Guidance for Persons With Diabetes (PwD) & Caregivers
The Caribbean Public Health Agency is the Caribbean region’s collective response to strengthening health systems and addressing public health challenges which threaten development.

To obtain additional information, please contact:
Caribbean Public Health Agency (CARPHA)
16-18 Jamaica Boulevard Federation Park
Port of Spain,
Trinidad and Tobago
Tel: 868-299-0895 Fax: 868-622-2792
Email: postmaster@carpha.org
Website: http://carpha.org/

Suggested citation.


© Caribbean Public Health Agency 2019
Module 1
Evidence-Based Treatment Protocols for Diabetes

Module 2
Healthy Lifestyle Counselling

Module 3
Guidance For Persons With Diabetes (PwD) & Caregivers

Module 4
Access To Essential Medication

Module 5
Systems for Monitoring

CARPHA Guidelines For Management of Diabetes In Primary Care In The Caribbean
Contents

6 List of Tables
6 List of Algorithms
6 List of Appendices
7 List of Abbreviations
8 Preface
10 Acknowledgements
12 CARPHA Diabetes Guidelines: The Modular Approach Expanded
15 The Client-Centred Approach to Chronic Care
17 Methodology of Guideline Development

20 Introduction
21 Blood Sugar Control – The Simple Version
22 Risk Factors for Diabetes
23 Obesity
26 Signs of Diabetes
28 What to expect from your doctor’s visit:
29 Blood Sugar Monitoring
31 How to Use the Home Blood Sugar Monitor

32 Managing Our Diabetes: - Diet, Physical Activity, Medication
32 Diet
38 Physical Activity
41 Medication
42 Glucose-lowering Tablets (oral medicines)
43 Side Effects
43 Oral Medicines
43 Insulin Injections
44 Where Can I Inject my Insulin?
Why is it Important to Store Medicines Correctly?

High Blood Sugar (Hyperglycaemia)
Low Blood Sugar (Hypoglycaemia)
Setting Lifestyle Change Goals
Your Diabetes Care Schedule
Foot Care
Immunisations
Other Medical Conditions
The Importance of Self-Care for Caregivers
Needles & Sharps
Proper Disposal of Medicines
Journey with Diabetes

Reference List

Appendices
List of Tables

14  **Table A:** Modules of the Guidelines for the Management of Diabetes in Primary Care

List of Algorithms

50  **Algorithm 1:** Carers’ Guide to Hypoglycaemia

List of Appendices

i  Regional directory of Diabetic Associations and Ministries of Health
# List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>Body Mass Index</td>
</tr>
<tr>
<td>CARPHA</td>
<td>Caribbean Public Health Agency</td>
</tr>
<tr>
<td>CCFP</td>
<td>Caribbean College of Family Practitioners</td>
</tr>
<tr>
<td>CNCDs</td>
<td>Chronic Non-communicable Diseases</td>
</tr>
<tr>
<td>DKA</td>
<td>Diabetic Ketoacidosis</td>
</tr>
<tr>
<td>HBA1c</td>
<td>Glycosylated Haemoglobin</td>
</tr>
<tr>
<td>HHS</td>
<td>Hyperglycaemic Hyperosmolar Syndrome</td>
</tr>
<tr>
<td>PAHO</td>
<td>Pan American Health Organization</td>
</tr>
<tr>
<td>PWD</td>
<td>Persons with Diabetes</td>
</tr>
<tr>
<td>NCD</td>
<td>Non-Communicable Disease</td>
</tr>
<tr>
<td>NHS</td>
<td>National Health Service</td>
</tr>
<tr>
<td>T1DM</td>
<td>Type 1 Diabetes Mellitus</td>
</tr>
<tr>
<td>T2DM</td>
<td>Type 2 Diabetes Mellitus</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>WINDREF</td>
<td>Windward Islands Research and Education Foundation</td>
</tr>
</tbody>
</table>
Preface

The CARPHA Guidelines on the Management of Diabetes in Primary Care in the Caribbean provide a strategic approach to improving diabetes health outcomes, by providing simple directives on key aspects of care for persons with diabetes (PWD).

In 2018, the OECS Health Unit, as part of the Strategic Pillar ‘Healthy Environments and Health Empowerment,’ and consistent with the emphasis placed on Non-communicable Diseases (NCDs) in the region, collaborated with CARPHA and WINDREF and secured funding from the World Diabetes Foundation for the implementation of the “OECS Diabetes, Prevention and Care Project.” A key component of the project, required to support its implementation, was the updating of clinical practice guidelines for the management of diabetes. The collaborators viewed this project as opportune, as it allowed for the review and update of the CARPHA Management of Diabetes in Primary Care in the Caribbean.

Previous versions of these guidelines were produced in 1995, 1998 and 2006. However, with rapid advancements in research, resulting in new international guidelines and treatment protocols, there was a need for an updated document to be produced. Consistent with its remit to provide an accurate, timely and relevant evidence-base for public health decision-making, the Caribbean Public Health Agency teamed up with the Organisation of Eastern Caribbean States to expedite the production of the revised guidelines, aligning them with current WHO strategies on Non-communicable Disease (NCD) treatment and management, including the WHO HEARTS and WHO’s Package of Essential Package of Non-communicable Disease Interventions (WHO PEN).
High-quality, evidence-informed clinical practice guidelines bridge the gap between policy, best practice, local contexts and client choice. They have been upheld as an essential part of quality medical practice and have been defined as ‘a convenient way of packaging evidence and presenting recommendations to health care decision makers,’ improving effectiveness and quality of care, by standardising clinical practices, and reducing costly and preventable mistakes and adverse events.

This newest version of the CARPHA guidelines has been extensively modified from its previous format and uses a modular approach which includes five modules.

- Module 1: EVIDENCE-BASED TREATMENT PROTOCOLS
- Module 2: GUIDING LIFESTYLE CHANGES
- Module 3: GUIDANCE FOR PERSONS WITH DIABETES (PWD) AND CAREGIVERS
- Module 4: ACCESS TO ESSENTIAL MEDICINES
- Module 5: SYSTEMS FOR MONITORING

These modules are intended for use by clinicians, caregivers, policymakers and programme managers. Each one focuses on complementary aspects of care of diabetes in the health system, and targets different cadres of workers and care providers for management of diabetes. Target users may vary, based on context, existing health systems and national priorities in CARPHA Member States, and recommendations made in each of the modules may require adaptation for implementation at country level. Ultimately, the revised guidelines seek to support the efforts of Ministries of Health, to strengthen and standardise the management of diabetes in primary care and improve outcomes in care of diabetes, regionally.
Acknowledgements

The Caribbean Public Health Agency and the Organisation of Eastern Caribbean States acknowledge, with appreciation, the World Diabetes Foundation (WDF) and the several regional individuals and agencies whose contributions were indispensable to the successful completion of these revised guidelines:

Dr. Avery Hinds and Dr. Lisa Monrose, the Consultants who were instrumental in the development of this revised document.

The members of the CARPHA Expert Working Groups:

WORKING GROUP 1:

- Prof. Surujpal Teelucksingh - UWI, St. Augustine
- Dr. Michael Boyne - UWI, Mona
- Dr. Marshall Tulloch-Reid – UWI, Mona
- Dr. Sonia Roache-Barker - Caribbean College of Family Practitioners (CCFP)
- Prof. Nigel Unwin - UWI, Cave Hill
- Dr. Claude Khan – Ministry of Health Trinidad and Tobago

WORKING GROUPS 2 AND 3:

- Ms. June Holdip - Registered Dietitian
- Ms. Alecia Surujlal - Registered Dietitian, Diabetes Educator
- Ms. Jochelle Mohammed - Registered Dietitian
• Ms. Vanesa Martina - Public Health Nutritionist
• Ms. Denesia Venus - Registered Dietitian and Public Health Nutritionist

The technical persons who assisted in the provision of materials, development of various modules, editing and revision including:

• CARPHA Technical Officers - Dr. Kimberly Ashby-Mitchell, Dr. Virginia Asin-Oostburg, Dr. Cheryl Jones, Dr. Glennis Andall-Brereton, and Ms. Christine Bocage
• OECS Health Unit Staff - Ms. Lydia Atkins, Dr. Carlene Radix, and Ms. Eliza James
• OECS Pharmaceutical Procurement Service Unit - Mr. Francis Burnett and Mr. Abraham Weekes
• WINDREF - Professor Calum MacPherson and Dr. Satesh Bidaisee
• Ministry of Health Saint Lucia - Dr. Christy Nathaniel and Ms Ira Isaac
• Dr. Rohan Maharaj - University of the West Indies
• Ms. Anica Sanoir – Caribbean Certified Diabetes Educator
• Health Professionals, who participated in the peer review consultations
• Mr. Sherlan Gittens, responsible for the graphics and layout of the guidelines
The revised CARPHA Guidelines take a modular approach to providing guidance on the Management of Diabetes in Primary Care in the Caribbean.

**Module 1: EVIDENCE-BASED TREATMENT PROTOCOLS**
Targets primary care physicians, nurse-practitioners and any other health care provider who is directly involved in the medical management of diabetes. This module aims to give updated algorithms on care, incorporating the most recent recommendations in the care of diabetes.

**Module 2: GUIDING LIFESTYLE CHANGES**
Intended for all persons on the health team, who provide care and lifestyle-counselling to persons living with diabetes (PWD). It is specifically geared toward physicians, dietitians, nutritionists, nurses, community aides and home-help. This module covers all aspects of lifestyle that directly impact target outcomes. Therefore, diet, physical activity, weight management and mental health are addressed in this module.

**Module 3: GUIDANCE FOR PERSONS WITH DIABETES (PWD) AND CAREGIVERS**
Aims to inform to persons living with diabetes (PWD) and all persons involved in their care, with or without a medical or health care background. This module should be particularly useful to community nurses, home-help, community aides, and other community caregivers,
especially those involved in caring for PWD in their homes and can serve as a directory of topics relevant to caregivers. It addresses topics such as foot care, self-monitoring of blood glucose, identification and management of low blood glucose (hypoglycaemia) and high blood glucose (hyperglycaemia).

**Module 4: ACCESS TO ESSENTIAL MEDICATION**
Targets physicians, nurses, pharmacists and personnel involved in ensuring the efficiency of health system procurement mechanisms. It provides information on the various classes of medicine available for care of diabetes, issues related to their availability, as well as the risks, benefits and cautions that should be considered in their use.

**Module 5: SYSTEMS FOR MONITORING**
Targets all health care providers but is of particular relevance to Primary Care Managers and those involved in health systems evaluations. It focuses on monitoring and reporting information on the prevention and management of T2DM, and the implementation of the guidelines using standardised indicators and data collection tools.

Table I, below, summarises the scope and highlights the target users of each module.
<table>
<thead>
<tr>
<th>Module</th>
<th>What does it cover?</th>
<th>Who are the target users?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 1 Evidence Based Treatment Protocols</td>
<td>Documentation of protocols aimed at standardizing the clinical approach to the management of T2DM in primary care.</td>
<td>Physicians</td>
</tr>
<tr>
<td>Module 2 Guiding Lifestyle Changes</td>
<td>Information on lifestyle interventions that target the four modifiable risk factors for diabetes.</td>
<td>Physicians</td>
</tr>
<tr>
<td>Module 3 Guidance for PWD &amp; Caregivers</td>
<td>Information for Persons With Diabetes (PWD) and lay caregivers related to the care of diabetes.</td>
<td>Physicians</td>
</tr>
<tr>
<td>Module 4 Access to Essential Medications</td>
<td>Information on medicines and technologies available for diabetes management and their supply-chain management at the primary care facility level.</td>
<td>Physicians</td>
</tr>
<tr>
<td>Module 5 Systems for Monitoring</td>
<td>Monitoring and reporting information, standardized indicators and data collection tools for use in the prevention and management of T2DM.</td>
<td>Physicians</td>
</tr>
</tbody>
</table>
Diabetes is a chronic illness which extends across an individual’s lifespan. The goal of all clinicians and persons on the health team should therefore be to deliver optimal and evidence-based care and support. The Chronic Care Model, endorsed by PAHO/WHO, emphasises the importance of the team approach to the care of all Chronic Non-communicable Diseases (CNCDs) and further underscores the integral role of high-level policy support in optimising the delivery of care to persons with chronic illnesses. This framework informs the approaches recommended in these guidelines and is both endorsed and encouraged by CARPHA and the OECS as a mechanism for improving the standard of health care delivered to people of the region.

The Chronic Care Model identifies patient-centeredness, effectiveness, efficiency, equity and timeliness as essential elements of efficient health service delivery for people with this chronic illness. From as early as the 1980’s, the approach to the care of “clients” has undergone a paradigm shift from the doctor-centred model, to one which gives more focus, autonomy and involvement to the recipient of health care services, initially called “patient-centred care.” Moria Stewart et al (2003), highlighted that persons receiving care preferred this model and reported improved satisfaction, outcomes, and health care utilisation with this approach. As archetypes, relating to health care delivery continued to evolve, and the shared role of health care providers and recipients in decision-making became more widely accepted, and the terminology describing health care participants was updated. “Patients” are now called “clients,” a term recognising the
more empowered role they play in their own health care. Rather than passively presenting to be “fixed” by a doctor, they are recognised as an integral part of the health care team for their treatment. These guidelines will therefore utilise the terms “persons with diabetes” (PWD) and “clients” in reference to the recipients of health care services for diabetes.

At each visit, health care providers need to remember that clients are individuals, with the circumstances of their lives constantly changing. The natural progression of the disease process also means that recommended management will almost certainly need to be adjusted periodically. Early involvement of the wider team of health professionals in the prevention and management of the complications of diabetes is a critical risk mitigation strategy, the success of which hinges upon the cooperation of educated, motivated clients and integrated, coordinated providers of health care. At each point of care, it behoves the care-provider, to seek an integrated understanding of the client’s world and to solicit feedback alongside the provision of their recommendations for improving management. Each member of the health team must recognise that managing the non-clinical (emotional, social, economic, psychological) needs and life issues of the client plays an important role in ensuring successful outcomes and must understand the relevance of tailoring their care to suit their individual clients.

Integrating the individual client-centred approach into the broader framework of the Chronic Care Model will, necessarily, take varying forms in different Member States and will require the adaptation of both systems and individuals to new ways of executing health care functions; but the benefits to be derived at both the individual and the systemic level from improving the quality of health care delivery have been shown, in many other jurisdictions greatly, to outweigh the costs.
Methodology of Guideline Development

The guidelines adopted the most recent recommendations from organisations including the International Diabetes Federation (IDF), American Diabetes Association (ADA), World Health Organization (WHO), the UK NICE Guidelines and other relevant sources. Instrumental documents included, but were not limited to the: IDF 2017 Clinical Practice Recommendations for Managing T2DM in Primary Care; ADA Standards of Medical Care in Diabetes (2018 & 2019 iterations); WHO Guidelines on 2nd and 3rd Line Medicines and Types of Insulin for Control of Blood Glucose Levels in Non-pregnant Adults with Diabetes and the WHO HEARTS technical package for Cardiovascular Disease management in primary health care.

The updating of the guidelines utilised an iterative process for review and adhered to the Institute of Medicine’s (IOM) standards for developing trustworthy clinical practice guidelines. The IOM recommends that a Guidelines Development Group should be multidisciplinary and balanced, including methodological experts, clinicians, and populations expected to be affected, and should adopt strategies that increase effective participation. This was facilitated through the multidisciplinary CARPHA Expert Committee, who reviewed the draft iterations of the guidelines; and the broad stakeholder consultation, held in Saint Lucia, which allowed key end-users to provide feedback on the utility of the guidelines. Both internal and external review committees were developed to ensure that the final iteration of the guidelines was satisfactory. Additionally, WINDREF coordinated and facilitated a regional ‘Training of Trainers’ workshop in Grenada, which also provided and opportunity for attendees, health care professionals
involved in the management of diabetes, to give feedback on an early draft of the guidelines, accommodating broad-based reviewer input.

A consultant, based at the OECS Health Unit, was secured to update the guidelines and the CARPHA expert working group, who had drafted the first iteration of the guidelines was engaged for peer review to ensure that the most current and rigorous scientific evidence was included. The consultant, through a desk review, used the latest published version of the current guidelines for the management of Type 2 Diabetes around the world, limiting the selection to guidelines that were available in English.
MODULE 3
Guidance for Persons With Diabetes (PwD) & Caregivers
Introduction

Diabetes is a condition in which your blood glucose, also called blood sugar, is too high. Glucose is the main energy source for your body, and you get it from the food you eat. Your body produces a hormone called insulin, that helps your body to use glucose by moving it into your cells so it can be used to produce energy. The organ that produces insulin is the pancreas. Sometimes your pancreas cannot make enough—or any—insulin or your body does not use insulin well. Glucose then stays in your blood and does not reach your cells and resulting in your blood glucose levels becoming higher than normal.

If you do not control your blood glucose levels and they remain high, this can cause damage to your organs including your eyes, heart, kidneys, and feet, leading to serious illness and disability. Diabetes has no cure, but you can take steps to manage your diabetes and stay healthy.

Sometimes people call diabetes “a touch of sugar” or “borderline diabetes.” These terms suggest that someone does not really have diabetes or has a less serious case, but every case of diabetes is serious.

In persons living with diabetes, a large part of keeping healthy takes place between doctors’ visits when they are living their lives. Some persons with diabetes may also be cared for by family members, friends and home helpers that have no prior medical training. This module aims to provide information and guidance that are easy to understand and to follow, both for persons with diabetes and their caregivers, especially those not equipped with a medical background.
Our blood sugar control is based on a tight balance between glucose levels and insulin production. When we eat, we absorb nutrients including glucose into our bloodstream. The pancreas produces insulin to help your cells take up glucose and glucose levels go DOWN.
insulin, which helps the body’s cells take up glucose and use it for energy. When we have diabetes, we do not produce enough insulin, glucose cannot be taken up by cells and we develop high blood glucose levels. These high blood glucose levels can cause damage to blood vessels in many organs of our bodies, leading to complications such as blindness, kidney failure, heart disease, nerve damage (especially in hands and feet), and problems in sexual function for men. It is therefore important to find out if you have diabetes early and prevent yourself from developing these complications by getting and keeping your blood glucose under control

**Risk Factors for Diabetes**

Several factors may increase your risk of having diabetes. Some of them are under your control; others are not. The ones not under your control are called non-modifiable risk factors and include:

- Being 40 years and older
- Having a first-degree relative (parent/brother/sister) with diabetes
- Belonging to certain ethnic groups (especially persons of Asian and African descent)
- Previously having diabetes in pregnancy/ delivering a baby weighing >4 kg (9lbs)
- Previously having poor sugar control (pre-diabetes) diagnosed by your doctor

The factors under your control are called modifiable factors, and include:

- Physical inactivity – not moving enough and not getting enough exercise
• Having an unhealthy diet – especially consuming foods with too much carbohydrate content

• Being overweight or obese as measured by:
  » Body Mass Index- BMI [Wt.(kg)/height (m2)]
  » Waist Circumference

**Obesity**

In countries with mainly European populations, it has been proven that having a waistline that measures more than 35 inches for women, and 40 inches for men, is linked to increased risk of elevated blood sugar, elevated blood pressures and elevated cholesterol.

High sugar, pressure and cholesterol levels increase the chances of a person having a heart attack or stroke. Studies that have looked at different ethnicities suggest that persons of African descent, who have a waist circumference of more than 35 inches for men and 31 inches for women should be considered at increased risk of heart attacks and strokes. The cut-off values for persons of Indian heritage are even lower at 33 inches for men and 28 inches for women. While for persons of Chinese descent, the cut-offs are 35 inches for men, and 29 inches for women. It is recommended that persons should aim to
keep their waist circumference below the cut-off value most relevant to their ethnic background.

Your doctor may also determine if you are overweight or obese by calculating your Body-Mass-Index or BMI, which is a measure of your weight in kg divided by your height in meters squared. If the BMI calculated is above 25 then the individual is considered overweight i.e. they weigh too much for their height. A BMI of more than 30 indicates obesity and higher risk of diabetes, in European persons. Similar to waist measurements, however, a higher risk of diabetes was found to start at BMI values less 30 in persons of non-European ancestry. Table above, shows the high-risk values for different Ethnic Groups.
Being overweight or obese causes numerous health problems but in persons with diabetes, it has another negative effect. For persons with diabetes, being overweight prevents the body from responding as it should to the hormone insulin which helps regulates the body’s blood sugar and other body processes. Hence, the recommendation for persons with diabetes and are also overweight or obese, is to lose weight in order to achieve a normal BMI. Most doctors will suggest an initial goal of losing 5-10% of the present weight if you are overweight or obese. This is to help lower blood pressures, maintain normal blood sugars and improve the body’s ability to work with the medicines prescribed. Losing weight can be a scary thought for most persons who are overweight or obese. Often, they may have tried before and not succeeded or not been able to maintain the weight loss. The lifestyle changes already discussed are the initial recommendations that members of the health team will make. Diet and exercise are key components to weight loss.

Persons who are trying to lose weight should see a trained nutritionist who can help them in developing an eating plan that has less calories, but all the nutrients the body needs to remain healthy. Once assessed by their doctor for suitability to exercise, then consistent physical activity is recommended. Seeking talk therapy (psychotherapy) from a trained counsellor or psychologist is also recommended as part of the weight loss plan, as there may be several issues that need to be addressed in order to assist the client in achieving his/her goals.

For clients with a BMI >27kg/m^2 showing consistency in implementing lifestyle changes, weight loss medicines may be offered for a short period of time. Unfortunately, none of these medicines are currently purchased through the government services. They may be available at private pharmacies in different Member States.

In persons who are obese (BMI >30kg/m^2), they should have a
discussion with their doctors, on the risks and benefits of weight loss surgery (Bariatric surgery). Again, these surgeries are not routinely offered through the government service in many of the less-populous Member States at this time, but may be available in the private sector in those Member States, with a more extensive array of surgical services.

Signs of Diabetes

Diabetes may show itself in your body by giving you certain signs of either higher than normal blood sugars; poor blood sugar control or effects of organ damage. These signs include:

- Urinating often
- Being thirsty more often than usual
- Being hungry more often than usual
- Being more tired than usual
- Blurry vision
- Cuts and bruises that take a long time to heal
- Tingling or numbness in the hands, legs and feet
- Sudden weight loss without trying
- Irritability
• Frequent urination (peeing often)
• Feeling thirsty all the time
• Feeling hungry all the time
• Feeling tired all the time
• Blurry vision
• Slow healing of cuts and wounds
• Tingling or numbness in hands or feet
• Dark patches of skin on the back of your neck, in your armpits or groin
• Frequent yeast infections

If you are in a high-risk group for diabetes, or you see any of the above signs, you should go to your doctor to get a check-up and to be tested for diabetes.
What to expect from your doctor’s visit:

**History-Taking**

Your doctor will ask you questions about:
- any symptoms you may be having, like tiredness, weight loss, peeing often
- any other illnesses you may have, like heart or kidney disease or high BP
- if there is anyone else in your family with diabetes
- some of your habits, including diet, exercise, smoking and drinking alcohol
- your feelings about your diagnosis & your ability to manage it

**Physical Exam & Medical Tests**

Your doctor will give you a check-up, looking at:
- your weight, height, blood pressure, tummy, eyes, skin & feet
- blood tests for glucose control, kidney function and cholesterol levels
- tests on heart function

**Management**

Once diagnosed you doctor will put you in touch with:
- health professionals who can help you manage your diet and physical activity
- specialists to take care of your eyes, kidneys heart and feet
- a diabetes educator to help you understand your condition and how to manage it.

If needed, your doctor will also put you on medicines to help control your blood glucose, which may include:
- tablets or
- insulin injections
- or both
Blood Sugar Monitoring

Many persons with diabetes will be advised by their doctor to buy a “home blood sugar monitoring kit” (glucometer). These kits are used to check your blood sugar levels.

Self-monitoring of blood sugars is useful because you:
1. can check how you are responding to your medicines
2. can check how different foods and the amount of food eaten affect your blood sugars, and you can adjust your diet accordingly
3. can detect if your blood sugars are too low (hypoglycaemia) or too high (hyperglycaemia)
4. have power to check on an important part of your own health status without needing to see your doctor, or go to a pharmacy or health centre just to measure your blood sugars

The health provider will usually tell you how often the blood sugars need to be tested at home, what the values mean and what you can do at home to improve your care.

Self-monitoring of blood sugars is especially recommended for:
• ALL persons with T1DM
• Persons taking insulin for the treatment of diabetes
• Newly diagnosed persons with diabetes, until they achieve the blood sugar control that is needed
• ALL pregnant women with diabetes

Everyone with diabetes can benefit from self-monitoring, so even if you don’t fall into any of the groups above, it is still a good idea to get your own kit, so that you can self-monitor.
In Appendix 2 there is a blank form you can use to record blood glucose readings. Make sure to make copies of it. Fill in the copies and leave the form in the book blank so you always have that version when you need to make more copies. Keep your recordings in a safe place and take them with you to your doctor’s visits.

Clients and caregivers should be familiar with the glucometer and know how to use it.

**N.B. Make sure the test strips are the correct strips for the machine and NEVER RE-USE STRIPS**
How to Use the Home Blood Sugar Monitor

1. Gather all your materials: Glucometer Strips, lancet, cotton. Make sure it's the correct strips for the machine and that they are NOT expired.

2. Wash hands with warm soap-water. Place test strip into glucometer.

3. Stick finger with lancet. Squeeze finger until one drop of blood obtained.

4. Touch the edge of the clear rectangle on the strip to the drop of blood and allow the drop to get “sucked” into the space on the strip.

5. Wait for the result to show on screen. Place dry cotton and apply pressure to the pricked site. Record value.
Managing Our Diabetes: – Diet, Physical Activity, Medication

Your health care team will work with you to decide what approach is best for controlling your blood sugars. It is very important to maintain a healthy diet and to have enough physical activity on a daily basis. All persons with diabetes should see a nutrition specialist to help adjust their diets, to give them better control over their blood sugar levels. Getting involved in different kinds of physical activity every day, also helps with blood sugar control. If changing diet and physical activity alone don’t manage to bring your blood sugar under control, your doctor will prescribe medicines to help you reach your control goals.

Diet

Your daily diet is made up of the foods that you eat each day. Persons with diabetes must take special care that their daily food-intake helps them to maintain normal blood sugar levels throughout the day. Spikes (high blood sugars) and hypos or “dips” (very low blood sugars) should be avoided.

Listed below are some of the measures that can be taken to ensure blood sugars remain in the normal range:
Always have breakfast
- Eating breakfast prevents you from overeating at your next meal and gives you fuel to face your day

Eat smaller portions
- Use your hand to estimate portion sizes
When dishing out food divide plate in quarters
• ¼ for starches (provision, rice, etc.)
• ¼ for protein (fish, chicken, peas & beans, etc.)
• ¼ for cooked vegetables (carrots, okra, cabbage, etc.)
• ¼ for raw vegetables (lettuce, cucumber, tomato, etc.)

Eat every 3-4 hours
• Breakfast
• Morning Snack
• Lunch
• Afternoon Snack
• Dinner/Supper
• Eating regularly spaced meals, throughout the day, helps prevent spikes and dips in blood sugar levels
• This is very important for persons on insulin (remember insulin should be taken within half hour of eating)
What to eat?
- Drink more water
- Eat more lean meats (chicken, fish)
- Eat more legumes (peas & beans)
- Eat more unprocessed or complex carbs (e.g. green figs as opposed to pasta, etc.)
- Eat foods high in fibre
- Eat a variety of fruits and vegetables

What foods to avoid?
- Avoid sugary foods
- Avoid juice, soft drinks or any sweetened drinks
- Avoid foods cooked with oil and butter (fried foods, pastry, roti, etc.)
- Avoid using too much salt

What about Alcohol?
- If newly diagnosed, or on insulin, alcohol should be avoided
- If on a low-calorie diet, alcohol should be avoided
- One unit of alcohol (1 beer, 1 shot of rum, 1 glass of wine) may be consumed occasionally

One unit Beer
5% alcohol, 250mls

One unit Cider
4.5% alcohol, 218mls

One Unit Wine
13% alcohol, 76mls

One Unit Whisky
40% alcohol, 25mls
Packaged Foods: How to read your food labels?
Before eating any packaged food, you should read the nutritional facts on the food label and decide if you should eat this food and how much.

Step 1: HOW MANY SERVINGS ARE IN THE PACKAGE?

- The package food comes in will suggest the serving size and how many servings are in the package.
- If you eat twice the amount recommended by the package, then you are eating twice the calories.
- E.g. in the label shown below there are 2 servings in the container; if you ate all the food in the package you would have consumed twice the calories of one serving.

```
Nutrition Facts

Serving size 1 cup (228g)
Servings Per Container 2

Amount Per Serving

Calories 250
Calories from Fat 110

% Daily Value*

Total Fat 12g 18%
Saturated Fat 3g 15%
Trans Fat 3g

Cholesterol 30mg 10%
Sodium 470mg 20%

Total Carbohydrate 31g 10%

Dietary Fiber 0g

Sugars 5g

Protein 5g

Vitamin A 4%
Vitamin C 2%
Calcium 20%
Iron 4%

*Percent Daily Values are based on a 2,000 calorie diet.
Your Daily Values may be higher or lower depending on your calorie needs.
```

Footnote

Calories 2,000 2,500
Total Fat Less than 65g 80g
Sat Fat Less than 20g 25g
Cholesterol Less than 300mg 300mg
Sodium Less than 2,400mg 2,400mg
Total Carbohydrate 300g 375g
Dietary Fiber 25g 30g

5% or less is low
20% or more is high

Quick Guide to % DV
Step 2: CHECK THE CALORIES IN A SERVING.
• The package will tell you how many calories are in a serving of the food item
• If trying to lose weight, it is recommended that you cut down on the number of calories consumed

Step 3: LIMIT SALT (SODIUM), SUGARS & FATS
• Aim for foods having low daily values (less than 5%) for these nutrients

Step 4: ENSURE IT HAS SUFFICIENT VITAMINS AND FIBRE
• Aim for foods having high daily values for these (more than 20%)

Step 5: CHECK THE NUTRITIONAL VALUE BASED ON THE PERCENT DAILY VALUES (DV)
• The nutritional facts are based on the total number of calories estimated for an entire day of eating
• This label says that its daily value contribution of these foods is based on a 2000 calorie diet
• Thus, by looking on the right side of the nutrition facts label, you can quickly tell how much of your daily calorie intake you would get from eating the recommended serving size of that food item
• A low daily value is 5% or less
• A high daily value is 20% or more
• Most persons aiming for weight loss are encouraged to have 1500, or fewer, calories daily and may have to eat even smaller amounts than suggested on the food package to stay within their recommended daily calorie intake

Your nutritionist will help you with these calculations, so that you don’t have to do them on your own!

Step 6: LOOK AT THE INGREDIENT LIST
• All food packaging should clearly list all the ingredients contained in the food
• Proteins and carbohydrates are often listed along with their daily value contribution
Physical Activity

Physical activity is defined as any movement produced by the body’s muscles. Daily activities such as housework, play, recreational activities and exercise are all types of physical activity.

Exercise is a particular type of physical activity that is planned, structured, repetitive, and purposeful. It is encouraged for all persons, especially persons with diabetes, as it has several benefits, including:

• Maintaining normal blood sugars;
• Increasing flexibility and muscle strength;
• Improving mood and overall feelings of wellness;
• Helping manage and prevent depression;
• Preventing weight gain;
• Enhancing weight loss; and
• Helping to control high blood pressure and cholesterol.
Once the doctor has given the all clear to start your physical activity programme, you may begin.

Here is a checklist for being safe while engaging in physical activity:

• Wear comfortable, well-fitting shoes;
• Drink enough water;
• Warm up before you start and cool down afterward;
• Eat a meal or snack 1-3 hours before physical activity;
• Eat and adjust insulin as necessary;
• Insulin users should take insulin 1 hour before exercise & INJECT in a non-exercise area;
• Walk with a snack in case your blood sugar drops.

**Stretching**
Before starting any physical activity, it is advised that clients warm up for at least 5 minutes. Stretches are exercises that can be used as warm up exercises but can also be done separately to increase flexibility, strength and balance. Stretching loosens tight muscles and joints. It is advised to stretch until you feel tension and hold for 10-30 seconds. Remember to breathe through each exercise and stop if you feel pain. The same number of stretches should be done on each side and start slow with five repetitions of each exercise and gradually increase.

1. **Head stretch:** With shoulders relaxed, tilt head, first to the left, hold the position then gently tilt to the right.

2. **Shoulder stretch:** In a head-up position, raise shoulders to ears, hold the position and then drop. Then raise shoulders to ears and rotate first in a forward then in a backward direction.

3. **Back stretches:**
   **CAT STRETCH** In a table-top position, first take a deep breath
in arching the back and pulling in the tummy as much as possible. Hold the position then exhale the breath, relaxing the spine.

**KNEE TO CHEST STRETCH**
Lying flat on the back, with the knees bent and feet flat on the floor, bring one knee as close to the chest as possible and hold for 10 seconds. Lower the leg slowly and repeat on the other side.

4. **Ankle and foot exercises:**
These exercises can be done in a seated position. Put a bath towel on the floor with heels near the edge closest to you and scoot the towel towards you using toes.

**Medication**

If carefully following your diet plan and getting enough physical activity doesn’t bring your blood sugar readings to safe levels, your doctor will give you medicines to help with blood sugar control. In type 2 diabetes, the more common type in older adults, the medicines are usually in tablet form, but sometimes clients may also need insulin injections to get their blood sugars under proper control.
Glucose-lowering Tablets (oral medicines)

Your doctor may prescribe tablets/pills for you to take on a regular basis to keep your blood sugars under control. These tablets work in different ways to help control your blood sugar: some of them help your body’s cells respond to insulin better; others help your pancreas produce more insulin; yet others may stop you from absorbing sugars from your intestines; or they may make your body get rid of more sugar in your urine; still others act by opposing other hormones, such as glucagon, that work to raise blood sugar levels. Sometimes, it may be necessary for your doctor to give you more than one type of medicine so that the different ways of lowering your sugar can act together to keep your blood sugar at healthy levels. Appendix 3 has a table with some extra information on how each type of glucose lowering drug works in the body. As a person living with diabetes, or as the person responsible for the care of someone with diabetes, it is absolutely important that you know the names of all medicines being taken and the correct doses. This is especially important in the case of older adults who may be taking several medicines for numerous health conditions; having such information on hand helps the health team take better care of the client. Appendix 4 has a helpful format for recording information on your medicines. Describing the tablet by size and colour does not help, (e.g. several different tablets may be small and white). It is also important that you know if there are any allergies or side effects to any medicines that have been prescribed. When going to the doctor, please keep with you all the medicines that are being taken: those prescribed, over the counter and any herbal meds that are also being taken. In this way, medicines can be checked for cross reactions. If you have any questions about what the medicine does or why it is prescribed, you should ask the health provider when you visit. Having better knowledge makes you better at making healthy decisions. It is also important that you know how to store your medicines in a manner that is safe and that will allow the medicine to continue to work the way it is intended to work.
Side Effects

Oral Medicines
As with many other medicines, some people may have side effects when starting oral medicines. The most common side effects are nausea and diarrhea. *These side effects usually go away over time as your body gets used to the medicine.*

Here are some things you can do that might help your nausea go away:

- Eat small amounts often, instead of a few large meals
- Eat bland, non-greasy foods, such as baked potato, pasta, dry toast, or plain crackers
- Drink plenty of fluids
- Avoid foods and smells that make you feel sick
- Eat slowly and listen to your hunger

Your health care team can help you find ways to manage side effects.

Insulin Injections
Insulin is a hormone that the body makes naturally. In diabetes, the body either cannot make enough of it, or can’t respond well-enough to it, to keep your blood sugar under control. If tablet medicines are not helping you to achieve this control, insulin injections can be added to the list of medicines you may be given. Your health care team will ensure that you are properly trained in measuring and injecting the correct dose of insulin, for your needs. Injecting insulin, however, may cause some side effects. Here are a few to be aware of:

- Weight gain;
• Redness, swelling or itching at the place where you inject. Inform your health care team if this reaction happens. Changing to a different kind of insulin may solve the problem;

• Low blood sugar. Your blood sugar may become too low, if you take too much insulin, if you do not eat enough, or if you are more active than usual. When your blood sugar gets too low, you may feel:
  » weak or tired;
  » dizzy or shaky;
  » nervous or upset;
  » sweaty;
  » confused;
  » sleepy;
  » like your mood is changing; and/or
  » like you are getting headache.

Some people may not have any signs of low blood sugar before they have a problem. This is another reason why regular blood sugar checks are important. See pages 49 for more information about what to do about low blood sugar.

Where Can I Inject my Insulin?

Injections of diabetes medicines are given in the layer of fat just under the skin in these areas of the body:

• Abdomen (except a 2-inch circle around your belly button)
• Thighs (top and outer parts)
• Upper arms

Why is it Important to Store Medicines Correctly?

• Some medicines, especially liquid ones, like antibiotic syrups or insulin, need to be refrigerated to work well. If they are kept at the wrong temperature, they will become “spoilt” and will no longer work. Always read the labels carefully. Follow the directions on your bottle. Ask where to store your medicines.

• Keep medicines in tablet form in a cool, dry place. Keep them away from sunlight. Remember:
  » Do not keep medicines in the medicine cabinet in the bathroom. The heat and humidity from the shower can damage the medicines.
  » Do not keep your medicines in the kitchen. Heat from stoves and ovens can also damage them.

• Do not store injectable medicine in the glove compartment of your car.

• Always keep medicines in the container they came in. This container has a label with the name of the medicine, and the name of the person taking the medicine. A label on the container may prevent others from taking the wrong medicine by accident. You should not take medicine prescribed by a doctor for someone else, as using medicine not intended for you can make you very ill.

• Take out the cotton ball that comes in some medicine bottles. If you leave the cotton in the bottle it will attract water from the air into the bottle. This may harm the medicine.
• Check the expiration date before you take any medicine. Throw out medicines that are past the expiration date.

**Do not use medicine that has changed colour, texture, or smell. It may not work.**

If you do not take your medicines the right way, your blood sugars can go too high or drop too low. Both of these situations are dangerous: blood-sugar highs and lows are important problems that should be corrected as soon as possible.

---

**High Blood Sugar (Hyperglycaemia)**

Persons with diabetes are more likely to get episodes of high blood sugar, also called hyperglycaemia. The whole purpose of treatment for persons with diabetes, is to prevent persons from experiencing high blood sugars. Unfortunately, if the blood sugars remain very high and are not managed, this can lead to life threatening conditions such as:

- **Diabetic Ketoacidosis (DKA)**
  - A condition where the body needs to breakdown fat as a source of energy, this can lead to a diabetic coma (adapted from the NHS website).

- **Hyperglycaemic Hyperosmolar Syndrome (HHS)**
  - A condition where the client has severe dehydration caused by the body trying to get rid of excess sugars (adapted from the NHS website).
Blood sugars that remain high over long periods of time can lead to permanent damage to the kidney, eyes and nerves.

**When to See a Doctor?**
- If feeling sick
- If experiencing tummy pain/diarrhoea
- Rapid breathing
- Fever more than 38°C, for more than 24 hours
- Signs of dehydration (e.g. headache, dry skin, weak, rapid heartbeat)
- Difficulty staying awake
### What causes high blood sugars?
- Stress
- Illness e.g. the cold
- Eating too much sugary food (sweets, sodas, cookies, bread, etc.)
- Not enough exercise
- Not taking medicines as prescribed
- Taking other medicines e.g. steroids

### How can I tell if blood sugars are high?
- Thirsty more than usual
- Headaches
- Blurred vision
- Feeling tired or weak
- Trouble concentrating
- Frequent peeing
- Skin rashes
- Frequent bladder infections
- Frequent yeast infections

### What should you do if you suspect high blood sugars?
- Using a home blood sugar monitoring kit, check blood sugar levels frequently
- If levels are >180mg/dL
  - Drink plenty of water
  - Change diet (avoid foods with high sugar or starch content e.g. cake, sweets, bread, etc.)
  - Exercise
  - If using insulin, talk to your doctor about adjusting insulin
Low Blood Sugar (Hypoglycaemia)

Low blood sugar also called hypoglycaemia, is a common condition that affects many persons with diabetes. Persons will generally have the symptoms of hypoglycaemia when their blood sugar drops below 3.9mmol/L or 70mg/dL. Symptoms of low blood sugar include:

- Feeling light-headed or dizzy
- Trembling
- Hunger
- Cold sweats
- Blurred vision
- Confusion
- Palpitations (feeling the heart beating rapidly in your chest)
- Fits
- Unusually aggressive behaviour
- Fainting/passing out

If client has fainted and is unresponsive **CALL FOR AN AMBULANCE AND GET HIM/HER TO THE HOSPITAL AS SOON AS POSSIBLE.**

If low blood sugars are not identified early and treated, the client can slip into a coma and die. Thus, it is very important for clients to be aware of the signs and for the caregivers not only to know the signs, but to know what to do.
Low blood sugar (Hypoglycemia)

Hypo as it is popularly called, is used to describe blood glucose levels below 3.9mmol/L or 70mg/dl in a person with Diabetes on glucose-lowering drugs

Is the patient complaining of / is experiencing any of the following?

- Cold sweats
- Tingling sensations
- Fine tremors
- Hunger
- Palpitations
- Convulsions

- Confusion or slow speaking/thinking
- Blurred vision or seeing double
- General fatigue or weakness
- Faint or dizzy feelings
- Mood disturbances, anxiety, Unusually aggressive behaviour.

Clinically they have low Blood Sugar
Give 10-15grms glucose or juice if available

Check Blood Sugar

Blood Glucose <3.9 mmol <70mg/dl without symptoms
10-15 grams pure glucose wait 10 minutes, then give 8ozs milk/cheese & crackers

Blood Glucose <3.9mmol <70mg/dl with symptoms
20-30grams pure glucose wait 10mins then have a protein eg 8oz milk/cheese

Algorithm 1: Caregivers’ Approach to Hypoglycaemia
Algorithm 1, above, tells you that once the client has the symptoms of a “hypo,” that counts as a diagnosis of low blood sugar (even without stopping to do a blood sugar reading) and he/she should be given 10-15 grams of oral glucose (2 ½ to 4 tsp) or half a cup of orange juice. The client’s blood sugar can then be checked on a glucometer after waiting about 15 minutes for body to absorb the sugar. If the client is responsive and the blood sugar is <3.9 mmol/L and he/she shows no symptoms, then after giving the oral glucose, wait 10 minutes and then give something more substantial to eat such as a cheese sandwich. If the client’s blood sugar is <3.9 mmol/L and other symptoms are shown, then give 20-30 grams oral glucose (5-8 tsp) or a full cup of orange juice, wait 10 minutes and give a protein such as milk.

**What causes low blood sugars?**
- Too little food
- More exercise than normal
- Missed or late meals
- Drinking Alcohol
- Too much insulin
- Some prescribed medicine
- Taking more medicine than prescribed
- Monthly Menses (monthly period)
- Hot weather
- Kidney disease
- Liver disease
- Thyroid disease

**How can I tell if someone is HYPO?**
- Cold sweats
- Tingling sensation in their body
- Fine tremors (shaking)
- Hunger
- Racing heart
- Feeling anxious
- Confusion
- Slow to understand
- Blurred vision
- Feeling tired or weak
- Fainting or dizzy feelings
- Change in mood
- Aggressive behaviour
- Coma
Setting Lifestyle Change Goals

Person living with diabetes should set short- and long-term goals, as it relates to their health and well-being. For example, you can set personal goals such as “I will not drink any soft drinks/sodas between now and my next visit to the doctor, in three months” or “I will drink one extra glass of water, daily.”

A large part of living with diabetes is lifestyle changes. Because diabetes is a chronic condition, both you and the health team and the client should be in continuous discussions about implementing, achieving and maintaining these lifestyle changes.

From the doctor’s point of view, in most circumstances, a long-term goal for you would be to achieve and maintain an HbA1C reading of less than 6.5% on routine 3-monthly, 6-monthly or yearly testing. In some cases, the doctor will relax the value that is acceptable for you based on your specific health circumstance. For example, if you are an elderly PWD or you have had repeated episodes of low blood sugars on treatment, you may have a less strict goal, like 7.5%.

Your Diabetes Care Schedule

Regular tests and check-ups are part of your diabetes care plan. Ask your health care team how often you should have these tests. Write down the date that you are scheduled to have each test. You and your health care team will set individual goals for you.
Foot Care

A common complication of diabetes is that the nerves in the feet can become damaged and feeling in the feet can disappear (neuropathy). This complication can make it difficult for person with diabetes to know if they have hurt their feet. Something as simple as wearing shoes that are too tight, can lead to ulcers (sores) on the foot, that may never heal and lead to amputations (doctors cutting off badly damaged parts of the foot – e.g. toes) if not caught early.

Here are some suggestions on how to take care of your own feet, or the feet of a person living with diabetes and prevent loss of limb:

• Check feet EVERY DAY
  » Use a mirror to check under your feet or ask a family member to help you do so
• Dry feet especially between toes, after every bath using a clean soft towel
• Never cut corns/bunions yourself
  » They should be treated by a health professional such as a

<table>
<thead>
<tr>
<th>Every 3 Months</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular office visit</td>
<td></td>
</tr>
<tr>
<td>A1C test (every 3-6 months, as needed)</td>
<td></td>
</tr>
<tr>
<td>Blood pressure check</td>
<td></td>
</tr>
<tr>
<td>Blood pressure check</td>
<td></td>
</tr>
<tr>
<td>Weight check</td>
<td></td>
</tr>
<tr>
<td>Foot check</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Every 3 Months</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical exam</td>
<td></td>
</tr>
<tr>
<td>Comprehensive foot exam(^b)</td>
<td></td>
</tr>
<tr>
<td>Cholesterol and blood fat tests</td>
<td></td>
</tr>
<tr>
<td>Kidney tests</td>
<td></td>
</tr>
<tr>
<td>Dilated eye exam</td>
<td></td>
</tr>
<tr>
<td>Flu shot</td>
<td></td>
</tr>
</tbody>
</table>

\(^b\) Should be done more often if you have foot problems.
nurse or podiatrist
• DO NOT pick at blisters on the foot
• Have someone help with the cutting of toenails (especially if you do not have good vision)
• NEVER walk bare-footed. Ensure that people with diabetes for whom you are caring, wear comfortable footwear
• Cover any minor cuts to prevent it from becoming infected
• See your foot doctor (podiatrist) at least once per year

What Shoes Should a Person with Diabetes Wear?

1. The shoe should have a deep toe box. The toes should fit comfortably inside. Allow 1” of space between tips of toes and front of the shoe.

2. The shoe should have an effective fastener- either Velcro, straps or laces.

3. The shoe should have a thick, soft and comfortable, cushioning sole. This helps to absorb shock when walking and decreases the likelihood of the feet being punctured by something sharp sticking through the sole.
Buying Shoes: What You Should Know.
1. Try on and purchase new shoes in the afternoon, when feet may already be slightly swollen, so that newly-bought shoes don’t become tight, and bruise your feet if you tend to have swollen feet at the end of the day.

2. Look at the shoe and compare the shape of your feet to the shoe. They should be similar.

3. Do not rush the purchase, spend a few minutes walking in the shoe, in the store, to make sure that the shoe is comfortable.

4. Seamless styled shoes, with adjustable fasteners on the top, are better.
Immunisations

Diabetes can sometimes make it more difficult for the body to fight off certain diseases, even when the person’s diabetes is well controlled. Some of the conditions to which persons with diabetes maybe susceptible include:

- Influenza (Flu)
- Pneumonia (Serious lung infections)
- Septicaemia (Blood infections)
- Meningitis (Brain infections)

Children living with diabetes should get all the vaccines recommended for children their age. Adults living with diabetes are advised to get the following additional vaccines:

- FLU vaccine, every year, to protect against the various strains of the virus
- Pneumococcal vaccine, that protects against the brain infection
- TDAP (the tetanus booster), to protect against tetanus, diphtheria and whooping cough
- Zoster vaccine, to protect against shingles

Persons with diabetes should speak to their health care provider for more information on these vaccines and when they should get them.
Other Medical Conditions

Persons with Diabetes may often have other medical conditions that need treatment, as well, in order to reduce the risk of damage to their hearts, kidneys, eyes and other organs. If you have high blood pressure, or high blood cholesterol, along with diabetes, your doctor will take a special interest in making sure that those conditions are well controlled also. Your doctor may check on you frequently, at first, to ensure that your readings for your sugar, pressures and cholesterol, are all at acceptable levels. The target for your blood pressure is usually less than 130 (top number) over 80 (bottom number). The targets for your cholesterol may vary, depending on whether you have other health conditions but, in general, the aim is to keep your LDL or “bad” cholesterol below 100mg/dL.

Persons living with diabetes go through all of life’s challenges just as everyone else. Often, they have been living with diabetes for years. They may become frustrated or sad with aspects of their care, deteriorating health, family issues, financial issues or just overwhelmed with juggling life and the disease. Clients therefore, are encouraged to guard their mental well-being.

Check on yourself to see how you are coping. Do you need to ask for help for any aspect of your care? Do you need clarification form your doctor or health team with regards to your current treatment plan? Can you take better care of yourself? Are you interested in doing anything more? Are you always sad/crying/tired or disinterested in taking your medicines or taking care of yourself? If you answered yes to these questions, you should tell your doctor.

Persons caring for those who live with diabetes should be vigilant, especially for changes in their level of interest and overall mood. Depression and anxiety are common in persons living with chronic
illnesses. If you are concerned with how the person in your care is coping, or notice possible personality changes, then encourage him/her to seek help or seek help with him/her.

The Importance of Self-Care for Caregivers

Providing care for persons who have a chronic illness can be a very stressful experience, if it isn’t managed well from the outset. In many instances, caregivers are relatives (children, grandchildren, siblings) living with an elderly family member who needs assistance in caring for themselves with their chronic illness. The stress caregivers experience can be physical, emotional and/or financial. It is important therefore, for you, the caregiver, to take measures to ensure that you remain in the best of health. Here are some suggestions on how you can manage the “caregiver burden.”

1. Understand the illness that the client has.
   Gaining a full understanding of the illness may help you in understanding what the PWD is going through and why they may have certain behaviours. Attending client-education sessions along with the client can help you to improve your understanding of diabetes. Note that sometimes, mental health problems like dementia and depression may be contributing to the person’s behaviour.

2. Ask for help
   Call someone in to assist with care so that the burden of care does not lie on one person.

3. Seek family support
   Have a family meeting to get the duties of caring for the individual shared.
<table>
<thead>
<tr>
<th></th>
<th><strong>Take a break</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Personal time to do something you love will help with stress management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>Keep in touch with friends</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>As far as possible maintain a strong social network and reach out to your friends as a support network when needed. Avoiding the feeling of isolation is important (it may be as simple as making a phone call, or meeting up with friends for coffee, or going for a walk)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>Cultivate coping strategies that are specific to you</strong></th>
</tr>
</thead>
</table>
|   | Some persons pray/meditate (asking for strength to continue the task)  
Some people sing, or garden, or go get their hair or nails done  
**FIND WHAT WORKS FOR YOU!!** |

<table>
<thead>
<tr>
<th></th>
<th><strong>Check on your own physical health</strong></th>
</tr>
</thead>
</table>
|   | Are you eating on time?  
Have you kept your doctor’s appointments?  
Have you taken your medicine? |

<table>
<thead>
<tr>
<th></th>
<th><strong>Check your mental health</strong></th>
</tr>
</thead>
</table>
|   | Are you crying continuously, feeling sad?  
Are you feeling anxious or unable to cope?  
**Seek help** from trained mental health professionals |

<table>
<thead>
<tr>
<th></th>
<th><strong>Family counselling</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sometimes the whole family must go into counselling, to deal with the caregiver stress and the associated issues</td>
</tr>
</tbody>
</table>

|   | **Consider and plan for managing how you will feel, in the event that the client passes on and you no longer have to care for them.** |
Needles & Sharps

Persons living with diabetes, who are treated with insulin, as well as persons who do self-monitoring of blood sugars, need to know the correct way in which to dispose of the sharp objects they use as part of their care. Needles and syringes, lancets, etc., should all be placed in a labelled container that says SHARPS, after use.

A sharps container can be made from an empty detergent container once it is labelled adequately. It should be kept out of the reach of children and when filled preferably returned to your nearest wellness centre for proper disposal.

SHARPS should never be flushed down the toilet or thrown directly into a bin. Someone could unwittingly get stuck by these objects. Additionally, they can create a hazard at landfill-sites, if discarded without discretion.

Proper Disposal of Medicines

After discussing how well your blood sugar is being controlled and finding out about any side-effects you may be having, your doctor may decide to tell you to stop taking one medicine, and to begin taking another. This might mean that you remain with some left-over medicine from your old prescription. When you and the doctor have decided that you no longer need those medicines, they should be disposed of promptly.

Clients and caregivers should remove expired, unwanted, or unused medicines from their home as quickly as possible, to help reduce the chance that others accidentally take or intentionally misuse
the unneeded medicine. Below, are instructions for disposing of unwanted/unneeded medicines:

Steps for disposal in household trash

1. Take your prescription medicines out of their original containers.
2. Mix medicines with an undesirable substance, such as wet dirt or sand, (so that someone else won’t see the pills and be tempted to take one).
3. Put the mixture into a disposable container with a lid, or a sealable bag. If your medicine was originally in one of those, you can put it back, once you have mixed it with the dirt or sand.
4. Conceal or remove any personal information, (e.g. name, address, Rx number), on the empty containers by covering it with permanent marker or duct tape, or by scratching it off.
5. Place the sealed containers with the medicines/dirt mixture, in the trash.

Promptly disposing of unneeded medications can help prevent accidental exposure to, including ingestion of, these potentially dangerous medicines by children and others. If you received special disposal instructions for a medicine, you should dispose of that medicine as directed by those instructions. Otherwise, please dispose of your medicines as described above.

Please contact your local Solid Waste Disposal Agency for further guidance on the disposal of your unused diabetes medicines.
Put the plastic container in the household trash- **DON’T RECYCLE**
If a trash collector is reluctant to collect a red sharps container, take the sharps container to your local health centre.

Sharps should never be thrown loosely into the trash or toilet.
Sharps that retract after use, or are very small, should be disposed of like all other sharps.
Journey with Diabetes

Diabetes is a chronic non-communicable disease, which means that once diagnosed, a person will live with the condition for the balance of his/her life, a bit like a new permanent roommate. Once given the diagnosis, you should get to know your new roommate (the diabetes) well and make the adjustments that will ensure the new roommate does not take over the house or gain so much power that it runs the house. Diabetes is a condition that can be managed with changes to lifestyle as well as with the medicines that are prescribed. As a client, you have the power to manage your health.

It is also important to understand that living with diabetes is a journey. The body goes through changes every year as we get older and the disease pathway develops with time. Have a partnership with your health team to help you navigate the changes as they occur. Ask questions that will help you make better decisions for yourself and enable you to live life to its fullest. Seek support systems such as your local diabetes association and share experiences with others who are on the same journey as you are. You are not alone!

The journey to wellness is filled with little steps that you take on the path. If you lapse on a good lifestyle habit, do not give up! Try and try and try again! Changing life habits can be a challenge, so persevere, to do better and be kind to yourself and to others.
REFERENCE LIST


EX CLI journal 2018;17;72-88-ISSN. www.ncbi.nlm.nih.gov/pmc/article

HEARTS Technical package for Cardiovascular Disease management in Primary care; Module 1; Healthy lifestyle counselling

HEARTS Technical package for Cardiovascular Disease management in Primary Care; Module 2; Evidence based protocols

HEARTS Technical package for Cardiovascular Disease management in Primary Care; Module 3; Access to essential Medicines and technology

HEARTS Technical package for Cardiovascular Disease management in Primary Care; Module 4; Team based care


https://www.cdc.gov/vaccines/adults/rec-ve centres for Disease
control and prevention

https://www.diabetes.co.uk/diet-basics.html Diet Guides


NICE pathway updated 10th Sep 2018 https://www.who.int/news-room/factsheets/detail/healthy diet

IDF Clinical Practice recommendations on Diabetic Foot 2017 (a guide for health care professionals)

Incidence and trends of childhood Type 1 Diabetes worldwide 1990-1999.


https://www.ncbi.nlm.nih.gov/pcm/articles/PMC4363846

International Diabetes Federation Clinical Practice Recommendations for Managing Type 2 Diabetes in Primary Care- 2017


Kate Lorig, Halsted Holman et al Living a Healthy Life with Chronic Conditions 4th Ed Management of Diabetes in Youth WDF10-573. 2015.

Moria Stewart, Judith Belle Brown et al. Patient- Centred Medicine Transforming the Clinical Method. 2nd Edition


NICE guidelines26 Aug 2015. Diabetes Type 1 and Type 2 in children and young people; diagnosis and management. nice.org/guidance/ng18

NICE Managing a diabetic foot

NICE Reducing the risk of developing a diabetic foot problem. OECS/PPS medical Products list 2017-2019
NICE guideline 2 Dec 2015. Type 2 Diabetes in adult management. Nice. org.uk/guidance/ng28

NICE guidelines 26 Aug 2015. Diabetes Type 1 and Type 2 in children and young people; diagnosis and management. nice.org/guidance/ng18

NICE Managing a diabetic foot

NICE Reducing the risk of developing a diabetic foot problem. OECS/PPS medical Products list 2017-2019


Post grad med. http://pmj.bmj.com jan 28 2016. Does the slipper sign in the patient with Diabetes predict the presence of retinopathy and nephropathy

Psychosocial Care for People With Diabetes: A Position Statement of

Russell, Koenigsberg et al. Facilitating Treatment adherence with Lifestyle changes in diabetes.


Tulloch-Reid MK, Boyne MS, Smikle MF, Choo-Kang EG, Parkes RH, Wright-Pascoe RA, et al. Clinical and laboratory features of


WHO 2018. Guidelines on second and third line medicines and type of insulin


World Diabetes day project Report by Windward islands research and education Foundation 28th Nov 2012.

Appendices
Appendix 1 – Important contacts

A contact-list, that is easy to read, should be filled out with the names and numbers of persons involved in the client’s care and placed in an easy to see spot, such as on a fridge door. This list should include the names and contact information of:

- your doctor/s
- the pharmacy
- other health care providers
- health centres or clinics that you attend
- emergency services e.g. the ambulance service and
- the names and contacts of closest relatives or friends that should be contacted in case of an emergency

The format below gives an example of one way to organise all this information. This allows caregivers and relatives to easily find contact numbers for the health services that the client needs, on a single page. In addition, a National directory of Diabetes Associations and Ministries of Health should be printed for easy reference as these advocacy groups offer a number of services that may be helpful in supporting PWD, outside of the hospital or clinic setting. (Appendix I).
## List of Health Services & Providers

### Health Access Information Chart

<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Doctor(s)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td></td>
</tr>
<tr>
<td><strong>Pharmacy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td></td>
</tr>
<tr>
<td><strong>Health Centre/Hospitals</strong>&lt;br&gt;Where clinics attended</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td></td>
</tr>
<tr>
<td><strong>Caregivers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td></td>
</tr>
<tr>
<td><strong>Ambulance Service</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Service Providers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td></td>
</tr>
<tr>
<td><strong>Relatives or Friends to call In Case of Emergency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>
### Appendix 2 Blood Glucose Recording Chart (Adapted from ADA Self-Care Workbook)

<table>
<thead>
<tr>
<th>Day</th>
<th>Breakfast Before 2 Hours After</th>
<th>Lunch Before 2 Hours After</th>
<th>Dinner Before 2 Hours After</th>
<th>Nighttime (if needed) Before 2 Hours After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Medicine</td>
<td>Medicine Name</td>
<td>Action</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>---------------</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biguanides</td>
<td>Metformin 250/500/850 mg</td>
<td>Lower glucose release from the liver; Reduce insulin secretion.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulphonylureas (2nd Generation)</td>
<td>Gliclazide 30mg MR tab 60mg SR tab</td>
<td>Increase insulin release.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Glyburide Glimepiride</td>
<td>Lower glucose release from the liver; Delay glucose absorption.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meglitinides (glinides)</td>
<td>Repaglinide Nateglinide</td>
<td>Increase insulin secretion after meals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alpha Glucosidase inhibitors</td>
<td>Acarbose</td>
<td>Decrease absorption of carbohydrates in the gut.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TZDs Thiazolidinediones</td>
<td>Rosiglitazone Pioglitazone</td>
<td>Decrease absorption of carbohydrates in the gut.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GLP-1 Receptor Agonists</td>
<td>Exenatide Liraglutide Exenatide ER</td>
<td>Increase insulin secretion in response to meals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPP-4 Inhibitors</td>
<td>Sitagliptin Vildagliptin Saxagliptin Alogliphitin</td>
<td>Enhance insulin secretion in response to meals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGLT-2 Inhibitors</td>
<td>Canagliflozin Dapagliflozin Empagliflozin Ipragliflozin</td>
<td>Reduce plasma glucose by allowing glucose to be filtered into the urine.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meglitinides (glinides)</td>
<td>Glyburide Glimepiride</td>
<td>Lower glucose release from the liver; Delay glucose absorption.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGLT-2 Inhibitors</td>
<td>Canagliflozin</td>
<td>Reduce plasma glucose by allowing glucose to be filtered into the urine.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucagon mimetics</td>
<td>Exenatide Liraglutide Exenatide ER</td>
<td>Increase insulin secretion in response to meals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meglitinides (glinides)</td>
<td>Repaglinide Nateglinide</td>
<td>Increase insulin secretion after meals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGLT-2 Inhibitors</td>
<td>Canagliflozin</td>
<td>Lower glucose release from the liver; Delay glucose absorption.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meglitinides (glinides)</td>
<td>Glyburide Glimepiride</td>
<td>Lower glucose release from the liver; Delay glucose absorption.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGLT-2 Inhibitors</td>
<td>Canagliflozin</td>
<td>Reduce plasma glucose by allowing glucose to be filtered into the urine.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucagon mimetics</td>
<td>Exenatide Liraglutide Exenatide ER</td>
<td>Increase insulin secretion in response to meals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meglitinides (glinides)</td>
<td>Repaglinide Nateglinide</td>
<td>Increase insulin secretion after meals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGLT-2 Inhibitors</td>
<td>Canagliflozin</td>
<td>Lower glucose release from the liver; Delay glucose absorption.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meglitinides (glinides)</td>
<td>Glyburide Glimepiride</td>
<td>Lower glucose release from the liver; Delay glucose absorption.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGLT-2 Inhibitors</td>
<td>Canagliflozin</td>
<td>Reduce plasma glucose by allowing glucose to be filtered into the urine.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucagon mimetics</td>
<td>Exenatide Liraglutide Exenatide ER</td>
<td>Increase insulin secretion in response to meals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meglitinides (glinides)</td>
<td>Repaglinide Nateglinide</td>
<td>Increase insulin secretion after meals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGLT-2 Inhibitors</td>
<td>Canagliflozin</td>
<td>Lower glucose release from the liver; Delay glucose absorption.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meglitinides (glinides)</td>
<td>Glyburide Glimepiride</td>
<td>Lower glucose release from the liver; Delay glucose absorption.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGLT-2 Inhibitors</td>
<td>Canagliflozin</td>
<td>Reduce plasma glucose by allowing glucose to be filtered into the urine.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucagon mimetics</td>
<td>Exenatide Liraglutide Exenatide ER</td>
<td>Increase insulin secretion in response to meals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meglitinides (glinides)</td>
<td>Repaglinide Nateglinide</td>
<td>Increase insulin secretion after meals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of Medicine</td>
<td>How much to take (Dosage)</td>
<td>Timing (how often and when)</td>
<td>With Meals? Empty Stomach?</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------</td>
<td>----------------------------</td>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>