Thames Valley
Family Health Team

Medical Directive

Medical Management of Type 2 Diabetes	**Assigned Number: 003B**
Activation Date: July 1, 2011	**Review Due: December 2027**

Approval Signature & Date

Medical Director: _____ Date Reviewed: Aug 11, 2026

Executive Director, Clinical Services: _____ Date Reviewed: Aug 11, 2026

Order and/or Delegated Procedure:	**Appendix Attached:** ☐ **Yes** ☒ **No**

Assessment and treatment of Type 2 Diabetes Mellitus, including initiation of appropriate pharmacologic therapy and facilitation of laboratory investigations as clinically indicated.

Recipient Patients:	**Appendix Attached:** ☐ **Yes** ☒ **No**

All active patients (attached or unattached) served by Thames Valley Family Health Team affiliated physicians and nurse practitioners, as identified on the Authorizer Approval Form.

Authorized Implementers:	**Appendix Attached:** ☐ **Yes** ☒ **No**

Thames Valley Family Health Team Registered Pharmacists (RPh).

The implementer must complete educational requirements for this medical directive, including review of the educational package and medical directive and successful completion of any quizzes. If additional orientation or shadowing is needed, the implementer must make arrangements for this with their clinical supervisor. Once all of the above has been completed, they are required to sign the Implementer Performance Readiness Form electronically, via Citation Canada, indicating they have the knowledge, skill and judgement to safely enact the directive.

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

Non-pregnant adult patients ≥18 years of age identified with Type 2 Diabetes

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

1. Patients under 18 years of age or identified as having Type 1 Diabetes.
2. Pregnancy and lactation.
3. Patients identified by their provider as not appropriate candidates for management under this medical directive.

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

Informed verbal consent is obtained from patient/substitute decision maker, per TVFHT: Informed Consent of Patient Healthcare Procedure, prior to the implementation of care.

Guidelines for Implementing the Order/Procedure:	**Appendix Attached:** ☒ **Yes** ☐ **No** Appendix 1 – Laboratory Investigations Appendix 2 – Oral/Injectable Non-Insulin Anti-Hyperglycemic Agents Appendix 3 – Insulin Management

1. The implementer will educate, initiate, and adjust new medications in accordance with Appendix 2: Oral/Injectable Non-Insulin Antihyperglycemic Agents and Appendix 3: Insulin Management.
   - Education includes a review of sick day management and providing a copy of SADMANS-Rx.pdf
   - Order baseline laboratory investigations when initiating new medications (see Appendix 1).
   - Adjust, hold, discontinue, or initiate oral or injectable antihyperglycemic agents as outlined in the appendices to this directive.
   - Prescribe and refill up to 400 days of diabetes medications and supplies (e.g., 100-day supply with three refills).
   - Medications listed in appendices that require dosage adjustments for renal function are indicated with a kidney symbol , consult Diabetes Canada Renal Dosing Chart for recommended doses
2. A message via EMR will be sent to the patient's most responsible provider within 48 hours of initiating a new agent and for any dose adjustments. If appropriate and clinically indicated, the implementer may also follow up with a phone call to the most responsible provider within 48 hours of initiating the new agent.
3. The implementer will consult with the patient's provider if the patient experiences severe adverse drug events requiring further medical evaluation (e.g., symptoms consistent with pancreatitis, retinopathy, etc.) or if there are concerns regarding the patient's immediate safety, well-being, or stability related to their diabetic condition.
4. The implementer will phone or send a new prescription to the patient's pharmacy of choice. Preferences will be given to medications covered under a provincial or private drug plan.
5. The implementer will ensure an appropriate follow-up plan, which may include one or more of the following: self-monitoring of blood glucose; HbA1c testing in 3–6 months; arranging recommended laboratory monitoring for new medications (see Appendix); or scheduling follow-up with the most responsible provider.

Documentation and Communication	**Appendix Attached:** ☐ **Yes** ☒ **No**

- The implementer will follow the documentation standards set by their governing college.
- In the patient's medical record, documentation must be completed on the TVFHT documentation template provided for this directive.
- Information regarding implementation of the directive and the patient's response will be documented in the patient's medical record, in accordance with standard documentation practice.
- Requisitions and prescriptions released must include the name and number of the directive, name of authorizer, name and signature of implementer.

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

The directive remains in effect until amended. It will be reviewed biennially or under the following circumstances:

1. The Medical Director identifies a need for change
2. Issues arise related to the directive's use—the team must promptly communicate these concerns to their clinical supervisor, Medical Directives Coordinator, or Clinical Director
3. New information becomes available between scheduled reviews, particularly if it affects outcomes

The Medical Directives Committee will then review the concerns in consultation with at least one implementer and the Medical Director, as needed, before making necessary changes.

Approving Authorizer(s):	**Appendix Attached:** ☐ **Yes** ☒ **No**

Authorizer Approval Form signed in Citation Canada.

Appendix 1: Laboratory Tests in Adults with Type 2 Diabetes

Prior to ordering laboratory tests, the implementer will review patient record to ascertain:

- When relevant laboratory tests were last ordered
- Refer patient to or consult with physician or nurse practitioner if there are concerns relating to previous laboratory results
- If any laboratory tests listed below are indicated to be ordered.

Laboratory Tests	Indication(s)
Creatinine/eGFR [1] **Albumin/Creatinine Ratio-urine**[1]	• If eGFR ≥60 AND ACR <3, annual • If eGFR between 30-59 AND/OR ACR 3-60 mg/mmol, q6 months • If eGFR ≤30 AND/OR ACR >60 mg/mmol, notify PCP, consult prescriber if different than PCP • Before initiating Metformin or SGLT2 • 2-4 weeks after initiation of SGLT2
HbA1C	• Approximately every 3-4 months
AST (hepatology), ALT, CBC for FIB-4 score to screen for advanced liver fibrosis	• Baseline FIB-4 may be ordered if not previously done • If FIB-4 < 1.30, repeat in 2 years • If FIB-4 >1.30, schedule patient with PCP to discuss further management
CK	• Patient reporting symptoms suspicious of rhabdomyolysis • Not to be used for screening prior to or after initiation of HMG-CoA reductase inhibitor
Na/K/Cl	• Before initiating or increasing diuretic therapy
B12	• Baseline if patient is taking Metformin • Every 2-3 years for those on Metformin * * Evaluation of vitamin B12 monitoring in patients on metformin in urban ambulatory care settings (nih.gov)

Lipid Panel (NON fasting) Total[2]	• Annually
	• 3 to 6 months if:
	  ○ lipid medications changed within last 3-6 months, OR
	  ○ LDL not at target (i.e., greater than 2 mmol/L or less than 50% reduction from baseline

Cholesterol/TG/LDL/HDL/TC:HDL	• A fasting sample will be needed if patients have a recent triglyceride level great than or equal to 4.5 mmol/L

References:

1. KidneyWise Clinical Toolkit
2. Diabetes Canada | Clinical Practice Guidelines Dyslipidemia
3. Evaluation of vitamin B12 monitoring in patients on metformin in urban ambulatory care settings - PMC (nih.gov)
4. FIT_Recommendations_3rd_Edition_2017.pdf (fit4diabetes.com)
5. Diabetes and Metabolic Dysfunction–associated Steatotic Liver Disease in Adults: A Clinical Practice Guideline - Canadian Journal of Diabetes

Appendix 2: Oral and Injectable Non-insulin Antihyperglycemic Agents

Note: Medications discontinued or placed on hold should be reviewed within 24-48 hours by the implementer in collaboration with the provider.

Oral/Non-insulin Injectable Antihyperglycemic Agent Dose (I = initial, U = usual, M = max, CI = contraindications)	**Indications for Adjustment**	**Contraindication/Precautions**
Biguanides		
Metformin (Glucophage®) **I:** 250 –500 mg PO daily with food **U:** 1000 mg PO BID with food **M:** 2550 mg PO per day or 850 mg PO TID **CI:** eGFR less than 15 mL per min **Metformin Extended Release** (Glumetza®) **I:** 250 –500 mg PO daily with food **U:** 1000 – 2000 PO mg with food **M:** 2500 PO mg daily **CI:** eGFR less than 15 mL per min	GI side effects Inadequate blood glucose control Renal impairment Frequent hypoglycemic event	Contraindications: Type 1 Diabetes, history of lactic acidosis, ketoacidosis, renal impairment (CrCl <15 or on dialysis), excessive alcohol consumption (acute or chronic), hepatic dysfunction, pregnancy, or gastrointestinal side effects Hold for 48 hours if undergoing radiologic studies with administration of iodinated contrast material
SGLT2 Inhibitors		
Canagliflozin (Invokana)© **I, U:** 100 mg PO daily in the morning **M:** 300 mg PO daily in the morning **CI:** eGFR less than 30mL per min **Dapagliflozin** (Forxiga)© **I, U:** 5 mg PO daily in the morning **M:** 10 mg PO daily in the morning **CI:** eGFR less than 25 mL per min **Empagliflozin** (Jardiance)© **I, U:** 10 mg PO daily in the morning **M:** 25 mg PO daily in the morning **CI:** eGFR less than 20 mL per min	Hypoglycemia Nausea and hyperkalemia Discontinue if recurrent genital mycotic infection or if develops ketoacidosis	Contraindications: Type 1 Diabetes, hypersensitivity, renal impairment) Canagliflozin: lower extremity amputation (avoid if prior amputation – Canadian Black Box Warning). May cause ketoacidosis, even with glucose values less than 13.9 mmoL; use with caution in patients predisposed to ketoacidosis – Canadian Black Box Warning (e.g., alcohol abuse, caloric restriction) May Increase risk of genital mycotic infections and urinary tract infections that may become serious (urosepsis, pyelonephritis); assess patients with symptoms suggestive of UTI and consider discontinuation of drug May cause symptomatic hypotension due to intravascular volume depletion

= requires dose adjustment for impaired renal function, consult Diabetes Canada Renal Dosing Chart

GLP-1 Analogues		
Liraglutide (Victoza) © **I:** 0.6 mg subcut daily **U:** after greater than or equal to 1 week 1.2 mg subcut daily X 1 week, then 1.8 mg subcut daily **M:** 1.8 mg subcut daily **CI:** eGFR less than 15 mL per min	Persistent and/or bothersome GI adverse effects Inadequate glucose control May need to reduce dose of insulin or insulin secretagogue if used in combination therapy **Rybelsus formulation update:** The optimized formulation of Rybelsus (oral semaglutide) will replace the initial formulation [*italicized in first column*] which is to be phased out. The optimized formulation improves absorption, allowing for a lower dose to be used. Efficacy, safety, and administration remain the same. **Dose adjustment instructions** **Scenario 1:** Patients stabilized on initial Rybelsus should be switched directly to the equivalent optimized formulation tablets: - 3 mg (initial) → 1.5 mg (optimized) - 7 mg (initial) → 4 mg (optimized) - 14 mg (initial) → 9 mg (optimized) **Scenario 2:** Patients naïve to Rybelsus should be started on the optimized formulations.	Contraindications: Hypersensitivity, pregnancy, breast-feeding, personal or family history of Medullary Thyroid Cancer, Multiple Endocrine Neoplasia syndrome type 2 (MEN2), concomitant DPP-4 or GLP-1/GIP therapy Caution of us use in patients with hepatic impairment, especially liver cirrhosis Cases of acute and chronic pancreatitis have been reported, monitor for signs and symptoms of pancreatitis, and use with caution in patients with history of pancreatitis Caution in patients with pre-existing diabetic retinopathy, GERD, or gastroparesis (risk of worsening these conditions)
Dulaglutide (Trulicity) © **I:** 0.75 mg subcut once weekly **U, M:** 1.5 mg subcut once weekly		
Semaglutide (Ozempic) © **I:** 0.25 mg subcut once weekly **U:** after at least 4 weeks 0.5 mg once weekly X 4 weeks, then 1 mg subcut once weekly as tolerated **M:** 2 mg subcut once weekly **CI:** eGFR less than 15 mL per min (limited data available)		
Semaglutide (Rybelsus*) © **I:** 1.5 mg PO daily 30min before meals with 120mL of water [*initial formulation starting dose was 3 mg*] **U:** After 30 days, increase dose to 4 mg daily 30min before meals with 120mL of water. [*initial formulation equivalent was 7 mg*] **M:** 9 mg PO daily 30min before meals with 120mL of water [*initial formulation equivalent was 14 mg*] **CI:** eGFR less than 30 mL per min (limited data available)		
Lixisenatide © **I:** 10 mcg subcut daily before meals X 2 weeks **U, M:** 20 mcg subcut once daily before meals **CI**: eGFR less than 30 mL per min (limited data)		

GIP and GLP1-RA		
Tirzepatide (Mounjaro) © **I:** 2.5 mg subcut once weekly x 4 weeks, then increase to 5 mg once weekly **U:** May increase dose in 2.5 mg per week increments every 4 weeks if needed to achieve glycemic goals **M:** 15 mg subcut once weekly	Hypoglycemia, more frequent when combined with sulfonylurea or basal insulin vs. non-secretagogues Inadequate glucose control May need to reduce dose of insulin or insulin secretagogue if used in combination therapy	Contraindications personal or family history of Medullary Thyroid Cancer, Multiple Endocrine Neoplasia syndrome type 2 (MEN2), concomitant DPP-4 or GLP-1 therapy Loss of up to 11.3 kg over 26 weeks (caution in frail elderly) Caution in patients with GI disease (e.g., GERD, gastroparesis) due to risk of worsening of symptoms

◗ = requires dose adjustment for impaired renal function, consult Diabetes Canada Renal Dosing Chart

Incretins		
Sitagliptin (Januvia)© **I, U, M:** 25-100 mg PO daily **Linagliptin (**Trajenta) © **I, U, M:** 5 mg PO daily **Saxagliptin** (Onglyza®) **I, U, M:** 2.5 – 5 mg PO daily **CI:** eGFR less than 15 mL per min use alternative agent	Nasopharyngitis Inadequate glucose control May need to reduce dose of insulin or insulin secretagogue if used in combination therapy	Contraindications: Hypersensitivity, Type 1 Diabetes, concomitant GLP-1 or GIP/GLP-1 therapy Cases of acute pancreatitis have been reported, monitor for signs and symptoms of pancreatitis, and use with caution in patients with history of pancreatitis' CYP 3A4 inhibitors may increase the serum concentration of saxagliptin. U.S. saxagliptin product labelling recommends limiting adult dose to 2.5 mg PO daily when used with a strong CYP 3A4 inhibitor, monitor for increased saxagliptin effects. A similar recommendation is not made in the Canadian product labeling
Insulin Secretagogues		
Sulfonylureas		
Gliclazide (Diamicron)© **I:** 40-80 mg PO daily in am with food **U:** 80 mg PO BID with food **M:** 160 mg PO BID with food **CI**: eGFR less than 30 mL per min **Gliclazide MR** (Diamicron MR) © **I:** 30 mg MR PO daily **U:** 60 mg MR PO daily **M:** 120 mg MR PO daily **CI:** eGFR less than 30 mL per min	Frequent hypoglycemic events Inadequate blood glucose control Renal impairment, consider dose reduction if hypoglycemia occurs	Contraindications: Type 1 Diabetes, hypersensitivity to sulfonamides, severe renal or hepatic impairment, diabetic ketoacidosis, pregnancy, breastfeeding Risk of hypoglycemia and weight gain, further increased with concomitant insulin
Non-sulfonylureas		
Repaglinide (GlucoNorm) © **I:** [A1C less than 8%] 0.5 mg PO TID before meals, [A1C greater than or equal to 8%] 1-2 mg PO TID before meals **U:** 1-4 mg PO BID-QID before meals **M:** 16 mg PO daily eGFR less than 30mL per min (caution)	Frequent hypoglycemic events Inadequate blood glucose control Renal impairment	Check for drug interactions before using; avoid use with strong 3A4 and 2C8 inhibitors (due to increased risk of hypoglycemia) Repaglinide contraindicated when co-administered with clopidogrel or with gemfibrozil Less risk of hypoglycemia than sulfonylureas due to short action and mealtime administration
Combination Therapy		
Any combination therapy of individual agents listed above	As per information listed for individual agents above	As per information listed for individual agents above

= requires dose adjustment for impaired renal function, consult Diabetes Canada Renal Dosing Chart

Adapted from: Rx Files: Metformin- Precautions with Renal Impairment, Hepatic Disease and Heart Failure, revised Aug 2019 Diabetes Canada | Clinical Practice Guidelines, accessed Jul 8, 2026

Summary of Therapeutic Notes for Oral and Injectable Non-Insulin Antihyperglycemic Agents:

Key Adverse Effects

- Gastrointestinal upset, loose bowels (biguanide, GLP-1 analogues)
- Hypoglycemia (secretagogues – less with gliclazide, glimepride and replaglinide than with glyburide), GLP-1 analogues, SGLT2 inhibitors.
- Moderate weight gain (insulin secretagogues, insulin sensitizers)
- Urinary tract infections, genital mycotic infections, euglycemic diabetic ketoacidosis with or without hyperglycemia (SGLT2 inhibitors)
- Canagliflozin fracture risk (NNH =285/~3 years), lower extremity amputation (NNH = 345/ ~ 3 years); avoid if prior amputation

Key Precaution / Contraindications

- Hepatic disease - consult drug information resource such as UpToDate
- Renal disease – see Appendix 2: Oral and Injectable Non-insulin Antihyperglycemic Agents Pancreatitis history (GLP-1 analogues, DPP4-inhibitors)
- Personal/family history of medullary thyroid cancer or multiple endocrine neoplasia syndrome type 2 (GLP-1 analogues, DPP4-inhibitors)
- Retinopathy history (Semaglutide) ©
- Caution with renal dysfunction, loop diuretics in older adults (SGLT2-inhibitors)
- Bladder cancer (Dapagliflozin) ©
- Sick day management – caution in acute illness/dehydration (sulfonylrueas, metformin, SGLT-2 inhibitors) – see https://www.rxfiles.ca/rxfiles/uploads/documents/SADMANS-Rx.pdf

Appendix 3: Insulin Management

Insulin Type	Onset	Peak (P) / Duration(D)	Indications for Adjustment	Therapeutic Considerations
Basal Insulin Long-Acting and Ultra Long Acting (clear)				The most common adverse effect of insulin is hypoglycemia. The timing of hypoglycemia may vary, depending on the insulin formulation and extrinsic factors such as timing of meals, exercise, or combination with other anti-hyperglycemic agents. General storage and stability information for all insulins: Store unopened vials/cartridges in refrigerator. Keep away from heat and sunlight; do not freeze. Use by expiration date. Store punctured or open vials or cartridges/pens at room temperature. Discard within 28 days of opening. Consult individual product monograph for product-specific details.
Insulin detemir	1-2hrs	P: undiscernible D: 16-24hrs	Titrate to target based on fasting blood sugar Hypoglycemia Switch to more concentrated product (e.g., glargine 300 units per mL or degludec 200 units per mL) for large volume doses	
Insulin glargine 100 units per mL	1-2hrs	P: undiscernible D: Up to 4hr		
Insulin glargine 300 units per mL	Up to 6hrs	P: undiscernible D: Up to 30hrs		
Insulin degludec 100 units per mL, 200 units per mL	60-90mins	P: none D: More than 42hrs		
Insulin icodec 700 units per mL	Not available	P: days 2-4 after injection D: approx. 1 week	Conversion from daily basal insulin: multiply previous daily dose by 7 and round to the nearest 10 units. Titrate by 20 units weekly (or 10 units if high risk hypoglycemia). Hypoglycemia *High potential for errors due to high concentration. Always check label.	
Basal Insulin Intermediate-Acting (cloudy)				
NPH	1-3hr	P: 5-8hr peak D: Up to 18hrs	Hyperglycemia Hypoglycemia For twice daily dosing: Increase evening dose if high fasting and rebound hyperglycemia has been ruled out. Increase or decrease morning dose if readings 4-6 hours after injection are out of target	

Bolus (Prandial) Insulins Rapid and Short-Acting (clear)				
Ultra-fast acting Insulin aspart (Fiasp® only)	5mins	P: 45-60min D: 3-5 hrs	Typically administered in multiple daily doses. Patients should eat within 10-15 min of injection (with the exception of ultra-fast acting aspart which is given no sooner than 2 minutes before the meal and up to 20 min after) Titrate based on 2- hour post-meal glucose measurement or next pre-meal measurement following the injection. May also be adjusted if carbohydrate to insulin ratio is changed Avoid hypoglycemia	
Rapid acting Insulin aspart (all other products) Insulin glulisine Insulin lispro	10-15mins	P: 1-2 hrs D: 3-5hrs		
Regular insulin Insulin human	30mins	P: 2-3 hrs D: 5-8hrs		
Insulin Type	**Onset**	**Peak (P) / Duration(D)**	**Indications for Adjustment**	**Therapeutic Considerations**
Premixed Insulins				
Premixed regular (cloudy) Insulin human and isophane **Premixed analogues** (cloudy) Insulin lispro and lispro protamine Insulin aspart and aspart protamine	Each single vial/cartridge contains insulin in fixed ratio of rapid/short-acting to intermediate-acting. See above onset, peak, and duration times for individual components.		Typically administered in 2 daily doses.	See therapeutic considerations above for individual components
Combination Products with Insulin + GLP-1 Analogues				
Any combination therapy of individual agents listed above and GLP-1s listed in Appendix 1	As per information listed for individual agents above as well as per monograph information for the combination therapy		Typically administered subcutaneously once a day within the hour prior to the first meal of the day	As per information for individual agents listed above and GLP-1s listed in Appendix 1

Summary of Therapeutic Notes for Insulins

1. The usual total daily requirement is approximately 0.5 unit per kg of body weight.
2. Most patients new to insulin are started at 0.1 – 0.3 units per kg per day 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.
3. Under certain circumstances patients may need insulin adjusted greater or less than evidence-based recommendation of 5 –10% total daily dose (TDD)
4. Determine a plan for the frequency of communication with the pharmacist for further adjustments. Depending on clinical situation, may 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 unit daily until fasting plasma glucose target is reached except for degludec & glargine (300 units/mL). Change one type of insulin at a time unless this change could cause hypoglycemia then adjust accordingly.
5. The dose of degludec can be titrated +/- 2 units every 3 - 4 days to target the individualized fasting glucose range. Alternatively, it can be titrated +/- 4 units once weekly to target the individualized fasting glucose range.
6. Insulin icodec has different initial/conversion and titration doses due to it being dosed once weekly. Titrate by 20 units weekly (or 10 units if high risk of hypoglycemia). See the product monograph for specific details. Exercise caution with use of this product due to potential for medication errors given its high concentration.
7. In the event a patient has high and low glucose results, always adjust insulin for hypoglycemia first.
8. Consult the Diabetes Canada Insulin Prescription Tool for further guidance