

A HANDBOOK OF THE SHEEMA DISTRICT HEALTH INITIATIVE

Promoting Community Wellness through Local action



HEALTH
FOR ALL
SHEEMA



A Comprehensive
Community Guide



Scientia Pro Salūte

PROF SILVER BAHENDEKA – Principal Investigator

HOPIET-UG Investigator Collaborative

HOPIET-UG Integrated NCD Management & Research Centre

Kabwohe Health Centre HCIV

Sheema District

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Sheema District Health Initiative (SDHI)

The Sheema District Health Initiative (SDHI) is a strategic, community-centred health framework designed to transform the clinical landscape of Sheema District, Uganda. As Uganda undergoes a rapid epidemiological transition, driven by the Uganda Vision 2040, the SDHI was created and addresses the rising burden of non-communicable diseases (NCDs) through a robust model of integrated management and prevention.

The Sheema District Health Initiative has been endorsed by the Ministry of Health (MoH) of the Ugandan Government and is operationalised through a quadripartite collaborative framework that integrates clinical research, central regulatory oversight, and decentralised local governance. This framework is sustained by four constituent entities:

1. The HOPIET-UG Investigator Collaborative: Functions as the core research and clinical implementation body, responsible for executing advanced intervention frameworks and precision medicine protocols.

2. The Sheema District Community Advisory Board (SDCAB): Serves as the community governance mechanism, providing local representation, ethical oversight, and cultural alignment to ensure robust community engagement.

3. The Ministry of Health (MoH): Provides regulatory oversight, strategic national alignment, and macro-level infrastructural and capital support.

4. The Sheema District Administration: Serves as the local institutional host, ensuring decentralised administrative integration, statutory alignment, and public service delivery.

The SDHI initiative is anchored at the HOPIET-UG Integrated NCD Management and Research Centre, a dedicated facility located in Sheema District. This coordinating centre—established through the combined financial contributions of the local community and the MoH—functions as the district's hub for longitudinal research, specialised NCD clinics, and health worker capacity building. By integrating high-level research with community-funded healthcare delivery, SDHI seeks to create a sustainable, scalable blueprint for improving health outcomes across the life course in Sub-Saharan Africa.



HOPIET-UG INTEGRATED NCD MANAGEMENT AND RESEARCH CENTRE

HOPIET-UG Investigator Collaborative

Investigators and Their Roles

Principal Investigator:

Prof. Silver Bahendeka, MD, PhD: Professor Silver Bahendeka is based at the Uganda Martyrs University School of Medicine and St. Francis Teaching Hospital, Nsambya, Department of Medicine and Endocrinology. Professor Bahendeka is the Principal Investigator of this project and has been the lead in the development and write up of this protocol. Professor Bahendeka was the lead in developing the 2014 & 2023 NCD Risk Factors Survey Protocols as well as the Principal Investigator for the 2014 & 2023 Uganda National NCD Risk Factors Survey, which were successfully completed and results published. As the Principal Investigator in this project, Professor Bahendeka will be responsible for the conduct of the clinical study and documenting the delegation of the study responsibilities to qualified and adequately trained research staff. He will oversee and ensure that study procedures are conducted at the research sites in accordance with the protocol and ICH - GCP guidelines for research (ensuring that the participants' well-being and safety are protected); and ensuring that the COVID-19 compliance safety guidelines are adhered to throughout the study. E-mail: silverbahendeka@gmail.com

Co-Investigators:

Prof. Ronald Wesonga, PhD: Prof. Ronald Wesonga is an established Statistician based at the Department of Statistics, Sultan Qaboos University (SQU), Sultanate of Oman. He is the Founder and Chair of the Data Science Analytics Lab (DSAL) and a prominent academic with a strong track record in statistical capacity building and public health analytics in Africa and the Gulf region. Prof. Wesonga played a key technical and leadership role in Uganda's National Non-Communicable Disease (NCD) Risk Factor Surveys conducted in 2014 and 2023, contributing to survey design, data management, statistical analysis, and the preparation of technical publications and policy briefs. His work continues to influence NCD policy and surveillance frameworks in Uganda. Previously, he served as a faculty member at Makerere University's School of Statistics and Planning. He is also the Founding Director of the East African Statistics Institute (EASI), Kampala, Uganda, a regional institute focused on bridging the statistics and data science capacity gap in East Africa. In the HOPIET-UG study, Prof. Wesonga brings over two decades of experience in survey methodology, epidemiological modelling, longitudinal data analysis, and statistical software implementation. He will contribute to study design, advanced analytics, and capacity strengthening of local data teams. E-mail: wesonga@wesonga.com

Dr. Jannie Nielsen, PhD. Associate Professor Jannie Nielsen is a social epidemiologist who have lived and conducted research in Denmark, Uganda, United States, and Tanzania. The primary goal of her research is to provide novel insights on the role of social networks and social inequality in risk of non-communicable diseases and access to care. She focuses on how diseases and related risk factors are shaped, shared, spread and interact in social network such as families, and how social networks influence disease management and access to treatment and care. She has investigated non-communicable disease, qualitatively and quantitatively; in families, couples, and parents and their children; collected primary data in Uganda, Tanzania, and Vietnam, and worked with secondary data from Denmark, United Kingdom, India, and the United States. Professor Nielsen has received research awards from the Independent Research Fund Denmark and National Institute of Health (USA). Email: Jannie.nielsen@sund.ku.dk

Mr. Ronald Kusolo, MSc (Biostatistics): Mr. Ronald Kusolo is a Biostatistician, Data Scientist, Data Management Expert and Research Associate in the Department of Epidemiology and Biostatistics at Makerere University School of Public Health (MakSPH). He has more than seven years of experience in research, statistical methods, data analysis, and data management. He currently teaches and mentors postgraduate students in Biostatistics and Machine learning at MakSPH. Ronald holds a Master of Biostatistics and a Bachelor of Statistics from Makerere University. He has technical skills in statistical computing systems like R, STATA, Python, and SQL among other tools. He is also enthusiastic to learn and adapt to new systems and challenges. Ronald is a Survey Analyst on the 2024-2025 Uganda Population-based HIV Impact Assessment (UPHIA 2024-2025) Survey. He also supports Research, data management, and Statistical processes at The Centre for Tobacco Control in Africa (MakSPH-CTCA). He has supported statistical design, analysis and data management processes of the National Non-Communicable Diseases STEPS Survey and Family planning surveys among other studies at MakSPH. He has also previously worked as a Data Manager and Analyst at Makerere University – Johns Hopkins Research Collaboration (MU-JHU) and Rakai Health Sciences Program (RHSP). Ronald's Research interests are in using data-centric statistical methods to inform decision-making. E-mail: kusoloronald@gmail.com

Mr. Denis Mubangizi, MSc, MBA: Mr. Denis Mubangizi joins HOPIET-UG as the Project Manager, bringing over 15 years of extensive experience in project implementation, supply chain management, and health systems strengthening. Previously, as the Type 1 Diabetes Programme Administrator at St. Francis Hospital, Nsambya, he demonstrated strong capabilities in managing complex health programs. His background equips him with essential skills for the operational oversight and ethical conduct of this research protocol. Jannie Nielsen. Email: dnc.mubangizi@gmail.com

Mr. Jasper Onono, MSc.: Mr. Jasper Onono is an IT professional with a sharp focus on Electronic Medical Records (EMRs), dedicated to optimising healthcare's digital backbone. His expertise spans the entire EMR lifecycle, from strategic implementation and seamless integration to ongoing optimisation and robust support. Jasper thrives on leveraging technology to not only streamline clinical workflows and ensure data integrity and enhance data-driven decision-making in healthcare but also to directly enhance patient care and operational efficiency. His goal is to empower healthcare providers with reliable, intuitive, and efficient digital tools that truly make a difference in the lives of patients and the effectiveness of medical practice. Email: zedjasper@gmail.com

Prof. Seyoum Berhane, MD, MPH: Professor Seyoum Berhane is a clinician-scientist and professor of medicine with over 15 years of dedicated experience in diabetes research and clinical care. He currently serves as the Medical Director for the Diabetes Program at Wayne State University School of Medicine. His research focuses on insulin resistance and Type 2 diabetes, with a strong emphasis on translational science aimed at bridging laboratory findings with real-world patient care. Prior to moving to the United States, he worked extensively in Ethiopia, addressing diabetes and other endocrine challenges in sub-Saharan Africa. He remains committed to improving diabetes care and education in resource-limited settings and continues to collaborate on global health initiatives. Since joining Wayne State, he has led and contributed to numerous interdisciplinary research projects in collaboration with colleagues from various departments. Email: bseyoum@med.wayne.edu

Dr. Wenceslaus Sseguya, PhD. Dr. Wenceslaus Sseguya a clinical and public health researcher based at St Francis Hospital Nsambya, Kampala, Uganda. He holds a BSc in Human Nutrition & Dietetics, a PgD in Project Planning & Management, an MSc in Global Public Health Nutrition, and a PhD in Global Health. He is a member of the Union for African Population Studies, the Nutrition Society of Uganda, the Royal Society of Tropical Medicine & Hygiene, and the East Africa Diabetes Study Group. He has a valid certificate of Research Ethics and Governance, as well as a certificate in Research Integrity for Research involving human participants. Email: seguyawenceslaus@yahoo.com

Dr. Mugerwa, MBChB, FECSA. Dr. Mugerwa Oscar is a dedicated general physician and researcher. He is currently working with St. Francis Hospital Nsambya and Mother Kevin Post Graduate Medical school. He is passionate about practising evidence-based medicine and precision medicine especially in the low resource setting. He is actively involved in Inpatient care, outpatient clinics, training of health workers as well as research. His areas of interest include non-communicable diseases like diabetes mellitus and hypertension, respiratory illnesses like asthma and gastrointestinal disorders. His education background includes a Bachelor's degree in medicine and surgery from Mbarara University of Science and Technology (MUST) and a fellowship training in the speciality of internal medicine from the East, Central and Southern College of Physician (ECSACoP). Email: ocmugerwa@gmail.com

Dr. Aravinda Meera Guntupalli, PhD. Dr. Guntupalli, Senior Lecturer in Global Health at the University of Aberdeen, has been researching health inequalities for the past 23 years. Using interdisciplinary methods, her work experience spanned across different parts of the world including International Institute for Population Sciences (An autonomous organisation of the Ministry of Health and Family Welfare, India), two of the world's oldest Universities (University of Tuebingen, Germany and University of Aberdeen, Scotland), top 100 Universities (University of Southampton, UK) and the leading distance learning higher education globally (The Open University). She has developed and led courses on global public health and global development while researching health inequalities across the life course. Her recent focus has been on non-communicable disease inequalities in Uganda, Malawi, and India, as well as the implications of food and fuel poverty on health in Europe. Additionally, she has explored the challenges of ageing and child stunting in low and middle-income countries, including India and Nepal. As a programme and course lead, she has mentored hundreds of students from various disciplines worldwide. She has successfully supervised PhD and MSc dissertation students from different parts of the world. Currently, she is a co-editor of the Journal of Global Ageing and Frontiers in Public Health. She is also a founding member and a current lead of the Special Interest Group on Ageing in Asia, Africa and Latin America of the British Society of Gerontology, External Examiner of MSc Global Policy for the London School of Hygiene and Tropical Medicine, Vice President of the Executive Board of the International Institute for Population Sciences Alumni Association, Economic and Social Research Council UK Peer Review College member as well as the Global CARE Panel member of Royal College of Surgeons Edinburgh.

Email: aravinda.guntupalli@abdn.ac.uk

Ms. Anita Kanyesige joins the research team as a motivated student perusing laboratory technology study, and wishes to improve her skills in administration of projects. Email: kanyesigeanita@gmail.com

Dr. Asimwe Fiona, MMed. Dr. Asimwe Fiona is an Obstetrician and Gynaecologist and doubles up as the Medical Director Kitagata District Hospital. She comes in to be on the ground 24 hours in the project.

Prof. Maria Vincent Kaguhangire-Barifaijo. Professor Maria Kaguhangire joined the team with an immense research experience. Her work on the Validity of Western “General Theories” in the African Context is a critical contribution to the field of management and public policy that directly applies to this project. The project will tap into her research and that of other scholars in this field, who have highlighted that simply importing and applying Western theories can lead to ineffective and even counterproductive outcomes in Africa. This is particularly relevant given the region’s current socio-economic trends, including the growth of a middle class.

Email: mbkaguhangire@umi.ac.ug

Vinay Sridhar. A Pharmacologist with an immense expertise in research communications and manuscript writing.

Vinay.sridhar309@gmail.com

Sheema District Community Advisory Board (SDCAB)

The Sheema District Community Advisory Board (SDCAB) serves as a vital link between the research team and the community. Its primary purpose is to ensure that the Sheema District Health Initiative remains culturally sensitive, transparent, and aligned with the interests of the local population. The SDCAB functions in a strictly advisory capacity and does not hold the administrative or fiduciary responsibilities of a Steering Committee. The relationship between the research team and the Sheema District Community Advisory Board (SDCAB) is built on mutual respect, bi-directional communication, and shared goals. To maintain this partnership, the research team commits to the following:

1. Transparency and Regular Briefing

The research team, led by a designated senior investigator, will provide the SDCAB with timely and accessible updates on the study's progress. This includes explaining complex medical protocols in clear, non-technical language to ensure the Board can provide informed feedback.

2. Integration of Community Feedback

While the research team retains final decision-making authority over scientific protocols, they will formally document and consider all advice provided by the SDCAB. Where suggestions are implemented, the team will report back to the Board on the outcome; where suggestions cannot be implemented due to scientific or ethical constraints, the team will provide a clear explanation.

3. Logistical Coordination and Respect

The research team will act as the secretariat for the SDCAB, handling the coordination of meetings, providing necessary documentation in advance, and ensuring that transport refunds are processed promptly and respectfully.

4. Ethical Collaboration

The research team will rely on the Board to help navigate local norms and traditions. In turn, the team will ensure the Board is fully trained on the rights of research participants, ensuring that the community's welfare remains the top priority for both parties.

SDCAB MEMBERS

Position	Name	Gender	Description	Telephone Contact
Chair:	John Kateshumba	Male	Retired Headmaster	0772 487 168
Secretary:	Ruth Sunday (Mrs)	Female	Retired Headmistress	0772 489 244
Vice Chair & Communication Assistant:	Dickens Baine-Enama	Male	Leader VHTs Sheema District	0782 525 469
Members:	Rev. Fr. Genensio Niwagira	Male	Parish Priest Mushanga Parish	0788 672 904
	Sheik Sulaiman Kafeero	Male	Sheik Sheema District	0700 826 304
	Canon Benon Muhwezi	Male	Sheema District Archdeaconry	0782 691 916
	Rose Bashakara (Mrs)	Female	Business woman	0772 514 684 0702 724 400
	Agumenaitwe Annet	Female	Rukondo2, Rutooma Ward, Kitagata	0772 358 889
	Karemba Mathias	Male	Nyarutooma cell, Kyeibanga, Kitagata	256782056990
	Busingye Florence	Female	Kigarama; Katanoga Cell	0782 151 967
	Nuwasiima Gloria	Female	Kyangenyi	0785 384 991
	Akatuhebwa Elizabeth	Female	Ryamatsya Kagongi	0760 360 724

Terms Of Reference:

1. Background

HOPIET UG Integrated NCD Management and Research Center is implementing activities in Sheema District aimed at strengthening diabetes care, research capacity, and community engagement, with special focus on Diabetes and other Non-Communicable Diseases (NCDs).

To ensure meaningful community involvement, ethical engagement, and effective communication between researchers, health workers, and the local community, the Sheema Community Advisory Board (SDCAB) supports and advises the Sheema District Health Initiative during implementation of activities.

2. Purpose of the SCAB

The purpose of the Sheema Community Advisory Board is to:

- Strengthen collaboration between the research team and the community
- Promote community participation in diabetes and NCD activities
- Provide community guidance and feedback on program activities
- Support ethical and culturally appropriate engagement with community members
- Promote awareness and understanding of Diabetes and other NCDs within the community.

3. Objectives

The specific objectives of the SDCAB are to:

- Support communication between researchers, health workers, and the community
- Advise on culturally appropriate community engagement activities
- Assist in mobilisation and participation during training and outreach activities
- Promote trust, transparency, and mutual respect between the program team and community members
- Support dissemination of health education and awareness messages within the community.

4. Roles and Responsibilities of SDCAB Members

SDCAB members shall:

- Participate in meetings, trainings, and community activities
- Provide guidance on community concerns and expectations
- Support community mobilization during outreach activities
- Assist in organizing community engagement sessions
- Advise the research team on appropriate communication approaches
- Promote positive relationships between researchers and the community
- Support awareness creation on diabetes and NCD care

5. Roles and Responsibilities of the Research Team

The research team shall:

- Maintain open and respectful communication with SDCAB members
- Provide timely information regarding planned activities
- Ensure ethical conduct during all program activities
- Respect community values, beliefs, and structures
- Consider feedback and recommendations provided by SDCAB members

6. Meetings and Communication

- Meetings may be held physically or virtually as agreed upon by members

Communication may be conducted through phone calls, WhatsApp, email, or formal meetings.

- Members shall be informed in advance regarding planned activities and schedules.
- SDCAB members are encouraged to freely share feedback and recommendations.

7. Community Engagement Activities

The SCAB shall support activities including:

- Health worker training sessions
- Visits to Kabwohe HC IV and HOPIET UG Integrated NCD Management and Research Center
- Community awareness sessions at churches and mosques
- Community sensitisation on diabetes and NCD prevention and care
- Public health education activities

8. Ethical Considerations

All SDCAB members and program staff shall:

- Respect confidentiality and privacy of participants
- Promote non-discrimination and respect for all community members
- Support ethical and professional conduct during activities
- Ensure respectful communication and engagement at all times

9. Duration

These Terms of Reference shall guide the activities of the Sheema Community Advisory Board during implementation of Sheema District Health Initiative and may be reviewed or updated as necessary.

10. Remuneration

Remuneration for work done will be in line with project finances.

CLINICAL NUANCE BASED

TWENDE
Tweragurize na Dollar Emwe



**COMMUNITIES TRANSFORMING
A NEED TO CONTROL**

*Non-Communicable
Diseases*

Introduction

This following is written to facilitate the health worker together with the patient in understanding the financing of Non-Communicable Diseases (NCDs) at the primary health care level. It addresses a concept of clinical nuance, to be implemented using value-based insurance design, as a key innovation. The concept recognises two important facts about the provision of medical care:

- i. Medical services differ in the amount of health produced, and
- ii. The clinical benefit derived from a medical service depends on who is using it, who is delivering the service, and where it is being delivered.

Community-Based Financing to improve care of Non-Communicable Diseases at Primary Health Care (PHC) Level.

The current focus of the international debate is on the need to move away from excessive reliance on out-of-pocket payment as a source of health financing towards a system which incorporates a greater element of risk pooling, and thus affords a greater protection for the poor. Reliance on out-of-pocket expenditure in chronic diseases may lead to catastrophic family expenditure, subsequent household impoverishment and severe abject poverty [1]. Uganda's main objective in the Health Financing Strategy is to facilitate attainment of Universal Health Coverage through making available the required resources for delivery of the essential package of services in an efficient and equitable manner. The instruments to achieve Universal Health Coverage are Sound Health Financing Mechanisms. The strategic interventions herein are revenue collection, risk pooling and strategic purchasing. Thus, in the medium term, no person should face risk of impoverishment when accessing health care nor should anybody forego medical services because of financial reasons [2].

Currently, however, Uganda's health sector remains significantly under-funded, mainly relying on private sources of financing, especially out-of-pocket spending. At 9.6 % of total government expenditure, public spending on health is far below the Abuja target of 15% that the Government of Uganda (GoU) committed to. Prepayments form a small proportion of funding for Uganda's health sector. There is limited cross-subsidisation and high fragmentation within and between health financing mechanisms, mainly due to high reliance on out-of-pocket payments and limited prepayment mechanisms. Without compulsory health insurance and low coverage of private health insurance, Uganda has limited pooling of resources, and hence minimal cross-subsidisation [3]. In difficult situations, as when there is insufficient resources, decisions have to be made; and regarding non-communicable diseases, it is how much do we spend on managing the chronic conditions. Because of the scarce resources, the shift on the available resources is to spend on what will generate value a concept of clinical nuance. To encourage a shift from volume to value, insurance benefits and payment models must be redesigned with the basic tenets of clinical nuance in mind. Health produced with regard to non-communicable diseases (NCD)

I. Prevent the occurrence of non-communicable diseases (NCD) by awareness and mitigating risk factors with increased physical activity, healthy diet, avoiding alcohol and smoking,

II. Early detection by screening for the diseases – waist, weight and height checking to estimate the body roundness index (or waist-to-height ratio [WtHR], body mass index (BMI), blood glucose for diabetes, blood pressure for hypertension, lipid profile for cholesterol, triglycerides and lipoproteins, serum creatinine and urine albumin for chronic kidney disease and electrocardiograph (ECG) for screening of heart disease.

III. Optimum management of those affected by the NCD and

IV. Optimum management of the complications of the NCD.

Community-Based Health Financing.

Currently, this will be to introduce community-based health financing in systems that are based on user fees and tax revenues. The objectives are:

- Reduce financial barriers created by user fees
- Encourage more efficient use of resources
- Raise more revenues

The Community-Based Health Financing will be 'pro-poor'

- Ensure that contributions to the costs of health care are in proportion to different households, ability to pay - concept of USD 1.00 equivalent in Uganda Shillings. This is based on Ubuntu (Obuntu) philosophy of Sheema Community.
- Protect the poor (and the near poor) from the financial shocks associated with severe illness
- Enhance the accessibility of services to the poor (particularly with respect to the perceived quality and geographic access)

Furthermore, ensuring adequate pro-poor financing does not, in itself, ensure that appropriate services are delivered. Good financing policies must be supplemented by good policies on the organisation and delivery of the health care. Other barriers to care that will need to be constantly addressed

- If the perceived quality of care is very low, even the poor may prefer to pay more to use higher quality private sector services - hence the need to improve the delivery of the health services
- There may be significant time and transport costs associated with accessing care, particularly for the poor
- Even in a system where there are no formal charges, informal charges for care may be widely prevalent.

These barriers will be looked for and addressed in the majority poor and the minority very poor.

User Fees

User fees undermine political support for the goal of universal coverage of basic health care services. At the beginning, this will be standardised and will be gradually reduced until a mechanism is available to all residents to access care for NCDs without user fees.

Interim Committee of TWENDE

NAME	TITLE	CONTACT
Silver Bahendeka	(Medical) Chair	0775 114 274
Robert Matsiko	(Community) Secretary	0782 888 464
Kabazeyo Vassy	(Secretary Association) Secretary	0772 529 613
Mwebaze Asaph	(Chair Patients Association)	0782 837 647
Kateshumbwa John	(Patient)	0772 487 168
Kukundakwe Asaph	(Patient)	0782 107 205
Mugyenyi Naboth	(Chair HC IV Management)	0787 830 245
Yorakamu Kamaringo	(Medical - Kabwohe)	0772 645 006
Najjukko Anne	Vice Chair	0779 887 714
Jovia Kamadansi	(Community)	0774 229 254
Bainenaama Dickens	(VHT)	0782 525 4691
Rev. Can. Kamwere Kesi	(Religious)	0782 290 889
Mwijuka Nicholas	(MUHAME SACCO), Financial Director/Treasurer	0784 971 884
Ahimbisibwe Mark	(MUHAME SACCO)	0782 749 262

Community-Based Health Financing

Community-based health financing schemes have frequently emerged, or been promoted, in contexts where there is high user financing of health care. They aim to mitigate some of the worst equity effects of user charges by spreading contributions between the healthy and the sick, and allowing people to spread their contributions over time in a predictable manner, rather than paying only when they fall sick. Such schemes should therefore enhance accessibility of health care for the poor. Furthermore, if hospital care is included in the benefit package they will protect the poor against catastrophic health care costs, and if a sliding scale of premiums is implemented, then contributions will reflect ability to pay. Unlike social health insurance schemes, community-based health financing normally covers those outside the formal sector employment. This is the ultimate goal in this scheme, but further based on clinical nuance.

Design of the Scheme

The following elements underlie this scheme:

- The financing mechanism will ensure the integration of the poorer groups
- The Scheme will ensure that there are sufficient health care inputs to meet the demand generated by the service without attracting resources away from providing services to the poor - e.g. increasing waiting time, informal charges, transportation charges.
- To ensure the implementation of the above two important elements of the scheme, there will be a phased implementation so as to build upon existing capacity and ensure proper fit between different elements of the financing scheme. Exemption mechanisms should be in place before introducing charges; and will be clearly spelt out.
- As has been observed in many health financing schemes, the most promising way in which financing mechanisms may improve the quality of services for the poor is not through raising extra revenues, but through the organisational reforms necessary to implement them.

Hence the focus in this scheme is to:

- 1.** Provide access to care with minimal barriers,
- 2.** Provide medicines pivotal in improving quality of care, with minimal barriers, and
- 3.** Provide monitoring of the disease processes with minimal barriers.

- The Sheema District Community Advisory Board (SDCAB) will sit on the Fund Management Committee.

- Funds collected will be categorised into two banked at the SACCO (MUHAME KABWOHE):

- i.** The USD 1.00 (One Dollar) Contribution will be earmarked to improve clinical services at the level of human resource and equipment - will be banked for a minimum of FIVE (05) years on a Fixed Deposit Account and the profit available six-monthly used towards the earmarked budget line. A membership card will be issued. There is an option of contributing more than a dollar. We encourage people to donate as much as they can.

- ii.** The funds contributed from the diabetes associations will not be mixed with the TWENDE accounts. The associations will manage their own funds.

To popularise the scheme, we shall leverage on Mwezikye which is already established and functional and works well.

- Community-based health financing may stand a better chance of bringing about service improvements for the poor than user fees.

Coverage.

The TWENDE Mechanism below discusses Uganda's Health Financing Strategy and its objective of achieving Universal Health Coverage (UHC). Uganda's health sector is under-funded and relies heavily on out-of-pocket payments. There is lack of significant cross-subsidisation and pooling of resources.

The philosophy of Ubuntu can be directly related to the concepts in this document, particularly in the context of Universal Health Coverage.

1. Shared Responsibility and Collective Well-being: The core of Ubuntu is the idea that "I am because we are." This philosophy directly aligns with the goal of UHC. It suggests that the health and well-being of each individual are the responsibility of the entire community. In the context of TWENDE Mechanism, this would mean that the community (or the government acting on its behalf) should ensure that no one is denied medical services due to their inability to pay.

2. No Person Should Face Risk of Impoverishment: The TWENDE Mechanism explicitly states that "no person should face risk of impoverishment when accessing health care nor should anybody forego medical services because of financial reasons." This statement is a practical application of Ubuntu. It embodies the principle of communal solidarity, where the community protects its most vulnerable members from financial hardship when they are sick.

3. Pooling of Resources and Cross: The TWENDE Mechanism points out that Uganda has "limited pooling of resources" and "limited cross-subsidisation." These are exactly the mechanisms that a health system guided by Ubuntu would aim to strengthen. Pooling resources—where the healthy contribute to a common fund that covers the sick—is the financial manifestation of the Ubuntu principle of shared responsibility. Cross-subsidisation, where richer individuals or healthier people's payments help cover the costs for the poor or sick, is a direct expression of compassion and communal support.

Summary

In summary, the TWENDE Mechanism describes a health system that, while aiming for Universal Health Coverage, is currently struggling with fragmentation and a lack of communal financial support. A health financing system built on the principles of Ubuntu would prioritise the very things the TWENDE Mechanism identifies as lacking: strong community-wide pooling of funds and a robust system of cross-subsidisation to ensure that everyone, regardless of their financial status, can access the care they need. The stated objective of preventing impoverishment due to health costs is, in essence, a modern health policy goal that is perfectly consistent with the ancient philosophy of Ubuntu.

References

- 1.** Huffman MD, Rao KD, Pichon-Riviere A, et al. A cross-sectional study of the microeconomic impact of cardiovascular disease hospitalization in four low- and middle-income countries. *PLoS One* 2011; 6(6): e20821: doi: 10.1371/journal.pone.0020821.
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- 3.** Zikusooka C, Kyomuhangi R, Orem J, Tumwine M. Is health care financing in Uganda equitable? *Afr Health Sci* 2009; (9): S52 - S8

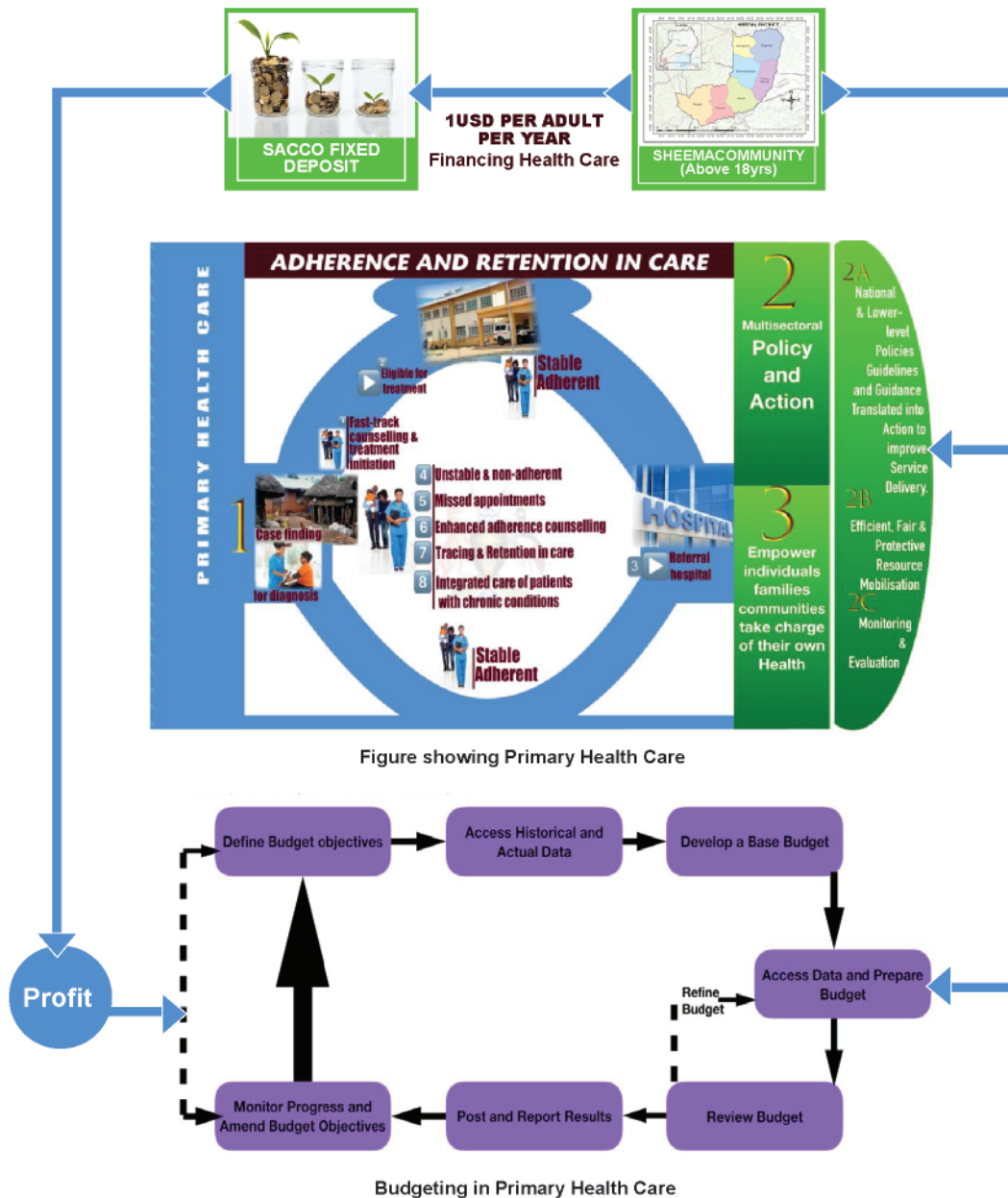


Figure showing Primary Health Care

Budgeting in Primary Health Care

Figure Showing Clinical Nuance-Based Community Financing in Sheema District Uganda

This figure provides a visual representation of the innovative community financing model implemented in Sheema District. The diagram illustrates how funds are collected, managed, and utilised to support the integrated care of cardiometabolic diseases. It clarifies the roles of various stakeholders, including patients, community members, and the health facility management, in the financial sustainability of the Sheema District Health Initiative. The model evolved as a response to the challenges of traditional, rigid financing models and presents a promising, viable solution for ensuring continued patient management at the point of care.

Research Studies

Plain language

The Sheema District Health Initiative (SDHI) is a community-centred program designed to tackle the growing burden of non-communicable diseases (NCDs) in Sheema District, Uganda, as the area experiences a rapid economic and health transition. Formally endorsed by the Ministry of Health, the initiative relies on a powerful four-way partnership: the HOPIET-UG Investigator Collaborative leads advanced clinical research and medicine protocols, the Sheema District Community Advisory Board ensures local engagement and cultural alignment, the Sheema District Administration provides the necessary framework for implementation of the initiative and the Ministry of Health provides official regulation and capital backing. This entire effort is anchored at the HOPIET-UG Integrated NCD Management and Research Centre—a specialised facility built through combined community and government funding—which serves as a local hub for patient care, medical training, and long-term health research. By combining cutting-edge science with local community financing, the initiative aims to build a sustainable, practical blueprint for improving lifelong health outcomes in Sheema District and indeed across Sub-Saharan Africa.

Executive Summary of Research Studies

The Government of Uganda has initiated a long-term, structured socioeconomic transformation aimed at transitioning the population from subsistence poverty to middle-income status. This action plan is aligned in a series of documents: Uganda Vision 2040, the National Development Plan IV, Sustainable Development Goals (especially SDG3, which calls for ensuring healthy lives and promoting wellbeing for all at all ages) and the Uganda National Health Compact (2025–2030). While this deliberate transition is essential for development, it is associated with a unique epidemiological window where cardiometabolic diseases (CMDs) emerge in unconventional patterns concurrently in a health system that is still struggling with infectious diseases. CMDs represent a cluster of interrelated metabolic abnormalities—principally obesity, insulin resistance, dyslipidaemia, and hypertension—that collectively drive the development of atherosclerotic cardiovascular disease, type 2 diabetes, and chronic kidney disease. While the Government of Uganda alludes to this phenomenon in the Uganda Vision 2040, there is as yet a critical lack of structured intervention frameworks at both the National and District levels to address this shift. To bridge this gap, we are implementing the SPECTRA (Socioeconomic Progression and Epidemiological Cardiometabolic Transition Research & Application) studies in Sheema District. This multi-modular studies are structured into four inter-arching modules designed to move from population-level data to individualised patient care.

The Foundation: Population & Burden

SPECTRA—Epi: *Cardiometabolic disease prevention and care in a rural socio-economically transforming population in Uganda.* This modular protocol constitutes the longitudinal backbone and surveillance engine of the framework. It has five main Work Packages. By integrating Work Packages 1 through 5, it facilitates a continuous feedback loop between population-level risk assessment and targeted prevention. It provides the high-level data required to inform the local and national NCD policy and validates the predictive models generated by the Collaborative. The modular protocol examines a comprehensive quantification of Sheema District CMD prevalence coupled with the development of advanced interventions, guided by the Medical Research Council (MRC) framework for complex interventions to prevent disease onset and mitigate chronic complications.

SPECTRA—STEPS: *Sheema District STEPS Survey for Cardiometabolic Disease Surveillance.* This modular protocol provides the clinical baseline of Cardiometabolic Diseases. It focuses specifically on establishing the hard data for cardiometabolic disease burden (diabetes, hypertension, dyslipidaemia, etc.) to justify the scale of resource allocation needed. It utilises the WHO Stepwise methodology for non-communicable disease surveillance.

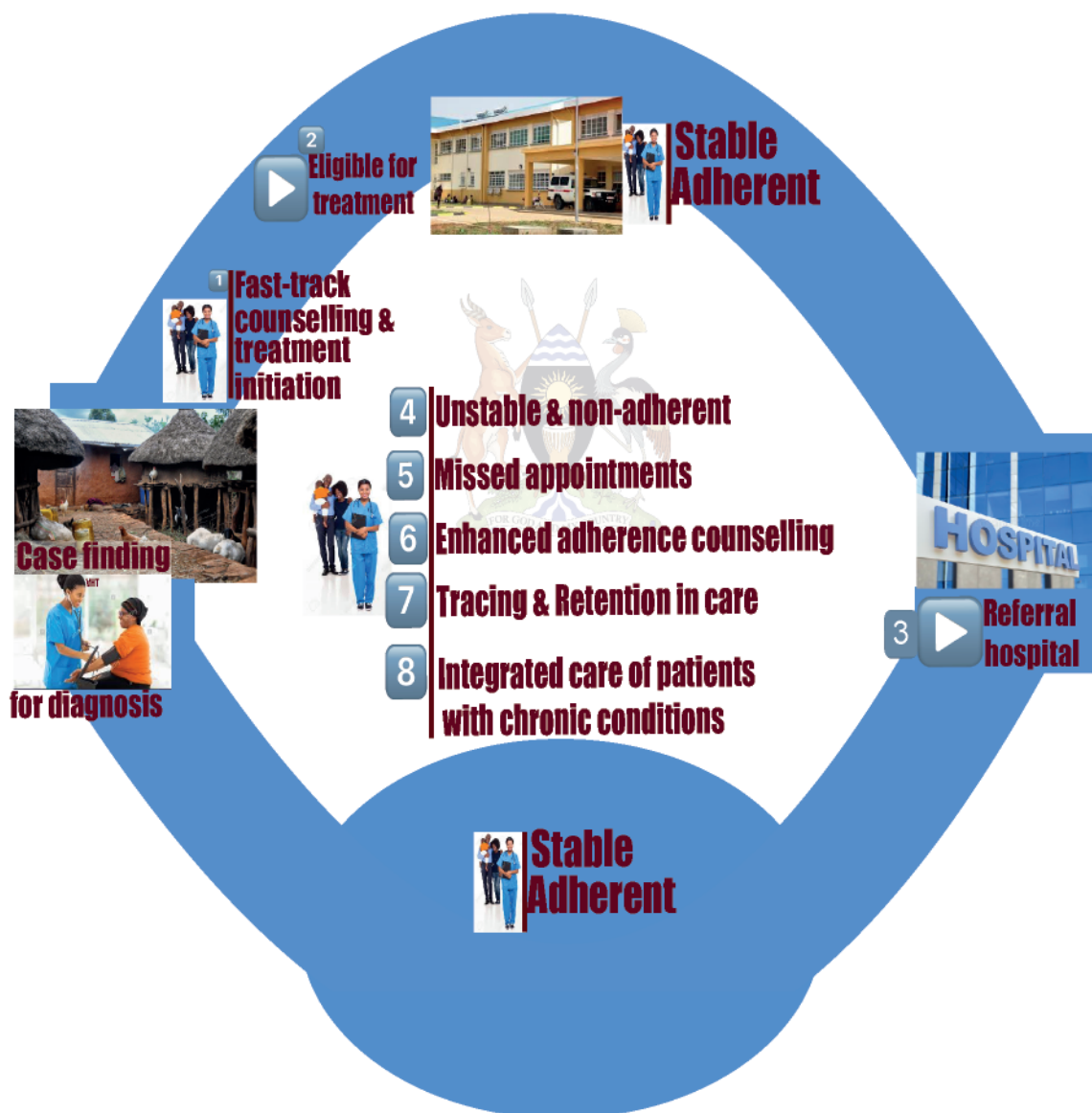
The Application: Care & Precision

SPECTRA—Path: *Health-Seeking Practices among adults living with cardiometabolic diseases in Sheema District, Uganda.* This modular protocol investigates the behavioural and structural determinants of healthcare navigation. Utilising a phenomenological approach and the Three-Delay Model, it maps the interplay between biomedical, traditional, and socio-spiritual pathways. It ensures that the technical advancements of the HOPIET-UG Investigator Collaborative are calibrated with sociocultural realities to achieve high-fidelity delivery.

SPECTRA—Precision: *Improving the Health and Well-Being of Young Adults with Diabetes and their Families.* Focusing on the 18–39 age cohort, this modular protocol represents the mechanistic depth and precision medicine core of the initiative. It challenges the standard type 1 diabetes (T1D) / type 2 diabetes (T2D) diagnostic binary through advanced phenotyping and the implementation of a validated precision 'scorecard.' This module shifts the unit of analysis from individual pathology to the Family Vulnerability Index, addressing the socio-economic downstream effects of metabolic disease. This modular protocol is a specific investigation into diabetes associated with undernutrition. By phenotyping this under-described group, SPECTRA aims to define the distinct cardiometabolic signatures that appear when malnutrition and metabolic transition intersect. By integrating these four module protocols, SPECTRA provides a holistic solution that addresses the immediate clinical needs of Sheema District while building a scalable evidence base for the Republic of Uganda's broader health goals under Vision 2040. A consortium of specialists (Health of a Population in Epidemiological Transition – Uganda (HOPIET-UG) Investigator Collaborative) dedicated to the metabolic health of populations in transition have come together to implement the research initiative.

PRIMARY HEALTH CARE THE GATEWAY TO HEALTHY LIFE

MINIMUM PACKAGE OF INTERVENTIONS TO SUPPORT LINKAGE TO CARE ADHERENCE AND RETENTION IN CARE

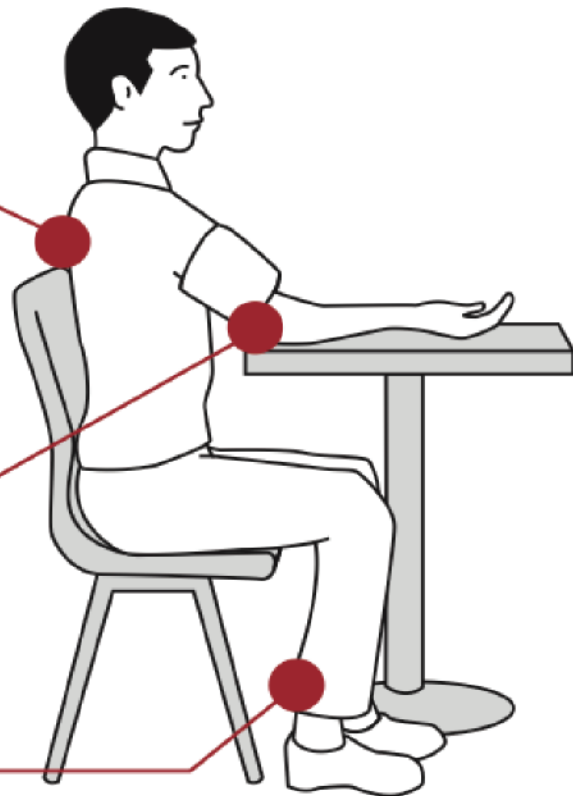


BLOOD PRESSURE MEASUREMENT



When you measure your blood pressure:

- ✓ Sitting position
- ✓ Back supported
- ✓ Arm bare and supported
- ✓ Use a cuff size appropriate for your arm
- ✓ Middle of the cuff at heart level
- ✓ Lower edge of cuff 3 cm above elbow crease
- ✓ Do not talk or move before or during the measurement
- ✓ Legs uncrossed
- ✓ Feet flat on the floor



Choosing the correct blood pressure cuff size

Measure the circumference of your upper arm with a cloth measuring tape midway between the elbow and shoulder. Choose a cuff size that includes this measurement.



Position for taking your blood pressure at home



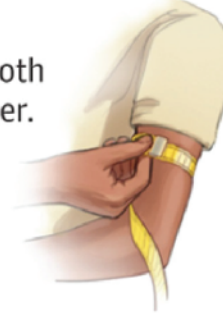
- 1 Rest for 5 minutes before measuring your blood pressure.
- 2 Sit in a chair with both feet flat on the ground and back straight.
- 3 Place your arm at the level of your heart or chest.
- 4 Stay still and do not talk as your blood pressure machine operates.

Measure your blood pressure in the morning right after you wake up or in the evening before you go to bed.

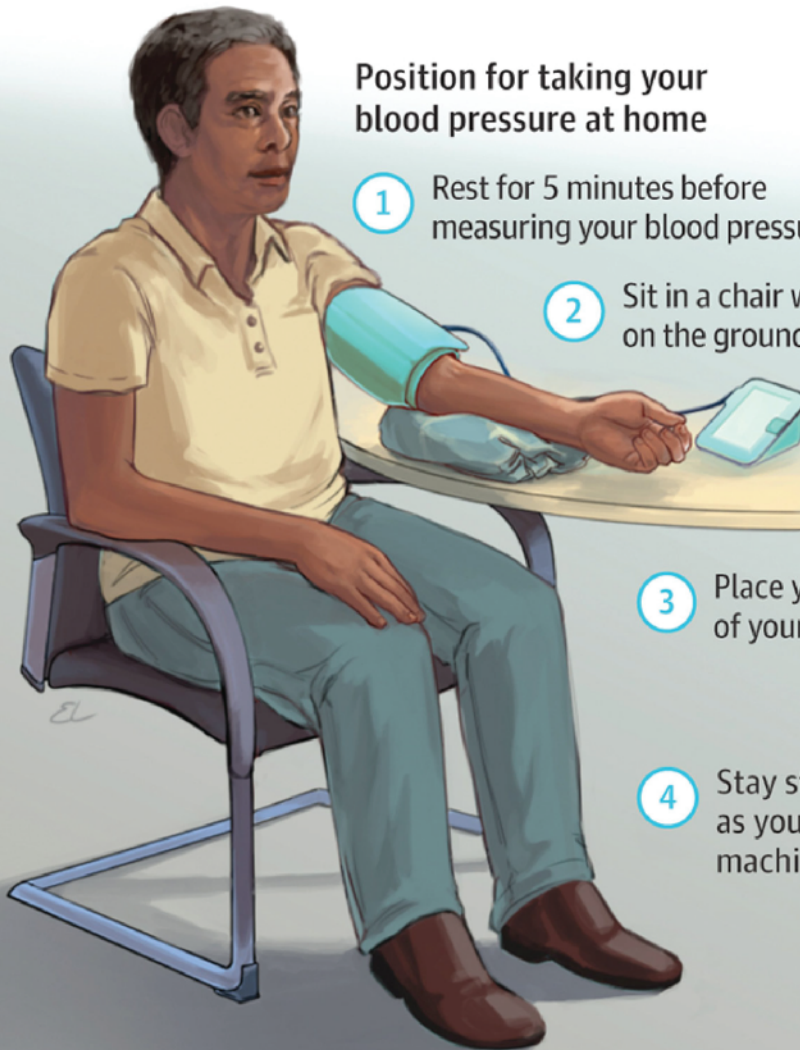
Try to measure your blood pressure at the same time every day.

Choosing the correct blood pressure cuff size

Measure the circumference of your upper arm with a cloth measuring tape midway between the elbow and shoulder. Choose a cuff size that includes this measurement.



Position for taking your blood pressure at home



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Measure your blood pressure in the morning right after you wake up or in the evening before you go to bed.

Try to measure your blood pressure at the same time every day.

SUMMARY



How to Accurately Measure Your Blood Pressure at Home

1. Choose a quiet place. Use an upright chair like a dining chair so your back can be supported. Place your feet flat on the floor.
2. Sit quietly for 5-10 minutes before taking blood pressure. Don't talk.
3. Remove your arm from any clothing.
4. Use the correct size cuff for your arm. Use the measuring guide on the cuff or the setting your provider showed you.
5. Accurately line up the artery arrow with the brachial artery in the crook of your elbow.
6. The cuff should be about 1 inch (2.5 cm) above the bend of your elbow.
7. Position your arm at the level of your heart. Support your arm on a table or arm rest.
8. Start the machine. Read and record blood pressure. "Do not round" numbers up or down.

SCREENING FOR DIABETES IN CHILDREN AND ADOLESCENTS (BELOW AGE OF 30 YEARS)

Consider This As Type 1 Diabetes

Check Blood Glucose When A Child Is Not Feeling Well

Or Is Not Growing Up Well

SCREENING FOR ADULTS FOR DIABETES

Consider This As Type 2 Diabetes

In adults (Above the age of 30 years)

Check those with high risk

First degree relative with type 2 diabetes

Person is fat (obese)

Person has not been feeling well

We shall use this procedure

Check blood sugar about 2 hours after food when at home. If above 11.1 mmol the person is likely to have diabetes and should be checked again the following day if not looking ill.

If looking ill, the person should be referred to the healthcare worker at the health facility for another check and further treatment.

If blood sugar is above 11.1 mmol/l the second time, please refer to the health facility for confirmation and treatment at the health facility fasting sugar will be done.

The fasting (before food in the morning) sugar is useful to confirm the diagnosis of diabetes and ascertain the medicines to use in treatment.

SIGNS AND SYMPTOMS OF DIABETES

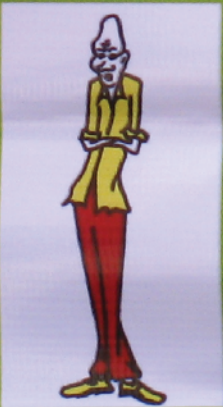
1. EXCESSIVE DRINKING OF WATER



2. EXCESSIVE URINATING



3. RASHES (SCRATCHING THE BODY)



4. WEIGHT LOSS



5. OVER WEIGHT (OBESITY)

THE ABC OF DIABETES MANAGEMENT

A. stands for blood glucose control Goal

checking at home or clinic - aim at between 4.0 - 7.0 mmol/l before breakfast

5.0 - 10.0 mmol/l 2 hours after a meal

The HBA1c should be individualized but is best between 6.0 - 7.0%

The healthworker will discuss which should be the target

B. stands for Blood Pressure Goal

This is best at $\leq 130/80$ mmHg

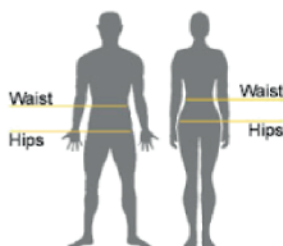
C. Stands for Cholesterol (Fats in Blood)

There are many types of cholesterol; we shall target the bad one which is called LDL-C and the current aim is it should be below 1.4 mmol/l in those with high risk of getting-heart attack.

There are other targets for control, but these we leave to be discussed at the health facility level.

Check the Passport to health for other items the patient should have done and achieved and discuss when they will be done, especially checking the eyes and the feet.

Measuring Waist Circumference



Measure the narrowest section of the torso, or at the mid point between the top of the hipbones and below the lowest palpable rib.

**A Waist Measurement of
>102cm for males
>88 cm women**

Is associated with an increased risk of Type 2 Diabetes and Cardiovascular Disease.



THE DIAGRAMS BELOW GUIDE YOU ON ACCURATE WAYS OF CHECKING WEIGHT, HEIGHT AND WAIST CIRCUMFERENCE

Standing on weighing scales
Measuring Height with a Standlometer



Measuring waist 1(b)

Frankfort Plane



Physical Activity

Engage in Adequate Physical Activities Daily

Key Messages

Physical activity:

- **Improves blood circulation.**
- **Stimulates appetite**
- **Improves mood**
- **Maintains muscles**
- **Makes you alert and active**



Adults should engage in 30 mins of moderate intense physical activity per day.

Children and adolescent should engage in 60 mins of moderate intense physical activity per day.

Examples of moderate intense physical activities include:

Brisk walking, Climbing stairs, Domestic work, Gardening, Jogging, Aerobics, cycling and sports.



During your medical check up, you should have the following

1

All the relevant blood tests taken and the results explained to you.

Your Blood Pressure recorded in every visit.

2

3

Your weight recorded in every visit.

Your urine tested for protein once per year.

4

5

If you have diabetes your feet checked in every visit and a dilated eye exam every year.

Your nutrition and physical activity pattern reviewed.

6

7

Your medication reviewed.

If you are on insulin, your injection sites should be checked on every visit.

8

9

The opportunity to discuss any other health problems you have with the healthcare worker.

Healthy Lifestyle

Successful meal planing involves two things:
1. Knowledge of food values
2. Changing behaviour

1 **Have breakfast, lunch and supper and take snacks in between meals.**



2 **If you plan to fast consult your healthcare worker**



3 **Moderate intake of carbohydrates, fats and salt.**



4 **Increase consumption of fruits and vegetables.**



5 **Do not smoke and avoid alcohol**

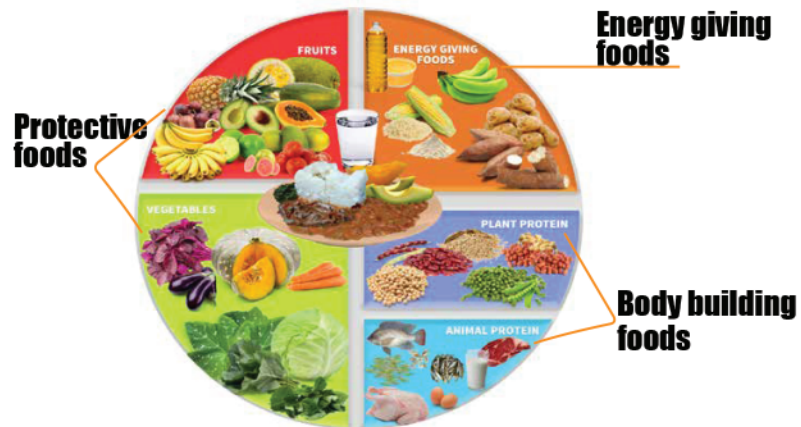


6 **Engage in adequate physical activity daily**



The Eat Well Plate

HAVE A BALANCED DIET



Eat appropriate portions of carbohydrate, and proteins foods including mixed vegetables



OR



Choose healthy fruit options



Food Exchange List

The potential of food to raise blood sugar is determined by amount of carbohydrate it contains
 The potential of a food to increase your weight is determined by the amount of energy it contains

Mainly Carbohydrates



20g Carbohydrate



20g Carbohydrate

Milk

Exchange for



40g Carbohydrate

Chapatti

.Rice
.posho
.sweet potato



40g Carbohydrate

Exchange for



40g Carbohydrate

Matonke



Mango: 14g Carbohydrate | Avocado: 9g Carbohydrate | Jack Fruit: 24g Carbohydrate

Exchange for



Sweet Banana
Bogoya = 30g Carbohydrate
Kabaragana = 18g Carbohydrate

Mainly Proteins

chicken



Zero Carbohydrate

Exchange for



Beef

Zero Carbohydrate



Nsenene:
Zero Carbohydrate

Exchange for



Eggs :
Zero Carbohydrate

Food Exchange List

Vegetables



Greens
Zero Carbohydrate



Greens
Zero Carbohydrate

Fats and Oils

Choose healthy fat options



Cooking oil
Zero Carbohydrate



Butter
Zero Carbohydrate



Ghee (Amajita ga Ente)
Zero Carbohydrate



Cheese
Zero Carbohydrate



Margarine
Zero Carbohydrate



Margarine/ Ghee
Zero Carbohydrate

Diabetes



Diabetes can be controlled with changes in life choices and medicines.

Visit your healthcare provider regularly. Always take your medication as prescribed.



Chronic Care
PASSPORT

Look at your treatment goals in your Passport to Healthy Life try to reach and keep them, especially your blood glucose and blood pressure goals.

Check your blood glucose regularly and record your readings and share them with your healthcare provider



Diabetes



Follow a healthy eating plan.

Eat appropriate portions of carbohydrate and proteins foods including mixed vegetables

Juices spike sugars high - avoid them. Take fruits as fruits.



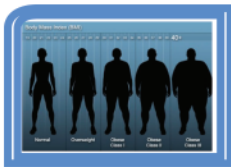
Eat less salt

Moderate intake of Carbohydrates and fat.



Avoid hearsay. Discuss the meal plan with a healthcare worker. Do not take for granted the information you access on internet or hear on the radio some may not be right for you.

Diabetes



Get to and stay at a healthy weight. Talk with your healthcare provider about getting to a weight that is right for you.

Engage in daily appropriate physical activity
Discuss the intended choice of exercise with your healthcare provide first.



Do not smoke. If you smoke ask your health provider for help to quit.

Avoid alcohol.



Diabetes Foot Care



Look at your feet frequently. Use a mirror or ask a member of your family to do so. If you have scratches, cracks, cuts, blisters or any change in the color of the skin, consult your health care provider immediately.



Wash your feet with warm water every day. Dry your feet gently especially between toes with a clean and soft towel.



If you have dry skin apply a Lotion to your feet 2-3 times per week. Never apply lotion between your toes.



Apply anti fungus talc or powder inside your shoes.



Never walk barefoot outside the house. Wear comfortable shoes with enough space for your toes.



Corns and calluses should be treated by a healthcare provider

Transporting Insulin & its storage at home



- Place ice cubes at the top
- Place a layer of cotton on insulin vial
- Keep insulin vial on cotton
- Place a layer of cotton above that
- Place ice cubes at the bottom

Transport to home

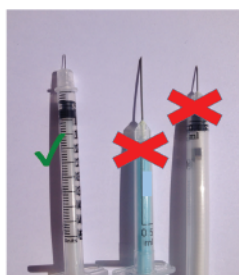


Keep at home

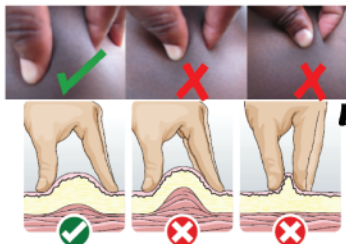


**No refrigeration
No ice at home**

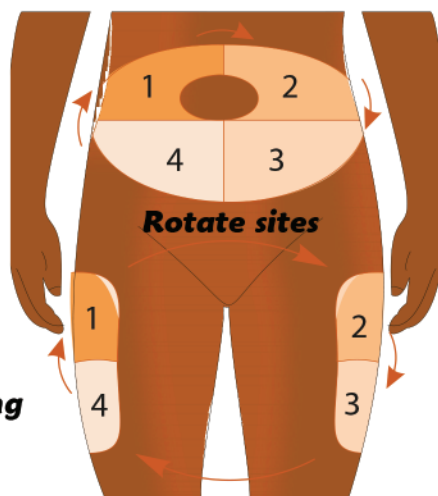
Injecting Insulin



Syringes



Pinching



Rotate sites

<p>1 Wash hands, check insulin for lumps, crystals or discoloring. Gently roll between Hands until uniformly cloudy. Never shake insulin.</p>	<p>2 Wipe the top of the insulin bottle with an alcohol swab.</p>	<p>3 Pull the plunger down to let units of air into the syringe. The units of air should equal the units of insulin that will be drawn.</p>	<p>4 Push the air into the insulin bottle. Leave the needle in the bottle.</p>	<p>5 Turn the insulin bottle and syringe upside down. Be sure the needle is in the insulin, not in the airspace inside the bottle. Pull the plunger down to get right units of insulin in the syringe.</p>
<p>9 Place the used syringe in a sharps container. Do not reuse the syringe if possible; limit re-use to maximum five times.</p>	<p>8 Push plunger to inject insulin. Count from 0-30 (30 seconds) before withdrawing the needle.</p>	<p>7 Push needle into skin at 90° angle.</p>	<p>6 Look for air bubble in syringe. If there are bubbles, push insulin back into bottle. Start again from step 5. When you have the right insulin units with no air bubbles, pull syringe out of the bottle.</p>	

Hypertension or High Blood Pressure



High blood pressure can be controlled with lifestyle changes and medicines.

Vist your healthcare provider regularly. Always take your medication as prescribed.



If advised to check your blood pressure at home follow the recommendation of the healthcare provider

Follow a healthy eating plan.



Hypertension or High Blood Pressure



Look at your treatment goals in your Passport to Healthy Life; try to reach and keep them; especially your blood pressure goal.



Eat less salt. Read food labels to find out how much sodium (salt)

Get to and stay at a healthy weight. Talk with your doctor, nurse, nutritionist or dietitian about getting to a weight that's right for you.



Engage in daily appropriate physical activity
Discuss the intended choice of exercise with your healthcare provider first.

Do not smoke. If you smoke ask your health provider for help to quit.



Avoid alcohol.

Talk to your health provider



1 if you have a persistent cough, weight loss, fever, constant fatigue, or night sweats.

if over the past two weeks you have felt down, depressed, hopeless or had little interest or pleasure in doing things.



3 about the risk for cervical cancer and ask if you need to have a test done.

about the risk for breast cancer: ask if you need a clinical breast exam or a mammography.

about the risk for prostate cancer: ask if you need a prostate examination



Care Plan



Medical Visits

Component	Frequency	Gold Standard
Blood Pressure	Each visit	<140/90mmHg/or <130/80 with diabetes
Eye Exam	Annual	Normal
Dental Exam	Every 6 months	Teeth and gum exam
Brief Foot Exam	Each visit	Normal. Remove shoes / socks
Complete Foot Exam	Annual	Clinical exam
Weight /Waist Circumference	Each Visit	BMI 20-25 / M<94 cm; F<80 cm
Immunizations	Annual	If available (optional)
Cardiovascular Risk	Each visit	<10%
Respiratory Symptomatic	Every visit	Doesn't have cough, fever, weight loss, or night sweats.
Breast Exam	Follow national guidelines	Negative
Prostate Exam	Follow national guidelines	Negative

Care Plan



Laboratory

Component	Frequency	Gold Standard
Hemoglobin A1c	Every 3-6 months	<7% (And this is Individualized)
Fasting/Postprandial Blood Glucose	Each visit	<7.0 mmol/l / <10.0 mmol/l
Triglycerides	Annual	1.7 mmol/l
Cholesterol total	Annual	5.0mmol/l
LDL Cholesterol	Annual	<2.2mmol/l
HDL Cholesterol	Annual	men: > 1.0mmol/l women: > 1.1mmol/l
Urine	Each visit	Normal (dipstick if available) <small>(SGLT2 drugs cause sugar to appear in urine and this is normal)</small>
Proteinuria/albuminuria	Annual	<30 µg/mg
Blood Creatinine	Annual	<1.4 125 mmol/l
EKG	Annual	Normal pattern
Chest X-Ray	if indicated	Normal
Sputum smear	If cough/ weight loss/ night sweats	Negative
Mammography	Follow national guidelines	Negative
Pap Smear	Follow national guidelines	Negative
PSA	Follow national guidelines	Negative

Care Plan Education



Component	Frequency	Gold Standard
Treatment Goals	Each visit	Discuss with patient
Blood Glucose Monitoring	Individualized	Recommend
Healthy Eating	Each visit	Recommend always
Smoking (+/-)/ Alcohol Use (+/-)	Each visit	Do not use
Physical Activity	Each Visit	30 minutes most days if clinically recommended

Exercise Plan

Discuss with healthcare provider



THE REPUBLIC OF UGANDA
MINISTRY OF HEALTH



HOPIET-UG
INVESTIGATOR COLLABORATIVE



SHEEMA DISTRICT COMMUNITY
ADVISORY BOARD
SDCAB



**The Sheema District Health Initiative
(SDHI)**