Oral Antihyperglycemic Agent	Indication for Initiation	Indications for Adjustment	Contraindications/Precautions
1.	***Biguanides*** Metformin (First line unless contraindicated) (Glucophage) (1-1.5% reduction in HbA1C) Start from 250 OD times 7 days increase 250 BID times 7 days 500 BID 500 ††BID or Start at 500 mg BID then increase to 1000 mg BID, if required/tolerated Maximum dose 2000 mg/day Glumetza (Metformin HCL) Start at 1000 mg OD then increase to 2000 mg OD if required/tolerated Maximum dose 2000 mg once daily	· A1c greater than 1.5% target required Consideration should be given to individual patients with an A1c between 6.5-7 who are younger or at high risk of adverse events	· Gastrointestinal side effects · Change in timing of the dose (i.e. moving dinner dose to HS to improve fasting sugars) · Renal insufficiency eGFR between 30-60ml/min · Gastrointestinal side effects · Fasting or pre-meal glucose remains above target (7 mMol/L) consistently/or 2hour PC sugars greater than 10 · Check creatinine eGFR at annual visit and with any increase in Metformin dose	· Contraindicated in patients with a history of lactic acidosis, renal impairment (creatinine clearance < 30 mL/min), congestive heart failure, excessive ETOH (acute or chronic), hepatic dysfunction, pregnancy, or gastrointestinal side effects · Reduce dose to 500-1000 mg if eGFR is between 30-45 · Hold for 48 hours after the procedure if undergoing radiologic studies with administration of iodinated contrast material with repeat creatinine prior to resuming Metformin
2.	***DPP4 Inhibitors*** Sitagliptin (Januvia) Add on to Metformin at maximally tolerated dose Use as monotherapy if not tolerating Metformin or contraindicated	· A1c greater than 1.5% target required and/or FBS 8 or greater · If patient is on Januvia	· Nasopharyngitis · Inadequate glucose control	· No hepatic insufficiency and stable hepatic function · Renal function checked at 3 months, if stable then check on a yearly basis · Hypersensitivity · Heart failure

	100 mg OD 50 mg OD 25 mg OD <u>Saxagliptin (Ongliza)</u> 5 mg dose 2.5 mg OD <u>Linagliptin (Trajenta)</u> 5 mg dose	and Metformin and is glycemically stable, may be converted to equivalent dose of Janumet or Janumet XR · A1c greater than 1.5% target required and/or FBS 8 or greater · If patient is on Trajenta and Metformin and is at glycemic stability, may be converted to equivalent dose of Jentadueto		· Contraindication with history of pancreatitis · Reduce dose to 50 mg OD if eGFR 30-50 · Reduce dose to 25 mg OD if eGFR <30 · Reduce dose to 2.5 mg OD if eGFR 15-50 · Discontinue if eGFR <15 · Contraindication with history of pancreatitis · Must discuss with Physician if eGFR is <15mL/min · Contraindication with history of pancreatitis · Should have ALT checked within 6 months of commencement

3.	***GLP-1 Agonist*** Victoza (Liraglutide) 0.6mg OD titrated to 1.2mg OD, and further to 1.8mg if further drop in A1C is needed Ozempic (Once Weekly Injection Semaglutide) 0.25 mg OW x 4 weeks then increase to 0.5 mg OW thereafter, if tolerated Can increase to 1.0 mg OW if further A1C control is required Rybelsus (Oral Semaglutide) Start at 3 mg OD x 30 days then increase to 7 mg OD x 30 days/maintenance dose, can increase to 14 mg OD if further glycemic control required		· If having any side effects (nausea, diarrhea), after initial start, remain at the 0.6mg dose and do not titrate to maintenance dose (1.2mg) until side effects resolve. · Reduce when eGFR ≥30 to ≤ 50 mL/min (moderate renal impairment) – dose reduction from 10 mcg to 5 mcg BID	· Contraindicated in personal or family history of medullary thyroid carcinoma, pancreatitis · and renal insufficiency. · Discontinue if eGFR <15 mL/min · No acute pancreatitis (stable amylase, lipase, and CBC) · Use caution with medications known to cause hypoglycemia (sulfonylureas, insulin) · Not recommended in patients with eGFR < 15 mL/min · Not recommended in patients with severe gastrointestinal disease · Contraindicated with pt's with family history of medullary thyroid cancer · Use caution with medications known to cause hypoglycemia (sulfonylureas, insulin) · Rybelsus should be taken in the morning on an empty stomach with <120 mL of water; wait 30 mins before taking any other meds, PO intake or additional fluids

4.	***Insulin Secretagogues*** Gliclazide MR (Diamicron MR) Start from 30 mg †OD q 2 weeks gradually depending on blood sugar Maximum dose is 120 mg/daily take once daily at breakfast Gliclazide (Diamicron) Start from 80 mg Maximum dose is 320 mg/day given BID with meal Glimepiride (Amaryl) 1 mg – 8 mg/day with meals Glyburide (Diabeta) 1.25 mg – 20 mg/day with meals Non-sulfonylureas: Nateglinide (Starlix) 180 mg – 540 mg/daily take before meals Repaglinide (GlucoNorm) 0.5 mg – 16 mg/day with meals	·	· Frequent hypoglycemia · Inadequate blood glucose control · Discontinue if hypoglycemia persists 1-2 times per week · Blood glucose remains above target (7 mMol/L) consistently · Blood glucose below 4 mMol/L consistently	· Hypoglycemia and weight gain are more common with glyburide · Consider using other class(es) of oral antihyperglycemic agents first in patients at high risk of hypoglycemia with insulin · Renal dose adjustment check creatinine eGFR · Discontinue if eGFR <30 · Glyburide: discontinue if eGFR <60
5.	***Alpha-Glucosidase Inhibitor*** Acarbose (Glucobay) Start from 25 TID increase slowly Maximum daily dose 300 mg/day with first bite of meal	·	· Gastrointestinal side effects · Inadequate blood glucose control · Frequency of hypoglycemia	· Not recommended as initial therapy in people with severe hyperglycemia (A1C ≥ 9.0%) · Gastrointestinal side effects · Treat hypoglycemia with 15 grams of fast acting carbohydrate such as tablets, milk or honey · Discontinue if eGFR <30

6.	***Insulin Sensitizers Thiazolidinediones (TZD's)*** Pioglitazone (Actos) 15 mg – 45 mg/day taken the same time each day Rosiglitazone (Avandia) 2 mg – 8 mg/day take with meals **** MUST CONSULT WITH FAMILY PHYSICIAN PRIOR TO ORDERING****	·	· Edema · Shortness of breath	· Contraindicated in hepatic dysfunction (ALT >2.5 times upper limit of normal or CHF) · Between 6 and 12 weeks required to achieve full blood glucose lowering effect · May induce mild edema, fluid retention · When used in combination with insulin, may increase risk of edema and CHF. The combination of a TZD plus insulin is currently not approved treatment in Canada · Rosiglitazone is no longer approved for use alone to treat type 2 diabetes, except when Metformin use is contraindicated or not tolerated · Rosiglitazone is no longer approved for use with a sulfonylurea drug, except when metformin is contraindicated or not tolerated · Rosiglitazone should not be used in combination with a sulfonylurea and metformin
7	***SGLT-2 Inhibitors*** Invokana (Canagliflozin) Start with 100mg OD Can increase to max dose of 300mg if further decreases in BG are required Forxiga (Dapagliflozin) Start with 5mg OD and can increase to max dose of 10mg if further decreases in BG are required Xigduo (Dapagliflorzin + Metformin)	· A1c greater than 1.5% target required and/or FBS 8 or greater · Used as a second line agent after Metformin	· eGFR <45, decrease Invokana to 100mg OD and discontinue if eGFR <30 · If eGFR <45, Dapagliflozin is contraindicated with both doses.	· eGFR must be greater than 45 mL/min in order to start these medications · UTI's/yeast infections are the most noted side effect from this class of medication. Treatment of the UTI's would require a prescription antibiotic from a physician. The risk of recurrent UTI's is low. · Use cautiously if patient has a history of DKA

	Start with 5mg/1000mg BID (no possible dose adjustments available as of yet) <u>Jardiance (Empagliflozin)</u> Start with 10mg OD and can increase to max dose of 25mg OD if further decreases in BG are required		· If eGFR < 30, Empagliflozin is contraindicated	
8	*<u>Anti-Obesity Medications (which may support lowering of A1C)</u>* *<u>Liraglutide (Saxenda)</u>* Start at 0.6 mg OD x 1 week and increase by 0.6 mg OD each week until 3.0 mg OD dose is reached or tolerated dose	· Prediabetes (included as one of the comorbidities) with a BMI >30 or BMI >35	·	· Not recommended in patients with eGFR < 15 mL/min · Not recommended in patients with severe gastrointestinal disease · Contraindicated with pt's with family history of medullary thyroid cancer
	<u>Naltrexone hydrochloride and bupropion hydrochloride (Contrave)</u>	· BMI >30 or adults with a BMI >27 with at least one weight-related medical problem		· Contraindicated with those who have uncontrolled high blood pressure; have or have had seizures; use other medicines that contain bupropion such as Wellbutrin, Aplenzin or Zyban have or have had an eating disorder; are dependent on opioid pain medicines or use medicines to help stop taking opioids such as methadone or buprenorphine, or are in opiate withdrawal; drink a lot of alcohol and abruptly stop drinking; are allergic to any of the ingredients in contrave; or are pregnant or planning to become pregnant.

Summary of Therapeutic Notes for Oral Antihyperglycemic Agents:

Key Adverse Effects

- Gastrointestinal upset, loose bowels (biguanide, alpha glucosidase inhibitor, GLP-1 agonist)
- Hypoglycemia (secretagogues-less with gliclazide, glimepiride, nateglinide) and repaglinide than with glyburide)
- Edema, fluid retention (insulin sensitizers)
- Moderate weight gain (insulin secretagogues, insulin sensitizers)

Key precautions/contraindications

- Hepatic disease (glyburide, biguanide, insulin sensitizers, DPP4I)
- Significant renal insufficiency (biguanide, sulfonylureas, DPP4I)
- Significant cardiac failure (biguanide, insulin sensitizers, DPP4I)

If patients have clinical CVD

- Start an antihyperglycemic agent with demonstrated CV benefits (liraglutide, canagliflozin, empagliflozin, semaglutide)

Appendix III: Insulin

CAPs under this directive will be implemented by the RD with a CDE designation. CAPs will be implemented in accordance with Appendix III, Table 1. More specifically, the RD with a CDE can start, adjust, hold or discontinue basal insulin and intensive insulin therapy.

CAPs: All insulin can be adjusted, held, discontinued and implemented by the RD as part of the medically established plan of care, without prior discussion with the physician.

Note: When an insulin is placed on hold or discontinued, it should be reviewed within 24 hours by the RD in collaboration with the physician.

Table 1: List of Medications Implemented Under this Directive with Detailed Indications/Contraindications

Insulin Type	Onset	Peak/ Duration	Indications for Adjustment	Therapeutic Considerations Check this section
Rapid-Acting Lispro (Humalog) Aspart (Novorapid) Glulisine (Apidra) PC check then institute MDI start with one meal then check PC	10-15 minutes	1-1.5 hours 4-5 hours	· 2 hours PC's and pre-meal blood sugars are either elevated or hypoglycemia	· Patient should eat within 10-15 minutes of injection · Store unopened vials in refrigerator · Store open vials at room temperature · Do not expose to heat or direct sunlight · Do not freeze · Opened vials (whether or not refrigerated) must be discarded within 28 days after first use · Use by expiration date on vial
Short-Acting Humalin R Novolin Toronto	30 -60 minutes	2-4 hours	· Increase or decrease depending on blood sugars.	· Must be adequately re-suspended before injecting · Store unopened vials in the refrigerator · Do not expose to heat or direct sunlight · Do not freeze · Opened vials (whether or not refrigerated) must be discarded within 30 days after first use) · Use by expiration date on vial

Pre-mix NovoMix 30 Humalog Mix 25 Humalog Mix 50 Novolin 30/70 40/60, 50/50 Humulin 30/70	10-15 minutes 30-60 minutes 60-30 min	 18 hours	· Increase/decrease morning dose if lunch/supper reading are out of target · Increase/decrease evening dose if hs or fasting sugars out of target	· Must be adequately re-suspended before injecting · Store unopened vials in refrigerator · Store opened vials at room temperature · Do not expose to heat or direct sunlight · Do not freeze · Open vials must be discarded within 28 days after first use · Use by expiration date on vial
Long-Acting Detemir (Levemir) Glargine (Lantus) Tresiba Toujeo Basal start 10 mg check morning FBS, if not in range increase by 1u/night. If on Tresiba, titrate by 2 units q 3-4 days or 4 units q once a week with u200 pen or titrate by 1 unit q 2-3 day with u100 pen	90 min	22-26 hours	· Increase/decrease does if fasting or pre-bed sugars are out of target	· Do not mix with other insulins in the same syringe · Open cartridge of Levemir must be discarded within 42 days after first use · Open vials of Lantus must be discarded within 28 days after first use · Open vials of Tresiba must be discarded within 64 days after first use · Open vials of Toujeo must be discarded within 42 days after first use · Store open vials at room temperature · Store unopened vials in refrigerator · Do not expose to heat or direct sunlight · Do not freeze · Use by expiration date on vial

Basal insulin + GLP-1 agonist combination Insulin glargine and lixisenatide injection (Soliqua) Discontinue GLP-1 agonist and basal insulin. If basal insulin was <30 units dose, start at 15 units OD. If basal insulin dose was 30-60 units, start at 30 units OD Inject within the hour before the first meal Insulin degludec and liraglutide injection *(Xultophy)* Start with 16 units of Xultophy and titrate the dosage upwards or downwards by two units every three to four days based on fasting blood glucose The dosage of Xultophy is between 16 to 50 units (Xultophy dosage may be temporarily down titrated to below 16 units (i.e., 0 to 15 units). However, if patients require persistent dosages below 16 units of Xultophy discontinue and use alternative therapy			· Increase/decrease does if fasting or pre-bed sugars are out of target	· Contraindication include during episodes of hypoglycemia as well as those with known hypersensitivity to the active substances or to any of the product components · Not indicated for patients with type 1 diabetes · Can be stored for 21 days at controlled room temperature or in a refrigerator

Hypoglycemia Treatment options *Baqsimi (glucagon) nasal powder*	· Single, fixed · 3 mg dose		· Indicated to treat a severe hypoglycemic event · Dry nasal powder form of glucagon · No inhalation required—absorbed passively in the nose · Ready to use with no reconstitution or priming · Does not need to be refrigerated, store at temperatures up to 86°F (30°C) in the shrink-wrapped tube provided	· Contraindicated in patients with pheochromocytoma because of risk of substantial increase in blood pressure , insulinoma because of risk of hypoglycemia, and known hypersensitivity to glucagon or to any of the excipients. · Allergic reactions have been reported with glucagon and include anaphylactic shock with breathing difficulties and hypotension.

Notes:

1. The RD will adhere to the Indications and Contraindications outlined in Table 1
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)
5. Determine a plan for the frequency of communication with the 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 the 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 BG results, always adjust insulin for hypoglycemia first.

Building Competency in Diabetes Education: Advancing Practice 2003 (pg. 2-15)

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 BG results
3. Patients will attend an individual session or group session with the RN or RD to learn the concepts of basal/bolus
4. A follow up with the RN, 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. Patients are encouraged to document BG results QID for 2-4 weeks and bring results to the appointment. If needed call RN or RD if blood sugars outside target discussed or if patient uncertain as to appropriate adjustment of insulin
5. Using BG results, identify the insulin action that influences the set of blood sugars (refer to Clinical Consideration for Insulin Adjustment pg, 12-13). Change identified insulin dose by 5 to 10% of TDD for 2-3 days and then reassess BG again for further adjustments needed to attain target blood glucose.

Clinical Consideration of Insulin Adjustment

Blood Glucose (BG) Testing Time	If BG is LOW	If BG is HIGH	Titration Guidelines
Fasting Blood Sugar (FBS)	1. If bedtime BG is within 4-7mmol/L and fasting BG is below 4.0mmol/L, then decrease evening (basal) insulin. 2. Consider the possibility of nocturnal hypoglycemia before adjusting. 3. Review proper hypoglycemia treatment with 15 g fast acting carbohydrate.	1. If evening BG is within target blood sugar control and FBS is high (>7.0mmol/L) then increase evening basal insulin dose. 2. If bedtime glucose readings are too high, >10mmol/L, then add or increase rapid-acting insulin at supper OR adjust evening snack first to achieve the agreed target evening BG level. Once evening blood glucose level is within target, then follow step 1. 3. Consider the possibility of nocturnal hypoglycemia prior to adjusting.	1. Titrate basal insulin by 1 unit (increase for hyperglycemia and decrease for hypoglycemia) each night until FBS are within target BG range. If on Tresiba, titrate by 2 units q 3-4 days or 4 units q once a week with u200 pen or titrate by 1 unit q 2-3 day with u100 pen
Before Lunch	Consider one of the following: 1) Decrease rapid or fast acting insulin at breakfast. 2) If using pre-mixed insulin, either switch to a different premix insulin to decrease percentage of rapid-acting insulin (i.e. Humalog Mix 50 to Humalog Mix 25) OR decrease dose of pre-mixed insulin at breakfast OR add a mid-morning snack (if there are no concerns	Consider one of the following: 1) Increase rapid insulin at breakfast. 2) If using pre-mix insulin, either switch to a different pre-mix insulin to increase the percentage of rapid-acting insulin (i.e. Humalog Mix 25 to Humalog Mix 50, for example) or increase the dose of the pre-mix insulin at breakfast. 3) Initiate patient on a basal/bolus regimen. Consider adding rapid insulin at breakfast only.	1. Titrate breakfast insulin by 1 unit (increase or decrease depending on BG Low/High) each day until pre-lunch BG is within target.

	with possible slight weight increase) 3) Initiate patient on a basal/bolus regimen. Consider adding rapid insulin at breakfast only OR all meals at once	to start OR add to all meals at once	
Before Supper	1. Decrease bolus (rapid or short-acting insulin) at lunch time. 2. Decrease the morning basal (if patient taking long-acting or NPH in the morning)	1. Increase bolus (rapid or short-acting) at lunch time. 2. Increase morning basal insulin (if patient taking NPH or long acting insulin in the morning)	1. Titrate lunch time insulin dose down or up by 1 unit (depending on if BG LOW vs. HIGH) each day until pre-dinner BG within target.
Bedtime	1. Determine if blood glucose level was pre or post a snack 2. Decrease rapid insulin at supper. 3. If using premix insulin, either switch to a different pre-mix insulin to decrease percentage of rapid acting insulin (i.e. Humalog Mix 50 to Humalog Mix 25) OR decrease dose of pre-mixed insulin at dinner OR add a bed-time snack (if there are no concerns with possible slight weight increase). 4. Initiate patient to basal/bolus insulin	1. Determine if BG level reading was pre or post snack. 2. Increase rapid insulin at dinner 3. If using pre-mix insulin, either switch to a different pre-mix insulin to increase the percentage of rapid-acting insulin (i.e. Humalog Mix 25 to Humalog Mix 50, for example) or increase the dose of the pre-mix insulin at dinner. 4. Initiate patient on a basal/bolus regimen. Consider adding rapid insulin at dinner only to start OR add to all meals at once	1. Titrate dinner time insulin dose down or up by 1 unit (depending on if BG LOW vs. HIGH) each day until pre-bed BG within target.
1-2 hours after meals	1. Decrease meal time insulin	1. Increase meal time insulin	2. Titrate previous meal dose down or up by 1 unit (depending on if BG LOW vs. HIGH) each day until post-prandial sugars are within target.

			3. Suggest patient learn to carb count, if willing, will develop IC ratios for each meal with patient

Management of Untoward Outcomes
See 2001 Canadian Diabetes Association Clinical Practice Guidelines for the Prevention and Management of Hypoglycemia in Diabetes: *http:www.diabetes.ca/Files/CDAHypoglycemiaGuidelines.pdf*

1. *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, and numbness to lips or tongue. Hypoglycemia is relieved with administration of fast-acting carbohydrates. Severe hypoglycemia treatment is Glucagon taken subcutaneously when the patient is non-cooperative or unable to ingest carbohydrates.

   If the patient's physician will prescribe a Glucagon kit, the RN 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:

   i. For adults give 1 mg (1 unit) by subcutaneous, or IM injection.
   ii. Preparation and administration directions for Glucagon:
      - Dissolve the lyophilized Glucagon with the accompanying diluents.
      - Glucagon should not be used at concentrations greater than 1 mg/mL (1 unit/mL)
      - Glucagon solution should not be used unless it is clear and has a water-like consistency
      - Give injection into the same area as insulin is injected
      - Turn patient on their side since vomiting may occur
   iii. The patient will usually awaken within 15 minutes
   iv. Call 911 for emergency assistance

2. *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.
   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.

3. *Allergy to Insulin*

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

Appendix IV: Requisition of Laboratory Investigations

CAPs under this directive will be implemented by the RD with CDE designation. The RD can implement these investigations as part of the medically established plan of care, without specific discussion with the physician.

See Table 2 for detailed indications, contraindications and notes.

Table 1: List of Investigations Implemented Under this Directive.

Laboratory Investigations *The following investigations are all CAPs	
Creatinine	CK
Glucose, Fasting	Sodium
Glucose, Random	Potassium
75 g 2h oral GTT	eGFR/serum creatinine
Fructosamine	GGT
TSH	CBC & Differential
Urea	Vitamin B12
A1C	Celiac Screen
Alkaline Phosphatase	C-Peptide
ALT	Insulin Antibodies
AST	AntiGAD
Biacarbonate	Islet Cell Antibodies

*Costs of investigations will also be considered as part of the decision making process.
*Limit to numbers of investigations ordered per year

Table 2: Detailed Indications/Contraindications

Indications for Laboratory Investigations *All investigations listed below are CAPs
Chemistry
Creatinine/Urea Annual screening Repeat q 3 or 6 months if <60 Before initiating Metformin or and SGLT-2 inhibitor
Plasma Glucose (Fasting/Random) Complete with each set of blood work If concerned re: accuracy of glucose meter
Fructosamine When certain hematological conditions will affect A1C results When A1C and BG results do not match
Thyroid levels (TSH) Annually for Type 1 diabetes or as indicated Annually for Type 2 diabetes – repeat if above/below range Every 3 months if Type 1 within the first year of postpartum period
Free T3/Free T4 If indicated by physician
A1c Complete approximately every three months new diagnosis or suboptimal glycemic control Complete approximately every six months for prediabetes, stable, or optimal glycemic control
Alkaline Phosphatase As indicated for liver disease
Liver Function Tests (ALT, ALP) Baseline required prior to initiating therapy with HMG-CoA Reductase Inhibitor or Fibrate 3 months after HMG-CoA Reductase Inhibitor or Fibrate therapy initiated or if last values abnormal Annually if on a statin
Monitored yearly if prescribed HMG-CoA Reductase Inhibitor or Fibrate therapy HMG-CoA Reductase Inhibitor or Fibrate therapy initiated or dose changed within the last month
Bicorbonate If diabetic ketoacidosis is suspected or hypokalemic
Creatinine Kinase Baseline required prior to initiating therapy with HMG-CoA Reductase Inhibitor or Fibrate Patient reporting symptoms suspicious of rhabdomyolysis
Electrolytes (Sodium, Potassium, Chloride) Before initiating or increasing diuretic therapy Only Potassium needed before initiating or increasing ACE inhibitor or ARB Annual screening If diabetic ketoacidosis is suspected

GGT
As indicated for liver disease

CBC and Diff
As indicated for anemia
Annual screening

Vitamin B12
As indicated for Type 1 diabetes with anemia, baseline for Metformin use in pre or type 2 diabetes
Annual screening

Celiac Screen
As indicated for unexplained anemia, weight loss, osteoporosis, GI symptoms

C-Peptide
As indicated to determine insulin production

Insulin Antibodies
To determine if antibodies exist which would account for the very high levels of insulin doses

Anti GAD
To determine the diagnosis of Type 1 diabetes

Islet Cell Antibodies
to determine antibody levels for Type 1 diabetes patients

Lipids

Lipid Panel (Cholesterol, Triglycerides, HDL, LDL fasting)

6 weeks to 3 months after lipid medication change
Annually if indicated or over the age of 40 years

Urinalysis

ACR+/- MICROALBUMIN
Annually if indicated for Type 2 diabetes

Contraindications for CAPs
Do not perform investigations under authority of this medical directive if: · The indications noted above are not fulfilled

Process for Implementing the Procedure
1 Assess and review previous blood work. 2 Explain to the patient the need for the test and obtain verbal consent. 3 Generate a requisition for the specimens required. 4 Documentation in the medical record that tests have been requisitioned, and the indications for the requisition. 5 Document that the results were reviewed once available.

Management of Untoward Outcomes:

1 If following up with the patient prior to patient's next physician visit, review the results of the diagnostic and blood tests and notify the PHYSICIAN of any abnormal or unexpected test results.

Appendix V Prescription of Diabetic Supplies and Performance of Capillary Blood Glucose Monitoring at Point of Care

CAPs under this directive will be implemented by the RD with CDE Certification. The RD can implement these investigations as part of the medically established plan of care, without specific discussion with the physician.

Table 1: Indications/Contraindications for Prescription of Diabetes Supplies

Controlled Act and Procedures	Indications	Contraindications/Considerations/Process for Implementing Procedure
Prescribing diabetes supplies including glucometers, lancets, test strips for glucometers, and needles for insulin/GLP-1 agonist pens	· 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. · Needles for patients injecting insulin or GLP-1 agonist.	· 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 · The length of the needle should be the smallest one available (currently the 4mm/5mm needles) as studies have shown that insulin is better absorbed, there is less pain and bruising leading to better compliance and they are just as effective if not more so than the larger needles. Unless patients have an adverse reaction to a smaller needle, it should always be the first choice.

Table 2: Indications/Contraindications for Performing Capillary Blood Glucose Monitoring at point-of-care

Controlled Acts and Procedures (CAPS)	Indications	Contraindications/Considerations/Process for Implementing Procedure
Perform Capillary Blood Glucose Monitoring point-of-care testing.	· 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.

Guidelines for Lancing Device Use for Capillary Blood Glucose Monitoring in Practices

Subject: Safety precautions to reduce risk of cross-contamination when using lancing devices.
Use of a Practice Demo Glucometer When a Practice glucometer is used to test blood sugars: 1. A single-use disposable lancing device must be used. 2. The lancing device and test strip must be disposed of in a sharps container. 3. The glucometer must be cleaned according to the manufacturer's directions between uses. 4. Gloves must be worn by the health care professional because there is a risk of contact with blood. We will provide single use disposable lancing devices. Reusable lancing devices are not acceptable for multi-person use due to the risk of cross contamination from improper sanitation or misuse.
Education of patient with a new glucometer kit When a patient is being taught with a new glucometer kit that has never been used: 1. The lancing device, lancets, test strips and glucometer may be used to instruct and demonstrate use if the kit will be given to the patient to take home. 2. The lancing device, lancets, test strips and glucometer may be shown to the patient, but may not be used to obtain capillary blood sample if this patient will not be taking the kit home.

1. *Health Care Professional(s) (HCPs) Authorizing Directive:*

Do the authorizing health professional(s) – both sponsoring the directive and those responsible for patients who may receive the procedure under authority of the directive – have the necessary scope of practice, authorization and competencies to authorize implementation of this directive in the family health team setting?
(Authorizing HCPs must be authorized and competent to order the procedure)

2. *Quality Monitoring Mechanisms*

What mechanisms and indicators will be used to conduct an evaluation and renewal of the directive? (e.g retrospective chart audit, literature review, user focus group; re-cert processes and/or annual performance reviews of implementing staff etc).

Regular reviews by RD through their respective clinical programs as per their College criteria will be performed. The programs will monitor how practice under the directive is proceeding; accommodate evolving, evidence-based practice along with focused, recorded reviews conducted on the Implementation Proposal Renewal Form during routine renewal processes one year after initial implementation. Clinicians may be subject to annual or biannual random chart audits as deemed appropriate by their Program Manager or College.

3. *Education Plan (New hires only)*

An RN or RD is eligible for this medical directive if they have completed and passed the Certified Diabetes Education process and will comply with the certification maintenance process that requires ongoing learning.

4. *Communication Plan:*

What is the communication plan for implementing the proposed Medical Directive?

- All staff in the area where the RD practice needs to be aware of the activation of the directive.
- Implementation of this directive will align with the current interdisciplinary practice model of care so no changes are required.
- The Program Manager will notify all key staff, i.e. managers or designates who will in turn orient the staff as needed.
- Notification will occur via email, program meetings, and physician forum meetings.
- When full approval of the directive is accomplished.

5. *For new hires*

For new staff members wishing to become eligible to practice under this medical directive, a probationary phase of approximately 3 month will occur. A preceptor will be assigned to the individual and job shadowing will occur. Upon successful completion of the probationary period, the clinician may apply to work under the medical directive and meet outlined criteria.

6. *How will competency be evaluated*

Maintenance of certification as a diabetes educator (CDE)

Authorizer Approval Form

Title and Number of Directive/Delegation: Diabetes Management in Adults – C-FHT 01

Name of Implementers	Signature	Date
Dr. Sandra Charman	SCharman	Oct 24/2024 SHC May 11/24
Curtis Kelly	Curtis Kelly	Oct 16/24
STEPHEN DUNCAN		16/10/24
LORI CHALKLIN		16/10/24
Alina Gallaccio		16/10/24
CHRIS WILLIAMS		17/10/24
Kim Walsh		24/10/24
Rob Tohn		06/12/24
DAVID WALLIK		2/01/25
Albert Gurges		1/23/25

3.	***GLP-1 Agonist*** Victoza (Liraglutide) 0.6mg OD titrated to 1.2mg OD, and further to 1.8mg if further drop in A1C is needed Ozempic (Once Weekly Injection Semaglutide) 0.25 mg OW x 4 weeks then increase to 0.5 mg OW thereafter, if tolerated Can increase to 1.0 mg OW and 2.0 mg OW if further A1C control is required Rybelsus (Oral Semaglutide) Start at 3 mg OD x 30 days then increase to 7 mg OD x 30 days/maintenance dose, can increase to 14 mg OD if further glycemic control required		· If having any side effects (nausea, diarrhea), after initial start, remain at the 0.6mg dose and do not titrate to maintenance dose (1.2mg) until side effects resolve. · Reduce when eGFR ≥30 to ≤ 50 mL/min (moderate renal impairment) – dose reduction from 10 mcg to 5 mcg BID	· Contraindicated in personal or family history of medullary thyroid carcinoma, pancreatitis · and renal insufficiency. · Discontinue if eGFR <15 mL/min · No acute pancreatitis (stable amylase, lipase, and CBC) · Use caution with medications known to cause hypoglycemia (sulfonylureas, insulin) · Not recommended in patients with eGFR < 15 mL/min · Not recommended in patients with severe gastrointestinal disease · Contraindicated with pt's with family history of medullary thyroid cancer · Use caution with medications known to cause hypoglycemia (sulfonylureas, insulin) · Rybelsus should be taken in the morning on an empty stomach with <120 mL of water; wait 30 mins before taking any other meds, PO intake or additional fluids

ADDENDUM – New Diabetes Medication Class – GLP-1 RA + GIP combination medication Mounjaro - Tirzepatide injection

TABLE 1: List of Medications Implemented Under this Directive with Detailed Indications/Contraindications

	Oral Antihyperglycemic Agent	Indication for Initiation	Indications for Adjustment	Contraindications/Precautions
9	Mounjaro is a single molecule that activates GIP and GLP-1 receptors in the body Starting dose is 2.5 mg once weekly for 4 weeks. Continue to 5 mg once weekly for at least 4 weeks. If additional glycemic control is needed, dose can be increased to 7.5 mg once weekly for at least 4 weeks, then 10 mg once weekly for at least 4 weeks, then 12.5 mg once weekly for at least 4 weeks, and then 15 mg once weekly as a maximum dose.	Subcutaneous injection (abdomen, thigh, arm) Once a week Patient has been diagnosed with Type 2 Diabetes and is on max dose metformin or a documented intolerance to metformin	· If having any side effects (nausea, loose stools), after initial start, remain at the 2.5 mg dose and do not titrate to maintenance dose (5 mg) until side effects resolve. · Reduce when eGFR ≥15 mL/min (moderate renal impairment · Common side effects: nausea, diarrhea, decreased appetite, vomiting, abdominal pain, constipation, indigestion · It is not a weight loss medication,	· Tell your healthcare provider if you get a lump or swelling in your neck, hoarseness, trouble swallowing, or shortness of breath. These may be symptoms of thyroid cancer. In studies with rats, Mounjaro and medicines that work like Mounjaro caused thyroid tumors, including thyroid cancer. It is not known if Mounjaro will cause thyroid tumors, or a type of thyroid cancer called medullary thyroid carcinoma (MTC) in people. Contraindicated for patients who have ever had MTC or if you have an endocrine system condition called Multiple Endocrine Neoplasia syndrome type 2 (MEN 2). · Serious side effects for some patients may be at risk kidney failure/problems, severe stomach problems, gallbladder problems, changes in vision

			but weight loss can occur – research showed up to 25 lbs weight loss	

Addendum: updates to current medications on the directive

7	SGLT-2 Inhibitors <u>Jardiance (Empagliflozin)</u> Start with 10mg OD and can increase to max dose of 25mg OD if further decreases in BG are required <u>Invokana (Canagliflozin)</u> Start with 100mg OD Can increase to max dose of 300mg if further decreases in BG are required <u>Forxiga (Dapagliflozin)</u> Start with 5mg OD and can increase to max dose of 10mg if further decreases in BG are required Xigduo (Dapagliflorzin + Metformin) Start with 5mg/1000mg BID (no possible dose adjustments available as of yet)	· A1c greater than 7 and/or FBS 8 or greater · eGFR needs to be greater than 60 to start · Used as a second line agent after Metformin · Jardiance will be used as the primary choice unless otherwise indicated according to the Canadian Diabetes Association Guidelines	The do not initiate eGFR cut-off of 60mL/min/1.73m2 has been removed as of September 21st/18 and the new direction in the Jardiance product monograph pertain to discontinuation only. If eGFR <45, decrease Invokana to 100 mg OD and discontinue if eGFR <15 mg or on dialysis If eGFR <15, discontinue or on dialysis, discontinue Forxiga or Jardiance	· eGFR must be greater than 20 mL/min in order to start these medications · UTI's/yeast infections are the most noted side effect from this class of medication. Treatment of the UTI's would require a prescription antibiotic from a physician. The risk of recurrent UTI's is low. · Use cautiously if patient has a history of DKA

Addendum: updates to current medications on the directive

Table 1: List of Medications Implemented Under this Directive with Detailed Indications/Contraindications

Rapid-Acting Lispro (Humalog) Aspart (Novorapid) Glulisine (Apidra) Kirsty (insulin aspart) PC check then institute MDI start with one meal then check PC	10-15 minutes	1-1.5 hours 4-5 hours	· 2 hours PC's and pre-meal blood sugars are either elevated or hypoglycemia	· Patient should eat within 10-15 minutes of injection · Store unopened vials in refrigerator · Store open vials at room temperature · Do not expose to heat or direct sunlight · Do not freeze · Opened vials (whether or not refrigerated) must be discarded within 28 days after first use · Use by expiration date on vial
Long-Acting Detemir (Levemir) Glargine (Lantus) Tresiba Toujeo Basal start 10 units check morning FBS, if not in range increase by 1u/night. If on Tresiba, titrate by 2 units q 3-4 days or 4 units q once a week with u200 pen or titrate by 1 unit q 2-3 day with u100 pen	90 min	22-42 hours	· Increase/decrease does if fasting or pre-bed sugars are out of target	· Do not mix with other insulins in the same syringe · Open cartridge of Levemir must be discarded within 42 days after first use · Open vials of Lantus must be discarded within 28 days after first use · Open vials of Tresiba must be discarded within 64 days after first use · Open vials of Toujeo must be discarded within 42 days after first use · Store open vials at room temperature · Store unopened vials in refrigerator

				· Do not expose to heat or direct sunlight · Do not freeze · Use by expiration date on vial
Awiqli (insulin icodec) - once weekly basal insulin Dose when switching from a once- or twice-daily basal insulin the once a week dose of Awiqli depends on the current basal insulin When switching patients from once- or twice-daily basal insulin, the recommended once-weekly Awiqli dose is the total daily basal dose multiplied by 7. For the first injection only (week 1 dose), a one-time additional 50% Awiqli dose is recommended if seeking faster achievement of glycemic control in patients with type 2 diabetes. For type 1 diabetes patients, this dose is always recommended (for	once a week	~ 1 week		· Awiqli pre-filled pen should be kept at room temperature (below 30 °C) or in a refrigerator (2 °C to 8 °C) for up to 12 weeks once opening

the first injection only). If the one-time additional 50% Awiqli dose is administered, the week 1 dose should be the total daily basal insulin dose multiplied by 7 and then multiplied by 1.5, rounded to the nearest 10 units (see Table 1 - https://ec.europa.eu/health/documents/community-register/2024/20240517162426/anx_162426_en.pdf). The one-time additional dose must not be added for the second injection onwards (see section 4.4). The second once-weekly dose of Awiqli is the total daily basal dose multiplied by 7. The third and subsequent once-weekly doses should be based on the patient's metabolic needs, blood glucose monitoring results, and glycemic control goal until the desired fasting plasma glucose is				

achieved. Adjustment of the dose should be made based on the self-monitored fasting glucose values on the day of titration and the two prior days. Close glucose monitoring is recommended during the switch and in the following weeks. Doses and timing of concurrent bolus insulin products or other concomitant antidiabetic treatment may need to be adjusted.				

ADDENDUM – New Diabetes Medication – OW Anti-Obesity Medication - Wegovy (Semaglutide)

Anti-Obesity Medications (which may support lowering of A1C) Liraglutide (Saxenda) Start at 0.6 mg OD x 1 week and increase by 0.6 mg OD each week until 3.0 mg OD dose is reached or tolerated dose Semaglutide (Wegovy) The starting dose is 0.25 mg once weekly and increase gradually the dose every 4 weeks until the recommended dose of 2.4 mg once weekly or maximum tolerated dose is achieved Dose escalation - Weekly Dose Week 1 – 4 0.25 mg Week 5 – 8 0.5 mg Week 9 – 12 1 mg Week 13 – 16 1.7 mg Maintenance Dose 2.4 mg	· Prediabetes (included as one of the comorbidities) with a BMI >30 (or greater with obesity) OR a BMI of 27 kg/m2 and less than 30 kg/m2 (overweight) and weight-related health problems.	·	· Not recommended in patients with eGFR < 15 mL/min · Not recommended in patients with severe gastrointestinal disease · Contraindicated with pt's if they or any of family member have ever had a type of thyroid cancer called medullary thyroid carcinoma (MTC), or if an endocrine system condition called Multiple Endocrine Neoplasia syndrome type 2 (MEN 2).
Naltrexone hydrochloride and bupropion hydrochloride (Contrave)	· BMI >30 or adults with a BMI >27 with at least one weight-related medical problem		· Contraindicated with those who have uncontrolled high blood pressure; have or have had seizures; use other medicines that contain bupropion such as Wellbutrin, Aplenzin or Zyban have or have had an eating disorder; are dependent on opioid pain medicines or use medicines to help stop taking opioids such as methadone or buprenorphine, or are in opiate withdrawal; drink a lot of alcohol and abruptly stop

			drinking; are allergic to any of the ingredients in contrave; or are pregnant or planning to become pregnant.