



INNOVATIVE MANAGEMENT OF NON-COMMUNICABLE DISEASE IN A LOW-INCOME COUNTRY: SUPPORTING NURSES AND MIDWIVES TO SET UP AND MANAGE A NURSE-LED DIABETES CLINIC AT BO GOVERNMENT HOSPITAL IN SIERRA LEONE

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ABSTRACT: *Recognising the increasing prevalence of diabetes globally and the challenges faced by communities with limited resources, the Organisation of Sierra Leonean Healthcare Professionals Abroad (TOSHPA) proposed the establishment of a nurse/midwife-led clinic for patients with Type 2 and gestational diabetes to be established in Bo Government Hospital (BGH) Southern Sierra Leone. The nurse/midwife-led approach can prove to be an effective and sustainable solution and is done in collaboration with the Ministry of Health (MOH) and BGH Management Team in Sierra Leone. The project is funded by The Burdett Trust for Nursing, UK. BGH will allow second-motivated registered nurses and midwives who have a passion for community health to be trained/upskilled and capacitated to work in an extended role. The training will focus on patient assessment, investigations, diagnosis, treatment, health promotion, education, cultural competency, effective communication and active follow-up.*

KEYWORDS: Bo Clinic, Diabetes, Nurse-led, Midwifery-led, Sierra Leone.



BACKGROUND

There is an epidemic of non-communicable diseases (NCDs) in sub-Saharan Africa, particularly for diabetes mellitus (DM) and cardiovascular diseases (CVD) like hypertension, coronary heart disease, and strokes (International Diabetes Federation, IDF, 2023). Low-resource settings often face additional challenges in managing this chronic condition due to limited access to healthcare services and resources. The impact of these conditions on existing healthcare systems is enormous (Xu et al., 2020). The World Health Organisation (WHO) report on NCD (WHO, 2022) and The Global Burden of Disease (2020) identified diabetes mellitus as one of the leading risk factors for early death and disability globally and in low-income countries (LIC) low-middle-income countries (LMIC) in particular.

Chronic disease management treatment programmes devised for communicable diseases like tuberculosis (TB), human immunodeficiency virus (HIV) and newer diseases like Ebola or Covid-19 though successfully implemented, are resource (workforce and consumables) intensive (Public Health England, 2019); this makes these strategies not easily replicable for non-communicable diseases. In Sierra Leone, with a persistent lack of trained medical staff (Statista, 2022), and where the healthcare system is primarily oriented towards medical/doctor-led management of acute infections and/or maternal-child health, there is a need to re-design services to meet the demands of the diverse needs of patient populations using available resources sustainably.

Various models of diabetes and hypertension care exist worldwide. Gold standard management guidelines have been devised based on Western experience, where multidisciplinary teams (MDT) offer specialised and resource-intensive care (National Institute of Clinical Excellence (NICE), 2022; Nuha et al., 2023). These approaches are poorly adapted for low-income countries like Sierra Leone, where nurses, predominantly women, are the frontline workers attending to patients as they enter the healthcare system at the primary health unit level (PHU). Models of care for diabetes mellitus based on task-shifting from medical doctors to non-medical clinicians and decentralisation to primary care have been successfully implemented in some African countries like Ghana, Nigeria, and Zimbabwe (Singh & Nichols, 2021; Bosun-Arije et al 2021; Frieden et al, 2020). Therefore a nurse/midwife-led clinic can bridge this gap by providing accessible, community-centred care.

The Organisation of Sierra Leonean Healthcare Professionals Abroad (TOSHPA) has a long history of collaborative working with the Government of Sierra Leone to improve healthcare services for the benefit of the population. Details of completed and ongoing TOSHPA projects in Sierra Leone are available on the organisation's website at www.toshpa.org.uk. Based on their experience of working with the government of Sierra Leone Ministry of Health, a needs assessment was conducted considering the prevalence of diabetes, existing infrastructure and potential barriers to care at BHH. Information gathered through this needs assessment guided the application for funding and development of targeted interventions.



Diabetes Condition

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin due to autoimmune destruction of the insulin-producing cells in the pancreas as seen in Type 1 or when the body cannot effectively use the insulin it produces as seen in Type 2 (WHO, 2023). Insulin is a hormone that regulates blood glucose/sugar levels. Hyperglycemia which is a state of high blood glucose is a common feature of poorly managed diabetes and can lead to serious damage to many of the body's systems resulting in diabetic retinopathy causing blindness, peripheral neuropathy causing diabetes foot problems culminating in amputation if left untreated, nephropathy causing kidney failure, cardiovascular disease including heart attacks or strokes, oral problems like gum or dental disease, erectile dysfunction, mental health issues due to living with a chronic condition in challenging environment and death. In the clinical setting, the most common diabetes complications observed include hypoglycemia, hyperglycaemia, diabetic ketoacidosis (DKA), acute kidney failure, and hyperosmolar hyperglycaemic state (HHS). These are medical emergencies that would require urgent attention to prevent worst outcomes.

Statistics on NCD conditions in Sierra Leone are currently based on informed estimates with the prevalence of diabetes mellitus variously estimated to range between 2 and 7% for adults; men slightly more than women (WHO, 2016; Global Nutrition Report, 2022). As reported in other countries and regions of the world, these estimates have shown an upward growth in case numbers year on year over the past 2 decades. The International Diabetes Foundation (IDF) Diabetes Atlas (2021) reports that 10.5% of the global adult population (20-79 years) has diabetes, with almost half unaware that they are living with the condition. By 2045, IDF projections show that 1 in 8 adults, approximately 783 million, will be living with diabetes, an increase of 46%.

At Bo Government Hospital (BGH), there have been clinician reports of a steady increase in referrals of diabetes cases and related complications from various sources. In addition, the hospital has seen higher incidental findings/diagnosis for Type 2 diabetes in the attending general patient population and gestational diabetes in the maternity/obstetrics units. Sundufu et al. (2017) recorded a total of 694 outpatient adults of ages 18 and older at BGH were tested for diabetes between January 2012 and December 2014. Diabetes in this case was defined as a fasting blood sugar level of ≥ 126 mg/dL (≥ 7.0 mmol/L).

Rationale for a Nurse/Midwife-led Diabetes Clinic

Clinical care at BGH is currently physician-led and the demands on the doctor's time are enormous, prioritising between managing urgent surgical emergencies, communicable disease outbreaks, and chronic non-communicable conditions. Establishing a nurse/midwife-led diabetes clinic is an innovative, strategic and impactful approach to addressing the complex needs of individuals with diabetes. This encompasses various factors that highlight the unique skill set, patient-centred focus and holistic care philosophy of nurses and midwives.

Because of the multifaceted nature of diabetes management, nurses and midwives are trained to provide holistic care thereby prioritising patient-centred care. The care provided by nurses and midwives is often deeply embedded with the communities they serve, fostering trust and rapport, increased accessibility and community engagement in diabetes prevention and management initiatives (International Council of Nurses ICN, 2018).



The educational background of nurses and midwives enables them to empower individuals with diabetes through comprehensive education and self-management, lifestyle modifications, adherence to treatment plans and continuity of care where ongoing support and monitoring are crucial. In addition, nurse/midwife-led clinics emphasise preventive care and health promotion, thereby improving outcomes for individuals with diabetes in a more cost-effective and sustainable way (WHO, 2020).

Proposed Project Site and Setting

Bo Government Hospital is located in Bo City, Southern Sierra Leone. Bo City serves as the administrative district headquarters of Bo District and regional headquarters of the Southern Region. According to the 2021 census, Bo City has a population of 401,109 and BGH is a regional referral hospital for the southern region and receives referrals from 4 administrative districts of Bo, Bonthe, Moyamba and Pujehun with a combined population of 899,069 (Statistics, 2022). Currently, there is no nurse-led diabetes clinic at BGH. Following the approval of the grant from The Burdett Trust for Nursing, TOSHPA engaged the BGH Management Team and the MOH with a proposal and concept paper on the proposed plan, training and upskilling nominated BGH nurses to the practice in a hospital-based nurse/midwife-led diabetes clinic.

Collaborating with local healthcare authorities and other stakeholders will garner support and ensure the sustainability of the clinic and foster a sense of ownership. It is envisaged that setting up a nurse or midwife-led clinic for Type 2 diabetes and gestational diabetes at Bo Government Hospital is an innovative and appropriate use of nursing/midwifery resources to improve patient care services. Cross section of TOSHPA executive members together with the BGH management identified a central and easily accessible location within the hospital to enhance participation.

Clinical care at BGH has historically been delivered on a medical doctor-led basis. The demands on the doctor's time are enormous. Prioritising between managing patients with urgent surgical emergencies, communicable disease outbreaks, and a huge patient caseload of chronic non-communicable conditions is a tough balancing act. Through observations during previous TOSHPA engagements at BGH and discussions with senior nurse leaders, TOSHPA envisaged that with careful planning and support, registered nurses could be trained, upskilled, and supported for task shifting from doctors to nurses to manage NCD diabetes patients safely. There is evidence that nurse-led services/clinics provide a viable service delivery alternative for NCDs like diabetes and hypertension in both developed countries and LMICs (Kavita et al, 2023; Holloway et al 2023). Using a ten-step strategy suggested by Hatchet (2008), TOSHPA mapped out a feasible project for upskilling nurses/midwives for nurse/midwife-led clinic roles at BGH.


Box 1: Ten key steps TOSHPA followed to aid nurse-led service projects

Step	Rationale	How achieved
Building a business case	Explain why the service is needed.	<ul style="list-style-type: none"> ● TOSHPA discussed and agreed on a proposal at a members general meeting. ● Funding sourced from The Burdett Trust for Nursing. ● TOSHPA engaged and discussed the concept paper with MOH and BGH leaders. ● Agreed a service level agreement with MOH and BGH.
Defining your aims and objectives	Clarify what you are offering to patients and other professionals.	<ul style="list-style-type: none"> ● As part of the service level agreement. ● Project will run for 1 year. ● Aiming for BGH to adopt the service after the upskilling will be completed.
Establishing patient criteria	Decide what services you will offer.	<ul style="list-style-type: none"> ● Initially agreed to start with Type 2 and gestational diabetes patient groups. ● Will work with an endocrinologist. ● To include Type 1 diabetes as nurses/midwives gain competency and confidence.
Planning and publicity	Ensure patients and referring professionals will know it exists.	<ul style="list-style-type: none"> ● Advertised internally within the hospital. ● On national radio & television. ● In the local newspapers. ● At community gatherings in mosques, churches, and social events.
Selecting a suitable location	Find a suitable place to run the clinic, with appropriate facilities and access.	<ul style="list-style-type: none"> ● Hospital based approach agreed as a start with the possibility of extending out in the community at chiefdom level for wider participation. ● Clinic space allocated by BGH.
Gaining support from colleagues and co-workers	Ensure the multidisciplinary team recognises the need for the service.	<ul style="list-style-type: none"> ● Collaborative working established over a long period of TOSHPA engagement in Sierra Leone. ● Positive engagement with Sierra Leone partners through the Ministry of Health
Ensuring professional development	Ensure you will be able to maintain and expand your competencies.	<ul style="list-style-type: none"> ● Seconded nurses/midwives will work with TOSHPA colleagues in a preceptor–mentor relationship. ● The TTT approach will be utilised to facilitate knowledge transfer.
Considering medicines management	Decide how medication will be provided.	<ul style="list-style-type: none"> ● Agreed to work within the BGH hospital arrangement for oral glycaemic medicines biguanide and sulfonylurea; and insulin injections.



Auditing and evaluation	Consider how you will measure the effectiveness of the service.	<ul style="list-style-type: none"> ● Weekly reviews of clinic activities. ● Monthly audit on patient numbers and management outcomes. ● Ongoing patient satisfaction survey. ● Prompt investigation and resolution of complaints.
Facilitating ongoing improvement	Attend administrative detail to ensure the clinic can run smoothly and you can act on evaluation data.	<ul style="list-style-type: none"> ● Oversight will be provided by the Chief Nursing & Midwifery Officer and BGH Hospital Matron. ● Publish and share clinic experience.

Culled from Hatchett's (2008) study.

Engaging Sierra Leone Government and Bo Government Hospital stakeholders.

TOSHPA Chair (Mimi Rogers) and Secretary General (Ibrahim Momoh) travelled to Sierra Leone in October 2023 and engaged senior Ministry of Health officers to finalise arrangements for the proposed project at Bo Government Hospital. They met with the Chief Nursing and Midwifery Officer (Mrs Mary Fullah), Deputy CNMO, (Mrs. Amba Coker) and the Diaspora Liaison Officer (Mrs Mariam Sow). These senior MOH officers have been supportive of the proposed project and agreed to collaboratively work on a concept paper with TOSHPA. They tabled the proposal for further discussion at their MOH's weekly strategic management meeting and approval was granted. A service level agreement (SLA) was approved, signed by all parties and a hard copy was issued to TOSHPA.

With the agreement of the MOH in Freetown, TOSHPA then engaged with the Bo Government Hospital management team for final discussions on how to put the SLA into operation. The Medical Superintendent (Dr Osman Kakay), the resident physician in charge of endocrinology cases (Dr Satta Kpagoi), the Hospital Matron (Mrs. Kadie Kpaka) and registered nurses, midwives, nutritionist, and laboratory technicians welcomed TOSHPA to the hospital. Following a series of meetings over 2 days, the project was approved, and a clinic site was allocated within the grounds of BGH. TOSHPA agreed to refurbish the clinic site using its own resources. Additional funding secured by TOSHPA from The Burdett Trust for Nursing will be used to purchase the clinical and training equipment required for setting up a fully functioning standard diabetes clinic.

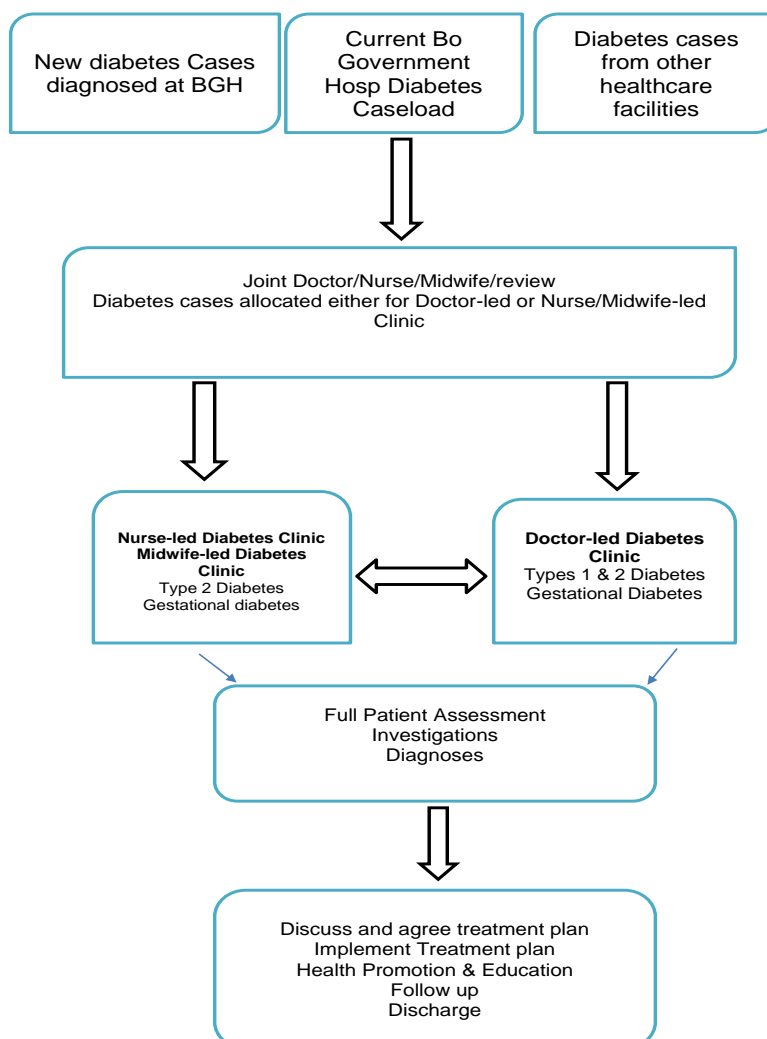
Nurse-led Diabetes Clinic

Nurse-led models of care are dynamic healthcare innovations that provide accessible, affordable, high-quality, patient-centred care that integrates the body and mind (Hansen-Turton, 2016). Broadly speaking, a nurse-led clinic is a service/clinic where the nurse has his/her own caseload for which he/she is independently responsible (Hatchett, 2016). Where these clinics have been successfully implemented, nurse-led clinics produce high patient satisfaction and outcomes that are as good as those provided by medical doctors in patient groups like chronic conditions like diabetes in developed and as well as developing countries (Sharma et al., 2021; Wang et al., 2019). In the UK for example, many clinical specialties including endocrinology and diabetes have well-developed Diabetes Nurse Specialist (DNS) nurse-led services in both the acute and community care settings. These DNS independently and effectively manage their allocated caseload of allocated patients.

Objectives of the Bo Government Hospital Diabetes Nurse/Midwife-led Clinic

The key objectives of the proposed nurse/midwifery-led clinic will include providing comprehensive patient assessment, undertaking appropriate clinical investigations; discussing, agreeing, and implementing treatment plans and patient follow-ups according to BGH protocols and localised guidelines. Initially, the seconded nurses will be working alongside their TOSHPA colleagues (who though registered with the United Kingdom Nursing and Midwifery Council, will have to register with the Sierra Leone Nursing Council) in a mentor-preceptorship arrangement, to deliver care and evaluate agreed plans of care for named patients, encourage/enhance and concordance with agreed treatment plans, provide ongoing health promotion/education and to refer patients to other professionals like ophthalmology, podiatry and dentist. The service will initially be limited to diagnosed or suspected cases of referred patients with Type 2 diabetes or gestational diabetes. However, patients with any other type of diabetes including Type 1 that the Medical Doctor may assess as appropriate for nurse or midwife-led clinic management can be allocated to this clinic. All new patients will need to be referred to BGH in the usual way (self-referrals/other healthcare professionals). A clearly defined pathway adapted from Momoh and Hatchett (2010) has been agreed to facilitate this process (**Fig 1**).

Fig. 1: Proposed Patient Pathway





The Train-the-Trainer Strategy for Knowledge Transfer

TOSHPA plans to use the train-the-trainer (TTT) model to upskill seconded nurses and midwives to the BGH diabetes clinic project. TTT is a framework for training potential subject matter experts to enable them to train other colleagues in their organisations and has been utilised by NGOs to facilitate knowledge transfer in resource-challenged situations like in sub-Saharan Africa (Kuo et al., 2021). The advantages of TTT are many including faster knowledge transfer, cost-effectiveness, support for the development of competent in-house training professionals, promotes tailored learning, and better training follow-up since trained staff become in-house expert trainers who stay around to follow through new skills or knowledge until these become fully embedded in their organisations (Yarber et al., 2015).

Non-governmental organisations (NGOs) have used TTT successfully to develop services for sustainable development in resource-challenged settings. Such a model is appropriate for nurse competency training, empowering the trained nurses to go on and cascade their acquired skills to other nurses/midwives at BGH and other healthcare centres nationally.

Assessment and Diagnosis

The current Sierra Leone national diabetes guidelines or WHO recommendations will be adopted as standard diagnostic and treatment criteria in the Nurse/Midwife-led Clinics. This is the same criteria currently used in the Doctor-led clinic. **Box 2** gives details of patient assessment and clinic equipment installed to aid the accurate investigation, diagnosis, and patient management at the BGH diabetes clinic.

Box 2: Assessment tools and tests

Assessment/Test	Rationale	How done
History and head-to-toe assessment	<p>Obtain biographic and socio-economic information.</p> <p>Measure and record baseline and ongoing patient clinical information of including:</p> <ul style="list-style-type: none"> ● Weight, abdominal/waist circumference, height, and BMI. ● Vital signs of BP, Pulse Temperature, Oxygen saturation. ● Eyes examination using the Snellen test. ● Peripheral neuropathy and leg ulcers. 	<p>Utilise a formally agreed assessment proforma to aid in capturing of relevant information on the patient to assist with care planning and follow-up.</p> <p>Acquired diabetes clinic equipment:</p> <ul style="list-style-type: none"> ● Ergonomic Assessment couch ● New and calibrated sphygmomanometer (automatic and manual), ● Weighing scales ● Standing height measuring tape ● Measuring tape for abdominal/waist circumference ● Pulse oximeter



		<ul style="list-style-type: none"> ● Digital thermometer. ● Safety sharps bins ● Consumables including gloves, aprons, gauze, hand hygiene soap and alcohol rub.
Urinalysis	<p>Urinalysis to check for ketones and urine glucose.</p> <p>Ketones, protein, and nitrite in urine sample checks for ketoacidosis, kidney health and evidence of urinary tract infection e.g. thrush</p>	<p>Standard urine dipstick urine testing.</p> <p>TOSHPA will supply</p>
<p>HbA1C</p> <p><i>Not currently available at BGH.</i></p>	<p>Gold standard diagnostic tool and accurate monitoring of the patient at 3 – 6 monthly intervals.</p>	<p>Currently not available at BGH.</p> <p>TOSHPA will buy and install at BGH.</p> <p>Private local laboratories.</p>
Capillary blood glucose levels	<p>Capillary blood glucose monitoring measures and records glucose levels at a specific point in time. It uses a drop of blood from a finger prick to get a reading using a calibrated blood glucose meter.</p>	<p>TOSHPA will purchase and supply standard finger capillary blood testing equipment including glucose meters, strips and safe lancets will be utilised.</p>
Fasting blood glucose	<p>Alternative diabetes diagnostic tool.</p>	<p>Standard equipment will be used.</p>
<p>Full blood count</p> <p><i>Not currently routinely done at BGH</i></p>	<p>To check for anaemia as an IDA and malaria endemic area.</p> <p>WBC important health indicator.</p>	<p>TOSHPA will buy and install a FBC analyser.</p> <p>Private local laboratories will be utilised.</p>
<p>Urea & Electrolytes.</p> <p><i>Not currently routinely done at BGH</i></p>	<p>To review kidney function and general health of the patients</p>	<p>Use the current BGH facility and private local laboratories.</p>
<p>Liver profile – LFTs</p> <p><i>Not currently routinely done at BGH.</i></p>	<p>To assess liver health, especially from side effects due to medicines and also alcohol use.</p>	<p>Use the current BGH facility and private local laboratories.</p>
<p>Lipid profile</p> <p><i>Not currently routinely done at BGH</i></p>	<p>To assess cholesterol levels including LDL, HDL, and non-HDL levels to monitor for hyperlipidaemia and reduce CVA risks.</p>	<p>Use the current BGH facility and private local laboratories.</p>



Various diagnostic criteria have been used to diagnose diabetes including incidental finding of raised capillary glucose levels (≥ 20 mmol/dL) in an otherwise well patient, fasting plasma glucose levels (≥ 7 mmol/L) or the WHO recommended gold standard measurement of glycated haemoglobin (HbA1c) levels of ≥ 48 mmol/mol (WHO, 2011). Currently, there is no equipment in the BGH laboratory facilities for carrying out HbA1C testing. TOSHPA will purchase and install HbA1C analyzer and point of care testing equipment and standard blood glucose meter in the clinic setting. If available, the clinical laboratory services at private institutions locally will be utilised.

Blood sugar monitoring which can be done at the clinic or by the patient at home (self-care) provides useful information for diabetes management. Accurate monitoring and recording of blood glucose levels helps to identify blood sugar levels that are high or low, monitor the effect of diabetes medications on blood sugar levels, adjust medications, recommend lifestyle modifications, and track the patient's progress in reaching treatment targets. Institutions like the National Institute of Clinical Excellence (NICE), NHS, and the American Diabetes Association (ADA) recommend target blood glucose ranges for adults (**Box 3**). Clinicians tailor their advice based on individual patient-specific needs.

Box 3: NICE recommended target blood glucose levels ranges.

Target level by type	Upon waking	Pre-prandial (before meal)	Post-prandial (90 – 120 minutes after meal)
Type 2		4 - 7 mmol/L	under 8.5 mmol/L
Type 1	5 – 7 mmol/L	4 - 7 mmol/L	5 - 9 mmol/L
Children with Type 1	4 – 7 mmol/L	4 - 7 mmol/L	5 - 7 mmol/L

Note: NICE refers to the National Institute of Clinical Excellence, UK.

Treatment Options

Diabetes care and treatment revolves around compliance/concordance with prescribed medication (oral glycaemic agents for type 2 diabetes and injectable insulin where required), lifestyle modification and proactive monitoring of the patients (International Diabetes Foundation, 2023; National Institute of Clinical Excellence 2022; Ministry of Health, 2022). These will form part of the main goals of training and care provision in the BGH clinic. The national NCD protocol, which is based on WHO recommendations, recommends the biguanide Metformin as the first-line treatment for Type 2 diabetes. If this is not tolerated or effective, a glyburide (Glibenclamide) or sulphonylurea (Glimepiride, Gliclazide or Glipizide) is prescribed. In some patients, a combination therapy approach of 2 oral medications is prescribed. In all Type 1 diabetes and some Type 2 diabetes cases that fail to respond to oral treatment, these are managed with prescribed insulin injections. There are various brands of insulin to choose from (rapid-acting, short-acting, intermediate-acting, long-acting or pre-mixed) though the long-acting brands tend to be more available because of the longer injection intervals, can be dispensed in prefilled pens and storage issues as electricity supply in Bo City is erratic. This makes refrigerated storage of insulin within the recommended temperature range a challenge.

In the UK, most Diabetes Specialist Nurses (DSN) s are independent nurse prescribers, having



completed post-qualification/registration training in prescribing medicines and this additional qualification is recorded against their registration held with the Nursing and Midwifery Council (NMC). Alternatively, some DSNs without nurse prescribing qualifications are working within Patient Group Directions (PGDs) to dispense diabetes medications. PGDs provide a legal framework that allows some registered health professionals to supply and/or administer specified medicines to a pre-defined group of patients, without them having to see a prescriber doctor or nurse (Medicines and Healthcare Products Regulatory Agency (MHRA), 2017). Supplying and/or administering medicines under PGDs is reserved for situations in which this offers an advantage for patient care, without compromising patient safety. In Sierra Leone, medical prescribing remains the standard practice and the BGH diabetes clinic will rely on the assigned doctor for prescribing diabetes medicines for the patients. Nurses could be trained and supported to follow simple treatment algorithms like those developed by the World Health Organisation in the Hearts D: diagnosis and management of Type 2 diabetes module (WHO-UCH-NCD-20.1) in **Fig 2**. Such an algorithm would be useful in the BGH diabetes clinic with a limited choice of oral diabetes medications to prescribe at present.

Holistic Approach and Chronic Disease Self-care Management Strategy

Health promotion and patient education are important in chronic condition management. The provision of relevant information to patients and their families aided by printed or digital material developed locally will be standardised. Diabetes is associated with many complications and therefore a holistic management approach will be adopted for better outcomes (IDF, 2023; NICE 2022; Nuha et al., 2022). Within the available resources at BGH, an MDT approach with collaborative working and referral to other professionals within BGH for further investigations and/or treatments will be encouraged. The services of pharmacy (onsite and private community-based) for supply/management of medications, nutritionist for advice on healthy diets, podiatry for foot assessment, obstetrician/midwife for pregnancy-related care, ophthalmology for eye care, dentist for teeth and/or oral health, surgeon/physicians for pre-surgery/surgery care optimization including tight blood glucose control, checking/monitoring for related conditions such as anaemia, hypertension and stroke risks, psychologist/psychiatrists for mental health support and the smoking cessation or alcohol education teams. The BGH diabetes clinic nurses will facilitate the patient journey through these referrals and remain the focal personnel engaging and championing the patients' cause to achieve agreed targets on glycaemic control to within normal glycated haemoglobin (HbA1C) levels, well-managed blood pressures, prompt management of diabetes complications to prevent diabetic foot ulcers, amputations, blindness, cardiovascular accidents or kidney damage which can invariably significantly impact on the patients quality of life and health outcomes.

In long-term chronic disease management, patient support groups are important. These groups are defined as organisations of patients with common experiences and concerns who provide psychological, emotional and moral support for one another (NHS, 2022). Patient support groups are organised to fulfil many important functions which when properly harnessed can improve patient outcomes and promote self-care in conditions like diabetes by enhancing educating patients/family, sharing the illness experience, providing strength to members, raising public awareness about a particular illness, and fundraising for care service improvement (Yin et al, 2015). Presently, there is no diabetes patient support group at BGH. The setting up of such a group will be explored, and the patient's encouraged/supported to establish one with facilitated monthly meetings either at the BGH clinic site or in an appropriate



community setting of their choice.

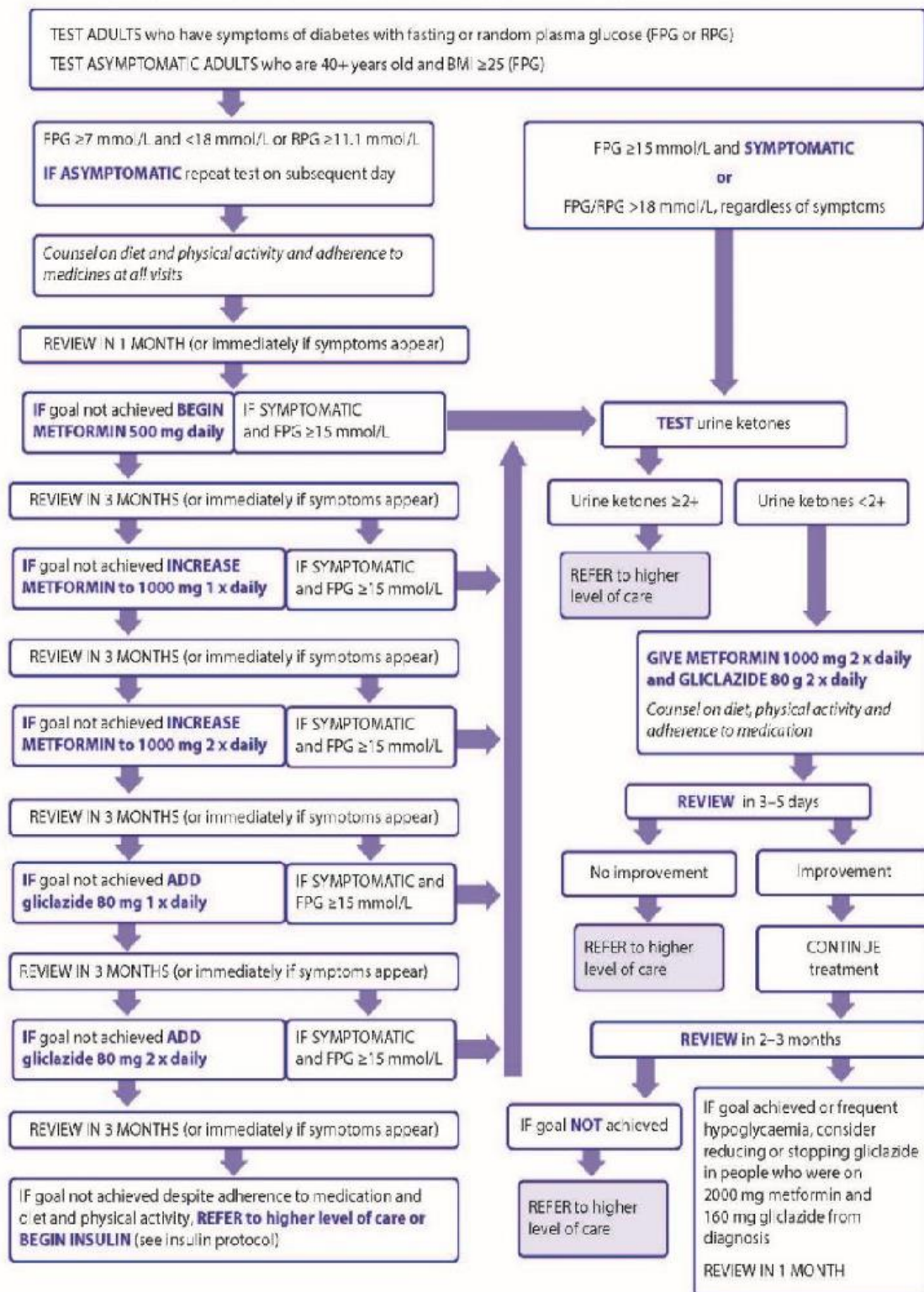
CONCLUSION

The establishment of the first nurse/midwife-led diabetes clinic in BGH and Sierra Leone in general, has emerged as a promising and holistic approach to addressing the multifaceted challenges posed by diabetes in this healthcare setting. The compelling rationale for the project emphasising the unique contributions of nurses and midwives for the service is explored. The focus is on continuity of care with collaborative efforts thereby showcasing nurse/midwife-led clinics in making a significant impact on the health and well-being of individuals with diabetes. As the prevalence of diabetes continues to rise globally, the nurse/midwife clinic model is characterised as a patient-centred solution, innovative and sustainable. Furthermore, the cost-effective nature especially in this low-resource setting is supported by literature. Incorporating preventative care, health promotion and community engagement not only addresses the immediate needs of individuals with diabetes but has also contributed to the broader goal of improving the health of the community.

Advocating for the integration and recognition of nurse/midwife-led clinics within the healthcare system must be the way forward. Support from stakeholders and policymakers needs to be sought to ensure the sustainability and scalability of such initiatives. Nurse/midwife-led clinics can become catalysts for positive change in diabetes management, ultimately improving health outcomes and enhancing the quality of life for individuals and communities alike by fostering a culture of collaboration and embracing the principles of patient-centred care.

On 21st December 2023, at a well-attended ceremony at BGH including stakeholders from the Ministry of Health & Sanitation, Bo Government Hospital, TOSHPA and the Bo City community, the BGH nurse/midwife-led diabetes clinic was officially launched, and the clinic opened its doors to receiving patient referrals in January 2024. Two TOSHPA registered nurse trainers working with their Sierra Leonean colleague nurses and the support of the resident endocrinologist doctor will take charge of the newly created diabetes nurse-led clinic.

Fig. 2 Protocol for control of blood glucose in type 2 diabetes*





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Group Photo at the launching of the Bo Government Hospital nurse-led diabetes clinic.

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