Laboratoire d'Etudes et de Recherches sur les Dynamiques Sociales et le Développement Local

Etudes et Travaux
n°142

LASDEL "Stop NCD" team

The fight against diabetes and hypertension in Niger: a qualitative diagnosis

2025

LASDEL "Stop NCD" team

Principal investigator :

Aïssa DIARRA

Co-investigators:

Saidou OUMAROU

Salamatou ABDOUL KARIM YAMBA

Téoma OUSSEINI

Babba Gana ELHADJI MOUSTAPHA CHETIMA

Farouck GAOH

Ibrahim NASSIROU

Abdoulaye OUSSEINI

Control and quality manager :

Jean-Pierre OLIVIER de SARDAN

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Foreword

This report is the result of qualitative research carried out by LASDEL in Niger in July and August 2023, as part of the Stop-NCD program covering three West African countries: Burkina Faso, Ghana and Niger. It is implemented by five teaching and research institutions: 1) Ghana College of Physicians and Surgeons (GCPS) in Ghana; 2) London School of Hygiene and Tropical Medicine (LSHTM) in the UK; 3) Ashesi University in Ghana; 4) Catholic University of West Africa (CUWA) in Burkina Faso; 5) Laboratoire d'Études et de Recherche sur les Dynamiques Sociales et le Développement Local (LASDEL) in Niger. It is funded by the National Institute for Health and Care Research (NIHR). It focuses specifically on hypertension, diabetes and the mental disorders associated with these two non-communicable diseases (NCDs).

The report analyzes the policy for combating these NCDs and its implementation in the field, and describes the concrete ways in which diabetes and hypertension, as well as related mental disorders, are prevented and managed in the Nigerien healthcare system, within the health pyramid, and at community level. It is based on numerous interviews with caregivers, patients and other stakeholders, who share their perceptions, fears, difficulties and practices.

The survey revealed an irrefutable fact, crucial to any attempt to improve the fight against NCDs in Niger: the vast majority of the population affected by diabetes and hypertension do not currently receive accessible, effective care. Despite a few promising pilot projects here and there, and the dedication of many healthcare staff, the Nigerien healthcare system is failing to take up the fight against these two NCDs. The quantitative study conducted by Ibrahim Nassirou confirms this conclusion (cf. *Etudes et Travaux du LASDEL* n°141, Nassirou, 2025).

Let's be clear: **diabetes and hypertension, long perceived as "diseases of the rich" and now widespread in all social strata, have become diseases that hit the poor much harder.**

To find solutions, a rigorous diagnosis is essential, even if it highlights problems, and especially if it highlights problems!

Let's take a brief look at the four main problems mentioned in this report, which justify this observation, and from which some courses of action can be proposed:

1. **The poor are almost totally or completely excluded from the treatment of these illnesses**, due to the very high cost of treatment, examinations and travel to distant hospitals, which are often the only ones able to provide the essential services. In the absence of any state coverage (unlike civil servants, who are covered by mutual insurance companies), they are condemned to complications and an early end to their lives.

2. **The molecules or small items of equipment needed to diagnose diabetes and hypertension and manage them on a day-to-day basis at the level of the patient or his or her primary caregiver, in order to prevent complications, are most often lacking at the level of primary health centers** (CSI), which are nevertheless the base of the health pyramid for the for the lower classes (the urban middle and upper classes do not frequent them and can access hospital care, often privately). Likewise, CSI staff often lack the necessary skills to deal with these two NCDs.

3. These first two problems are in part the consequences of the third: **despite stated intentions, NCDs are not at all public health priorities in Niger.** It remains a donor recommendation that has not been adopted nationally. It's a sector that lives in destitution. The Programme National de Lutte contre les Maladies Non Transmissibles, which is responsible for combating NCDs, has only paltry resources. The State does not invest at all in this field, and the only activities carried out are those financed by external partners, which come to an end as soon as the project funding them withdraws.

4. A final factor is the **lack of coordination and coherence, and the absence of an overall plan for NCD-related interventions by TFPs**. Each one develops its own programs as it sees fit, in a sporadic fashion, giving priority to this or that area, this or that system.

In addition, the survey showed that **the same difficulties are to be found in Niger as have already been highlighted in previous work on NCDs in other African countries**:

- **Delayed detection**: the symptoms of diabetes and hypertension are not easy to read, and are shared with other pathologies, which does not encourage patients to seek a diagnosis; as for the health staff at the IHCs, they are all the more reluctant to propose a diagnosis as they have little or no training in NCDs. This lack of early diagnosis encourages the onset of complications, which often have serious consequences and require more extensive and costly treatment.

- There is **little dialogue between caregiver and patient**, little listening to patients, little explanation and advice to patients, despite the fact that these two NCDs require even greater monitoring than most other pathologies, and active assistance from caregivers to help patients take charge of their own disease management.

- Like all chronic diseases, **diabetes and hypertension are perceived as failures of biomedicine, prompting patients to turn to popular alternative, traditional or neo-traditional therapies**, fuelled by innumerable rumours.

- **Measures to be taken by patients themselves, in particular dietary modifications, are very difficult to apply in the social context** of family meals. Moreover, the cost of foods adapted to the sick is often prohibitive for poor families.

- **Available statistics on NCDs are few and far between, and they grossly underestimate the scale and impact of these diseases**. We need to reflect on this important issue: how can we find out the real prevalence of these two NCDs, particularly in the lower classes areas?

- Finally, **it is very difficult to assess the real impact of public awareness campaigns carried out by community relays, traditional authorities and local or national radio or television stations**. These activities are easy enough to program, finance, carry out and justify, but do they contribute significantly to real behavioral change? It

would be worthwhile to reflect on this and develop a survey methodology on the subject.

Finally, it should be noted that the results of this qualitative diagnosis are inseparable from the method employed by LASDEL for many years, which is based on the new anthropology of health: researchers' familiarity with the contexts under investigation, in situ observation, guided individual conversations, case studies, and attention to counterexamples, the unexpected, variances, and discrepancies. The investigation is not limited to a series of answers to a series of pre-determined questions, filling in the boxes of a pre-established template. On the contrary, it raises new questions as it progresses, following new leads that emerge from the researchers' interactions with the various strategic groups concerned.

Jean-Pierre OLIVIER de SARDAN (LASDEL)

The fight against diabetes and hypertension in Niger: a qualitative diagnosis

LASDEL « Stop-NCD » team

INTRODUCTION

Research questions

Like other developing countries, Niger is facing a sharp increase in cases of NCDs. Although rare, available studies and estimates point to an increase in their incidence, particularly in recent years (MSP, 2012). As a result, 30% of deaths recorded each year are due to NCDs, and the risk of premature death due to NCDs is 21% in Niger (WHO, 2022). According to the results of the STEPS survey carried out in 2021 among adults aged 18 to 69, the prevalence of NCD risk factors is on the rise, with a high level in relation to the target set by international and national bodies. These statistics testify to a worrying public health situation that requires urgent action. Niger's control strategy is based on a multi-sectoral approach, with the following objectives: 1) to give the fight against NCDs a higher priority; 2) to strengthen governance within the health system; 3) to reduce modifiable risk factors; 4) to promote action research; 5) to rigorously evaluate prevention and management programs.

The "Stop NDC (Non Communicable Diseases)" action-research project aims to support the achievement of these government objectives by providing decision-makers and development partners with reliable and relevant evidence-based data to help strengthen existing policies and

programs aimed at better management of non-communicable diseases, as well as effectively combating the prevalence of these diseases.

The present report is the result of the qualitative component of the contextual analysis that forms the first work package of the Stop-NCD program. It aims to deepen our understanding of contextual influences and help guide effective interventions for the prevention, diagnosis and management of NCDs in Niger and more widely in West Africa. The surveys were conducted on the basis of the following research questions.

WP	Thème de recherche		
	Thème 1 : Soutien individuel et communautaire	Thème 2 : Soutien aux établissements de soins de santé primaires	Thème 3 : Soutien aux systèmes et aux politiques
WP1 : Analyse du contexte et synthèse des données	1.1. Quels sont les caractéristiques et les comportements individuels, ainsi que les facteurs environnementaux et contextuels (par exemple, les normes sociales, les traditions, les revenus et les moyens de subsistance, le sexe, le pouvoir) qui permettent ou entravent la lutte contre les MNT dans chaque pays, et comment ? 1.2. Quels sont les acteurs communautaires impliqués dans la lutte contre les MNT, et comment leurs rôles, leurs intérêts et leurs pouvoirs influencent-ils les décisions et les pratiques en matière de MNT ? 1.3. Quelles sont les interventions au niveau individuel et communautaire qui favorisent une vie saine, le dépistage et la gestion des MNT dans les pays en développement ? Afrique occidentale et saharienne, et quelles sont les preuves de leur efficacité ?	2.1. Quelles sont les possibilités et les contraintes liées à l'intégration des soins des MNT dans les établissements de soins de santé primaires, y compris le soutien du personnel, la documentation, l'établissement de rapports et la prise de décisions cliniques ? 2.2. Quel personnel au sein des établissements de santé est impliqué dans le contrôle des MNT interdépendantes, et quels sont leurs intérêts, pouvoirs, rôles et responsabilités dans la prise de décision clinique et de gestion ? 2.3. Quelles sont les interventions au niveau des établissements qui permettent de lutter efficacement contre les MNT interdépendantes en Afrique subsaharienne/occidentale, et quelles sont les preuves de leur efficacité ?	3.1. Quels sont les environnements politiques actuels et les structures et processus des systèmes de santé, et comment affectent-ils les soins intégrés des MNT dans et à travers les trois contextes ? 3.2. Quels sont les acteurs politiques nationaux engagés dans la lutte contre les MNT, quels sont leurs intérêts, leurs pouvoirs et leurs rôles, et comment ceux-ci influencent-ils les politiques relatives aux MNT ? 3.3. Quels systèmes et interventions politiques ont renforcé la lutte intégrée contre les MNT en Afrique subsaharienne/occidentale, et quelles sont les preuves de leur efficacité ?

Source : Investigateurs principaux du programme Stop-NCD.

It should be noted that quantitative surveys were carried out in parallel with the qualitative surveys, in accordance with the provisions of the Stop-NCD program. The results of this quantitative aspect of the research are discussed briefly at the end of this report, and readers are invited to refer to issue no. 141 of *Etudes et Travaux du LASDEL* (Nassirou 2015).

Context

Niger has an estimated population of over 21 million in 2018 and a high demographic growth rate (3.9%) (INS, 2019). Its population is made up of 9 ethnic groups which are: Arabs, Boudouma, Djerma-Songhaï, Gourmantché, Haoussa, Kanouri, Peul, Touareg and Toubou. The majority of the population is illiterate (71% of the population in 2012). Young people

under the age of 15 (49.54%) make up half of Niger's population (Institut National de la Statistique, 2012). Administratively, Niger is divided into 8 regions, 63 departments and 266 communes.

Niger's economic performance is among the weakest in the world. Its economy remains fragile, largely dependent on the price of raw materials and rainfall conditions (Ousmane Ida 2015). Agriculture and livestock breeding remain the main sources of employment. They employ the overwhelming majority of the working population. However, the agricultural sector, which employs the largest number of people, is also the sector with the lowest productivity, which explains the very low incomes observed (Da Corta. et al, 2021). Despite the exploitation and export of mining and energy resources (oil, uranium), Niger's human development index remains the lowest in the world at 0.394% in 2019, and around 40.8% of the Nigerien population live below the poverty line, i.e. on less than one US dollar a day (Ministère de la Santé Publique, 2022). The country's poor economic performance is reflected in all public service sectors, including healthcare, our field of research.

Niger's health sector is characterized by poor coverage. Only 52.74% of the population will be within 5 kilometers of a health facility in 2020, with a 43.86% utilization rate for curative services in 2019 (Ministry of Public Health, 2022). The health sector is under-financed. Sources of funding are mainly payment for healthcare services by users, the state budget, the Common Fund and contributions from NGOs and other individual players. The table below shows a comparison of the share of the state budget allocated to the security, education and health sectors from 2018 to 2022.

Sectors Years	Security	Education	Health
2018	17%	19%	9%
2019	14,39%	20,49	10,16
2020	13,61%	18,01%	10,34%
2021	8%	12%	4%
2022	13,9%	19,9%	7%

Source : ministère des Finances : 2018, 2019, 2020, 2021, 2022

It can be seen that the proportion of the budget allocated to health is quite low compared to the security and education sectors. Moreover, during the years 2021 and 2022, the rate has fallen drastically, far from the commitments made in Abuja in 2001, namely to devote 15% of the state budget to health.

As mentioned above, a significant proportion of health financing is therefore borne by households/communities. According to the Ministry of Health, 43.68% of current healthcare expenditure in 2020 will be borne by households. The high cost of public health services is increasing the use of non-conventional medicine (modern drug peddlers and traditional therapists), which accounts for 80% of the population's first recourse in the event of illness, particularly among the poorest (Ministry of Public Health 2022).

Niger's health pyramid comprises 3 administrative levels: central, intermediate and peripheral:

- the peripheral or operational level corresponds to the primary health centers supervised by the health district;
- the regional or technical level corresponds to the health region
- the central or strategic level corresponds to the national level.

The country's poor economic performance is having a negative impact on its healthcare system (inadequate health infrastructures, human resources, technical facilities, etc.). In terms of infrastructure, the central level comprises 6 national hospitals and a national reference maternity hospital, all of which are Public Administrative Establishments (EPA). The regional level comprises 8 Regional Public Health Departments (DRSP), which coordinate and monitor health initiatives and provide technical support to the health districts under their responsibility. 2nd referral care is provided by 7 regional hospitals, an army hospital and 7 Mother and Child Health Centers, all of which are operational. The peripheral level, supported by 72 health districts, comprises 1,267 Integrated Health Centers (CSI) and 2,329 Health Huts (CS) attached to them (WHO, 2022).

In terms of human resources, according to the 2019 Statistical Yearbook, there is one doctor for every 24,110 inhabitants, far from the WHO standard of one doctor for every 10,000 inhabitants. In some regions, the discrepancies are even greater. For example, there is one doctor for every 55,642 inhabitants in the Tahoua region, and one doctor for every 57,297

inhabitants in the Tillabéri region. This situation is helping to increase health care provision at the third level, i.e. the referral centers. All these infrastructures are insufficient in number, given the vastness of the country. Indeed, the national coverage rate is only 51.53% (Ministry of Public Health, 2022).

The country's health infrastructure and human resources are unevenly distributed. Health infrastructures are concentrated in urban areas, to the detriment of rural areas. This uneven distribution of health facilities deprives a large part of the population of access to healthcare. Rural patients face enormous difficulties in accessing a health center.

Despite the policy of medicalizing IHCs through the massive recruitment of doctors in 2015, the vast majority of IHCs are run by nurses. Material and technical resources have not kept pace with the need for better care at CSIs.

In 2017, the 2016-2035 National Health Policy (PNS) was drawn up. It aims to offer quality care and services to the population, particularly at the level of vulnerable groups, in line with international standards. To this end, a new Health Development Plan (PDS) has been drawn up to cover the period 2022-2026, which is the second five-year declination of this policy. As for non-communicable diseases, although a national program has been in place since 2012, it wasn't until 2021 that this program drew up a national strategic plan to combat NCDs. The main aim of this plan is to contribute to the reduction of morbidity, mortality and disability linked to NCDs by 2026. Specifically, this involves :

- Strengthening leadership and governance to accelerate the fight against non-communicable diseases and associated trauma.
- Strengthening prevention of non-communicable diseases, trauma and their risk factors.
- Improving the quality of care for non-communicable diseases and trauma
- Developing research into non-communicable diseases and trauma
- Ensuring epidemiological surveillance of non-communicable diseases and trauma at all levels

In concrete terms, this involves :

- Focusing on non-communicable diseases: cardiovascular diseases, cancers, chronic respiratory diseases and diabetes.
- Carrying out prevention activities: training health workers at community or health district level (CS, SCI, HD) in prevention; these

workers must in turn raise awareness among users at health facility level; levying a tax on products considered to be contributory factors in NCDs.

- Carrying out screening and diagnostic activities: providing community-level services with diagnostic equipment (blood pressure monitors, glucometers, scales, supports), and train them in their use and in diagnosing NCDs.
- Carrying out treatment and care activities: training and setting up a first level of care at the district hospital (HD), which has examination and care facilities for hypertension and diabetes. Follow-up is then coordinated between the HD and the SI.
- Reducing distance to care and disease follow-up, rapid treatment, reduced transport costs, reduced complications of disease, capacity-building of health workers and technical support at community level, use of tax on products promoting NCDs, easier access to medicines.

In terms of the fight against NCDs, specifically diabetes, hypertension and associated mental disorders, the manifestation of political will is recent and has hardly been put into practice; few concrete actions have been implemented. Yet the prevalence of these diseases remains high. For example, according to the results of the latest STEP survey, 2021, the prevalence of high blood pressure has risen from 21.2% in 2007 to 27.4% in 2021. The prevalence of smoking and obesity rose from 4.9% in 2007 to 6.2% in 2021 and from 3.8% in 2007 to 4.9% in 2021 respectively (STEPS, 2007; 2021). As regards diabetes and hypertension care facilities, diagnostic and/or treatment services are available in 29% of the country's health facilities. In the public sector, they are available in 24% of facilities, and in the private sector in 80%. The highest proportion of health facilities (73%) is in Niamey. In the fight against cardiovascular disease, diagnostic and/or treatment services are available in 42% of the country's health facilities. These services are available in 87% of hospitals and 38% of public-sector IHCs. Screening and/or treatment services for chronic respiratory diseases (CRD) are available in 43% of health facilities (PDS, 2022-2026).

Methodology

This research adopts a qualitative socio-anthropological approach, based on piloted interviews and observations. Interviews were conducted with two groups of stakeholders: on the one hand, institutional stakeholders (health workers, Ministry of Public Health workers, technical service workers, media workers, NGO workers); on the other hand, community stakeholders (patients suffering from diabetes or hypertension, members of their families, traditional practitioners).

The interviews were conducted on the basis of a flexible framework developed during the ECRIS collective survey (Bierschenk & Olivier de Sardan, 1997) and shared with all the teams in the three countries. This data collection tool is built around four main axes. The first deals with popular perceptions of non-communicable diseases (NCDs). The second is devoted to NCD health policy, including stakeholder analysis, programs and funding. The third deals with the management of NCDs in healthcare facilities. Finally, the last section is dedicated to the experiences of NCD patients (diabetes and hypertension), treatment compliance, use of traditional medicine, and adherence to a healthy diet. The interviews took place in the health facilities, in the agents' offices, and in the patients' homes. In general, interviews lasted between 30 and 1h30 minutes. Based on the free consent of the respondents, almost all interviews were systematically recorded, and notes were taken throughout. The summaries produced from the interviews and the transcriptions of the recordings formed the elements of the data corpus.

An eight-strong team has been set up. It is made up of two research assistants from LASDEL, three doctoral students from the STOP-NDC program and three research assistants, including one doctoral student and two holders of a Master II degree in socio-anthropology. All these people have sociology and anthropology as their core disciplines. The researchers worked in pairs. After conducting the interviews, the whole team met for discussions based on a summary of each interview, during daily sessions.

Data collection lasted 26 days, including 10 days in Maradi (and the Mayahi rural site), 10 days in Tahoua (and the Madaoua rural site) and 6 days in Niamey. It took place between the end of July and the end of August 2023. Interviews were conducted in urban and rural areas, in local languages or in French.

Observations focused on consultation sessions and the management of diabetic and hypertensive patients at the Maradi regional hospital.

After 26 days of data collection, a total of 116 interviews were conducted, and two (2) observation sessions were carried out. The table below breaks down the number of interviews carried out by profile of the people interviewed.

Localités	Maradi ville	Mayahi	Total Maradi	Tahoua ville	Madaoua	Total Tahoua	Niamey	Total Niamey	Total Maradi, Niamey et Tahoua
Infirmiers	1	7		8	6		3		
Médecins (generalistes et specilaitses) et	10	3		8	3		8		
Sages-femmes	0	0		1	0		1		
Service technique	2	0		1	1		3		
Agents de labo	1	0		0	0		0		
Pharmaciens	1	1		0	2		1		
HTA	11	8		1	1		3		
Diabétiques Et relais diabétiques	4	1		2	2		4		
Accompa-gnants	1	0		0	2		0		
Agents de radio	0	1		2	1		1		
Agents ONG et	1	0		1	0		5		
Tradi-praticien	1	0		1	0		1		
Total :	33	21	54	25	18	43	30	29	127

THE COUNTRY'S MAIN HEALTH POLICY PRIORITIES

Implementing a policy to combat NCDs in Niger

Niger's health policy is defined by the Health Development Plan (PDS), which is a sectoral planning tool in response to the country's health problems. But for decades, the effective fight against non-communicable diseases has not been sufficiently taken into account by the PDS.

Indeed, the fight against NCDs is primarily a response to the international community's concern about the high prevalence of these diseases. The development of the policy can be traced back to the participation of Heads of State in several United Nations Assemblies and the ratification of several conventions on the fight against NCDs at national and international level. The most decisive factor was the Summit of Heads of State and Government on the Prevention and Control of Non-Communicable Diseases, held at UN headquarters in New York on September 19-20, 2011. States committed to developing and implementing a national policy to address the scale of NCDs worldwide. To follow up on its commitments, Niger through the Ministry of Public Health created the national program to combat NCDs (PNLMNT) by decree 0016/MSP/SG/DGSP of January 25, 2012.

Administratively, the program is housed in the Disease Control Department (DLM) of the Ministry of Public Health (MSP/AS/P). It comprises four (4) departments: a secretariat, an administrative and financial department, a communication and social mobilization department, and a monitoring-evaluation department comprising a research unit and a computing and statistics unit. It is headed by a national coordinator and a deputy national coordinator appointed by ministerial decree. Twelve staff have been assigned to it: two doctors, a manager, two health communicators, a social action inspector, two nutritionists, a mental health technician, a sociologist, an epidemiologist and a secretary. The program's remit is to design, implement and evaluate national policy in the fight against non-communicable diseases. The aim is to ensure that strategies and interventions to combat these diseases and their risk factors are integrated into the Nigerien healthcare system. With this in mind, the PNLMNT is drawing up a multi-sectoral strategic plan for the fight against non-communicable diseases for a 5-year

period, with reference to the PDS. It constitutes the roadmap defining the priorities for the implementation of activities in the field. Niger has successively drawn up three strategic plans.

A number of strategic areas have been identified. In terms of leadership and governance, the focus is on strengthening coordination, multisectoriality, the institutional framework and regulatory mechanism, institutional communication, partnership (TFPs, CSOs) and planning and monitoring. With regard to the prevention of NCDs, we note the reinforcement of the fight against risk factors and the availability of screening, diagnosis and treatment facilities through activities carried out as part of WHO strategies. Finally, we plan to develop research and strengthen epidemiological surveillance.

Weak commitment to NCD policy

The fight against non-communicable diseases has taken a back seat to the fight against communicable diseases. There is a lack of political commitment at both national and local levels. Most partners focus on communicable diseases to the detriment of noncommunicable ones:

> "People run after communicable diseases when it's NCDs that do the damage. In terms of mortality, NCDs, cardiovascular diseases alone, multiplied communicable diseases such as AIDS, tuberculosis and malaria 6 times in 2018. And then in terms of premature death, i.e. dying before life expectancy, it's diabetic comas, asthma attacks, cancer - let's not talk about it!" (PNLMNT agent in Niamey, August 2023).

> "In-all-cases, they're dealing with Covid-19, whereas there's no more covid, here, it's HTA and diabetes that are covid-19." (internist in Tahoua, August 2023)

As with other health programs, the program does not have a specific, dedicated financial policy for implementing activities to combat NCDs in the field. State funding of PNLMNT's activities is limited to covering its operating costs: staff salaries, office equipment and IT tools. In operational terms, since the program's creation in 2012, we had to wait until 2015 for the personnel allocation decree and the budget allocation decree to be issued. In 2017, direct allocation was abolished in favor of attaching the program to the Ministry of Health's Direction of Financial and Material Resources (DRFM). For its supply of operating inputs, the PNLMNT submits purchase orders to the DRFM, as explained by a PNLMNT manager. The funds received by the PNLMNT are insufficient in view of the immensity of its

duties and responsibilities at national level. What's more, the difficulty of accessing state funding has made it precarious:

> "We're often left to our own devices. We don't have any porters or waitresses, even the janitor, he's a volunteer, and we often have to contribute to give him something. We clean our offices ourselves. In the morning, before starting work, I had to clean my office and the toilets. Even to get to the Ministry of Health, I have to take a cab, as the fuel for our only vehicle is not provided. Today, the regional health structures are better off than we are, because they have an AAP that is financed by a state budget, and they have a lot of partners who support them". (PNLMNT agent, Niamey, August 2023)

In addition to this lack of funding, the PNLMNT is also faced with a lack of commitment on the part of technical and financial partners, for whom NCDs are not a priority:

> "There are partners who say they'll finance, but when it comes to implementation, they don't. MNT is not a government priority. MNT is not a government priority. If it's a government priority, we'll get funding. It's communicable diseases that are the government's priority. Maybe that's because it's the priority of the donors. (PNLMNT agent, Niamey, August 2023)

One of the reasons why NCDs are not sufficiently integrated into priorities is undoubtedly the lack of statistical data mobilization to make political decision-makers aware of the urgent need to intervene in this field.

Lack of data for effective implementation of NCD policy

Health data on non-communicable diseases are woefully inadequate to inform decision-making and improve the performance of national disease control efforts. The health information system is limited to the fields of epidemiological surveillance and the monitoring of health activities, which do not sufficiently target NCDs. In addition, statistical data are not sufficiently exploited, although they should drive precise and relevant actions to improve indicator levels.

> "Public health does not assist the population. It hides behind figures when it should be initiating measures to attract attention." (Surgeon, Maradi, August 2023)

In the IHCs and district hospitals, there is no support adapted to NCDs to enable regular data collection. The process of data collection and systematic analysis at each level for immediate decision-making is also lacking at health

facility level. This penalizes the archiving, dissemination and publication of health information concerning NCDs. Indeed, there is a significant underestimation of NCD-related data, which is centralized monthly on the Ministry of Health's online data collection platform, DHIS2 :

> "There is a discrepancy in the updating of data on the DHIS2 platform. The data does not reflect reality on the ground. The data is not updated or is late in the CSIs. (PNLMNT agent, Niamey, August 2023)

A member of the Société nigérienne d'endocrinologie et diabétologie (SONED), an endocrinologist and diabetologist practicing in a private clinic, highlights the problem of lack of data in the fight against NCDs:

> "Once, we saw a consultant who researched the prevalence of NCDs and said he had obtained 2%. We were surprised because we know that the real situation exceeds what he says, and even if that's the case, with 2%, who can we go to defend a plea for the implementation of activities to combat these diseases?" (endocrinologist and diabetologist, member of SONED, in Niamey, August 2023).

The data do not take sufficient account of the private sector. In addition, the prevalence of these diseases is assessed every 5 years by the STEPS survey, which depends entirely on funding from technical and financial partners (TFPs). The first survey was carried out in 2007, but due to a lack of funding, we had to wait until 2021, 14 years later, for another partner to finance the second prevalence survey. However, this survey, combined with the health statistics directory, identified 4 major groups of NCDs in Niger: cardiovascular diseases, cancers, chronic respiratory diseases and diabetes.

Overview of national policies and regulatory documents relating to the fight against NCDs

Description of the policy development process and involvement of key players

The 2023 plan was proposed using a participative, iterative and consensual approach. Two committees were set up to oversee the development of the plan. The first is the steering committee, made up of program managers, focal points for the main non-communicable diseases, WHO representatives and the Ministry of Planning. The WHO provided technical support through its expertise but also ensured that the plan was aligned with international objectives in the fight against non-communicable diseases. The Ministry of Planning is the institution responsible, in collaboration with the Ministry of Health, for designing, drawing up, implementing, monitoring and evaluating

national planning policy in accordance with the guidelines laid down by the government.

The steering committee was responsible for drafting the proposed strategic plan. With the exception of the first strategic plan for 2012-2016, which was drawn up essentially based on data from the 2007 STEPS survey and the statistical yearbook produced each year, the steering committee is carrying out a contextual assessment based on two approaches. The first is the evaluation of the former PMLMNT and the analysis of the NCD situation. In some cases, the committee asked the regional public health departments (DRSP) to submit proposals in advance, considering the specificities of the different regions. This assessment led to the identification of priority issues and key interventions. The second approach was to hold workshops. The committee held a planning and budgeting workshop and a pre-validation workshop.

The second committee is the multidisciplinary and multi-sectoral ad-hoc technical committee responsible for validating the plan proposed by the steering committee, during a consensus workshop:

> "The fight against NCDs is not just about health. Everyone in their own field has something to do in the fight against NCDs. That's why we advocate a multi-sector approach. For example, we're working with the Ministry of Youth, which is creating spaces to promote sport to prevent sedentarization. The Ministry of Commerce is involved in controlling the import of products". (PNLMNT agent, Niamey, August 2023)

The a-hoc committee that validated the 2023-2026 plan included representatives from the following organizations:

- The eight representatives of Niger's 8 regional public health departments;
- The national program to combat mental illness;
- The Secretary General of the Ministry of Public Health;
- The Ministry of Agriculture;
- The Ministry of the Environment and the Fight against Desertification;
- The Ministry of Finance;
- The Technical Advisor to the Prime Minister's Office;
- The National Cancer Center;
- The national anti-tobacco program;
- Two cardiology specialists from Zinder and Diffa;
- The WHO "non-communicable diseases" focal point;

- The focal point of the NCD project of the NGO FORSNI;
- The focal point of SOS MNT;
- The coalition of NGOs and associations in the health sector;
- The coalition for the fight against non-communicable diseases;
- The health sector communication network;
- The 3 doctoral students in LASDEL's STOP-NCD program[1].

This two-day workshop, financed by Belgian cooperation, resulted in the integration of suggested modifications and validation of the Plan by the Secretary General of the Ministry of Public Health. Development of the 2023-2027 plan began in the fourth quarter of 2022 and was validated in July 2023.

To define field activities, at the end of each year an Annual Action Plan (AAP) is set up by the national program. All health facilities (DS, CHR, CSME) draw up their annual action plans (AAP), taking into account the needs of the departments or health facilities attached to them. These AAPs are centralized at the level of the respective regional directorates (DRSP/AS/P) and sent to the Directorate of Studies and Programming (DEP) of the Ministry of Public Health. The PNLMNT synthesizes the elements of the 8 DRSP/AS/P AAPs that concern NCDs, to establish the national needs in the fight against NCDs. It should be noted, however, that this approach is not always respected, due to delays in the preparation of the AAPs and, above all, to the fact that the fight against NCDs is not always taken into account in the AAPs of health facilities. What's more, in health facilities, activities are prioritized according to the areas of interest of partners already involved or ready to finance the activities. NCDs are not a priority:

> "One of the difficulties encountered by the program at central level is the overlapping of activities. For example, right now, the operational peripheral level is in a malaria CPS campaign. Now, if we want to carry out an activity during this period, they say it's not possible because all the players are involved in other activities. So that slows down the implementation of our activities". (PNLMNT agent, in Niamey in August 2023)

The PNLMNT completes the AAP in the field of NCDs by evaluating the results of the previous AAP, taking into account needs and, above all, the availability of financial resources. The AAP is then validated at a meeting of the National Health Council (CNS), chaired by the Secretary General (SG)

[1] The doctoral students participated as free auditors as part of their context analysis work. However, they were involved in activities throughout the process of validating the plan

of the Ministry of Public Health and attended by the health sector's technical and financial partners (PTF), who decide to finance certain activities.

Information on NCD policy

Information on the NCD policy follows several mechanisms. The official presentation of the policy takes place during the multi-sectoral meeting bringing together the various stakeholders and state institutions, accompanied by media coverage (radio and TV). The PNLMNT and the PAA are also announced to stakeholders during the strategic plan validation workshop and the PAA validation meeting by the CNS. The PNLMNT also holds advocacy and information meetings with administrative, customary and religious authorities in certain regions. There are also days when diseases are commemorated, such as International Cancer Day or International Diabetes Day, when messages are broadcast on TV and radio. There are also attempts to integrate the policy into the AAPs of certain health districts.

The actors questioned about their knowledge of the policy can be grouped into three categories. Firstly, there are the actors who have a good knowledge of the national policy to combat NCDs: organizations (NGOs and CSOs) involved in the fight against NCDs, agents of the Ministry of Health and decentralized entities of the health pyramid (DRPS, DS):

> "I know the policy. Recently, we organized two days of screening and three days of awareness-raising against cervical cancer, diabetes and hypertension. The only link between us is the organization of these days". (Chief Medical Officer, Niamey, August 2023)

Secondly, we note that many actors have only vague knowledge of the policy and the PNLMNT. Most of them come from regional, departmental or peripheral health services, or from the institutions involved (NGOs and CSOs). In the health sector, most players are specialists and general practitioners:

> "I would have learned that the ministry has a unit to combat NCDs. We've never had any contact, but they're in charge of NCDs. I've been here for three years, I've never been contacted, I don't know how it works, I'd say it doesn't exist for me." (Cardiologist, Tahoua, August 2023)

> "I know there's a policy. But I don't know what's being done as I've never been involved in these activities." (cardiologist, involved in training students at the Niamey medical school in August 2023)

Some health workers became aware of the policy through the activities carried out by associations, perceived in the majority of cases as the initiators of the policy:

> "Honestly, I don't know any state (policy) programs. I've been in this profession for 3 years, and I've never seen a representative of a program to combat non-communicable diseases, particularly hypertension. However, there are associations that fight against these diseases, and we've had to do a few programs with them. But really, these are associations that are in it for themselves, not for the State." (internist, Tahoua, August 2023)
>
> "Apart from the HEART project, at least since I've been in the field, I haven't come across a state structure." (general practitioner, Tahoua, August 2023)
>
> "What's really missing is the field program (field activities) and, as we say in Niger, the *political will*" (internist, Maradi, August 2023).

We also note that some traditional practitioners have taken part in training and awareness-raising sessions on the management of hypertension and diabetes, organized in collaboration with the traditional practitioners' association.

The last category is that of actors who have no knowledge of the policy. They include nurses at community level in health districts or managers of peripheral IHCs, people suffering from these diseases and their families, and customary and religious authorities at local or community level. In addition, there are a number of specialists and general practitioners at regional or departmental level:

> "The biggest problem in the fight against NCD disease and specifically diabetes and hypertension is the non-existence of a policy (...) Faced with the number of cases, a program must be put in place to respond to the problem." (Surgeon, part of the amputation team in Maradi, August 2023)

Local implementation

Le rôle des PTF

The implementation of NCD control through the PNLMNT is based on a scaling-up process at the level of regional health structures. Since the program's inception and scaling-up, the policy has been limited to the training of 4 districts that benefited from WHO support through the HEART project. In the annual action plan of the PDS 2023-2026, it has been planned to scale up to 4 health districts each year. This involves training three agents per health facility, with at least 100 agents per district, and providing appropriate screening and management equipment.

In the absence of financial resources from the State, the implementation of PNLMNT activities depends heavily on the availability of funding from technical and financial partners:

> "We carry out activities that are financed by partners. In the terms of reference (ToR), we provide everything we need for travel in the field, fuel, vehicles." (PNLMNT agent, Niamey, August 2023)

WHO is a key organization in the implementation of the policy to combat NCDs. It provides technical expertise to the national program in the training and monitoring of players in epidemiological surveillance and the drafting of technical documents. In addition, it lobbies for funding for activities such as the STEPS 2021 survey, financed by ENABEL (Belgium aid). WHO is also supporting the PNLMNT in integrating the WHOPEN strategy (WHO Package for integrating essential interventions for major non communicable diseases) in health districts. This approach consists in promoting a package of activities essential to the management of NCDs at health facility level, and addressing the challenge of low resource allocation, insufficient skills and inaccessibility to specialized NCD care. As part of the implementation of this strategy, the HEART project was financed by the Danish Development Cooperation in 2021:

The WHO HEART project

HEART is a program financed by Danish development cooperation that focuses on the prevention, screening and management of cardiovascular disease. However, WHO has focused the program on diabetes and hypertension to satisfy the donor. The program is being rolled out on a small, progressive scale in three districts of Niger. Actual implementation is scheduled for the Niamey commune 3 health district in 2021, the Tahoua city health district in 2022 and the Madawa health district in 2023 (Tahoua region). The choice of these intervention zones was guided by the STEPS survey, which revealed a high prevalence of risk factors such as smoking and lack of physical activity.

The program's activities focused on strengthening community-based care, in line with the health pyramid. To this end, a system of early detection, management and outpatient follow-up of stable cases has been set up at the IHCs in these three districts. In the district hospitals (HD), the hospitalization and follow-up mechanism has been improved. Prior to this, however, the program strengthened the capacities of those involved. District health workers were trained in screening, early treatment and therapeutic patient education. In addition, community relays were trained and community leaders were involved in awareness-raising activities. In terms of equipment, the program has provided health districts with blood glucose meters, blood glucose and urine test strips, scales and medicines for the regular management and monitoring of patients. In addition, a support and reference

mechanism has been set up, with the provision of technical data sheets and reference algorithms under the coordination of the health districts.

In addition, WHO has just signed a contract with the local NGO MEDCOM to implement a community awareness program. In addition, other partners are funding the WHOPEN strategy directly, depending on their area of intervention. In Zinder, WAHO (West African Health Organization) is active in the districts of Zinder commune, Mirriyah and Matamey. In Dosso, ENABEL is active in the Djoundjoun, Gothey and Gaya districts.

At national level, the FORSANI NGO is working to relocate skills in public health services through the diabetes project.

The FOSRSANI diabetes project

Implementation of the FORSANI NGO's diabetes project has been underway since 2015 with funding from the World Diabetes Foundation (WDF). For FORSAN (a national NGO), interest in NCDs stemmed from an observation of the lack of reliable data on the real situation of NCDs in the country and the absence of an effective management system in health facilities. The NGO has organized awareness-raising and screening campaigns, as well as capacity-building activities.

The project was carried out in Tahoua, Dosso, Zinder and Niamey over two three-year phases. The project is based on three strategies. The first strategy consisted in supporting medical student organizations that organize medical caravans during the vacations in the regions of Niger. This support included the provision of blood glucose meters, test strips and blood pressure meters for screening, capacity-building and financial support. The second strategy was based on raising awareness, screening in public places and organizing scientific conferences on diabetes in hospitals during World Diabetes Day. The third strategy consisted in setting up diabetes care units around focal points (internists and general practitioners) at the Niamey general referral hospital (HGR) and in the 7 RHCs in the other regions. The operationalization of these units has been accompanied by the training of care teams, the provision of equipment (teaching aids and tools for the transfer of knowledge between agents, diabetic notebooks and cards), and the inputs mentioned above. They have also set up refrigerators to store insulin, provided projectors for therapeutic patient education and set up cupboards to store inputs. Lastly, a network has been set up for the exchange and sharing of experiences between diabetes project focal points.

The diabetes project has therefore had an impact by screening the population, raising awareness and setting up more or less specialized care centers in all regions of Niger. Nonetheless, there are frequent shortages of test strips in care units. This is due to the project's heavy dependence on external funding. As for professional associations, in most cases they are not

active. Exceptions include the Niger Society of Endocrinologists and Diabetologists (SONED), and the SOS Diabète association, which organizes conferences and advocacy activities. There are also associations of medical students who organize awareness-raising and screening activities in their respective regions during each holiday season. In addition, there is a lack of coordination and synergy of action between the various interventions in the fight against NCDs in healthcare structures.

A coordination, monitoring and evaluation mechanism has been set up at different levels of the health pyramid by the PSNLMNT, in line with the PDS 2022-2023. This mechanism brings together all the players involved in the fight against NCDs. At national level, there are meetings between the PNLMNT and the regional focal points, a quarterly meeting of the Coordination Nationale Multisectorielle de lutte contre les MNT (CNMLMNT), and a biannual meeting of the consultation framework with players involved in the fight against NCDs.

At regional level, there is the quarterly meeting of the Regional Multisectoral Coordination for the Fight against NCDs (CRMLMNT), and the quarterly coordination meeting of regional NCD focal points with the districts. At departmental or operational level, there is also the biannual meeting of the consultation framework with actors involved in the fight against NCDs, the quarterly meeting of the Departmental Multisectoral Coordination for the Fight against NCDs (CDMLMNT) and the quarterly district coordination meeting with the CSIs. However, the latter body has yet to be set up.

The annual action plan is reviewed at two points during the year by the Ministry of Health and the PNLMNT manager. There is a mid-term review to evaluate activities, and an annual review to plan for the new year. The partners (ENABEL and FORSANI) also organize field activities on the coordination, monitoring and evaluation of the MNT project implemented. In the case of the monitoring and evaluation of the diabetes project and HEART, each year national supervisions have been carried out in collaboration with the PNLMNT.

Poorly integrated health care in outlying health centers

For a long time, the treatment of non-communicable diseases has been confined to the inadequate number of referral facilities, most of which are located in the capital. Indeed, in terms of human resources, some regions do not have all the specialties relating to non-communicable diseases:

> "Training in diabetology is done abroad in all cases of trained specialists. Since then, Niger has only trained 15 diabetologists, including 4 at the Niamey General Reference Hospital (HGR), 2 at the Niamey National Hospital, 2 at the Lamordé National Hospital (HNL) and 1 at the Maradi Regional Hospital. We have one who has retired, and the others have not returned to the country since their training." (A diabetologist at the Niamey HGR in July 2023)

Most of the population is not covered by specialized NCD care. This is limited to internists in regional hospitals. There is no mechanism for knowledge transfer and capacity-building for optimal care. Added to this is the lack of infrastructure and equipment for the management of complicated cases. This difficulty means that specialists are overloaded and intervene too late:

> "The particularity of diabetes and hypertension is that patients come to us in an advanced and complicated state. We're trained to take care of these patients, but unfortunately, we end up taking care of the complications. In the absence of resources, we have to grope our way through the patient, who already has two or three other illnesses resulting from the complication. If you prescribe a drug, you run the risk of provoking reactions in another pathology. It's tiring, and in the long run, you're not productive". (a doctor, Maradi, August 2023)

In addition, the activities of the national NCD program are limited to the health districts. As a result, there is no adequate system for managing NCDs in other healthcare structures. Health workers are not trained, and the majority of health facilities do not have adequate supplies of NCD management inputs. Cost recovery regulations do not cover NCD drugs in IHCs. Cost-recovery funds are intended primarily for the purchase of essential generic medicines, management tools and bonuses for collectors and treasurers, paid from a budget line. NCD medicines and medical tools are considered ineligible under the control and management procedure for community participation resources:

> "To manage diabetes and hypertension, we had to look for scales, blood pressure monitors, glucometers and strips, and urine strips, which are not covered by cost recovery. (...) we had to call a meeting of technical committees and hold a general meeting to explain to people and come up with solutions. (...) we decided that glycemia and urine strips should be paid for directly by users to maintain the supply system. We issue one receipt for cost recovery and another for blood glucose". (a doctor in the Madawa district in August 2023)

Specialized drugs prescribed by doctors are not covered by cost recovery. In the ICUs, nurses do not master and integrate the management of diabetes and hypertension with essential generic drugs. These generic drugs are also perceived as ineffective in the management of diabetes and hypertension.

Apart from this, there is no integrated monitoring and supervision mechanism to draw the agents' attention:

> "You know the diseases that everyone knows about from their training at school. But we health workers need to be reminded and followed all the time, otherwise we risk not giving too much importance to our activities. You know, in a CSI everything is a priority, you just have to let go of the follow-up and something else will take its place." (CSI head nurse, Takorka, August 2023)

In addition, NCDs are not integrated into the education and awareness program held every morning in the CSI. Health workers are not sufficiently trained and equipped to implement a counseling strategy for patients. As for specialists, they are too overloaded to be able to provide adequate counseling:

> "In cases of NCDs, counseling really doesn't exist. Consultation alone is not enough to bring the patient to accept the disease. In this particular case, you need a trained technician who will be available in a special office to communicate with the patient and his family for nearly an hour." (A cardiologist at the Maradi Regional Hospital in August 2023)

Awareness of NCD guidelines among different stakeholder groups

The guidelines and strategies are not clearly known by the players. The program is limited to general guidelines based on prevention and awareness-raising activities:

> "Since the module (plan) was developed in 2018, practically, if not on TV, nothing has been done so far." (Internist involved in the development of the PSNMLMNT in 2018, in Tahoua in August 2023)

These activities are carried out with little involvement of various stakeholders such as civil society organizations in the promotion and implementation of the policy at local and community level. For management, the protocol is adopted on the basis of WHO recommendations and standards from scientific societies (scientific journals). In addition to university training, which plays a role in sharing the protocol, doctors also organize conferences and share the protocol in their virtual exchange group. However, the protocol available from the nurses in charge of CSI does not take into account the management of complications, which account for most admissions for hypertension and diabetes.

What's more, apart from teaching at the Faculty of Medicine, the protocol has so far been disseminated only through the HEART project and the diabetes project. Many stakeholders therefore have little or no knowledge of the guidelines and orientations of the NCD policy.

This lack of knowledge is also due to the lack of decentralization of the policy, which should take place at regional public health directorate (DRSP) and health facility levels. Policy and coordination are limited to the national program, which is headquartered in the capital. This makes it difficult to integrate NCD control activities into health structures:

> "I don't know their program (orientation and guidelines), and they're next-door neighbors (...) if there were a focal point for non-communicable diseases in our structures, they would be in charge of supporting them, from the health hut to the district level. But this may not be community-based, and since we don't have it, we don't know what's at stake (...) what goal, what vision, what objective, so that we have a basic situation." (Chief Medical Officer, Niamey, August 2023)

However, training modules on non-communicable diseases have been introduced in the second year of nursing technician studies. However, basic health workers, who represent the majority of nurses in service, do not benefit from this training. The national program also holds advocacy and information meetings with administrative, health, customary and religious authorities, depending on funding from technical and financial partners. In the specific case of the Tahoua Regional Hospital Center, a tutoring system has been set up to provide on-the-job training for staff, with the protocol posted in all departments involved in treatment:

> "Since I was recruited to the civil service three years ago, I've never had the national treatment protocol for the management of hypertension. I try to make my own technical sheets, which I share with colleagues, and which are posted in the departments." (Cardiologist, Tahoua, August 2023)

On a personal level, some staff members carry out research on the Internet or take part in online training courses to bring themselves up to date.

Health system and health facilities in the fight against non-communicable diseases

Niger has a pyramid-shaped healthcare system. It comprises three levels: peripheral, intermediate and national.

Management of non-communicable diseases at the peripheral level

The peripheral level is made up of district hospitals attached to health districts, integrated health centers ***(IHC, CSI in French)*** and health huts.

District hospitals

Madaoua hospital is one of two district hospitals in the Tahoua region selected by WHO to implement the Hearts program. As part of this program, the district hospital received support in the form of medicines, equipment and tools for the management of diabetes and hypertension, such as blood glucose meters, test strips, scales, blood pressure monitors and so on. However, a fire in May 2023 destroyed all the drugs and inputs supplied by the program. This led to a serious shortage of the strips and molecules that were offered free of charge to patients. The CSIs in the district were also affected by this shortage, as they were getting their supplies from the district pharmacy. The latter now only orders products and strips for the hospital. CSIs do not have access to strips. Patients are therefore systematically referred to the hospital. According to an ECD official, the district's priority is to replenish only the stock of essential molecules and inputs intended to treat diseases or health problems for which the district is accountable.

The Madaoua district hospital has a better technical platform. For example, it has certain equipment for carrying out examinations, purchased from the district's own funds. This includes equipment for urea-creatinine tests, and 5-parameter ionograms. In addition to these devices, the district has blood glucose meters or glycometers with test strips in certain care units for controlling and monitoring blood sugar levels, and blood pressure monitors

for measuring blood pressure. Some advanced tests, such as glycated hemoglobin, are carried out in the laboratory.

The non-pilot Mayahi district hospital receives patients referred by the integrated health centers. These are hypertensive patients or patients suspected of having diabetes, in order to confirm their status and continue their treatment. Apart from Furosemide*, which is available for hypertension, no molecules are available for the management of diabetes. Patients buy their products from the city's pharmaceutical depots. Some drugs, such as insulin, are not available from these depots. Patients are therefore obliged to order them from larger towns:

> "When I was hospitalized here, I was prescribed insulin, but it wasn't available in Mayahi, so I had to go to Maradi to get it. It was my brother who went to buy it every time in a thermos." (Diabetic, interview on 02/08/2023 in Mayahi)

It should be remembered that drugs for NCDs are not subsidized by the state. Costs are borne by patients. For example, for diabetes, the price of insulin varies from 5,000 to 6,000 CFA francs (12 $). According to those interviewed, a bottle of insulin can be used for 10 injections. For cardiovascular diseases, injectable Catapressan costs between 2,000 and 3,000 FCFA (6 $), an ampoule of Furosemide costs 200 FCFA and Captopril tablet costs 1,000 FCFA per pack.

As for examinations and check-ups, patients pay 1,500 CFA francs for a blood sugar test in the districts visited, urea-creatinine 3,000 CFA francs and X-rays 3,000 CFA francs.

Insulin is not a drug like any other, as it needs to be kept in a refrigerator at a temperature of 2 to 8°C. Some patients who don't have a refrigerator have their own strategies for storing insulin. For example, they wrap the insulin bottle in plastic and bury it in a cool place, while others use a thermos containing ice to store it. Another difficulty is injection. Indeed, without therapeutic education, patients cannot calculate and inject the dose their body needs, which exposes them to the risk of hypoglycemia, which can be fatal if not properly managed. As a result, the patient is obliged to travel back and forth to a health facility to receive the correct dose. However, if they have to travel a long distance to get there, they run the risk of slackening off or even giving up.

> "If you want to give injections in the morning and evening, and the health center is 10 kilometers away, you can do it in the morning, but in the evening, if you have to go back again, it becomes a bit complicated. It's really unbearable". (A diabetologist, interview on 26/09/2023 in Niamey).

Integrated health centers

Integrated health centers are first-level peripheral health facilities. They are under the responsibility of a doctor (very rarely), or almost always a nurse (senior nursing technician, state-qualified nurse or sometimes certified nurse).

There are two types of CSI: type 1 CSI and type 2 CSI. The first, with no maternity unit, serves a population of 5,000 or less within a 5-kilometer radius. The latter, with a maternity unit, serve a population of 5,000 to 15,000 within a 5-kilometer radius, or in an urban area.

Integrated health centers deliver a minimum package of activities. These include curative, preventive, educational and rehabilitative care, including family planning (FP) services; training, retraining and supervision of health workers; raising health awareness among local authorities and the population; monitoring pregnancy, normal deliveries and pre- and post-natal care; handling referrals; collecting and summarizing data; education and promotion of environmental hygiene, etc.

In addition to these activities, the health centers provide services relating to non-communicable diseases, type 2 diabetes and hypertension. However, apart from the HEARTS pilot IHCs, which manage these diseases because they have benefited from screening materials, molecules and training for health workers, most of the IHCs we visited offer little or no services relating to these two diseases, especially diabetes, due to the lack of training for health workers and the absence of screening materials. We found that in some IHCs, doctors buy their own blood glucose meters and blood pressure monitors to treat patients. The most expensive meter costs 30,000 CFA francs, and the cheapest 15,000 CFA francs. As for strips, a box of 50 strips costs between 22,000 and 25,000 F CFA. Tensiometers range from 22,000 to 50,000 F CFA.

It should also be pointed out that even in CSIs where doctors are available, they lack the appropriate technical facilities to manage these chronic pathologies. Doctors are therefore obliged to refer patients to regional hospitals, despite their competence:

> « The skills are there, but the technical facilities are lacking. We don't have a laboratory, even though it's a medicalized CSI that should normally have its own laboratory, and a technical platform enabling it to carry out certain initial examinations on diabetics for better management of their disease. If it did, we wouldn't need to refer them to the hospital, where they'd have to pay even more for the tests and stand in line with all the stress and waiting for them to

> pass, which is not without consequences for their health." (Doctor, interview on 09/08/2023 in Tahoua)

The CSIs run by a doctor and included in the pilot sites are better in terms of service provision for diabetics and hypertensives, as patients benefit from rapid treatment, access to prescriptions and regular follow-up. CSIs that do not have doctors and have not benefited from the HEARTS project refer patients to hospitals where a doctor is available. This is a limitation, as not only does it delay their treatment due to difficulties in finding a doctor, but the cost of transport also hampers referral. The cost of evacuation varies from 10,000 FCFA to 65,000 FCFA (130 $), depending on the distance. For example, a patient referred to the Mayahi district from CSI Baja must pay 27,000 FCFA; from Bermo to Maradi, he pays 65,000 F CFA to be evacuated.

Algorithms for the management of diabetes and hypertension are displayed throughout the various departments of the pilot IHCs we visited. Not only does this display show the availability of care for these conditions, it also serves as a guide for nurses and midwives with no training in NCDs.

More specifically, these algorithms indicate the steps in the management of a diabetic patient and the actions that health workers should take when faced with a diabetic patient. When a patient is screened twice and has venous glycemia of 1.26g/l or higher, health workers are first asked to put him/her on dietary measures and regular physical activity for at least 30 minutes a day for 5 days a week. These instructions are to be followed for 1 to 3 months. When the patient returns for a check-up, the venous glucose test is repeated. If the fasting blood glucose level is below 1.26g/l, it is recommended to continue with the initial measurements. However, if his fasting blood glucose is greater than or equal to 1.26g/l, in addition to dietary measures and regular physical activity, he is put on Metformin 500mg (1 to 3 a day) for 3 months.

Three months later, two situations may arise: either he returns with a fasting blood glucose level of less than 1.26g/l, and is asked to continue treatment, dietary measures and regular physical activity. Or the blood sugar level is higher, and the patient is referred to a district hospital.

Screening

Except for the annual World Diabetes and Hypertension Days, when mass screenings are free of charge, people do not take the initiative to go for voluntary screening. Most diabetics and hypertensives are detected by chance, during consultations or after an attack. A diabetic whose disease was

discovered at a very advanced stage recounts the circumstances in which her diabetes was detected:

> "My diabetes started with an eye problem, but I didn't know it was diabetes. At the moment, I could only see out of one eye. So I decided to go to Makka Hospital, which is an Arab hospital. After consultation, they told me they were going to do an operation on me. Before that, they did some tests and drew my blood to see if I had diabetes. The result of the test confirmed that I have diabetes, and they told me that they weren't going to do the operation today, so I would have to leave and come back tomorrow when my blood sugar level drops. Before leaving, they put a liquid in my eye. The next day, I came back and they did the operation. (Diabetic woman, interview on 07/30/23 in Maradi)

Dietary advice

Nutritional counseling for diabetes and hypertension is provided by health workers, who have no specialized training in this area:

> "I haven't received any training in dietary measures (...), it's with empirical knowledge that we try to do dietary management." (A cardiologist, interview on 07/08/23 in Tahoua)

The knowledge acquired during university training or based on experience is insufficient to convince the patient of the need to follow the recommended diet. In this context, the main advice given to diabetics concerns the prohibition of sugary drinks, sweetened fruit and certain cereals such as millet, rice, corn, etc. However, they are allowed to eat sorghum, cowpeas and vegetables (salad, moringa, cabbage, etc.). Compliance with this diet is difficult for many patients, due to low incomes and the scarcity of certain vegetables whose production is seasonal.

> "They gave me dietary advice that I shouldn't eat too much sugar, oil and rice, but I can eat sorghum... It's a disease of the rich because even to eat sorghum and other recommended foods, you have to have money. If you don't have any, you have to eat what's available at home to avoid starving." (Diabetic woman, interview on 07/29/23 in Maradi)

For hypertensives, the consumption of Maggi flavoring, salts, meat and high-fat foods is forbidden.

Compliance with the diet requires the involvement of the family or close relatives. When the patient's status is confirmed, health workers often invite the person accompanying them to follow the explanation of the importance of adhering to the diet. The aim is for family members to contribute to the observance of these dietary restrictions.

However, while some family members or close friends of the patient are fully involved in observing the diet by preparing an adapted meal, etc., many do

not have enough leeway to respect these restrictions. As a result, they eat whatever is prepared in the family kitchen. Sometimes, too, despite the family's best efforts, some patients secretly eat foods that are forbidden to diabetics or hypertensives:

> "The health workers have forbidden our mother to eat the food, but she takes advantage of our absence to buy sweet cakes. One day, we caught her in her room eating a sweet ball." (Diabetic woman, interview on 10/08/2023 in Tahoua)

Adherence to the diet by patients, especially the poor, is not at all easy because of eating habits (dishes rich in carbohydrates), rooted in socio-cultural realities. To deprive patients of these foods is to "declare war":

> "As I said, Nigeriens eat meals based on raw cereals, which contain between 60 and 75% sugar in cereals such as millet, rice and corn. Tubers have about the same carbohydrate content, so if you want to eliminate them from a diet, you're asking for war. What is the person going to eat? If they don't die of diabetes, they'll starve to death. So it's a difficult equation, to the extent that our diabetics require much higher doses of medication than elsewhere, which means extra costs in terms of care, because the quantity of medication to be consumed will be paid for by the patient. Protein-based foods, such as meat, fish, chicken and vegetables, are not available to everyone, and even vegetables are seasonal. As you can see, starting with the diet, it's a bit complex; that's the first point". (A diabetologist, interview on 09/23/2023 in Niamey)

Tips for physical activity

Health professionals recommend a 30-minute walk at least three times a week, at sunrise or sunset. Some patients make an effort to comply with this recommendation, walking a relatively short distance in the streets of their neighborhoods. On the other hand, lack of sufficient information on the duration and frequency of sport makes it difficult for some patients to measure their physical activity, which often exposes them to hypoglycemia:

> "At first, I used to go for a long walk, heading for the mosque just outside town and back. Then I met a doctor and he asked me about the distance I'd cover, and when I told him that, he said it's too far, to go shorter." (Diabetic woman, interview on 07/30/2023 in Maradi)

On the other hand, others find it difficult to walk because they feel they lack the strength for this exercise.

Patient monitoring

Patient follow-up involves regular monitoring of blood glucose and blood pressure levels, to avoid complications. Follow-up appointments vary from 2 weeks to 3 months, depending on the patient's previous blood glucose

levels. Some patients referred or evacuated to hospital, after stabilization, return to their original facility for follow-up.

In addition to follow-up care, CSI doctors and nurses request initial examinations or check-ups, in order to avoid or prevent complications in patients. Despite the importance of these complementary examinations, many patients are unable to undergo them due to a lack of resources:

> "The tests required of patients are costly, and most of them are poor. Ideally, patients should undergo initial examinations to ensure that they don't develop complications, so that the doctor can take better care of them. Unfortunately, because of a lack of resources, many don't, which puts them at risk of developing complications associated with their diabetes or hypertension. This means that we're just going to treat diabetes by balancing blood sugar levels, without taking care of the complications." (A doctor, interview on 09/08/23 in Tahoua)

Intermediate-level management of non-communicable diseases

The intermediate level comprises regional hospitals and mother-and-child health centers. They have a better technical platform and a number of specialists (diabetologists, cardiologists), as well as senior technicians and nurses for the treatment of diabetes, hypertension and mental disorders.

Successful management of these chronic diseases depends to a large extent on an initial check-up to assess not only how the disease is progressing, but also whether certain organs are unaffected. Check-ups and analyses are available in these hospitals, but remain largely inaccessible to the chronically ill due to their poverty:

> "Really, that's where the problem lies. Health today is not as accessible as we'd like it to be. What's more, these are classic illnesses which, because they represent a public health problem, the State should, like other pathologies, try to provide a certain level of free treatment, particularly for the initial assessment. Because everything depends on the initial assessment. And unfortunately, this initial assessment is difficult to carry out, even when it has been revised by the WHO to simplify it so that it can really be popularized in all countries. Whether it's a developed or developing country, up to now, it's a check-up that's not all that accessible. So most of our patients can't afford it. It's a costly procedure, and most of our patients can't afford to pay for it. We are often obliged to split up the check-up. To do it over a very long period, which is not what is recommended". (A cardiologist, interview on 07/08/2023 in Tahoua)

Moreover, according to the same cardiologist, there is insufficient political will to make them accessible by subsidizing certain molecules:

> "What's really missing is the political will. Otherwise, for the management of hypertension, we don't need a very advanced technical platform. All the tests I'm talking about are available at the hospital. The tests for the initial work-up. The molecules are available in pharmacies. Of course, they're not affordable. The government needs to be diligent in finding a mechanism to reduce the cost of these drugs. Apart from that, it's just screening and awareness-raising that are lacking, and programs are needed for that". (A cardiologist, interview on 01/08/2023)

At the Maradi CHR, diabetics and hypertensives have access to specialized care. An endocrinologist is available. He is responsible for the care and follow-up of these patients. He explains his work in the following terms:

> "We try to prevent complications and treat certain complications if there are any, and if there is any other associated disease, we take care of them, that's what patient follow-up consists of. Patients are given appointments according to the progress of their disease. Some patients are seen every month, for example, if they're not well-balanced; if they are, we see them every three months. (An endocrinologist, interview on 01/08/2023 in Maradi)

Specialists are often faced with difficulties that prevent them from taking proper care of patients:

> "The difficulty we have is being able to make ourselves understood, and the second difficulty is people who don't have the means, it's difficult for them to buy medicines or even travel to come here. So, these are essentially problems we face in the course of our work." (An endocrinologist, interview on 01/08/2023 in Maradi)

While some of the examinations requested for diabetes are accessible, others are not because of their high cost or unavailability of antibody tests.

Another doctor we met at the Maradi Regional Hospital also explained the difficulties involved:

> "The difficulty in management is that we are trained to manage diseases, but it's y. This is the case for complications that we manage. For example, if a diabetic patient presents with complications such as renal failure or respiratory insufficiency, their management is different and complicated. The doctor often fumbles around in their management, trying to find just the right balance in the treatment. If a doctor takes on 2 such cases a day, he or she becomes stressed and tired. And these are cases admitted every day. There's a fear that the introduction of treatment for the disease or complication will trigger other health problems." (Doctor, interview on 01/08/2023 in Maradi)

Materials and supplies for primary health care

The management of diabetes and hypertension requires the availability of a number of screening devices (blood pressure monitors, glucometers, test strips, etc.) and molecules (furosemide, metformin, etc.). However, the majority of IHCs do not have this equipment, especially blood glucose meters, which enable diabetes to be diagnosed with. This is true even in some hospitals, where blood glucose meters are essential for monitoring patients undergoing treatment or hospitalized, before administering medication, particularly insulin. Health workers are obliged to send the blood glucose test to the laboratory each time, which delays proper care for these patients:

> "Even in the ER now they don't have blood glucose meters. I even went to see the head doctor. I did everything I could to get them to bring us a meter. The lack of blood glucose meters has an impact on treatment. For example, someone who is undergoing a rapid procedure, i.e. insulin injection. Now imagine if you're told to do the fast-track procedure, and before you do that you need to check your patient's blood sugar levels. If you don't have this level, you can't administer insulin. So, you see, if you have to administer insulin now, you run the risk of waiting a long time. For example, we can sometimes take a sample at 5 a.m. and get the results in 9 hours. You can see the delay this can entail for care, whereas if we had our blood glucose meter, you'd have your results on the spot." (Nurse, interview with Mayahi on 4/08/2023)

Sometimes, blood glucose meters are available, but strips are in short supply. In fact, one of the biggest problems encountered by health workers is the lack of strips adapted to blood glucose meters:

> "Currently we have a large quantity of strips, but we can no longer use them, as they are not adapted to the blood glucose meters we have." (District head doctor, interview on 09/20/2023 in Madaoua)

For the diagnosis of hypertension, not all IHCs (including some in Niamey) are equipped with blood pressure monitors. Sometimes, in an IHC, a single tensiometer is shared between several care units. What's more, its management, particularly the replacement of batteries (in the case of electric sphygmomanometers), poses huge problems for health workers. According to some CSI managers, they sometimes spend a minimum of 1,000 FCFA (2 $) a week on renewing batteries, as they are not covered by cost recovery (CR). In other cases, as soon as the batteries run out, they put them down for renewal. This means that not every patient who comes in for a consultation that day will benefit from blood pressure monitoring. To get around this difficulty, some IHCs have introduced a fee to cover the cost of renewing blood pressure monitor batteries. Each user is asked to donate between 25 and 50 FCFA. In addition, some tensiometers do not display

anything beyond a certain level of blood pressure elevation. This forces health workers to refer patients to another CSI or to the district hospital.

ECOWAS sanctions and their impact on the management of non-communicable diseases

The change of regime following the events of July 26, 2023 led to a series of sanctions against Niger. The health sector is one of the sectors most affected by these sanctions. They have had repercussions on the treatment of chronically ill patients. The first is the rupture of molecules. Patients could no longer renew products adapted to their disease:

> "It's already having an impact, because there are certain types of insulin that aren't on the market, and that's unfortunate, because someone who has a well-balanced treatment that they can't find any more is forced to fall back on another type of insulin, and it's not certain that as soon as they're prescribed the dose it's going to be all right, they'll have to change again. As a diabetologist, we already feel it. I get a lot of messages saying I can't find my usual medication in the pharmacies. And sometimes I go to replace it, I go to the pharmacy, they say here's what's there, unfortunately it's starting to have an impact. (....). Whatever the type of storage, switching from one type of insulin to another, nibbling on the stock used by others, it will end up depleting all stocks one day. That's our fear, and insulin is insulin, there's no other alternative. (...). For insulin, you need insulin. So it's really one of the sanctions that I've found the most bloodthirsty from a pharmaceutical point of view. For some people, it's better to shoot them in the head than to do it. Imagining anti-cancer products, people on chemotherapy, it's really despicable to punish pharmaceutical products". (A diabetologist, interview on 26/09/2023 in Niamey)

The second factor in the worsening condition of the patients was the sudden suspension of the electricity supply by Nigeria. Untimely power cuts in several towns have not made life easier for patients and doctors. They have seriously affected the operation of health facilities, including private clinics, which have relatively more resources to cope with the power cuts:

> "Yes, electricity too. I'll give you an example of what I've experienced: it's the generator that works, and the more it works, the greater the risk of a breakdown. It happened at 11pm. A patient was being treated with a continuous electric syringe. The electric syringe has autonomy, and my main concern was that the generator had to restart, because what happens if the battery dies? You recover someone for a week and then, stupidly, you lose them in 15 minutes because there's no electricity. (...). I've told you this from personal experience. Just 4 days ago, I was worried, and we had to call the storekeeper at Manutention Africaine at night to fetch a part and repair the unit. Thank God the patient pulled through and even left the (private) clinic,

but I was hyper-stressed if we lost a life like that." (A diabetologist, interview on 26/09/2023)

Silent prevention of non-communicable diseases

Preventive action against diabetes and hypertension is based essentially on strengthening the healthcare system, but also on disseminating awareness-raising messages to the population to encourage them to adopt a healthy lifestyle through behavioral change. These messages also inform the population about pathologies, risk factors, causes and consequences. Efforts are being made by the various players in the field. In Mayahi, for example, the health district has included a prevention activity in the AAP, which the Common Fund financed in 2023. This involved organizing a mass sports event to raise awareness of the need for people to take up sport on a regular basis. At the same time, a screening session was organized.

However, much remains to be done in terms of the population's eating habits. In fact, our field data show that these preventive actions have not produced the expected effects, as many people do not have a healthy lifestyle (excessive consumption of sugary foods, low levels of physical activity, etc.). Some are unaware of the danger to which they are exposed, while others are aware of it, but are not sufficiently conscious of it due to socio-cultural considerations. For example, in our societies, weight loss is associated with HIV-AIDS, or with suffering in a society where being overweight is considered a sign of affluence.

Care for mental disorders

In the sites visited, health workers not specialized in mental health were trained. This training was based on a WHO document entitled "mhGAP" (mental health gap action), to teach them how to provide first aid to people suffering from drug-related mental disorders, before referring them to a mental health technician at the regional hospital level. Once stabilized, these people are referred back to their CSI for further care. Technicians also organize outings to village health facilities. During these outings, services such as consultations and mass screening are carried out. Those found to be ill receive free medication. Home visits are also organized to monitor these patients and provide them with supplies. Awareness campaigns are organized in schools. Pupils are informed about drug addiction, epilepsy, etc.

All these activities were funded by the NGO Medu. It operates in three regions of Niger: Maradi, Niamey and Tahoua. It should be emphasized that government intervention in this health sector is timid. For example, from 2008 to 2023, the psychiatry department of the Maradi Regional Hospital received only 2 supplies of generic drugs from the State. These drugs are managed rationally. In fact, the department gives priority to destitute patients, unaccompanied patients, incarcerated patients and so on. They are treated free of charge. When donated products are available in large quantities, they are given to all patients without distinction.

The mental health technician is also involved in the psychological aspect of caring for diabetic and hypertensive patients who develop mental disorders. The main diabetic disorders from which these patients suffer are mood disorders (sadness, visible on the face), suicidal ideation, and so on :

> "They come to hospital late and are asked to undergo tests, because it's on the basis of these that the doctor will know what they're suffering from and will treat them; but these tests are expensive; on top of that, they have to buy medicines and unfortunately they're financially exhausted because they've spent all their money on traditional treatments, traditional healers. This situation leads many of them to become sad and anxious". (Mental health technician, interview on 01/08/2023 in Maradi)

Available financial resources and their sources in the healthcare system

Health care is financed from a variety of sources: the state, households, international institutions, local authorities, faith-based organizations and associations, and so on.

Cost recovery, i.e. direct payment by households, is another source of healthcare funding. The delivery of health care remains essentially based on (partial) cost recovery. In integrated health centers, adults pay a standard lump sum of 1,000 FCFA (800 FCFA for services, 100 FCFA for the health booklet and 100 FCFA for additional centimes). So, whatever the type of care required, patients have to pay this sum. These fees are collected by the SMC treasurers and paid into a single account in the districts to which they belong. This fund is used to purchase essential molecules, inputs and equipment.

By 2021, the State had allocated 243.984 billion FCFA to health, or 50.07% of total health expenditure. Direct payments by households amounted to 204.518 billion FCFA, or 40.7%.

According to the National Strategic Plan to Combat NCDs (2012: 22), "poor people spend an average of 1,439 FCFA per person on health, or 2.3% of their income, compared with 8,018 FCFA for wealthier people, or 3.6% of their income. This disparity is accentuated by the crushing burden borne by households in financing overall health expenditure in general and NCDs in particular."

Due to a lack of social protection or insurance, the cost of healthcare makes poor patients very vulnerable in the event of chronic illness. This is not the case for civil servants, NGO workers, and company employees, who have access to healthcare through an insurance system.

Whether the reason for consultation is a communicable or non-communicable disease, users pay 1,000 CFA francs. By paying this fee, diabetic patients will receive the following services: screening, dietary advice, and a prescription. Hypertensive patients, in addition to diagnosis and dietary advice, will receive an injection of furosemide to stabilize their blood pressure, if necessary, before being referred to the district hospital, which is the first level of referral.

In addition, certain materials, generic drugs, and inputs used in the management of communicable diseases and high blood pressure are covered by the cost recovery package. However, those for diabetes are not covered.

Although diabetes care was initiated by the HEART project in the pilot districts, services for this condition have not continued in many CSIs for administrative reasons. A district chief medical officer explains this situation:

> "(...) The first difficulty is that we cannot renew these drugs because we are not authorized to do so. In addition, the molecules used to treat these conditions are not CSI-level molecules, they are hospital-level molecules. Nurses are not qualified to use these molecules as we would like them to, which is a second obstacle. The third issue is that there are no generic products. You know, in public health, we always weigh the cost of a prescription against its expected effectiveness. So even if you give a patient a prescription, if they can't afford to pay for it, it's worthless, you've done nothing." (A district chief medical officer, interview on September 26, 2023, in Niamey)

As for the partners, the Common Fund, which brings together six partners (AFD, UNICEF, AECID, the WORLD BANK, GAVI, and UNFPA), makes quarterly payments to the accounts of national and decentralized entities (regional public health directorates and health districts). In 2023, the Common Fund financed prevention activities coupled with diabetes and

hypertension screening in the Mayahi district. This is an activity that the district had included in its Annual Action Plan.

The HEART project activities relating to the management of non-communicable diseases, funded by the Danish government, were implemented by the WHO for a period of six months in the Niamey and Tahoua regions. They mainly concerned the Niamey 3 district and two districts of Tahoua, namely the urban commune district and the Madaoua district. In addition, the WHO funds World Diabetes and Hypertension Days, during which it organizes free screening in many CSIs across the country.

The NGO Forsani is involved in the fight against diabetes and hypertension. It provides material support (test strips, blood pressure monitors, supplies, record sheets, and report sheets) to regional hospitals. It also organizes capacity-building training for service providers.

Many NGOs support the treatment of mental disorders. In the two regional facilities we visited, mental health technicians told us about the NGO Medu, which supports health facilities by providing medicines (neuroleptics and antiepileptics) and equipment (beds, mattresses, dining tables, chairs, sheets, mosquito nets, computers, printers, etc.).

Human resources in the fight against non-communicable diseases

The management of diabetes and hypertension requires the availability of sufficient numbers of qualified human resources in healthcare facilities. However, field data reveal a low coverage of trained healthcare workers and specialists. For example, for the entire Tahoua region, there is only one cardiologist practicing at the regional hospital:

> "Here, I am alone. I have a 20-bed ward and I have to do everything related to cardiology, including electrocardiograms, consultations, and visits. And often there are 15 to 20 patients per consultation." (A cardiologist, interview on August 6, 2023, in Tahoua)

Added to this is the lack of training or capacity building for primary care workers, even though they are the first point of contact for patients. Furthermore, due to a lack of dietitians, it is these health workers who provide dietary advice to patients. However, they have no training in this area. The presence of a dietitian would greatly help these patients to balance

their diet and find personalized diets, i.e., diets adapted to their age, lifestyle, tastes, and health status.

The presence of therapeutic education technicians would also be important in helping patients take care of themselves at home, which would reduce travel and patient care costs. However, there is a lack of such technicians in the regional hospitals visited. Therapeutic education work is often carried out by specialist doctors, such as the cardiologist we met in Tahoua, who try to schedule educational meetings with patients despite their busy schedules.

Reports on the fight against NCDs in primary health care

Integrated health centers report cases of diabetes and hypertension in their treatment records. By compiling data on all pathologies, CSI managers write a monthly report. This data is then entered into the DHIS2 platform. The district must use this data to plan activities. However, the data appears to be underestimated:

> "There is a discrepancy in the updating of data on the DHIS2 platform. The data does not reflect the reality on the ground. This data is not updated in the CSIs. In some cases, it is updated late." (A national program officer, interview on 08/22/23 in Niamey)

These limitations can be explained in part by the instability of the internet connection in some localities, which prevents health workers from regularly entering data and updating the platform.

Given the shortcomings in data production, the national program to combat noncommunicable diseases relies on data from STEPS surveys to assess the epidemiological situation and plan actions, even though these surveys are irregular. The first STEPS survey was conducted in 2007, but due to lack of funding, the second was conducted in 2021, 14 years later, even though they should be organized every five years.

Levels of confidence in primary health care

The essential package of NCD management (WHO-PEN) is being integrated into primary health care, but it covered very few primary health care facilities at the time of our field survey. Health workers in the few pilot centers say they are satisfied that they are trained and equipped with diagnostic materials:

> "In any case, I am very motivated because I can now manage noncommunicable diseases, whereas before we were just groping in the dark. The training we received has really helped us." (A nurse, interview on August 5, 2023, in Mayahi)

> "We received refresher training, which allowed us to learn things we didn't know before. And it is thanks to this HEARTS program training and the equipment we received that we were able to start treating these cardiovascular diseases. We would like to treat them, but we were limited because the resources we had did not allow us to treat them at our level. Today, we see many positive points." (A nurse, interview on 07/08/2023 in Tahoua)

On the other hand, other health workers express their dissatisfaction because the package of activities could not be sustained. At the end of the pilot project, support for primary health centers did not continue. The sustainability of these activities became problematic due to the lack of renewal of essential equipment and molecules.

On the population side, many users are frustrated at being referred to other facilities for care due to a lack of skills or equipment.

Community structures and governance arrangements

Like most African countries, Niger has long developed a strategy for managing health interventions by relying on community-based structures or actors, such as community relays or COGES (public health facility management committees), which play a key role in community health prevention and promotion activities by acting as a bridge between the population and public health services.

The role of community relays

In the Madaoua area, some relays have received training from partners such as UNICEF, MSF, and WHO through its Heart approach. In the specific case of the WHO Heart approach, relays in the commune of Takorka (Madaoua) received training on high blood pressure. This five-day training course, held in Madaoua, focused mainly on the causes of high blood pressure, recognizing its clinical signs, diagnostic techniques, clinical management, and the types of foods recommended for patients with high blood pressure. This is why these community relays are often used by health workers to convey messages to the population:

> "We are the intermediaries between health workers and the population. We are responsible for relaying messages to both sides." (Community liaison, excerpt from interview on 07/29/23 in Maradi)

> "During the week, when we see patients and the number of cases worries us, we include community liaisons in our meetings, as they have access to the population. We tell them that during a certain period we have had many cases of hypertension or diabetes, so please raise awareness among the population about these diseases." (Health worker, interview on 11/08/23 in Madaoua)

> "If we refer people to health centers and they consult them, if there are many cases of hypertension, they ask us to intensify our awareness-raising efforts on this disease. Even though we can decide for ourselves to carry out our awareness-raising activities according to our respective schedules, health workers also give us guidance when they see what is most troubling to the population. " (Community liaison, excerpt from interview on 08/11/23)

In the context of these diseases, these trained community liaisons play a crucial role in monitoring patients, as they have easier access to their daily lives:

> ” Sometimes, it is the liaisons who go to explain things to them. We tell the liaison to go to a particular patient to gather information about their case and their compliance with instructions. Once they have the results, they come and report back to us. Based on this, we take the necessary steps to see what we can do to improve the patient's situation." (Interview on 11/08/23 in Madaoua)

They are able to reach people in social settings such as baptisms, weddings, water points, etc.

> “Through them, we can cover a very large area in terms of high blood pressure.” (Health worker, interview on 11/08/23 in Madaoua)

> "We were told to gather the women in groups of five, because if there are too many of them, they find it difficult to concentrate and listen to us. And we often go door to door to explain things to them. By adopting this strategy, they take what we tell them more seriously (...) We also meet them at water points, places where they do “*sussuka*” (hand-shelling of millet, sorghum, etc.) or at the sites of baptism." (Community relay, excerpt from an interview on 08/11/23 in Madaoua)

These relays also attempt to deconstruct certain popular beliefs that make these diseases, particularly high blood pressure, a supernatural pathology caused by “iska” (genius):

> "You know, there are people who think that this disease (high blood pressure) is linked to spirits and that if they go to the hospital and get injected, they will die. They often come to us and say, ‘You who are a relay, how is it there? I went to so-and-so and he told me such-and-such.’ You who work with health workers, how is it really? And we explain it to them. We tell them to go to the health center and that the consultation is free. Now they understand, and some don't even need to go through the community relays." (Community relay, interview on 08/11/23 in Madaoua)

The community relays are responsible for informing the population about the causes of these diseases, the warning signs, the risk factors, and their consequences:

> "With regard to diabetes, we explain to them that as soon as a person urinates too much and feels cold, they must go to the health center quickly, as these can be warning signs of the disease. We also tell them to stop consuming bouillon cubes, to reduce their salt intake, and, for men, to stop smoking. We even go to the markets to explain to vendors and consumers that salt should be exposed to the sun to reduce its sodium content, etc." (Community relay, excerpt from an interview on August 11, 2023, in Madaoua)

They must also provide information on local foods that can be alternatives for people suffering from diabetes or hypertension:

> "We tell them that people suffering from these diseases should eat foods such as moringa, sorghum, etc." (Community relay, interview on 11/08/23)

However, beyond this official language regarding the responsibilities of community relays, there are various recurring problems relating to their actual role. Their very limited training does not always make them credible to the populations (whose beliefs they share). Sometimes, no importance is attached to their awareness-raising activities, which are considered uninteresting. The population accuses them of taking money from partners to come and disturb them with empty words:

> "*Ku tchale in iska*!" (Leave those bastards alone!). "They go and take money and come and disturb us with useless words" (community liaison, interview on 11/08/23, Madaoua)

> "*Ku tchalé mu da zantchan banza*" (Leave us alone with your useless words)" (Nurse, excerpt from interview on 05/06/2024 in Madaoua)

As various previous LASDEL surveys (Sounaye A, Diarra A, Younoussi I, 2017) had already shown, the widespread lack of pay demotivates them and leads to many dropouts (it is a form of "compulsory volunteering," which is rather poorly perceived by those involved).

> " They sometimes carry out awareness-raising activities on non-communicable diseases, but this is rare. Without salaries or other forms of financial or material compensation, it is difficult. You can't force someone you don't pay to work, you know!" (Nurse, excerpt from interview on June 5, 2024, in Madaoua)

Finally, they appear to be the product of TFP "project" decisions, and the reasons for their selection are often unclear.

It can also be argued that they only gain importance in the eyes of the population when they are entrusted with technical tasks (rapid detection tests, minor nursing care, blood sugar measurement): confining them to speeches and advice does not seem very effective.

Role of traditional and religious authorities and traditions

In the fight against non-communicable diseases, traditional and religious authorities play a key role, as they can influence the habits and perceptions of the community. They are mainly involved in mobilizing communities,

conveying certain preventive messages, and encouraging people to visit health centers:

> "We tell people to go to the health center as quickly as possible if necessary." (Head of the village of Baja, interview on August 3, 2023)

> "When health workers have certain information to pass on to the population, they call on us village chiefs and we in turn keep the population informed. " (Village chief, excerpt from interview on 03/08/23 in Mayahi)

However, beyond official statements, the real role of traditional and religious authorities on the one hand, and traditional practitioners on the other, in dealing with NCDs, remains to be explored further.

The power of religious faith in accepting and managing illness

One of the strategies most used by patients when faced with illness is to turn to religious faith. Indeed, we often see a state of resignation, with the belief that it is God who created health and illness and that human beings must accept their fate.

> "Whether you are sick or healthy, there is not a single soul who will not taste death... every time I surrender my situation to God, my heart is light and peaceful." (A hypertensive patient, interview on 07/30/23 in Maradi)

Indeed, religious beliefs, whether in the form of a helpless acceptance of the trial of illness sent by God or a conviction that health will be restored through the power of God, are present in many patients regardless of religious denomination (Christians and Muslims).

> "Even if no one has ever been cured of this disease, I will be cured. God will perform his miracle." (A patient with hypertension, interview on 07/29/23 in Maradi)

> "Yes, they say there is no cure, but every disease has a cure. It's just that we don't know what it is. The cure for any disease comes from God. If God says you will be cured, you will be cured, whatever the disease." (Hypertensive patient, interview on 08/23/23 in Niamey)

Also, even in cases where the patient and their family and friends attribute the disease to a spell cast by a third party, some prefer to put everything in God's hands:

> "When we learned that someone had cast a spell on me, I was offered *kur'ani*[2], but I preferred to leave everything to God." (Hypertensive patient in Baja, Mayahi, excerpt from interview on 08/03/23)

[2] Hausa word referring to a reading from the Quran that will harm the person who cast the spell

Some diabetic patients force themselves to fast out of piety or because they cannot afford to compensate for missed days of fasting with *fidya*[3]:

> "The pain starts again as soon as I begin fasting. People say that fasting and diabetes are incompatible. But I tell them that fasting and illness are both God's property." (Diabetic patient, interview on 08/22/23 in Niamey)

> "The marabouts tell us that if we have the means to compensate for the days of fasting, we don't have to fast. But if we don't, we have to fast, so I decided to fast." " (Diabetic patient, excerpt from interview on 08/23/23 in Niamey)

Commercial and community radio stations: actively participating in the fight against NCDs

The adoption of Ordinance No. 93-031 of March 30, 1993, which liberalized audiovisual communication, led to the creation of numerous private and community radio and television stations[4]. Local radio stations are often used by development actors (project workers, health workers, associations, or even individuals) as a means of conveying messages to communities, mainly in local languages. Sometimes covering very large areas, these radio stations enable populations that are often far from urban centers to access information, open up to the outside world, and communicate.

These radio stations play a crucial role in the fight against non-communicable diseases:

> "Health workers use local radio stations to broadcast messages aimed at raising awareness about drug addiction, psychosis, and other diseases (...) Some radio stations broadcast health programs during which health workers are able to raise awareness among the population about these chronic diseases and other topics, free of charge." (Psychiatrist, interview on August 1, 2023, in Maradi)

> "You know, some things are learned on the radio". (Hypertensive patient in Maradi, interview on 07/29/23)

> "It's on the radio that we hear health workers say that these diseases cannot be cured, they say that you just have to take medication to stabilize the disease." (Hypertensive patient, interview on 08/09/23 in Tahoua)

[3] The *fidya* corresponds to compensation for days not fasted by offering the equivalent of a mudd of food to a person in need.

[4] Directory of community radio stations in Niger, October 2021

In addition to health workers, these radio stations are also used by associations and NGOs fighting NCDs as part of their awareness-raising and prevention activities:

> "The activities we organize are awareness-raising campaigns. Sometimes we use thematic radio stations, sometimes we use ORTN. Among the associated thematic radio stations are Radio des Scous, Koira Tagui, Dounia, and others." (member of an association fighting diabetes, interview on 08/22/23 in Niamey)

However, despite the obvious importance of these media in health promotion activities, the shortage or even absence of NCD specialists in rural areas is a handicap:

> "Even when there are World Diabetes or Hypertension Days, if we get up and say we want to do a program on these diseases, the first thing we struggle with is finding a doctor or someone who is knowledgeable in the field and who will agree to educate the population on the subject (...) You can call someone and they will tell you that they don't have time, that they are working, etc. So if I can't find any specialists, all I can do as a journalist is perhaps find someone who suffers from these diseases to talk to them, which, although useful, does not provide any real information on how to prevent and combat these diseases. (media agent, interview on 10/08 23 in Tahoua).

Traditional healers and the media

Radio stations can also play a negative role. Despite a formal ban by the Ministry of Health, in collaboration with the CSC (Higher Council for Communication), on broadcasting programs or commercials dedicated to traditional practitioners who do not have authorization to practice from the Ministry of Health, several radio stations continue to serve as a platform for their messages.

> "Even though we try to comply with this ban, there are other colleagues who continue to broadcast messages from these traditional practitioners, even though we are in a competitive environment. What's more, there are traditional practitioners who we consider to be acting in good faith, so it's difficult to refuse." (Journalist, interview on September 10, 2023, in Tahoua)

One reason given by these media outlets to justify their reluctance to ban unlicensed traditional practitioners from the airwaves is the difficulty of obtaining such certification from regional public health authorities. This administrative handicap then benefits both parties, who override the bans to allow traditional practitioners to promote their products:

> "Even when we refer these traditional practitioners to the regional health department to obtain their licenses to practice, they don't know who to talk to, and when they ask questions, everyone says it's not their area of expertise,

> which prevents them from obtaining this authorization. So there's a vacuum." " (Media agent, interview on 08/10/23)

Communities facing the challenge of NCDs

Heterogeneous societies

The prevalence rate of non-communicable diseases varies according to the locality and region of the country. Certain sociocultural, ethnic, and geographical parameters seem to influence the risk factors for NCDs and their effective and efficient management.

In the Tahoua region, for example, certain dietary habits, such as high consumption of fatty meat, were mentioned by some respondents as one of the risk factors that increase the rate of hypertension in this area:

> "People in Tahoua can't eat meat that isn't fatty. You have to go to the butcher's on the road, and from 10 p.m. onwards you'll see people buying a kilo or two of meat, and they also buy boules with milk and sugar, all accompanied by drinks and sweets, and every day it's the same thing, morning, noon, and evening." (Midwife, excerpt from interview on 08/09/23 in Tahoua)

Some also mention the hot, salty waters of this city to explain the considerable number of people with high blood pressure in Tahoua:

> "Apart from the fact that in this region (Tahoua) people are heavy meat consumers, it is a region where the water is very rich in iron and calcium, which may be the reason for the large number of people with high blood pressure in this area. " (Cardiologist, excerpt from interview on 09/08/23 in Tahoua)

A common dish, a limited choice for patients

For some patients, adherence to a diet is linked to a personal choice to set or not set limits on their food intake. For others, it is more a matter of dependence.

Some patients have no influence over the diet of the household in which they live, either because they are cared for or because they have no role to play in the kitchen: others cook what they eat. In this case, while some manage to impose their dietary restrictions on the rest of the family, for others this is a factor in their failure to follow the diet. This is particularly true of elderly people whose meals are prepared by their daughters-in-law. In this case, the whole family continues to eat their usual diet. Sometimes, care is simply taken not to add broth, salt, or other ingredients for the sick person.

Main individual and community factors that promote or limit the fight against NCDs

Individual and community constraints

Very little knowledge (of the symptoms) of NCDs

Despite the increasing prevalence of diabetes and hypertension, their warning signs and symptoms remain generally unknown, as they are "silent." ." For some, the first symptoms that appear are insignificant (headaches, asthenia[5]) and are also common to several diseases. This often leads the patient to seek symptomatic treatment, which contributes to delaying diagnosis at health facilities and may lead to possible complications. These diseases are therefore most often discovered either by chance during routine consultations (particularly prenatal care for women), because of persistent symptoms, during mass screening campaigns, or in the event of complications (blindness, numbness in certain limbs) and stroke.

The social environment and the lack of a coherent policy do not allow for widespread and adequate education of communities on NCDs. Added to this general lack of knowledge is the circulation of a considerable number of rumors and misinformation, spread by various actors (neighbors, friends, traditional healers, parents, social networks, etc.).

According to the National Institute of Statistics (INS 2022), the literacy rate in Niger is estimated at around 30%. In this context, people find it difficult to understand the chronic and incurable nature of these diseases.

> "I don't believe that this disease (hypertension) cannot be cured. I am convinced that traditional medicine can provide remedies to cure it, perhaps because I have not been to school." (A hypertensive patient, interview on August 2, 2023, in Mayahi)

> "One of the difficulties is getting patients to understand. It is easier to explain the disease and treatment to literate patients than to illiterate ones; with the latter, things are difficult." (A diabetologist, interview on 01/08/23 in Maradi)

Thus, in the absence of clear and convincing explanations from healthcare providers (which is often the case), or due to a lack of understanding on the part of patients, there are many misunderstandings. Some respondents say they follow the prescribed dosage of medication because they hope to be cured of their illnesses. However, when they do not recover, they eventually

[5] Abnormal fatigue that persists even after rest.

give up and resort to traditional medicine, which plays an important role in healthcare provision and almost always promises a cure:

> "As soon as you have a certain illness and people know about it, everyone will say they know this or that remedy." (A patient with high blood pressure, interview on 08/02/23 in Mayahi)

> "I heard on the radio that *dan fanu* treats high blood pressure, and I was told about *dan doya* by people around me. I also use papaya, mango, guava, and lemon leaves." (A diabetic patient, interview on 07/28/23 in Maradi)

> " I was in a very bad way because of diabetes and its complications. Then a friend told me about a pastor who healed all illnesses through prayer, so I went to see him and it's been about seven months since I stopped my biomedical treatments, as the pastor instructed me to do. I feel better physically, but I haven't had a check-up yet to see if the disease has really gone away or not." (A diabetes patient, interview on 08/25/23 in Niamey)

Added to this multitude of information, which often leaves patients confused because they cannot distinguish between what is true and what is false, is the complex nature of these diseases, which are difficult and variable to manage on a daily basis. Diabetes patients often say they feel lost, swinging between states of hypo- and hyperglycemia:

> "We always hear that hyperglycemia is caused by excess sugar in the blood. But one day, I ate some sugar cane and was very worried that I would have hyperglycemia, but to my surprise, I ended up with hypoglycemia. So in the end, we don't even know what to believe anymore." (A diabetic patient, interview on 07/29/23 in Maradi)

Thus, the sometimes "mysterious" and "contradictory" nature of these diseases, combined with a lack of reliable information, widespread misinformation, and a lack of clear explanations from healthcare professionals, leaves patients in a state of great confusion. One patient said she had asked herself countless questions that remained unanswered when she was diagnosed with hypertension:

> "*Tension manti banikom dori no? Manti gaham koy dori no*? *Manti fulanzamay dori no*? (Isn't high blood pressure a disease of rich people, of overweight people? Isn't it a disease of people who rest?)"
>
> She adds, "*tension si hawi bay*" ("high blood pressure is not ashamed", in other words, it does not follow any rules). (A patient with high blood pressure, interview on 08/31/23 in Niamey)

The excessive and often unaffordable cost of tests, treatments, and patient strategies

From the very first consultation, the question of cost arises:

> "You can't prescribe just any type of medication to any type of patient. Ideally, a complete assessment should be carried out to see if any organs are affected

> or if the patient is developing complications. But due to a lack of resources, we try to request as few tests as possible to stay within our patients' financial means." (A cardiologist, interview on 08/29/23 in Niamey)

The cost of tests is far too high, given that most of these patients are poor. This often leads to treatment being interrupted, or patients not returning to health centers for check-ups, etc. According to interviews with health workers, many patients start treatment but then disappear, opting for traditional medicine and sometimes only returning in the event of serious complications.

Chronic diseases and their complications disrupt the usual management of diseases. They require long-term, almost "religious" adherence to dietary rules, as well as strict compliance with medication. As a result, poor, vulnerable, or destitute patients are unable to strictly adhere to "lifelong" treatment. Often, patients and their families find themselves completely financially exhausted after only a few months of treatment:

> "When five months had passed, we were forced to leave the hospital despite my poor health because my family had run out of money to continue my hospitalization. My mother even sold her field so that I could be cared for, but the money ran out. And to this day, we still have debts that we have not been able to repay." (08/02/23, Mayahi)

Some medications are excessively expensive because the vast majority are specialty drugs and are not subsidized by the government.

> "Diabetics are generally very poor people... Sometimes we even pay for consultations out of our own pockets, because they come in exhausted and have no money left". (09/08/23, Tahoua)

Many patients are unable to have their medication renewed or visit health centers regularly for check-ups, given the distance involved and the financial expense this entails. When patients are faced with the choice between having food for themselves and their families or paying for medication, the choice is quickly made at the expense of treatment compliance. In addition, with products such as insulin, there is a major problem with supply and storage, particularly in rural areas (a strict protocol is required to prevent the product from deteriorating).

> "The product (insulin) that I was injected with is not available in Mayahi. We used to go to Maradi to buy it. One of my brothers would go and get it for me and would bring back a week's supply each time. He buys it, puts it in a thermos, and transports it to Mayahi. If he doesn't put it in a thermos, the product can spoil. Once here, the product is stored in the refrigerator of a nephew who has a shop opposite the district hospital." (Diabetic patient, 08/02/23, Mayahi)

Difficult access to healthcare personnel and communication difficulties

One of the major challenges for patients is navigating the various healthcare facilities. Indeed, they find it difficult (especially in rural areas) to access specialists who can provide good care, mainly in public hospitals. Some patients also say that doctors favor the private sector much more than the public sector. However, many patients cannot afford to go to these private clinics. As for public hospitals, due to long waits, missed appointments because doctors are absent, and poor reception, they are places that cause "fear", according to our respondents.

Finally, in some communities, there is a language barrier between caregivers and patients (Zarma spoken by caregivers and Hausa spoken by patients in the cases encountered), which does not facilitate communication and therefore hinders effective care and good compliance with prescriptions. Similarly, consultation times that are too short do not allow for patient education, which can have direct and serious consequences on treatment. According to a diabetic patient who has had an amputation:

> "The doctor who diagnosed me with diabetes didn't take the time to explain the disease to me properly, so a friend who owns a shop did. When I started treatment with medication that I got from this friend, I only took it when I felt symptoms, and as soon as I felt better, I stopped. I didn't follow a diet either." (01/08/23, Maradi)

Factors promoting the fight against NCDs

Family support and mobilization of social networks to ensure treatment compliance

One of the important findings of the survey is that family support is extremely important for patients in their fight against these various diseases. Indeed, this support, whatever form it takes—financial, moral, physical, etc.—is essential for managing these diseases and their complications:

> "My husband said to stop putting bouillon cubes in the meals cooked for the family...I eat, take my medication, and rest. My older children prevent the younger ones from disturbing me." (interview on 08/31/23 in Niamey)
>
> "My family and friends support me a lot. People come to see me and bring me things. Thanks to them, I was able to pay for my operation (leg amputation) and all the other expenses related to my illness. It warms my heart." (Interview on August 1, 2023, in Maradi)
>
> "All around me are my brothers' houses. For example, Maliki has been taking care of all my needs (urination and defecation) since part of my body became paralyzed." (A hypertensive patient, interview on 03/08/23 in Baja Kouykouyou)

Unfortunately, some patients do not have this support. As a result, compliance with prescriptions becomes problematic:

> "My daughters-in-law prepare my meals. I can't force them to prepare separate meals for me. They'll get tired of me." (A hypertensive patient, interview on 03/08/23 in Baja Kouykouyou)

Moral support from healthcare workers when announcing the diagnosis

Due to their high prevalence and serious consequences, hypertension and diabetes are a source of real fear for patients who are diagnosed. This causes some to feel great distress upon receiving the diagnosis, leading them, according to one respondent, to "obvious decline." According to one healthcare worker, upon receiving the diagnosis, the faces of some patients show "stress," "fear," and "dissatisfaction." This situation leads some doctors to prepare patients psychologically before telling them about their condition, helping them understand that this disease is not synonymous with "death" and that a person can also live a long life as long as they follow dietary advice, take medication, and engage in regular physical activity.

Individual characteristics and behaviors that are not conducive to compliance

Discovering the disease: between acceptance and denial

Faced with the physical and psychological upheaval caused by the diagnosis of a chronic disease, patients use different methods to maintain hope: acceptance, denial, or resignation. In terms of denial, some, for example, say about doctors' prescriptions: "*kay tchale su*" "*kay il faut les laisser*" ou "*tensio richin hutu ne*" "hypertension is nothing more than a lack of rest" (08/08/23/health worker, Tahoua). Other patients recognize the existence of these diseases (hypertension and diabetes) but cannot accept their chronic and incurable nature, sometimes relying on religious precepts. According to several respondents, there is a verse in the Holy Quran in which God says that he has sent down every disease with its cure, which is why "I am convinced that traditional medicine can provide remedies to completely cure these diseases." (A hypertensive patient, interview on 08/02/23 in Mayahi)

Onset of complications and psychological disorders (anxiety, distress, depression)

Despite the shock that the diagnosis of the disease can cause and the daily constraints of managing it, most psychological disorders (anxiety, stress, depression) appear in patients later, with the onset of certain complications related to diabetes and high blood pressure. Changes occur in the patient's social life. They feel that their dignity as a human being has been compromised by certain complications such as paralysis, amputation, or

sexual impotence. The transition from being the head of the family, a decision-maker and protector of their household, to being a patient dependent on others for all their daily needs (food, mobility, personal hygiene, religious practices, etc.) is a shock that few patients manage to overcome. These psychological disorders manifest themselves in deep concern or sadness, "*kuntchin rayuwa*," according to the head of psychiatry at the Maradi Regional Hospital Center (01/08/23), with mood disorders, sad and dark thoughts, such as constantly thinking about death. The patient then despairs and loses all will to fight what they consider a lost battle. They sometimes refuse to eat and follow medical advice (healthy diet, medication, and exercise).

Difficult access to alternative foods (fruit and vegetables)

A diet based on fruit and vegetables is part of an approach to regulate and/or stabilize patients. It is initially prescribed to lower indicators. In the case of diabetes in particular, the aim is to reduce sugar intake by avoiding foods with a very high sugar content. Fruits and vegetables are recommended to balance blood sugar levels. But the question of access and means of obtaining them arises. Indeed, for a significant proportion of patients, this fruit and vegetable-based diet is an additional burden that many find difficult to bear. Others do not even consider it. As a result, few patients (only those who can afford it) are able to follow this diet. This is another reason why diabetes is considered a disease of the rich.

Restrictions and diet

Diet plays a central role in the management of diabetes and hypertension. It requires a significant change in patients' eating habits. It essentially consists of reducing or stopping the consumption of foods containing sugar, bouillon, and salt. However, patients were used to consuming these foods.

The main difficulty in following this diet lies in eating differently from the rest of the family. The diet places patients in a restrictive situation that they quickly tire of, especially since the recommended diet does not correspond to local eating habits.

Field interviews thus report deviations among patients who refuse to comply with the dietary restrictions recommended by their doctors.

Use of traditional therapies

Traditional therapies often play a role in the treatment choices of people with chronic diseases. We have already mentioned the fact that traditional

practitioners promise a cure that is ruled out by modern medicine. Their discourse is also in line with popular beliefs. Everyone (in all social classes) is convinced of the effectiveness of traditional therapies for many diseases that modern medicine does not recognize or cannot cure. But traditional therapies are very diverse, ranging from family knowledge of plants, Muslim marabouts of various denominations, priests of possession cults, renowned healers, etc.

A diversity of remedies offered

Faced with the symptoms and complications of diabetes and hypertension, a profusion of traditional therapies offer treatments most often based on the belief in the age-old effectiveness of certain plants on diseases. But there are many combinations of different plants that are prescribed, which vary from one healer to another.

We have identified:

Herbal teas to be taken as a daily drink (for example: a combination of garlic, lemongrass, jan jiji, cloves; or a combination of garlic, basil, crushed dried doum, etc.)

These are combinations of plants and tree bark or leaves that are sold on the market, the ingredients of which are not disclosed to buyers. These products are generally combined with other foods such as porridge, milk, etc., and their effects on health can sometimes be completely beyond the control of users (causing hypotension or hypoglycemia), or lead to other pathologies.

There are variations in the duration and period of use depending on the different treatments. For some treatments, a specific number of days and times of day must be observed, while for others, the medication is taken when certain warning signs of an imminent crisis (diabetes or hypertension) appear.

Mystical-religious practices, particularly in cases of complications attributed to spirits (*iskoki*)

Certain complications are, in fact, linked in community beliefs to this supernatural presence, which must be treated by traditional healers who sometimes apply solutions to the affected parts of the body and sometimes perform invocations aimed at ridding the body of its invisible occupants or soliciting their benevolence. Even though the two forms of therapy are opposed, treatments often give rise to possession rituals aimed either at forming an alliance with intrusive spirits (*bori)* or exorcism rituals based on Islamic tradition *(rokiya*).

A widespread alternative for patients

The use of traditional therapies is sometimes presented as a complement to, but above all as an alternative to, conventional medicine.

Information on the diversity of traditional therapies is disseminated within the community in various ways: through the patient's relatives, neighbors, the media (including social networks), and sometimes by health workers themselves, who share their own experiences with the patients in their care.

However, the main channel for disseminating information on traditional remedies remains the activism of traditional practitioners in public places, markets, and crossroads to promote their products, as well as their advertisements on certain radio and television channels.

An environment favorable to traditional therapies

The use of traditional therapies has economic reasons, due to the high cost of biomedical treatment (medications, tests, check-ups, travel, diet) that patients must bear. Many diabetics or hypertensive patients do not have sufficient means to maintain long-term biomedical treatment.

> "Diabetes, for example, may require testing of other organs such as the kidneys, lungs, etc. For those who can afford it, these tests are usually carried out at the CHR. However, a large proportion of patients do not have these tests because the average cost of treatment can be as high as 20,000 francs. Some do not even have 100 francs to pay for the consultation. Compliance with the health and diet regimen also suffers from this lack of means in some patients because it is a regimen that requires a lot of money, which can be an additional burden." (Excerpt from an interview with a CSI chief on July 27, 2023, in Maradi)

Admittedly, some traditional therapies can also be very expensive. However, those based on plants are generally affordable. On the other hand, conventional medicines cause side effects in patients, such as the urge to urinate, diarrhea, and abdominal pain. Added to this is a feeling of toxicity attributed to regular medication use.

> "Added to this are the side effects associated with certain drugs: patients who start taking these drugs suffer from diarrhea and abdominal pain. Some patients ask us to release them so that they can leave the hospital and start traditional treatment. They find it hard to believe that they cannot be cured of their illness. For others, it is because they get tired, because everything has to be paid for by the patients themselves. And many lack the means to do so, especially during the winter season." (Excerpt from an interview conducted on August 11, 2023, with a doctor treating patients in Madaoua)

Comparison between conventional and traditional therapies: remedies considered effective by patients

The use of traditional treatment is justified primarily by the effectiveness of the medicines, whose effects are considered to be better than those of biomedical treatment, which is thought to have little effect on diseases.

> "I think that his treatment (a traditional practitioner) has greatly improved my health because the first time he came to see me, I couldn't even sit up on my own. But even before he returned for his second visit, he found that I could sit on a chair. And with the help of a few people, I could stand up." (Excerpt from an interview with a hypertensive patient, conducted on 07/29/2023 in Maradi)

Furthermore, as demonstrated in several LASDEL studies (Jaffré & Olivier de Sardan, 2003; Diarra, 2018; Oumarou, 2018, etc.), it has also become apparent that poor reception in health centers also discourages patients. Doctors in the public sector devote little time to patient care because they also practice in private facilities. They limit consultation time or the number of patients they see.

A double-edged sword

Most patients only learn about their diabetes or hypertension by chance. They usually come in for a specific condition, and that is when many of them learn about their illness. Most patients do not return for follow-up visits and tend to resort to traditional treatment. Others refuse to follow health and dietary advice or are unable to comply with it. However, traditional treatment does not prevent complications from arising, further worsening the health of many patients. These complications can range from a deterioration in the patient's health to damage to other organs (kidney failure).

> "Diabetes and hypertension have a huge impact on the population. The complications associated with these conditions, which people tend to neglect, are a problem for the community. Patients with kidney failure often have to be transferred to Zinder or Niamey." (Excerpt from an interview with a CSI chief, conducted on July 28, 2023, in Maradi)

As some of these complications are attributed to various invisible forces (*shafin doguwa, iskoki, kwarruruka, etc.*), this further reinforces the use of traditional therapies to the detriment of drug treatment.

> "For traditional treatment, there are several healers (more than 15 people) who have come one after the other. Each one comes to do what he thinks is the solution to my illness (...). Obviously, no treatment is working because I am still sick. And every time we try a healer, when the treatment period he gives is up and there is no improvement, we change and another one comes to try

> his luck too. We continue with traditional treatment because we think it's not hypertension, it's supernatural (*kwarruruka*, the Hausa term for spirits). The consultations with the healers revealed that someone had put a spell on me because whenever there is something going on in the village, I am always at the forefront. I am better than many people in several areas. And that is why someone has put a spell on me." (Excerpt from an interview with a hypertensive patient with complications, conducted on August 3, 2023, in Baja, Mayahi department)

Stakeholder influence: a lever for co-production

This analysis is built around two questions: Who are the stakeholders in NTM policies and what is their influence? Which stakeholders are allies, which are neutral, and which are opponents?

The conceptual framework used posits that the role of stakeholders in the NTM public policy cycle is determined by their resources and interests, and allows the influence (strong, medium, weak) of each stakeholder to be assessed. From a co-production perspective, it is therefore possible to classify stakeholders into three categories: allies, neutrals, and opponents.

State actors

Several state institutions are involved in NCD policies in Niger: the Office of the President, the Prime Minister's Office, ministries, and the National Assembly.

The Ministry of Public Health and Social Action (MP/AS) plays several roles in NCD policies. It works alongside PTFs to raise awareness of NCDs. It helps to put NCDs on the agenda. It sets up programs and centers. It develops strategic documents. It advocates for the mobilization of resources (human, material, and financial).

In 2012, the MSP/AS established the National Program for the Control of Noncommunicable Diseases (PNLMNT). The PNLMNT provides technical expertise and training for health workers on the *Package for integrating Essential interventions for major Noncommunicable diseases in primary health care (*WHOPEN with WHO). The PNLMT coordinates the fight against noncommunicable diseases. It advocates for the financing of curative, preventive, and promotional activities.

The PNLMNT has a National Multisectoral Committee for the Fight against Noncommunicable Diseases (CNM/LMNT, created in 2017). The CNM/LMNT is a body for reflection, exchange of ideas, and advice on

issues related to NCDs. The CNM/LMNT is made up of representatives from state and non-state institutions and structures: the Presidency of the Republic, the Prime Minister's Office, technical ministries, technical and financial partners, the private sector, and civil society (associations and foundations).

The Ministry of Higher Education, Research, and Innovation develops curricula and programs related to the teaching of NCDs in public universities and research on these diseases.

The Ministry of Youth and Sports develops and implements sports policy for the entire population.

The Ministry of Communication and the Digital Economy develops and implements policies. It regulates media activity (radio, television, new online media).

The MSP/AS has a high level of influence. This influence is based on the institutional legitimacy of this ministry.

On the other hand, the other technical ministries have little influence. This is because the interministerial committee set up under the PNLMNT is not functional.

International organizations

Several international organizations are involved in NCD policies: WHO, the MSP/AS Support Fund (AFD, UNICEF, AECID, the Bank, the GAVI fund, and UNFPA), the Belgian Federal Government Development Agency (Enabel), Danish Cooperation, and the World Diabetes Foundation.

These international organizations are involved in setting the agenda, financing, shaping, and implementing NCD policies. They have a significant influence on NCD policies due to the resources available to these international organizations: institutional legitimacy, infrastructure, financing, etc.

Actors in the pharmaceutical sector

Public and private actors in the pharmaceutical sector are involved in the provision of medicines, equipment, and medical supplies within the framework of NCD policies. The public pharmaceutical sector is represented by the National Office for Pharmaceutical and Chemical Products (ONPPC), which is responsible for the procurement, storage, and distribution of essential medicines and supplies, the Nigerien

Pharmaceutical Industries Company (SONIPHAR), which ensures the local production and distribution of medicines, and the National Public Health and Expertise Laboratory (LANSPEX), responsible for the quality control of medicines.

Private actors in the pharmaceutical sector consist of wholesalers[6], a production unit (Société Industrielle Pharmaceutique SIP), and numerous pharmacies, located in urban areas only.

Civil society organizations

Civil society organizations consist of NGOs working in the field of NCDs: SOS Diabétique, MEDCOM, Medu, FORSANI, the coalition for the fight against non-communicable diseases, and the health sector communication network.

Two NCD professional associations are listed: the Niger Society of Endocrinologists and Diabetologists (SONED) and the Niger Society of Cardiologists (SONICAR).

Traditional media and social networks

Traditional media (national and private radio and television stations, public and private print media, community radio stations) help raise public awareness of NCDs.

New social media (Facebook, WhatsApp, TikTok) disseminate content related to NCDs.

Patients, families, and friends

NCD patients have diverse profiles in their interactions with healthcare providers. The common denominator among these patients is their very limited influence on the formulation of NCD policies.

On the other hand, patients have some leeway that allows them to be more or less compliant in managing their disease, which gives them some influence in the implementation of NCD policies.

[6] COPHARNI-SA, LABOREX-NIGER, PHAMATECH-SA, MULTI-M NIGER-SARL, PHAMABEST SA, DAHAICO-SA, SAPHAR-SA, REALAB-PHARMA, and PHARMA-STORE

Research institutions

Scientific knowledge on NCDs is multifaceted: epidemiology, health policy and systems analysis, sociology, and health anthropology. Among other things, this knowledge is intended to support public authorities in their decision-making on NCDs. This knowledge should inform the formulation and implementation of the PNLMNT and facilitate dialogue between all stakeholders involved in NCDs (see STOP NCD co-production workshop).

The actors working in research are: the Laboratory for Studies and Research on Social Dynamics and Local Development (LASDEL), the National Institute of Statistics of Niger, the PNLMNT, and teacher-researchers from the FSS of the Universities of Niger.

Health training institutions

Several health institutions are involved in the initial NCD training of health workers. At the higher level, we have the health sciences faculties of Abdou Moumouni, Maradi, and Zinder Universities. Higher-level health technician students receive courses on NCDs in Niger's health schools.

Constraints

The data collection, which lasted 26 days in the Maradi and Zinder regions, took place in a particular socio-political context characterized by the advent of military rule, which brought an end to the democratic regime in Niger. This coup d'état led to the end of cooperation with European Union countries and several technical and financial partners, and a series of economic, financial, and political sanctions, including the closure of borders with ECOWAS countries and the cessation of electricity supplies from Nigeria. The long and frequent power cuts delayed the work of collecting and transcribing data by preventing field teams from compiling their daily reports in the evenings.

Furthermore, these sanctions have had an impact on the health of the population, including in terms of NCDs, with drug shortages due to border closures, the suspension of health interventions by non-governmental organizations for vulnerable populations, and power cuts in health services. This situation further highlights the country's dependence on external aid, a phenomenon that is at the heart of many shortcomings in the fight against NCDs, which remains primarily a recommendation of international institutions and not a national priority. This dependence was also mentioned by Lofandjola, J.M. et al. (2017) for the Congo. Furthermore, the only specific activities to combat diabetes and hypertension in Niger are those initiated and funded by international organizations or NGOs.

The fight against NCDs, like many health policies (free healthcare, tuberculosis, HIV/AIDS, noma, malaria, etc.), was imported into Niger as part of a global agenda to combat emerging diseases, following a summit of heads of state in June 2011 at the United Nations headquarters. With this in mind, Niger has signed up to regional and international commitments, but without the necessary human and material resources and in a state of technical and financial unpreparedness. Funds earmarked for health are mainly directed towards communicable diseases. Despite declarations to the contrary, NCDs seem to be the "forgotten" diseases in global health: for example, they have not benefited from donor subsidies for the provision of medicines and support for patients, unlike free ARVs or COVID-19 vaccination, etc. In this regard, Lofandjola, J.M. et al. (2017) refer to the

"marginalization of noncommunicable diseases." In Niger, as in neighboring countries, there is a lack of political will to combat diabetes and hypertension.

The fight against non-communicable diseases is hampered by limited health budgets (the Nigerien government has not allocated any budgetary resources to the fight against NCDs), a lack of qualified health personnel (one doctor for every 24,000 inhabitants), inadequate medical infrastructure, shortages of medicines and tools, poorly maintained records, a lack of patient follow-up, and poor access to care. This situation is similar in many sub-Saharan African countries (see Amoah et al. (2000); Besançon et al. (2018); Carmoi et al. (2007), where these shortcomings have already been identified at all levels of diabetes and hypertension control policy. Most public and private healthcare facilities are concentrated in large urban centers: this urban/rural divide has been reported in other countries by (Diop et al. 2019; Whiting, Hayes, and Unwin 2003; Gning et al. 2007).

The majority of Niger's population is poor. More than 60% of its population lives below the poverty line. To facilitate access to healthcare, the removal of financial barriers for various diseases (AIDS, tuberculosis, sickle cell disease) has proven to be an exemplary practice with a high impact on improving the health of vulnerable populations. However, nothing has been done in Niger to address diabetes and hypertension. The implementation of the policy to combat non-communicable diseases has not taken into account the poverty of the population; it has ignored the principle of the healthcare cost recovery system in place in Niger since the 1990s. Medications and tests used for diabetes and hypertension are not subsidized, and patients must purchase them at high prices (and exorbitant prices in the case of insulin) in private pharmacies. Furthermore, health insurance is very underdeveloped in Niger. In Senegal, Ndour Mbaye M. et al. (2015) showed that many patients encounter similar difficulties in accessing medical check-ups and medicines in the absence of a social security system. The lack of equity in the fight against NCDs is glaring. The most disadvantaged people are excluded from care due to a failing health system with very few resources for prevention, screening, and treatment. This exclusion of vulnerable populations is not specific to Niger but is widespread in sub-Saharan African countries (Yaya, S.H. & Kengne, A. P., 2014).

Despite the many advances in the care of diabetics in developed countries (new insulin-like drugs, insulin pumps, artificial pancreases, new GLP1 analog molecules and SGLTE inhibitors providing cardiac and renal protection, the use of telemedicine for remote monitoring of diabetics and

mobile phones for transmitting advice on diabetes monitoring), it is clear that the situation in developing countries remains deplorable due to a lack of access to technological innovations. Given the lack of information on NCDs, poor risk prevention, and limited patient access to health services, combined with frequent non-compliance with treatment and the use of multiple non-medical therapies, there are increasing numbers of cases of complications such as blindness, paralysis, amputation, sexual impotence, etc. These complications place a burden on the health system, if it covers them at all, and lead to disabling and stigmatizing identities for patients.

Finally, analysis of the data reveals poor coordination of interventions between the various public health actors, i.e., health facilities and the Ministry of Health, non-governmental organizations, and technical and financial partners, which compromises the effectiveness of strategies to combat these diseases. This is not specific to Niger: other studies (Bygbjerg 2012; Laar et al. 2020) have reported a similar lack of coordination in the fight against NCDs, as well as between NCD programs and other programs such as those concerning maternal and child health. Similarly, elsewhere (Gahungu and Coppieters 2014) there has been a noted lack of involvement by institutional and non-institutional actors in the process of formulating and planning policies to combat NCDs, a lack of coherence, synergy, and coordination of multisectoral policies, and a lack of clear delineation of responsibilities.

Conclusion

We know this, and the results of both parts of the research illustrate it yet again: Niger, like most low-income countries, is characterized by a context where "everything is a priority," "choices must be made among priorities," and "lack of everything is the rule." However, limiting we to these leitmotifs obscures the examination of the vast field of possible links between international policies and national socio-political spaces in terms of institutionalization and available resources. It also masks the interplay of institutional actors at different levels, first in the way they concretely address the issue of combating NCDs in various forms, and second in the adaptive nature of their dynamics of action within the intertwining institutional bodies. Finally, beyond the similarities with other regional or even global contexts, it means ignoring, on the one hand, the roles of various socio-professional organizations in shaping the fight against NCDs at the local level and, on the other hand, the unique experiences of individuals with the disease and their therapeutic trajectories. It is these realities that our research has sought to describe and analyze.

A first level of interpretation highlights the scale of the obstacles that hinder policies to combat NCDs on several levels. First, we note the problem of the real appropriation of NCD-related policies by national actors, insofar as the international actors behind these policies do not include consideration of the real contexts of the country in their programs. There are weak links between these exogenous policies and the dynamics of internal policies with their various modes of governance, the effective modalities of the exercise of power, and their articulation with broader dimensions such as moral and religious norms, social and economic issues, and social inequalities. We should also include the individual level, with personal positions often contradicting public discourse. In fact, institutional actors routinely find themselves subject to the protocols of institutionalization of international public policies, far removed from local logic and strategies, with a high degree of mimicry. Thus, within the international community, the validity of NCD policies is based on essentially statistical and economic arguments. Calls for action directed at low-income countries are justified by the fact that these countries account for 80% of NCD-related deaths. A review of official documentation conducted in this research shows that these same arguments are echoed by national actors in the formulation of national NCD control

policy. Thus, justification based on statistical data remains the fundamental reference, as expressed by some health professionals on the need to produce sufficiently high figures so that the fight against NCDs gains visibility and thus attracts funding. However, national statistics, which greatly underestimate the prevalence of these diseases, do not allow for genuine mobilization. Similarly, the objectives and action plans defined by national technical frameworks during so-called validation workshops are taken from international recommendations and do not truly respond to real local needs in the fight against NCDs.

Another obstacle is the lack of financial resources. Here too, NCD policies are not immune to dependence on international aid and its negative effects. While health policy priorities at the global level and in Western countries depend largely on the mobilization and influence of international pressure groups, in Niger, as in other low-income countries, external funding is the most decisive factor. In other words, the more a policy is supported by technical and financial partners (TFPs), the more it becomes a major priority. This is the case for policies related to infectious diseases, which occupy a prominent place on the national political agenda, as demonstrated by vaccination policies with the well-known Expanded Program on Immunization (EPI), which has been widely implemented throughout the country since the early 1970s. The strength of vaccination policies relies on the importance of international aid: to finance vaccination programs, the GAVI Fund and agencies (WHO, UNICEF, Bill and Melinda Gates Foundation, NGOs, etc.) raised more than $3.2 billion in 2016 (Ikilezi et al., 2020).

The same cannot be said for NCD policies, which are perceived by all national stakeholders as a secondary priority. Without sufficient funding and despite having institutional support, they face numerous difficulties in their implementation within the health system. NCD programs are set up without adequate operating funds and remain absent in most health districts, as evidenced by the small number of focal points, most of which are not functional. The PNLMNT Strategic Plan is not widely known or applied in the field, and few health professionals are aware of its existence. This reflects the lack of ownership of the policy by operational actors.

In addition, technical facilities are inadequate, making screening difficult. Care is often limited to the treatment of complications. Indeed, equipment and pharmaceutical products are insufficient, and sometimes non-existent, particularly in primary health care facilities. The results of the quantitative part of the research are revealing in this regard. Take pharmaceutical

products, for example: with regard to diabetes, "apart from injectable glucose, which a quarter of health facilities (25.3%) reported as being available, less than 15% of health facilities have other products for the management of diabetes" and for hypertension, "except for aspirin, which 33% of the 182 health facilities visited reported having available, less than 13% of health facilities have other medications available" (*see* quantitative component report: Nassirou, 2025). The same problem is found in terms of human resources, with insufficient qualified staff: "just over a third (35.7%) of health facilities had at least one provider who had received training in the diagnosis and treatment of hypertension at the time of data collection " and "only 28% of the health facilities visited reported that at least one of their healthcare providers had received training in the diagnosis and treatment of diabetes in the last two years" (idem).

Human and material resources are important indicators of the priority given to national health policies. In areas where there is a large and competent workforce, sought-after training courses offering per diem allowances, appropriate infrastructure and equipment, there are most often "partners" (this term, commonly used in the discourse of local actors, refers to funding from external interventions).

Another major problem is related to inequalities. We identify four types of inequality based on the research results.

The first is reflected in geographical disparities, such as in the Tahoua region, where exposure to NCD risks is increased by the influx of food and pharmaceutical products harmful to health from neighboring Nigeria.

The second relates to the governance of the health system, which, while promoting decentralization through the concept of health districts, in fact results in a low presence of programs in peripheral rural areas. Specialized care is concentrated in urban centers. Security crises have exacerbated this situation, as certain localities, particularly in the Tillabéri region, which were previously relatively well served, have become beyond the reach of health interventions.

The third type of inequality, and not the least important, is related to the interventions of PTFs and international NGOs, which play an important role at all levels of the fight against NCDs: provision of materials and inputs, involvement in national workshops, community-level activities, production of field data, advocacy with donors, training, awareness-raising, and screening during global awareness days, etc. Their interventions have a real impact on NCD control policies, but because they operate through pilot

projects, they paradoxically produce inequalities between covered and uncovered regions. Sometimes, it is even the central level that is disadvantaged, contrary to expectations. Thus, the PNLMNT lacks logistical and financial resources compared to wealthier districts in the regions. Similarly, "while in the Madaoua health district, 93.8% of the health facilities visited reported having a protocol for the diagnosis and treatment of hypertension, in the Niamey V district, no health facility has such a protocol" (*see* quantitative report). In addition, the vertical modes of action of partners, according to their priorities, create inequalities between pathologies: for example, the fight against cancer has its own infrastructure and autonomous funding.

Finally, the fourth type of inequality is social, at the individual level. The very low access to NCD care for rural populations is linked to the limited coverage of NCD control interventions. But we must also take into account popular perceptions of NCDs, such as the belief that hypertension is a disease of rich people, a disease of those "who rest." Poverty is an important variable in the use of NCD services. The cost of treatment and the distance to primary and specialized care facilities exacerbate the disease among the poorest. In addition, the recent political crisis and ECOWAS sanctions have had a much greater impact on the poorest, with constant power cuts and drug shortages. Under these conditions, many people turn to "traditional" medicine, which is less expensive and more accessible, as an alternative to conventional medicine, especially since it offers hope of a cure that conventional medicine does not. Wealthier populations, on the other hand, can resort to other alternatives such as seeking care outside the country.

The same inequalities can be seen among healthcare professionals. We have seen medical CSIs where doctors do not have the equipment and products they need to do their job properly. Some are forced to pay for basic work tools such as stethoscopes out of their own pockets.

Finally, we should mention the structural dysfunctions within healthcare facilities. Although not discussed in detail in this report, they nonetheless constitute obstacles to the implementation of NCD policies. We will briefly mention a few of them here: the prevalence of petty corruption, contempt for anonymous users, frequent absenteeism, refusal to work in rural areas, poor record-keeping of epidemiological data, *per diem* pay remaining the primary motivation for training, supervision having little impact on healthcare practices due to clientelist arrangements, rarity of formal sanctions, desertion of public structures for private clinics considered more lucrative, etc.

A second level of interpretation relates to the strategies of actors. Several studies have shown the role of these actors in the implementation of health programs: protocols and manuals, rules and program guidelines are often far removed from the actual practices of actors (circumvention, rejection, partial adoption, etc.). Admittedly, these practices are often the cause of malfunctions. But they are also sometimes positive initiatives, particularly those emanating from actors who are keen to do the right thing, whom we call "local reformers":

> "Reformersand innovators from the inside are not locked into scrupulous compliance with official norms and procedures. They know that, in local contexts and given the practical norms of staff, these are often inapplicable as they stand. They start from day-to-day constraints and try to move the lines, to make a few realistic improvements, which may appear minimal from the point of view of a ministry (and even more so from the point of view of Geneva or Washington), but which are nevertheless significant steps forward at the scale of a service, a commune, a dispensary, a college, a court, or a police station. " (Olivier de Sardan, 2025: 273).

Thus, faced with the constraints of caring for poor patients, some caregivers have adopted a strategy of spreading out examinations that should be done simultaneously: "We are often forced to split up the assessment. To do it over a very long period of time (...)" (*see* qualitative section report).

The same is true for patients, who face multiple constraints and who, as both affected parties and full participants in their treatment, develop various strategies:

1) expanding social networks, including transport providers, patient associations, and researchers;

2) relying on the work of caregivers within the family unit and in health services;

3) for civil servants, seeking assignments to urban areas in order to be closer to specialized care, or taking steps to seek treatment elsewhere;

4) learning to store products with the means at hand, such as: "they put the insulin bottle in plastic and bury it in a cool place, others use a thermos containing ice to store it". (*see* qualitative report)

5) Increase the number of sources of information

6) Adopt a combination of conventional and "traditional" care.

There are insufficient examples because the surveys did not really focus on these palliative strategies, which are so important and yet so little explored

by socio-anthropology in the field of health. This gap calls for further investigation in additional surveys.

Finally, in this research, we focused on mental disorders resulting from the two NCDs investigated (diabetes and hypertension). These remain largely neglected by the public authorities. However, in the field, we were repeatedly challenged by both patients and health workers. It suffices to recall these snippets of sentiment in the gaps between the discourse: “If the doctor sees two cases of these patients a day, he becomes stressed and tired”; “(...) I experienced it firsthand (...). (...) I was worried (...). (...) I was extremely stressed if we lost a life like that”; "(...) I can't force them to prepare me separately. They'll get tired of me."

These emotional categories are another avenue to explore further, whether they relate to local healthcare governance at the macro, meso, and micro levels, or whether they arise from the intersection of the burden of disease and the multiple expressions of power between generations, genders, and in the caregiver-patient relationship.

Finally, we offer a few proposals for action that should be discussed in upcoming co-production workshops.

Advocacy must be carried out with Niger's health and political authorities, in particular **by giving priority support to Nigerien associations[7] concerned so that they are the ones on the front line** (rather than international institutions), in order to:

· **make** diagnostics, testing, and care accessible to rural populations and vulnerable urban populations **by integrating them into cost recovery**

· provide extensive training to frontline health workers in diagnosis and care

· **ensure the long-term availability** of the inputs needed for diagnostics, testing, and care at CSI level

· **coordinate** and harmonize the actions of PTFs and NGOs

[77] It should be noted that the absence of a national advocacy association for people with or affected by diabetes and hypertension hinders the fight against these diseases: the implementation of more effective health policies on HIV and sickle cell disease owes much to the existence of such associations, in Niger as in other countries.

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This report is an outcome of the research program

"STOP NON-COMMUNICABLE DISEASES PROGRAM (STOP-NCD)," funded by the *National Institute for Health and Care Research* (NIHR), United Kingdom (*https://nihr.ac.uk/*)

LASDEL (Laboratoire d'études et de recherches sur les dynamiques sociales et le développement local) is a social science research center based in Niger and Benin, whose main areas of focus are the delivery of public services, the implementation of public policies and interactions with users (health, hydraulics, pastoralism, education, justice, security, etc.), local authorities and decentralization, and the intervention of development institutions.

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