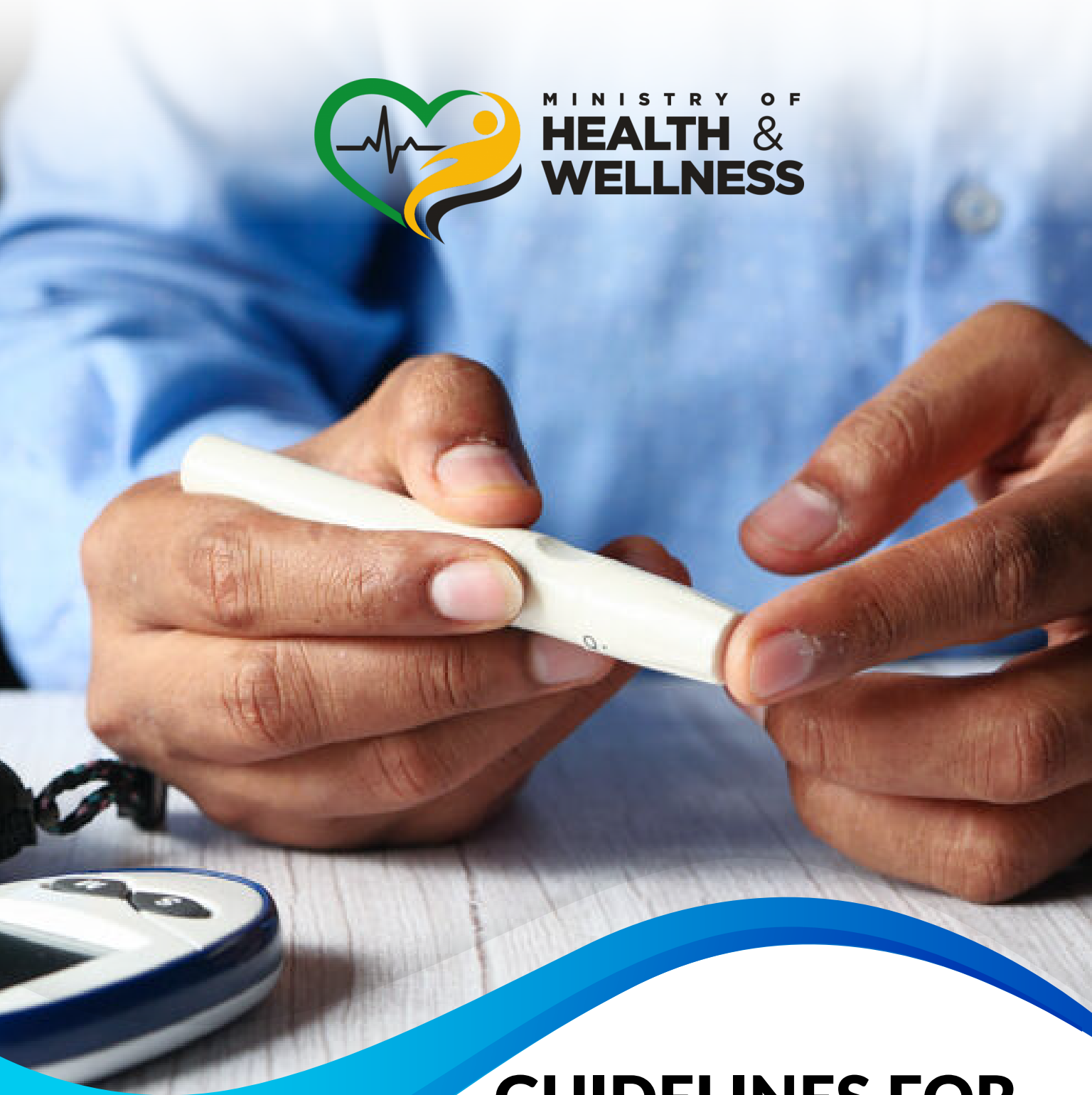

MINISTRY OF HEALTH & WELLNESS

GUIDELINES FOR THE CLINICAL MANAGEMENT OF TYPE 2 DIABETES IN JAMAICA

ISSUED: DECEMBER 2024

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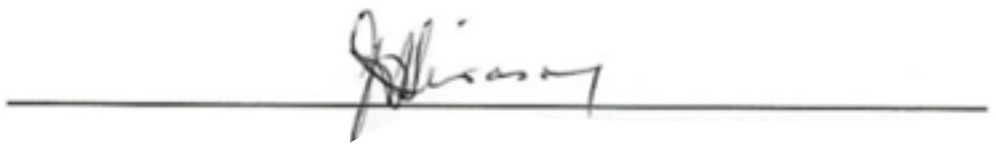
Approved by:



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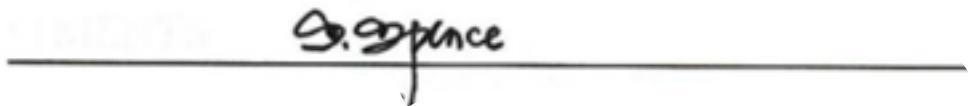

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ACRONYMS AND ABBREVIATIONS

ACEi	Angiotensin Converting Enzyme Inhibitor
ACR	Albumin-to-Creatinine Ratio
ADA	American Diabetes Association
ARB	Angiotensin-II-Receptor Blocker
BMI	Body Mass Index
BP	Blood Pressure
CGM	Continuous Glucose Monitoring
CHO	Carbohydrate
CKD	Chronic Kidney Disease
CV	Cardiovascular
CVD	Cardiovascular Disease
DKA	Diabetic Ketoacidosis
DPP-4	Dipeptidyl Peptidase-4
FBG	Fasting Blood Glucose
GDG	Guideline Development Group
GRADE	Grading of Recommendation, Assessment, Development and Evaluation
HbA1C	Haemoglobin A1c
HTN	Hypertension
IF	Intermittent Fasting
JNC	Joint National Committee
LMIC	Low- or Middle-Income Country
MoHW	Ministry of Health and Wellness
NICE	National Institute for Health and Care Excellence
NPH	Neutral Protamine Hagedorn
PAHO	Pan American Health Organization
RAAS	Renin-Angiotensin-Aldosterone System
SBP	Systolic Blood Pressure
SGLT-2	Sodium-Glucose Cotransporter-2
SMBG	Self-Monitoring of Blood Glucose
VEN	Vital Essential and Necessary
WHO	World Health Organization

INTRODUCTION

Diabetes Mellitus affects approximately 12% of Jamaicans over 15 years old and has been increasing in prevalence over the last 15 years (1). Type 2 diabetes is the most common form and occurs when there are defects in the action of insulin and its production, resulting in chronic hyperglycaemia. Persons with type 2 diabetes may be asymptomatic for several years and often present with already established chronic complications. Given the growing prevalence of type 2 diabetes and the fact that these chronic complications may be prevented or delayed, an argument has been built for screening in high-risk populations. However, there is no convincing evidence that there is significant mortality benefit in persons who are diagnosed from routine diabetes screening. On the contrary, effective interventions to reduce the risk of progression to diabetes in those with prediabetes are well documented in various settings (2).

Diabetes was the second leading cause of death, following stroke, and the leading cause of combined death and disability in Jamaica in 2019 (3). The Surveillance Unit of the Ministry of Health and Wellness (MoHW) documented a 24% increase in "premature deaths" due to chronic non-communicable diseases (including diabetes) among Jamaicans 30-70 years old between 2009 and 2020. While recent local data are not available, it is very likely that this has a significant effect on the economy.

There is also high prevalence of multi-morbidity among Jamaicans, with many patients with diabetes living with co-existing obesity and hypertension, increasing the risk of macrovascular and other complications. The 2016/17 Jamaica Health and Lifestyle Survey (4) showed that just over 50% of persons with diabetes were aware of their status with over 90% of those with diagnosed diabetes on pharmacologic treatment. Of those on treatment less than 1/3 had their blood sugars at goal (1).

An intensive approach to controlling blood sugars in patients with type 2 diabetes results in a reduction in the risk of microvascular complications. Tight control, however, increases hypoglycaemia risk and needs to be considered in those prone to this complication. It is important to determine glycaemic targets in a patient-inclusive/patient-centred manner and with specific patient characteristics in mind.

The implementation of evidence-based guidelines is generally accepted as a way of promoting and ensuring standard of care for patients with diabetes. For several years, local and regional physicians have utilised guidelines developed in North America and Europe and translated these to the local setting. This has posed challenges in many human and material resource-limited settings, hence the encouragement to develop regional and country-specific guidelines in the last few decades. The last formal set of guidelines for the Management of Diabetes in Jamaica was published by the Ministry of Health in November 2007 with Interim Guidelines produced in August 2020. The Caribbean Institute for Health

Research (CAIHR) responded to a call from the Ministry of Health and Wellness, Jamaica in 2021 to update national guidelines on three chronic illnesses: type 2 diabetes, hypertension, and bronchial asthma in accordance with international standards.

The current guidelines are based on the UK's NICE recommendations for type 2 diabetes management. We focus on the management of type 2 diabetes in the primary care setting with specific recommendations on diabetes self-management education, nutrition, glucose control, glucose-lowering therapy, blood pressure management, antiplatelet therapy, and chronic complications. Where we have not addressed some aspects of diabetes care in this document (classification of diabetes, prevention of diabetes, acute metabolic states, immunisation, pre-conception care, diabetes care in children, adolescents, and the elderly) we suggest that guidance be obtained from the existing MoHW guidelines and other documents which speak directly to these issues.

The revised Jamaica Ministry of Health and Wellness guidelines seek to offer up-to-date recommendations for the management of patients with type 2 diabetes in the primary health care setting. The committee looked at specific questions, decided on consensus, and attempted to address each using evidence-based information. While the document presents information on several aspects important to making everyday decisions in patient care, given the scope of the project, there are some components of diabetes management which have not been explored in detail. For some of these, evidence is still emerging. Further iterations of local diabetes management guidelines can explore these issues in greater depth as data become available.

Areas for consideration for future iterations of the guideline documents and knowledge gaps that will likely inform these recommendations are outlined below.

• **Nutrition** - Medical nutrition therapy is one of the cornerstones in the management of Type 2 diabetes. For this document, we explored the weight benefits of intermittent fasting as an approach to type 2 diabetes management based on the increasing popularity of this practice. Several other dietary interventions (very low-calorie diets, vegetarian diets) are emerging for the management of type 2 diabetes and can be considered in subsequent reviews. In addition to the evidence review we have also included general recommendations for nutrition in diabetes care.

• **Newer Oral Agents for Glycaemic Control** - Sodium-glucose transport protein 2 (SGLT-2) inhibitors are available on the local market. Several cardiovascular outcomes trials have shown improved renal and cardiovascular outcomes (morbidity and mortality) in patients with and without diabetes. We are also aware of the recently published systematic meta-analysis of 14 randomised controlled trials which suggested the cardiorenal benefits of SGLT-2 inhibitors and GLP-1 receptor agonists in Asian and White populations may not be seen in Black populations (4). Further well-designed studies will need to be done to answer questions on the benefits of these drugs by ethnicity/race and a cost benefit analysis on the use of these drugs in Jamaica.

• **Newer Injectable Agents for Glycaemic Control** - Glucagon-like peptide -1 (GLP 1) receptor agonists have been shown to have additional benefits for patients with type 2 diabetes particularly those with obesity or cardiovascular disease. Most of these treatments are not readily available in Jamaica as injectable or oral agents. A cost benefit analysis on the use of these agents would be helpful in guiding recommendations for use in our setting as access to this class of agents become available.

• **The Role of Mental Health and Social Determinants on Diabetes Management** – While adequate metabolic control and cardiovascular risk reduction are paramount in managing patients with diabetes, there are other aspects in patient care which need to be prioritised if we are to ensure the most favourable outcomes. Many patients experience diabetes distress with some being diagnosed with depressive disorders. These issues pose several barriers to effective disease management and, if not addressed, may negate gains made in other areas of diabetes care. A detailed needs assessment focused at identifying social and mental barriers to health is integral. Systems and adequate human resources, when established and made available at the primary and secondary care levels, are likely to target gaps in these aspects of diabetes management. Patients may then be equipped with self-management skills or referred for appropriate professional assessment for a more holistic management approach (See needs assessment questions included in primary care consultation form in Appendix A).

METHODS

The Ministry of Health and Wellness requested that these guidelines be developed using GRADE methodology in accordance with the Institute of Medicine's recommendations as published in "Clinical Practice Guidelines We Can Trust" with special emphasis on the following principles (5):

- Transparency
- Declaration of conflict of interest
- Multidisciplinary and balanced guideline development panels (with inclusion of patient/patient advocates)
- Using systematic reviews to guide recommendations
- Use of grading system to rate the strength of recommendations
- Articulation of recommendations in standardised format
- Ensuring external review of guidelines before being finalised

A core team commenced the process of guideline development with a rapid scoping review of the published data from Jamaica that might guide our recommendations. On October 6, 2022, the wider Diabetes Guideline Development Group had their first meeting to discuss the scope of the new guidelines, priority topics and selection of the source guideline. The committee included endocrinologists, general practitioners in the public and private sectors, nurses, pharmacists, a physiotherapist, a nutritionist, a social worker, and patients.

Prior to the first meeting a list of potential themes, covered by existing guidelines, was circulated for participants to review, and rank according to priority. These themes included diabetes surveillance, screening, prevention, diagnosis, drug therapy, chronic complications, emergencies, glucose monitoring, nutrition, exercise, foot care, diabetes education and special care/care of special populations like the elderly or those with specific complications. Within each of these priority topics, members were asked to suggest evidence questions they believed should be answered in these new guidelines.

The responses from the members of the Guideline Development Group were collated and circulated prior to the first meeting. Based on voting by participants, the top five theme areas for prioritisation were diabetes screening, drug therapy, diabetes complications, prevention, and education. We mapped these thematic areas to each of the guidelines identified from a review of diabetes guidelines obtained from a search for Society Guidelines in PubMed, the PAHO BIGG repository of GRADE guidelines and Society Webpages. This, along with a review of whether guidelines utilised the GRADE methodology, was used to select the most appropriate guideline(s) to be considered for adoption in developing the MoHW guidelines. This list of priority areas was further refined following a meeting with members of the MoHW. The NICE diabetes guidelines were the most suitable ones that addressed the priority areas agreed on by the MoHW and the Guideline Development Committee.

While evidence summaries from the NICE guideline served as the primary source of data for committee deliberations, where these data were not available or excluded, newly published data, systematic reviews and summary evidence from more up-to-date guidelines were used to provide information needed for a discussion on the topics of interest. All discussions followed a standard format and consensus was obtained prior to the production of the recommendations.

Additional guidance from local experts was also obtained where there was uncertainty about the evidence and some NICE recommendations, and to discuss issues around implementation of these recommendations in the local context.

Key for Guideline Recommendations

For this user manual we use the terms ‘should’ and ‘may’ to indicate the strength of the recommendation, where ‘should’ indicates as strong recommendation for which there is a clear body of evidence supporting the treatment, practice, or intervention and ‘may’ indicates recommendations where there is some uncertainty regarding the overall net benefit of the treatment, practice, or intervention.

DIAGNOSIS OF TYPE 2 DIABETES

The previous diabetes guidelines from the Ministry of Health have utilised diagnostic criteria from the 1997 American Diabetes Association (ADA) Criteria (6):

1. Fasting (8 hours) plasma glucose of ≥7.0 mmol/L
   OR
2. 2-hour glucose after a 75g Oral Glucose Tolerance Test (OGTT) ≥ 11.1 mmol/L [1]
   OR
3. A random glucose of ≥ 11.1mmol/L in a patient with classic symptoms of hyperglycaemia or in hyperglycaemic crisis

It is important that glucose samples be handled appropriately following collection to prevent falsely low readings resulting from inappropriate storage and delays in analysis (7).

Alternative Approaches to Diagnosis

Portable Glucose Meter Devices
While plasma glucose is preferred, limited access to phlebotomy services in some primary care clinics in poor urban and rural communities can delay diagnosis. For this reason, we suggest this option of diagnosis remains in place if this is the only test available, particularly for symptomatic patients.

When using a portable measuring device, diabetes is likely with a fasting sample of ≥7.0 mmol/L or a random sample of ≥12.2 mmol/L in a patient with symptoms of hyperglycaemia (8).

Glycated Haemoglobin (HbA1c)

(9) To avoid misdiagnosis or missed diagnosis, the ADA recommends that the HbA1c test be performed using a method that is certified by the National Glycohemoglobin Standardization Program (NSGP) (10) and standardised to the Diabetes Control and Complications Trial (DCCT) Assay. We are currently not aware of any local laboratories that utilise this standard which includes the exchange of 40 patient samples and an assessment of agreement analysis (10).

The HbA1c test may also be affected by both iron deficiency and haemoglobinopathies such as sickle cell trait or sickle cell disease (10), both of which are common in Jamaica and may impact the utility of many current assays in this setting (11). As a result of these factors, we do not endorse the use of this test for the diagnosis of diabetes in Jamaica currently.

1. To be performed on more than one occasion if the patient has no symptoms of diabetes

DIABETES SELF-MANAGEMENT EDUCATION

1.1 The Health Care Provider should provide structured education to adults with type 2 diabetes and their family members or carers (as appropriate) at the time of diagnosis, with annual reinforcement and review. They should explain that structured education is an integral part of diabetes care.

1.2 The Health Care Provider should ensure that any structured education programme for adults with type 2 diabetes:

- is evidence-based and suits the needs of the person.
- has specific aims and learning objectives, and supports the person, their family members, and carers to develop attitudes, beliefs, knowledge, and skills to self-manage diabetes.
- has a structured curriculum that is theory-driven, evidence-based, and resource-effective, has supporting materials and is written down.
- is delivered by trained educators who understand educational theory appropriate to the age and needs of the person and are trained and competent to deliver the principles and content of the programme.
- is quality assured, and reviewed by trained, competent, independent assessors who measure it against criteria that ensure consistency.
- has outcomes that are audited regularly.

1.3 The HCP should offer adults with type 2 diabetes group education programmes as the preferred option and provide an alternative of equal standard for people who are unable to take part in group education or prefer not to.

1.4 The HCP should ensure that education programmes for adults with type 2 diabetes meet the cultural, linguistic, cognitive and literacy needs of people in the local area.

1.5 The HCP should ensure that all members of the diabetes healthcare team are familiar with the education programmes available locally for adults with type 2 diabetes, and that these programmes are integrated with the rest of the care pathway.

1.6 The HCP should ensure that adults with type 2 diabetes and their family members and carers (as appropriate) have the opportunity to contribute to the design and provision of local education programmes for adults with type 2 diabetes.

Diabetes Self-management Education

All patients with type 2 diabetes, should receive group diabetes self-management education at diagnosis and as needed, based on changes in their healthcare needs and important transitions.

Points to Note

- Practitioners and health managers should recognise the need for specialist training in diabetes self-management education and develop a sustainable training programme to support patient needs.
- Health managers should develop strategies to increase the number of trained persons, who are cognisant of the social determinants of health, to deliver culturally appropriate educational messages.
- Diabetes educators should be assigned to designated regions to provide on-going group education at health centres.
- Practitioners and health managers should investigate the use of information technology to enhance accessibility.

Rationale

Diabetes self-management education has long been recognised as an integral component in diabetes care. Ensuring patient access to adequate information is likely to empower them to effect improvement blood sugar and weight management. It is also possible that longer term benefits in reduction of chronic complications of diabetes may result. Certain patient subpopulations (e.g., persons with disabilities, persons from rural areas, the elderly, etc.) may face greater barriers, which prevent access to education. The panel believed that group educational programmes should be tailored to be accessible to persons in need (12, 13).

NUTRITION

2.1 Health professionals with specific expertise and competencies in nutrition and diabetes should provide individualised and ongoing nutritional advice.

2.2 Nutritionists/dietitians working with patients with diabetes should be formally trained in the management of diabetes.

2.3 Health care professionals should provide dietary advice in a form sensitive to the person's needs, culture, and beliefs, being sensitive to their willingness to change and the effects on their quality of life.

2.4 Adults with type 2 diabetes should be encouraged to follow the same healthy eating advice as the general population, which includes: eating high-fibre, low-glycaemic-index sources of carbohydrate, choosing low-fat dairy products, eating oily fish, and controlling their intake of saturated and trans fatty acids and reducing/removing ultra/highly processed foods.

2.5 Health care professionals should emphasise the importance of carbohydrate intake on glucose control and the need for consistent intake with meals.

2.6 Health care professionals should integrate dietary advice with a personalised diabetes management plan, including other aspects of lifestyle modification such as increasing physical activity and losing weight.

2.7 Discussion should be held with adults with type 2 diabetes who are overweight or obese to obtain their agreement on an initial weight loss target of 5% to 10%. Patients should be advised that a small amount of weight loss may be beneficial, and a larger amount will have advantageous metabolic impact in the long term.

2.8 Practitioners should individualise recommendations for carbohydrate, alcohol intake, and meal patterns. Reducing the risk of hypoglycaemia should be a particular aim for people using insulin or an insulin secretagogue.

2.9 Adults with type 2 diabetes should be advised that they can substitute a limited amount of sucrose-containing food (e.g., fruit or fruit juice, pastries, cereals, syrups, candies) for other carbohydrates in the meal plan but should take care to avoid excess energy intake.

2.10 Adults with diabetes type 2 should be discouraged from using foods and supplements marketed specifically for people with diabetes.

2.11 Patients interested in specific meal plans for diabetes management should be advised to consult with a registered dietician or nutritionist.

Intermittent Fasting for Adults with Type 2 Diabetes

Patients with type 2 diabetes may be advised to consider intermittent fasting as one approach for assisting in weight management, after consultation with their healthcare provider.

Points to Note

- Intermittent fasting is an increasingly popular practice among patients for glucose control, making it more acceptable as an intervention.
- Intermittent fasting may be an easy intervention to implement in a setting where access to nutrition support is limited.

Rationale

Several diets have been explored for the achievement of weight loss in patients with diabetes. Intermittent fasting (IF) is among the most widely used. The duration of fasting varies widely among those who engage in IF (14). Patients with type 2 diabetes who engage in IF may experience weight loss, but this is associated with no significant change in blood sugar control as measured by HbA1c.

PHYSICAL ACTIVITY

3.1 Adults and older adults with type 2 diabetes should engage in 150 – 300 minutes of moderate-intensity aerobic physical activity; or at least 75-150 minutes of vigorous-intensity aerobic physical activity; or an equivalent combination of moderate and vigorous-intensity activity throughout the week for substantial health benefits. [2]

3.2 Adults with type 2 diabetes should engage in 2–3 sessions/week of resistance exercise (e.g., sit to stand, grip strengthening exercises) on non-consecutive days.

- Health care practitioners, under the guidance of a physiotherapist or exercise specialist, should encourage flexibility training and balance training (e.g. simple stretches for both upper and lower extremities) 2–3 times/week for older adults with type 2 diabetes. This serves to increase flexibility, muscular strength, and balance.

3.3 Patients with lower extremity amputations should be referred to a physiotherapist for an exercise programme. [3]

3.4 Pre-exercise medical clearance is generally unnecessary for asymptomatic individuals prior to beginning low- or moderate-intensity physical activity not exceeding the demands of brisk walking or everyday living. Special precautions may be required in patients with certain complications (e.g. retinopathy, neuropathy, hypoglycaemia unawareness, peripheral arterial disease, and known cardiac disease) or those who may be at increased risk of hypoglycaemia. This information should be included in referrals for physical activity.

3.5 Medical clearance from a specialist physician may be required for some patients who are beginning moderate to vigorous intensity exercise programme.

3.6 Providers should help the patient/person identify a safe and appropriate environment and time for exercise. Providers should encourage the use of appropriate exercise-wear, including comfortable clothes and well-fitting shoes. Persons should keep hydrated, know how to prevent and manage hypoglycaemia, and recognise when it may not be safe to exercise (e.g. sick days, chest discomfort, and unexplained high blood sugars). [3]

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2. Physical Activity and Sedentary Behaviour: A Brief to Support People Living with Type 2 Diabetes. https://iris.who.int/bitstream/handle/10665/364452/9789240062740-eng.pdf

3. Based on expert opinion

ANTIPLATELET THERAPY

For adults with type 2 diabetes, the provider should discuss the risks and benefits of aspirin therapy versus no treatment for primary prevention of cardiovascular events before prescribing.

Points to note

- Experts in diabetes care should develop decision aides to be used when having discussions with persons about the risks and benefits of treatment before initiation of therapy.
- Any benefit of aspirin use for the primary prevention of cardiovascular disease is probably also less in patients who are already on consistent statin and antihypertensive therapy, achieving their metabolic targets.

Rationale

Aspirin and other antiplatelet drugs are well accepted to be beneficial as a means of secondary prevention of cardiovascular disease. The practice of the use of aspirin as primary prevention in patients with diabetes has shifted in the last decade, however. This is largely due to the risk benefit ratio in those in whom it is used for primary prevention. It is imperative that bleeding risk, as a major complication of aspirin use, be considered when prescribing aspirin for primary prevention of cardiovascular disease (15-17).

BLOOD PRESSURE THERAPY

Blood Pressure Threshold for Initiation of Drug Therapy

For patients with type 2 diabetes, pharmacotherapy may be initiated at a SBP of ≥130 mmHg, instead of a SBP of ≥140mmHg, based on patient preferences and individual circumstances.

Points to Note

- Develop decision aides to use in discussion with patients about benefits of treatment before initiation of therapy.
- Address concerns of members of the health team about initiation of blood pressure medication at SBP of <140mmHg.

Rationale

Effective blood pressure management in patients with diabetes is integral in reducing CV risk. There is significant reduction in all-cause mortality, myocardial infarction and heart failure when initiating pharmacotherapy in patients with diabetes once their SBP is ≥130 mmHg.

Health care providers should initiate blood pressure pharmacotherapy SBP of ≥130 mmHg provided this can be done with minimal risk of complications. Blood pressure therapy should be commenced in all patients with SBP ≥140 mmHg.

Target Blood Pressure

For patients with type 2 diabetes, blood pressure should be treated to a SBP of <130 mmHg, taking into consideration patient characteristics and preferences.

Points to Note

- Practitioners and patients need to be further educated on potential benefits of targeting SBP <130 mmHg to reduce CV complications in patients with type 2 diabetes.
- Practitioners who adhered to a SBP target of <130 (according to previous local guidelines) and who relaxed SBP target to <140 mmHg after new cut points for HTN emerged, will now be asked to revert to original practice.
- Increased pill burden may reduce compliance in patients already on several long-term medications.
- A smaller percentage of patients with diabetes will be at BP goal if target SBP is reduced to <130 mmHg.

Rationale

The prevalence of hypertension, according to the JHLS III (2016-1017), among Jamaicans over 15 years old, was 57.6% (using the ACC cut-off of >130/80 mmHg) and 33.8% (using the JNC 7 cut-off of >140/90 mmHg) (1). In the same study, diabetes prevalence in Jamaicans >15 years old was 12%. With these prevalence figures, the likelihood of comorbid diseases (DM and HTN) is high and the management of HTN in those with type 2 diabetes is paramount. Poorly controlled HTN has been known to be associated with several complications that include CKD and CVD. What is sometimes controversial is the best blood pressure target to significantly reduce risk of complications, while minimising harm. The health care provider is thus required to assess risks and benefits in determining the ideal blood pressure target for individual patients.

Blood Pressure Drug Classes to be used as First Line Agents

For patients with type 2 diabetes, ACEi/ARBs should be used as first line therapy or part of combination therapy for adults with hypertension requiring pharmacological treatment.

Points to Note

- ACEis and ARBs are included on the Ministry of Health VEN list and several generic versions of these medications are readily available.
- There are few data on the prevalence of cardiovascular or renal complications from population-based studies of Jamaicans with diabetes.
- Monitoring of electrolytes and renal function are critical at the initiation of this class of agents.
- This recommendation is intended for execution within the primary healthcare setting.

Rationale

The WHO Guideline for the pharmacological treatment of hypertension recommends the use of drugs from any of the following three classes of pharmacological antihypertensive medications as an initial treatment:

1. thiazide and thiazide-like agents
2. angiotensin-converting enzyme inhibitors (ACEis)/angiotensin-receptor blockers (ARBs)
3. long acting dihydropyridine calcium channel blockers (CCBs).

ACEis and ARBs are first line therapy in patients with diabetes (18).

BLOOD GLUCOSE MONITORING

HbA1c Measurement

4.1 The health care provider should measure HbA1c levels in adults with type 2 diabetes:

- every 3 to 6 months (tailored to individual needs) until HbA1c is stable or if there are no changes in therapy.
- every 6 months once the HbA1c is at target and blood glucose lowering therapy remains unchanged.

4.2 The health care provider should measure HbA1c using methods calibrated according to International Federation of Clinical Chemistry (IFCC) standardisation.

4.3 If HbA1c monitoring is invalid because of disturbed erythrocyte turnover or abnormal haemoglobin type, the health care provider should estimate trends in blood glucose control using quality-controlled plasma glucose profiles for example self-monitoring of blood glucose using validated glucometers with several pre and prandial measurement throughout the day

The health care provider should investigate unexplained discrepancies between HbA1c and other glucose measurements. If discrepancies persist, they should seek advice from a team with specialist expertise in diabetes or clinical chemistry.

HbA1c Target

4.4 The health care provider should discuss and agree on individual HbA1c target for adults with type 2 diabetes. They should encourage patients to reach their target and maintain it, unless there are adverse effects (including hypoglycaemia), or their efforts to achieve their target impair their quality of life. Please see the patient decision aids on weighing up HbA1c targets to support these discussions.

4.5 Health care providers should offer lifestyle advice and drug treatment to support adults with type 2 diabetes in reaching and maintaining their HbA1c target (see sections on physical activity and nutrition).

4.6 For adults, whose type 2 diabetes is managed either by lifestyle and diet, or lifestyle and diet combined with a single drug not associated with hypoglycaemia, health care providers should support them to aim for an HbA1c level of 6.5%. For non-pregnant adults on a drug associated with hypoglycaemia, the health care provider should support them to aim for an HbA1c level of 7.0%.

4.7 In adults with type 2 diabetes, if HbA1c levels are not adequately controlled by a single drug and rise to 7.5% or higher, the health care provider should:

- Reinforce advice about diet, lifestyle, and adherence to drug treatment.
- Support the person to aim for an HbA1c level of 7.0%.
- Intensify drug treatment.

4.8 The health care provider should consider relaxing the target HbA1c level (see recommendations 4.6 and 4.7 and patient decision aid) on a case-by-case basis (with special consideration in elderly or frail patients) and after discussion with the patient with type 2 diabetes if:

- They are unlikely to achieve longer-term risk-reduction benefits, for example, people with a reduced life expectancy (less than 5 years)
- Tight blood glucose control would put them at high risk if they developed hypoglycaemia, for example, if they have dementia, are at risk of falling, have impaired awareness of hypoglycaemia, or drive or operate machinery as part of their job.
- Intensive management would not be appropriate, for example if they have significant comorbidities.

4.9 If adults with type 2 diabetes reach an HbA1c level that is lower than their target and they are not experiencing hypoglycaemia, the health care provider should encourage them to maintain it. The health care provider should also be aware that there are other reasons for a low HbA1c level, for example deteriorating renal function or sudden weight loss (e.g., post bariatric surgery).

Self-monitoring of Blood Sugar using capillary measurements and continuous glucose monitoring

4.10 Routine self-monitoring of capillary blood glucose levels for adults with type 2 diabetes may not be necessary in persons who are at low risk of hypoglycaemia but should be considered in the following situations:

- The person is on insulin.
- There is evidence of or suspected hypoglycaemic episodes.
- The person is on insulin or oral medication that may increase their risk of hypoglycaemia while driving or operating machinery [4]
- The person is pregnant or is planning to become pregnant.

4. Health care providers should recognise that self-monitoring should be performed by drivers and persons using heavy machinery, who are on medications that increase the risk of hypoglycaemia prior to operating a motor vehicle/machinery. Readings > 5 mmol/L are usually considered safe.==

4.11 Health care providers should advise short-term self-monitoring of capillary blood glucose levels in adults with type 2 diabetes, reviewing treatment as necessary:

- At diagnosis
- With treatment adjustments
- When starting treatment with oral or intravenous corticosteroids
- During acute intercurrent illness
- To confirm suspected hypoglycaemia

4.12 If adults with type 2 diabetes are self-monitoring their capillary blood glucose levels, the health care provider should carry out a structured assessment at least annually. This assessment should include:

- The person's self-monitoring skills
- The quality and frequency of testing
- Checking that the person knows how to interpret the blood glucose results and what action to take.
- The impact on the person's quality of life
- The continued benefit to the person
- The equipment used.

For adults with type 2 diabetes, the healthcare provider should guide any routine use of self-monitoring.

Health care providers should:

- Encourage patients to have a glucose meter available for use as needed.
- Prescribe a supply of blood glucose testing strips for patients on insulin or at risk for hypoglycaemia from oral agents.
- Combine access to supplies with diabetes self-management education.

Rationale

Self-monitoring of blood glucose is an accepted way of assessing control between clinic/office visits. Health care providers are well placed to provide guidance on how patients should approach this in a way that is beneficial, and which does not pose added risks. Guidance on the frequency of testing and how to interpret readings is essential. Education on how to address abnormal readings is integral in empowering patients in their own diabetes care.

CGM is primarily used for type 1 diabetes. The scope of this guideline did not take into consideration patients with type 1 diabetes.

We agree with the recommendation from the ADA regarding the use of these technologies in patients with type 2 diabetes as outlined below.

"*The type(s) and selection of devices should be individualized based on a person's specific needs, desires, skill level, and availability of devices. In the setting of an individual whose diabetes is partially or wholly managed by someone else (e.g., a young child or a person with cognitive impairment), the caregiver's skills and desires are integral to the decision-making process. When prescribing a device, ensure that people with diabetes/caregivers receive initial and ongoing education and training, either in-person or remotely, and regular evaluation of technique, results, and their ability to use data, including uploading/sharing data (if applicable), to adjust therapy.*" *(24)*

ORAL HYPOGLYCAEMIC AGENTS

5.1 Health care providers should discuss with adults with type 2 diabetes the benefits and risks of drug treatment and the options available. The choice of drug treatments should be based on:

- The person's individual clinical circumstances, for example comorbidities, contraindications, weight, and risks from polypharmacy
- The person's individual preferences and needs
- The effectiveness of the drug treatments in terms of metabolic response and cardiovascular and renal protection
- Safety and tolerability of the drug treatment
- Monitoring requirements
- The licensed indications or combinations available
- Cost (if 2 drugs in the same class are appropriate, choose the option with the lowest acquisition cost).

5.2 If an adult with type 2 diabetes is symptomatically hyperglycaemic, health care providers should prescribe insulin (see the section on insulin-based treatments) or a second-generation sulfonylurea, and review treatment when blood glucose control has been achieved.

5.3 The health care provider should offer standard-release metformin as first-line drug treatment to adults with type 2 diabetes.

5.4 Health care providers should assess the person's cardiovascular status and risk to determine whether they have chronic heart failure or established atherosclerotic cardiovascular disease or are at high risk of developing cardiovascular disease.

5.5 Based on the cardiovascular risk assessment for the person with type 2 diabetes:

- If they have chronic heart failure or established atherosclerotic cardiovascular disease, the health care provider should offer an SGLT2 inhibitor with proven cardiovascular benefit in addition to metformin.
- If they are at high risk of developing cardiovascular disease, the health care provider should prescribe an SGLT2 inhibitor with proven cardiovascular benefit in addition to metformin.

5.6 When starting an adult with type 2 diabetes on dual therapy with metformin and an SGLT2 inhibitor as first-line therapy, the health care provider should introduce the drugs sequentially, starting with metformin and checking tolerability and then start the SGLT2 inhibitor as soon as metformin tolerability is confirmed.

5.7 The health care provider should gradually increase the dose of standard-release metformin over several weeks to minimise the risk of gastrointestinal side effects in adults with type 2 diabetes.

5.8 If an adult with type 2 diabetes experiences gastrointestinal side effects with standard-release metformin, the health care provider should offer a trial of modified-release metformin.

5.9 For first-line drug treatment in adults with type 2 diabetes, if metformin is contraindicated or not tolerated:

- If they have chronic heart failure or established atherosclerotic cardiovascular disease, the health care provider should offer an SGLT2 inhibitor with proven cardiovascular benefit.
- If they are at high risk of developing cardiovascular disease, the health care provider should offer an SGLT2 inhibitor with proven cardiovascular benefit.

5.10 For first-line drug treatment in adults with type 2 diabetes, if metformin is contraindicated or not tolerated and if they are not in either of the groups mentioned in 5.9, the health care provider should offer:

- A DPP-4 inhibitor or
- Pioglitazone or
- A sulfonylurea or
- An SGLT2 inhibitor

5.11 Before starting an SGLT2 inhibitor, the health care provider should check whether the person may be at increased risk of diabetic ketoacidosis (DKA), for example if:

- They have had a previous episode of DKA.
- They are unwell with intercurrent illness.
- They are following a very low carbohydrate or ketogenic diet.

5.12 The health care provider should address modifiable risks for DKA before starting an SGLT2 inhibitor. For example, for people who are following a very low carbohydrate or ketogenic diet, the health care provider should delay treatment until they have changed their diet.

5.13 Health care providers should advise adults with type 2 diabetes who are taking an SGLT2 inhibitor about the need to minimise their risk of DKA by not starting a very low carbohydrate or ketogenic diet without discussing it with their healthcare professional, because they may need to suspend SGLT2 inhibitor treatment.

5.14 When reviewing or considering changing treatments for adults with type 2 diabetes, the health care provider should discuss:

- How to optimise their current treatment regimen before thinking about changing treatments, taking into account factors such as:
  - Adverse effects
  - Adherence to existing medicines
  - The need to revisit advice about diet and lifestyle.
  - Prescribed doses and formulations, stopping medicines that have had no impact on glycaemic control or weight, unless there is an additional clinical benefit, such as cardiovascular or renal protection, from continued treatment (see the note below on off-label use)
- Whether switching rather than adding drugs could be effective
- The considerations about treatment choice in recommendation 5.1.

5.15 For adults with type 2 diabetes at any stage after they have started first line treatment:

- If they have or develop chronic heart failure or established atherosclerotic cardiovascular disease, the health care provider should offer an SGLT2 inhibitor with proven cardiovascular benefit in addition to current treatment or replace an existing drug with the SGLT2 inhibitor.
- If they are or become at high risk of developing cardiovascular disease, the health care provider should add an SGLT2 inhibitor with proven cardiovascular benefit to current treatment or replacing an existing drug with the SGLT2 inhibitor.

The health care provider should take into account the person's current treatment regimen and preferences and make a shared decision about switching treatments or adding an SGLT2 inhibitor, as appropriate.

5.16 The health care provider should introduce drugs used in combination therapy in a stepwise manner, checking for tolerability and effectiveness of each drug.

5.17 For adults with type 2 diabetes, if monotherapy has not continued to control HbA1c to below the person's individually agreed threshold for further intervention, the health care provider should add:

- A DPP-4 inhibitor or
- Pioglitazone or
- A second-generation sulfonylurea or
- An SGLT2 inhibitor

5.18 For adults with type 2 diabetes, if dual therapy with metformin and another oral drug has not continued to control HbA1c to below the person's individually agreed threshold for further intervention, the health care provider should:

- Start triple therapy by adding a DPP-4 inhibitor, pioglitazone, or a sulfonylurea or an SGLT2 inhibitor or
- Start an insulin-based treatment (see the section on insulin-based treatments).

5.19 In adults with type 2 diabetes, if metformin is contraindicated or not tolerated and dual therapy with 2 oral drugs has not continued to control HbA1c to below the person's individually agreed threshold for further intervention, the health care provider should prescribe insulin-based treatment (see the section on insulin-based treatments).

Use of SGLT2-inhibitors

For patients with type 2 diabetes who have chronic kidney disease (with an estimated GFR exceeding 20 ml/min/1.73m2) or atherosclerotic cardiovascular disease, the health care provider should include SGLT-2 inhibitors in the treatment to reduce the risk of adverse cardiovascular and renal outcomes.

Rationale

The SGLT2 inhibitors are among the newest classes of drugs approved for the treatment of patients with diabetes. In cardiovascular outcomes trials they have shown significant cardiovascular benefit and renal benefit to include mortality benefits and in fact have now been approved for use in patients without diabetes. In some cases, they have been suggested for use among first line drugs in patients with diabetes and specific compelling indications (25).

INSULIN-BASED TREATMENTS

6.1 For adults with type 2 diabetes starting insulin therapy, the health care provider should provide a structured programme using active insulin dose titration that encompasses:

- Injection technique, rotating injection sites and avoiding repeated injections at the same point within sites.
- Continuing telephone support
- Self-monitoring
- Dose titration to target levels
- Managing hypoglycaemia
- Managing acute changes in plasma glucose control, for example: during sick days
- Support from an appropriately trained and experienced healthcare professional

6.2 For adults with type 2 diabetes starting insulin therapy, the health care provider should continue to offer metformin for people without contraindications or intolerance and review the continued need for other blood glucose lowering therapies.

6.3 The health care provider should start insulin therapy for adults with type 2 diabetes from a choice of the following insulin types and regimens:

- Neutral protamine Hagedorn (NPH) insulin injected once or twice daily according to need.
- Both NPH and short-acting insulin (particularly if the person's HbA1c is 9.0% or higher), administered either:

– separately

OR

– as a pre-mixed (biphasic) human insulin preparation.

- Insulin detemir or insulin glargine as an alternative to NPH insulin if

– The person needs help from a carer or healthcare professional to inject insulin, as use of insulin detemir or insulin glargine would reduce the frequency of injections from twice to once daily

OR

– The person's lifestyle is restricted by recurrent symptomatic hypoglycaemic episodes or

– The person would otherwise need twice-daily NPH insulin injections in combination with oral glucose-lowering drugs.

- The health care provider should offer pre-mixed (biphasic) preparations that include rapid-acting insulin analogues, rather than pre-mixed (biphasic) preparations that include short-acting human insulin preparations, if:

– The person prefers injecting insulin immediately before a meal

OR

– Hypoglycaemia is a problem

OR

– Blood glucose levels rise markedly after meals.

6.4 The health care provider should consider switching to insulin detemir or insulin glargine from NPH insulin in adults with type 2 diabetes:

- Who do not reach their target HbA1c because of significant hypoglycaemia

OR

- Who experience significant hypoglycaemia on NPH insulin, irrespective of the level of HbA1c reached

OR

- Who need help from a carer or healthcare professional to administer insulin injections and for whom switching to one of the long-acting insulin analogues would reduce the number of daily injections.

6.5 The health care provider should monitor adults with type 2 diabetes who are on a basal insulin regimen (NPH insulin, insulin detemir or insulin glargine) for the need for short-acting insulin before meals (or a pre-mixed [biphasic] insulin preparation).

6.6 The health care provider should monitor adults with type 2 diabetes who are on pre-mixed (biphasic) insulin for the need for a change to a basal-bolus regimen with NPH insulin or insulin detemir or insulin glargine, if blood glucose control remains inadequate.

When starting an insulin for which a biosimilar insulin (drugs which are manufactured to have activity levels similar to those of the original licenced drug) is available, the health care provider should use the product with the lowest acquisition cost.

6.7 The health care provider should ensure the risk of medication errors with insulins is minimised by following a standard such as the Medicines and Healthcare products Regulatory Agency (MHRA) guidance on minimising the risk of medication error with high strength, fixed combination, and biosimilar insulin products, which includes advice for healthcare professionals when starting treatment with a biosimilar (26).

6.8 When persons are already using an insulin for which a lower cost biosimilar is available, the health care provider should discuss the possibility of switching to the biosimilar and make a shared decision with the person, after discussing their preferences.

COMPLICATIONS

Eye

7.1 When adults are diagnosed with type 2 diabetes, the health care provider should refer them immediately to the local ophthalmology screening service.

7.2 The health care provider should encourage adults to attend eye screening and explain that it will help them to keep their eyes healthy and help to prevent problems with their vision and explain that the screening service is effective at identifying problems so that they can be treated early.

7.3 The health care provider should arrange emergency review by an ophthalmologist for:

- Sudden loss of vision
- Rubeosis iridis
- Pre-retinal or vitreous haemorrhage
- Retinal detachment.

The health care provider should refer to an ophthalmologist in accordance with the Jamaica Diabetic Retinopathy Screening Guidelines (27) or if there are refractory errors or cataract present.

Periodontitis

8.1 The health care provider should advise adults with type 2 diabetes at their annual review that:

- They are at higher risk of periodontitis.
- If they get periodontitis, managing it can improve their blood glucose control and can reduce their risk of hyperglycaemia.

8.2 The health care provider should advise adults with type 2 diabetes to have regular oral health reviews at least once per year at their primary care clinics (district health centre or higher).

8.3 For adults with type 2 diabetes who have been diagnosed with periodontitis by an oral healthcare professional or dental team member, the health care provider should offer dental appointments to manage and treat their periodontitis, at a frequency based on their oral health needs.

Erectile Dysfunction

9.1 The health care provider should offer men with type 2 diabetes the opportunity to discuss erectile dysfunction as part of their annual review.

9.2 The health care provider should assess, educate, and support men with type 2 diabetes who have problematic erectile dysfunction, addressing contributory factors such as poor blood sugar control and cardiovascular disease (e.g., high cholesterol and blood pressure), as well as possible treatment options.

9.3 The health care provider may start a phosphodiesterase-5 inhibitor to treat problematic erectile dysfunction in men with type 2 diabetes and initially choose the drug with the lowest acquisition cost and take into account any contraindications.

9.4 After discussion, the health care provider should refer men with type 2 diabetes to a service offering other medical, surgical, or psychological management of erectile dysfunction, if treatment (including a phosphodiesterase-5 inhibitor, as appropriate) has been unsuccessful.

Chronic Kidney Disease

10.1 The health care provider should measure albumin-to-creatinine ratio (ACR) yearly in adults with type 2 diabetes. Calculate estimated glomerular filtration rate (eGFR) from serum creatinine using the CKD-EPI formula.

10.2 For adults with chronic kidney disease (CKD) and type 2 diabetes, the health care provider should offer an angiotensin receptor blocker (ARB) or an angiotensin-converting enzyme inhibitor (ACEi) (titrated to the highest licensed dose that the person can tolerate) if albumin-to-creatinine ratio (ACR) is more than 30 mg/g (or its equivalent).

10.3 For adults with type 2 diabetes and CKD who are taking an ARB or an ACE inhibitor (titrated to the highest licensed dose that they can tolerate), the health care provider should offer an SGLT2 inhibitor (in addition to the ARB or ACE inhibitor) if:

- ACR is over 300 mg/g

  AND

- They meet the criteria in the marketing authorisation (including relevant eGFR thresholds).

10.4 For adults with type 2 diabetes and CKD who are taking an ARB or an ACE inhibitor (titrated to the highest licensed dose that they can tolerate), the health care provider should add an SGLT2 inhibitor (in addition to the ARB or ACE inhibitor) if:

- ACR is between 30 and 300 mg/g
  and
- They meet the criteria in the marketing authorisation (including relevant eGFR thresholds).

10.5 The health care provider should refer adults with type 2 diabetes and CKD to an internist or nephrologist if they have:

- An eGFR <60 ml/min/1.73m2
  OR
- Severe or persistent hyperkalaemia

10.6 The health care provider should refer adults with type 2 diabetes and CKD to a nephrologist if they have:

- An eGFR <30 ml/min/1.73m2
  OR
- Persistent macroalbuminuria

Public Nephrology Service Sites include:

- Kingston Public Hospital
- Spanish Town Hospital
- Cornwall Regional Hospital
- University Hospital of the West Indies (has satellite clinics in Mandeville and St. Ann's Bay)

Gastroparesis

11.1 The health care provider should think about a diagnosis of gastroparesis in adults with type 2 diabetes who have erratic blood glucose control or unexplained gastric bloating or vomiting, taking into account possible alternative diagnoses.

11.2 If gastroparesis is suspected, the health care provider should refer adults with type 2 diabetes to specialist services (for instance specialist diabetes referral clinics e.g. the University Hospital of the West Indies or the Kingston Public Hospital) if:

- The differential diagnosis is in doubt
  OR
- The diagnosis is established or strongly suspected.
  OR
- The person has persistent or severe vomiting.

Painful Diabetic Neuropathy

12.1 When agreeing on a treatment plan with persons with painful diabetic neuropathy, the health care provider should take into account their concerns and expectations, and discuss:

- The severity of the pain and its impact on lifestyle, daily activities (including sleep disturbance) and participation
- The underlying cause of the pain and whether this condition has deteriorated.
- Why a particular pharmacological treatment is being offered.
- The benefits and possible adverse effects of pharmacological treatments, taking into account any physical or psychological problems, and concurrent medications.
- The importance of dosage titration and the titration process, providing the person with individualised information and advice
- Coping strategies for pain and for possible adverse effects of treatment
- Non-pharmacological treatments, for example, physical and psychological therapies (which may be offered through a rehabilitation service) and surgery (which may be offered through specialist services).

12.2 The health care provider should refer the person to a specialist pain service and/or a condition-specific service at any stage, including at initial presentation and at the regular clinical reviews if:

- They have severe pain that is not responding to usual treatment.
- Their pain significantly limits their lifestyle/daily activities (including sleep disturbance)
- Their underlying health condition has deteriorated.
- There is evidence of wasting.
- There is mononeuropathy (cranial nerve deficits, carpal tunnel syndrome) – single or multiple.
- There is suspected diabetic amyotrophy (acute, asymmetric, focal onset of pain followed by weakness involving the proximal leg, with associated autonomic failure and weight loss)

12.3 The health care provider should offer a choice of pregabalin, duloxetine, gabapentin, amitriptyline, or Capsaicin containing cream as initial treatment for neuropathic pain.

12.4 If the initial treatment is not effective or is not tolerated, the health care provider should offer one of the remaining 3 drugs and consider switching again if the second and third drugs tried are also not effective or not tolerated.

Diabetic Foot

Assessing the risk of developing a diabetic foot problem

13.1 For adults with diabetes, the health care provider should assess their risk of developing a diabetic foot problem at each encounter. When examining the feet of a person with diabetes, the health care provider should remove their shoes, socks, bandages, and dressings, and examine both feet for evidence of the following risk factors:

- When diabetes is diagnosed, and at least annually thereafter (see the recommendation on carrying out reassessments at intervals, depending on the person's risk of developing a diabetic foot problem).
- Whenever any foot problems arise.

13.2 When examining the feet of a person with diabetes, the health care provider should remove their shoes, socks, bandages, and dressings, and examine both feet for evidence of the following risk factors:

- Neuropathy (use a 10g monofilament as part of a foot sensory examination)
- Limb ischaemia
- Ulceration
- Callus
- Infection and/or inflammation
- Deformity
- Gangrene
- Charcot arthropathy.

13.3 The health care provider should use ankle brachial pressure index to screen for peripheral arterial disease. Interpret results carefully in people with diabetes because calcified arteries may falsely elevate results.

13.4 The health care provider should assess people with suspected peripheral arterial disease by:

- Asking about the presence and severity of symptoms of intermittent claudication, rest pain, and critical limb ischaemia
- Examining the legs and feet for evidence of critical limb ischaemia, for example ulceration
- Examining the femoral, popliteal and foot pulses
- Measuring the ankle brachial pressure index (see recommendation 13.5).

13.5 The health care provider should measure the ankle brachial pressure index in the following way:

- The person should be resting and supine if possible.
- Record SBP with an appropriately sized cuff in both arms and in the posterior tibial, dorsalis pedis and, where possible, peroneal arteries.
- Take measurements manually using a doppler probe of suitable frequency in preference to an automated system.
- Document the nature of the doppler ultrasound signals in the foot arteries.
- Calculate the index in each leg by dividing the highest ankle pressure by the highest arm pressure.

13.6 The health care provider should assess the person's current risk of developing a diabetic foot problem or needing an amputation using the following risk stratification:

- **Low risk:**

– No risk factors present except callus alone.

- Moderate risk:

– Deformity

OR

– Neuropathy

OR

– Peripheral arterial disease.

- **High risk:**

– Previous ulceration

OR

– Previous amputation

OR

– On renal replacement therapy such as haemodialysis and peritoneal dialysis

OR

– Renal transplant

OR

– Neuropathy and peripheral arterial disease together

OR

– Neuropathy in combination with callus and/or deformity

OR

– Peripheral arterial disease in combination with callus and/or deformity.

• **Active diabetic foot problem:**

– Ulceration

OR

– Infection

OR

– Chronic limb-threatening ischaemia

OR

– Gangrene

OR

– Suspicion of an acute Charcot arthropathy, or an unexplained hot, swollen foot with a change in colour, with or without pain.

Managing the risk of developing a diabetic foot problem

13.7 For people who are at low risk of developing a diabetic foot problem, the health care provider should

- Continue to carry out foot assessments at their annual diabetes review.
- Emphasise the importance of foot care (see the section on patient information about the risk of developing a diabetic foot problem)
- Advise them that they could progress to moderate or high risk.

13.8 Depending on the person's risk of developing a diabetic foot problem, the health care provider should carry out reassessments at the following intervals:

- Annually for people who are at low risk, as part of their annual diabetes review.
- Frequently (for example, every 3 to 6 months) for people who are at moderate risk.
- For people who are at high risk, refer to the appropriate specialist service.

Patient information about the risk of developing a diabetic foot problem.

13.9 The health care provider should provide information and clear explanations to people with diabetes and/ or their family members or carers (as appropriate) when diabetes is diagnosed, during assessments, and if problems arise. Information should be oral and written, and include the following:

- Basic foot care advice and the importance of foot care.
- Foot emergencies and who to contact.
- Footwear advice.
- The person's current individual risk of developing a foot problem.
- Information about diabetes and the importance of blood glucose control.

Diabetic foot ulcer

If a person has a diabetic foot ulcer, the health care provider should assess, and document the size, depth and position of the ulcer and use a standardised system to document the severity of the foot ulcer, such as the SINBAD (Site, Ischaemia, Neuropathy, Bacterial Infection, Area and Depth) or the University of Texas classification system.

13.10 The health care provider should offer 1 or more of the following as standard care for treating diabetic foot ulcers:

- Offloading
- Control of foot infection
- Control of ischaemia
- Wound debridement
- Wound dressings

13.11 The health care provider should offer non-removable casting to offload plantar neuropathic, non-ischaemic, uninfected forefoot and midfoot diabetic ulcers. Offer an alternative offloading device until casting can be provided.

The treatment of diabetic foot ulcers and debridement of ulcers in the community should only be done by healthcare professionals with the relevant training and skills, continuing the care described in the person's treatment plan.

13.12 When deciding about wound dressings and offloading when treating diabetic foot ulcers, the health care provider should take into account the clinical assessment of the wound and the person's preference and use devices and dressings with the lowest acquisition cost appropriate to the clinical circumstances.

13.13 When deciding the frequency of follow-up as part of the treatment plan, the health care provider should take into account the overall health of the person with diabetes, how healing has progressed, and any deterioration.

13.14 The health care provider should ensure that the frequency of monitoring set out in the person's individualised treatment plan is maintained, whether the person with diabetes is being treated in hospital or in the community.

Diabetic foot infection

13.15 The health care provider should start antibiotic treatment for people with suspected diabetic foot infection as soon as possible and refer to surgical services for continued care.

FIGURE 1

HbA1c decision aid for patients with Type 2 Diabetes

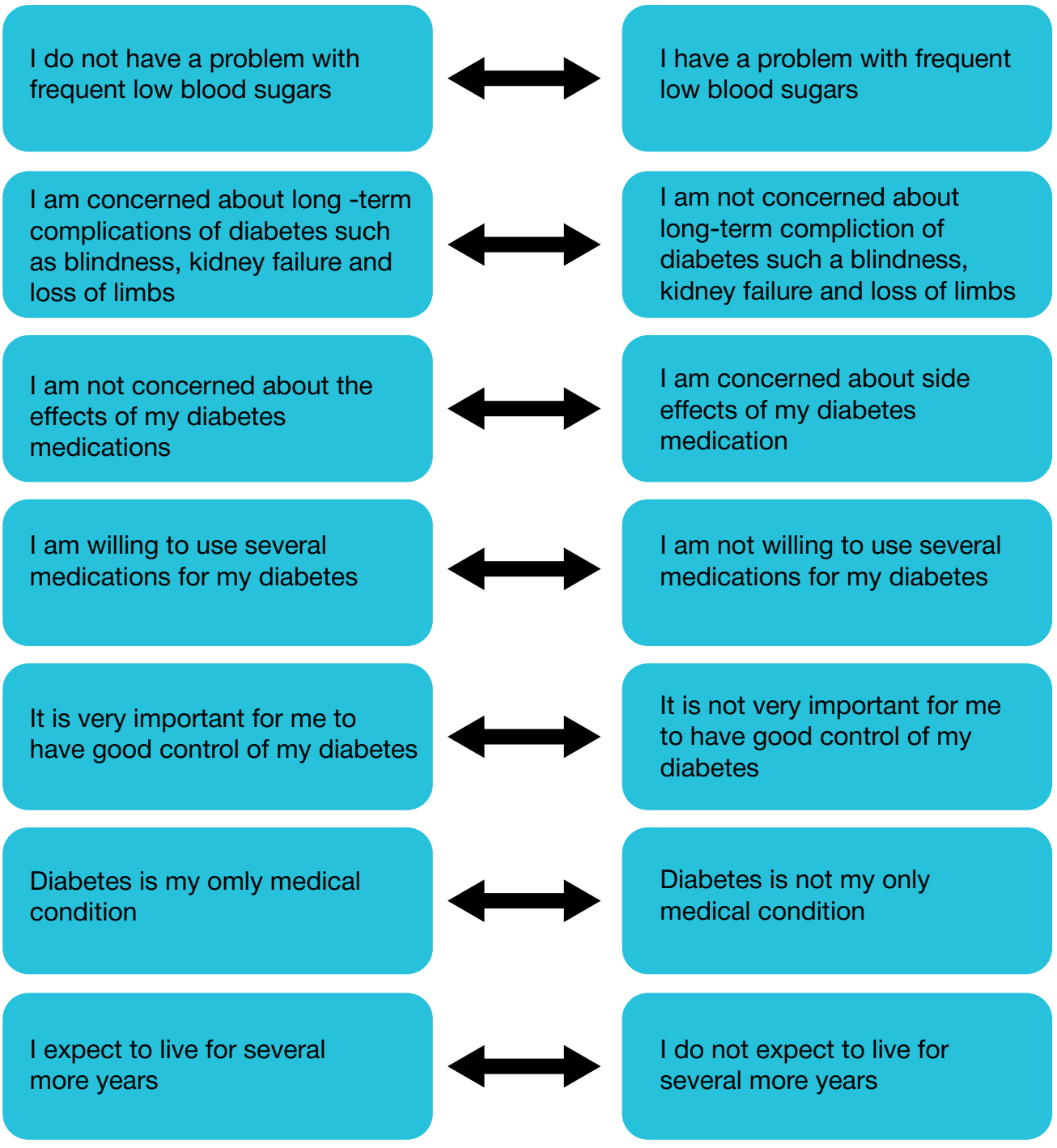
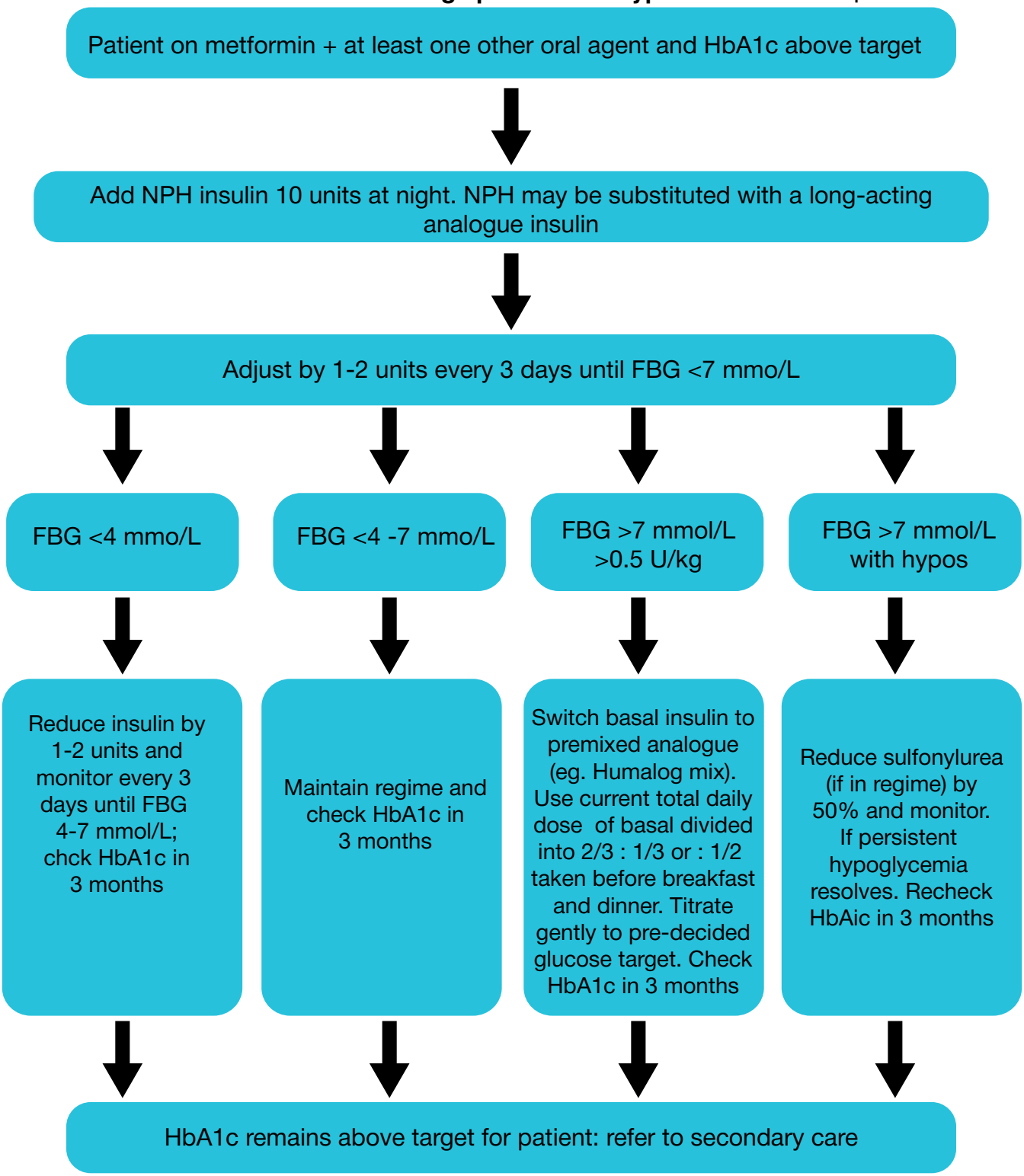


FIGURE 2

Insulin in the average patient with Type 2 Diabetes

If HbA1c >9% at review or sever symptoms of hyperglycaema present start insulin*



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APPENDIX

Appendix A: **Diabetes/ Hypertension Primary Care Consultation Form**

Medical Record: _____ Date: _____ Next Appointment: _____

PATIENT INFORMATION

Last Name:	First Name:	Age:	Sex: Male Female

VITALS AND PONT-OF-CARE TESTING

Temperature_____	Weight (kg)_____	Glucose-Fasting_____	Unne dipstick
Pulse/Heart Rate_____	Height (m) _____	Glucose-2hrPP _____	_____
Resp Rate _____	BMI_____	Glucose-random_____	_____
Blood Pressure_____	Waist Circumference (cm)_____	HbA1c _____	_____

HISTORY

Current Medication:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Adherence to Medication

Tablets Yes☐ Partially ☐ No ☐ Insulin Yes ☐ Partially ☐ No ☐

Adherence to Nutrition recommendations for

Sugar Yes☐ Partially☐ No☐ Salt Yes☐ Partially ☐ No☐
Staples Yes☐ Partially☐ No☐ Fats Yes☐ Partially☐ No☐
Fruits and Vegetables Yes☐ Partially ☐ ☐ No

Physical Activity

Exercise prescription provided Yes☐ Partially☐ No☐
Adherence to recommendations Yes ☐ Partially☐ No ☐

Recent Symtoms/Illness

☐ Weight Loss ☐ Hypogycaemia ☐ Paresthesia ☐ Oedema
☐ Weight Gain ☐ Hyperglycaemia ☐ Chest Pain ☐ SOB
☐ Infection: _____
☐ Other (specify): _____

Recent Hospitalization

Name of Hospital: _____ Date: _____
Reason: _____

(Other History - use progress notes history)

SCREENING AND ASSESSMENT

Cardivascular Risk Assessment

☐ Low Risk ☐ Low-Moderate Risk ☐ Moderate Risk
☐ High Risk ☐ Very High Risk

Nutrition/Dietician Assessment

☐ Yes ☐ No If yes, date:_____

Depression Screen: During the past month, bothered most of the time by...
1. feeling down, depressed, or hopeless?
2. having little interest or pleasure in doing things: Yes ☐ No☐

If "Yes" to either, please proceed with Full Medical Profile and PHQ-9 tool. Result:_____

Social Support Screen

1. Do you have someone to listen to you if you need to talk?
   Yes☐ No☐
2. Do you have challenges affording your Medications?
   Yes☐ No☐
3. Do you havesomone to help you if you get ill or in crisis?
   Yes☐ No☐

Drug Screen: Have you usd any substancein the past 12 months (e.g. Alcohol, Tobacco (products), Ganja, Crack Cocaine) or used a prescriptionmedication for non-medical reasons?
Yes☐ No ☐

If "Yes" please administer the ASSIST screening tool. Result:

Yes☐ No☐ If "Yes", do CXR Result_____

☐ HIV Screen: Date _____

Diabetes/ Hypertension Primary Care Consultation Form

Medical Record Number: _____ Date: _____ Next Appointment: _____

IMMUNIZATION

(Seasonal Influenza, COVID, other vaccines)

INVESTIGATION RESULTS

eGFR

PROGRESS NOTES

ASSESSMENT

DM Type 1 ☐ Controlled ☐ Uncontrolled
DM Type 2 ☐ Controlled ☐ Uncontrolled
HTN ☐ Controlled ☐ Uncontrolled

PLAN

INVESTIGATIONS ORDERED

☐ CBC ☐ Electrolytes ☐ LFTs
☐ BUN ☐ Creatinine ☐ Lipids
☐ Calcium ☐ Uric Acid
☐ FBG ☐ HbA1c ☐ 2htPP
☐ ECG ☐ Urinalysis ☐ CXR

Other:

REFERRAL(S)

CLINICIAN

Name	Position	Signature	Date (dd/mm/yyyy)

Note: Primary Care Clinicians are expected to complete and update the Medical Date section on the individual Health Profile form. Family History at least annually. Personal Medical History on each encounter. Add Progress Notes sheets as necessary for the consultation.

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