

ASSESSMENT OF THE IMPLEMENTATION OF THE CHANGING DIABETES IN CHILDREN (CDiC) PROGRAMME IN CAMEROON

Christiale Feuatsap Kenne
RSD Institute, Yaounde, Cameroon



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How this policy brief was developed:

This policy brief is based on the research project “Description and Analysis of the Implementation of the Changing Diabetes in Children (CDiC) Programme in Cameroon”. The research was conducted under the guidance of RSD Institute, Cameroon, and benefited from the incentive grant for young researchers provided by the World Health Organization Global NCD Platform and UNITAR’s Defeat-NCD Partnership in collaboration with the Alliance for Health Policy and Systems Research.



What is this policy brief about?

This policy brief presents the findings of a mixed-methods approach study to analyse the implementation status of the Changing Diabetes in Children (CDiC) Programme in Cameroon, its challenges and ways to ensure its future sustainability.

Who is this policy brief for?

This policy brief primarily targets national, regional and local health policy-makers in Cameroon, however other decision-makers, practitioners and researchers interested in T1D programmes may find this work relevant.

This policy brief includes:

- Description of the Changing Diabetes in Children (CDiC) Programme in Cameroon, and the key challenges it faces
- General implications and recommendations for ensuring the sustainability of CDiC

This policy brief does not include:

- Strategies to implement the provided recommendations
- Comparison of several viable policy options and recommendations on the best option

PROBLEM STATEMENT

- Type 1 diabetes (T1D), common among children and adolescents, requires a life-long insulin replacement with either multiple daily insulin injections, insulin pump therapy, or an automated insulin delivery system for survival.
- The Changing Diabetes in Children (CDiC) Programme in Cameroon was set up to provide free comprehensive care to children and young adults diagnosed with T1D.
- Some of the key stakeholders who were present at the start of the Programme in 2010 are no longer actively involved in the Programme causing a reduction in funding and the availability of insulin-related accessories.
- A possible barrier to obtaining scarce government funds is the perceived small scale of the T1D disease burden in children and adolescents.
- The CDiC programme in Cameroon is still to develop a clear sustainability plan, which probably further jeopardizes the ability to mobilize additional internal and external funding.

IMPLICATIONS

- The CDiC Programme is overall well structured, with a motivated staff at the central coordination unit, and established work mechanisms. However, the reduced engagement of key stakeholders / funders, and the inability of the Programme to ensure the necessary amount of funding / support may lead to adverse health outcomes of children and adolescents with T1D who rely on the CDiC support.
- The government of Cameroon should find novel local and international stakeholders to give a fresh impetus to the Programme and ensure long-term sustainability.
- In the meantime, it is advisable to clearly define transitional arrangements and sustainability plan with the current stakeholders, to ensure that the Programme continues to provide life-saving care to children and young people in need.
- To increase opportunities for funding, it is advisable to raise awareness of potential donors about the T1D disease burden in Cameroon.

1. FRAMING THE PROBLEM

BACKGROUND

Type 1 diabetes (T1D), formally referred to as 'juvenile diabetes' or 'insulin-dependent diabetes mellitus', is an autoimmune disease resulting from the destruction of insulin-producing pancreatic beta cells, leading to an absolute insulin deficiency [1, 2]. The condition, therefore, requires a life-long insulin replacement with either multiple daily insulin injections, insulin pump therapy, or an automated insulin delivery system for survival [2-4]. Although the disease can occur at any age, it is very common among children and adolescents, and it's estimated to affect about 1 million people worldwide. However, the epidemiology of the condition is known to vary considerably from one geographic region to another [5].

The epidemiological burden of T1D in Africa is poorly understood due to the lack of robust epidemiological studies and registries. The

recent International Diabetes Federation (IDF) atlas reports that an estimated 59,500 children and adolescents under 20 years are affected by T1D in Africa [6]. This shows an increase in the prevalence from the previous atlas, reporting an estimated 25,800 individuals within the same age group [7].

In addition, T1D in African populations is historically associated with premature mortality, which may further confound epidemiological data. These very high mortality rates have been attributed to misdiagnosis and poor insulin access [8, 9]. In order to reduce the premature mortality mainly attributed to poor insulin access and inappropriate treatment even when insulin is available [10, 11], the Novo Nordisk company, in collaboration with other international charities and countries' local ministries of health, in a public-private partnership, initiated fourteen years back

the Changing Diabetes in Children (CDiC) Programme, [12] which currently runs in 26 countries in sub-Saharan Africa.

The CDiC Programme in Cameroon was originally designed to run for five years, from 2010 to 2014, providing comprehensive care for children and young adults diagnosed with T1D. To date, the Programme has been running for over ten years, involving multiple stakeholders with varying levels of participation. Several

partners involved at the beginning of the Programme are no longer actively engaged.

The aim of this study was to assess the engagement level of various stakeholders in the implementation process of the CDiC Programme in Cameroon. The findings should help to strengthen government commitment and the recruitment of new sectors and civil society to enhance the sustainability of the Programme.

Where can I find out more about diabetes?

The [Global Health Observatory](#), a public health observatory established by the World Health Organization, monitors and shares data on global health, including statistics by country and information about specific diseases and health measures, presented in comprehensive analyses and with interactive visualizations.

The [International Diabetes Federation](#), a non-profit umbrella organization of more than 240 national diabetes associations in 161 countries and territories, collects and shares information about diabetes, promotes standards of care and prevention, and provides education for people living with diabetes and their healthcare providers.

METHODS AND DATA SOURCES

Study design, setting and time period

We used a mixed methods approach with qualitative and quantitative components to analyse the implementation of the CDiC Programme in Cameroon. The study took place mainly at the CDiC Coordination Unit, which is based at the National Obesity Centre described elsewhere. This unit serves as the focal point of the CDiC Programme in Cameroon, with direct links to the various established clinics throughout the country.

Data collection and analysis

The **document review** aimed to identify high-level administrative documents of the CDiC Programme and the main objectives defined at the beginning of the Programme. It consisted of going through the Programme memo at the Ministry of Public Health or the partner, Health of Population in Transition (HoPIT), to locate these key documents.

Key informant interviews were conducted with key leaders / staff, decision-makers and implementers of the CDiC Programme in different sectors. Key informants were identified using a purposive sampling

method. The key informants identified were the National CDiC Focal Point, the National CDiC Key Opinion Coordinator, the Ministry of Health CDiC Focal Point and nurses working in different CDiC clinics in the country.

The **quantitative data review** collected data from the medical records of the study participants. This included data on socio-demographic characteristics, age at enrolment and exit from the project, age at diabetes diagnosis, duration of diabetes, type of exit from the project (lost to follow-up, death, overage), glycaemic control, complications of diabetes, comorbidities, and, where applicable, causes, circumstances, and place of death.

In some cases, direct interviews were conducted with clinic health staff to ascertain the circumstances and cause of death. Telephone calls to the parents of deceased children were also useful in some cases to clarify the circumstances of death. Causes of death were presumed based on the diagnosis mentioned in the medical records or the clinical and/or paraclinical features presented by the patient at the time of death and based on the verbal autopsy.



Photo: WHO

2. KEY FINDINGS

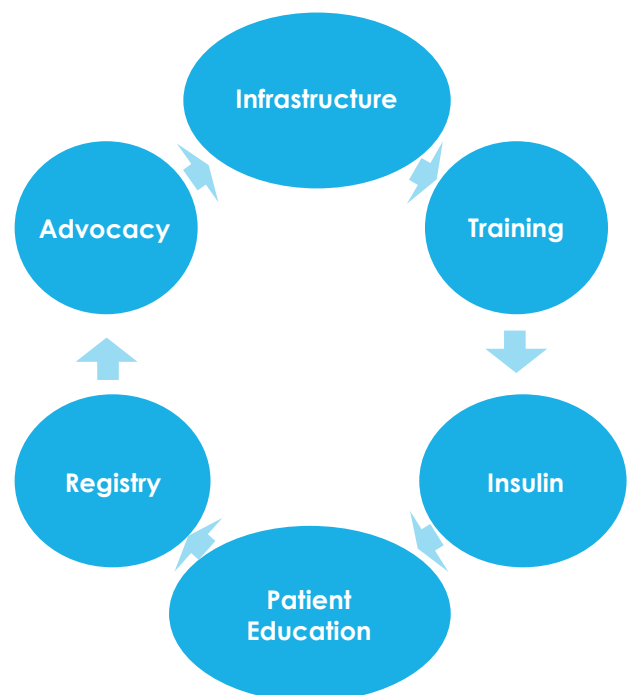
THE FRAMEWORK MODEL OF CARE OF THE CDiC PROGRAMME IN CAMEROON

The overall care model used in the CDiC Programme has six key components and has been developed as a collaborative effort between all international and local stakeholders. Figure 1 illustrates the Framework model of care in the CDiC Programme:

1. Infrastructure, improvement of existing infrastructure and provision of medical and laboratory equipment to establish centres for the treatment of children and young adults with T1D;
2. Training, training and education of healthcare professionals and diabetes educators;
3. Insulin, provision of human insulin and blood glucose monitoring equipment and supplies;
4. Patient education, provision of patient education materials for children and their families;

5. Registry, establishment of a patient registry system;
6. Advocacy, building advocacy and sharing best practices.

Figure 1. Framework model of care in the CDiC Programme



CDiC INSTITUTIONAL PARTNERS AND THEIR INVOLVEMENT IN THE CDiC PROGRAMME IN CAMEROON

We identified six key institutional partners (stakeholders) that were involved at the start of the CDiC Programme in Cameroon. **Table 1** below shows the key institutional partners and their level of involvement in the Programme.

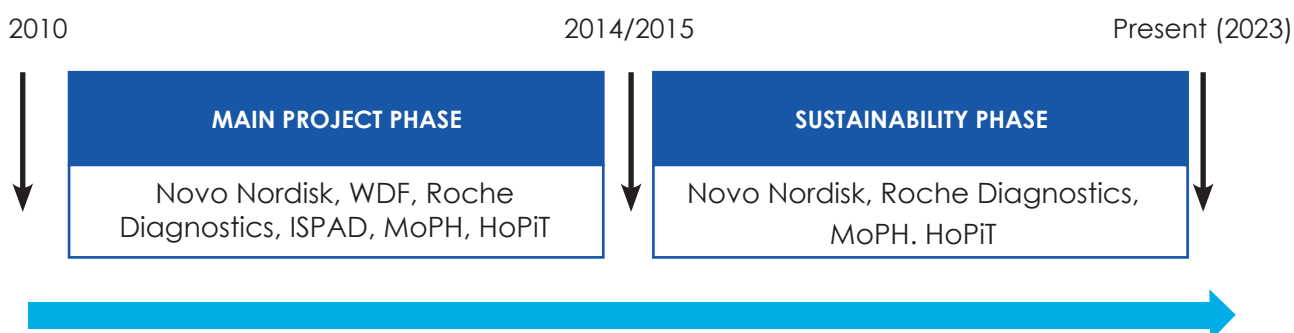
Table 1: Changing Diabetes in Children Programme: Implementation stakeholders and levels of involvement.

No	Institutional partners	Sectors & levels of involvement	Roles of partners
1	Novo Nordisk	Macro level (International)	Free insulin provision, including insulin accessories, programme administration and supervision
2	World Diabetes Foundation (WDF)	Macro level (International)	Equipping the centres, financing training and education materials
3	Roche Diagnostics	Macro level (International)	Provision of glucose metres, blood, and urine strips for monitoring
4	International Society for Paediatric and Adolescent Diabetes (ISPAD)	Macro level (International)	Production of the training manual for the management of diabetes in children and adolescents and elaboration of training of staff
5	Ministry of Public Health of Cameroon (MoPH)	Meso level (National)	Facilitation of administrative procedures, provide infrastructure and staff, aid fiscal exoneration and provide monitoring and evaluation through the steering committee
6	Health of Population in Transition (HoPiT)	Micro level (National)	Implementation, monitoring, and evaluation of the Programme in Cameroon

PHASES OF IMPLEMENTATION OF THE CDiC PROGRAMME IN CAMEROON

We identified two main phases of implementation of the CDiC Programme in Cameroon, which were the main project phase (2010 – 2014) and the continuation phase (2015 – 2023, Present date) as shown in **Figure 2**. These implementation phases were arbitrarily set following funding, involvement of stakeholders and local priorities.

Figure 2: Timeline of implementation of the CDiC programme in Cameroon



EXPECTED OUTCOMES BASED ON THE INITIAL OBJECTIVES OF THE CDiC PROGRAMME IN CAMEROON

The initial objectives of the CDiC programme were set at the start of the programme in 2010 and were recorded in the cooperation document signed by the Cameroon Ministry of Public Health and the international and local partners. **Table 2** summarises the main indicators and the expected and actual results.

Table 2: Objectives at the start of the programme and the results reached during the phases of implementation of the CDiC programme.

No	Items	Expected Results	Initial Phase	Sustainability Phase
1	Clinics/ Specialised centres	15	9	2
2	Enrolled participants	500	536	741
3	Trained health care providers (HCP)	664	662	41
4	Education (participants and family members)	- Education seminars - Camps - Workshops	- Education seminars - Camps - Workshops	- Education seminars - Camps - Workshops
5	Registry	- Medical records - Electronic registry	- Medical records	- Medical records - Electronic registry
6	Insulin, syringes, glucometers, and strips	- Free consultations - Free insulin, syringes, glucometers and strips - HbA1c monitoring	- Free consultations - Free insulin, syringes, glucometers and strips - HbA1c monitoring	- Free consultations - Free insulin, syringes, glucometers and strips - HbA1c monitoring

CHALLENGES IN THE IMPLEMENTATION OF THE CDiC PROGRAMME IN CAMEROON

We found that the CDiC Programme in Cameroon has faced several challenges that affected its course and implementation:

- Reduction in the number and involvement of key institutional stakeholders, which has also led to a reduction in the Programme's funding.
- The inability of the Programme to attract new committed health workers.
- High turnover of trained health workers due to competition from other hospital programmes.
- Poor handling of paper medical records and the lack of an electronic health record system.
- Lack of appropriate diabetes education materials for newly diagnosed children with T1D and their families.
- Reduced supply of glucose monitoring accessories such as glucose meters and glucose strips which are important for monitoring; inability for some families to provide for batteries or new glucose meters when they are damaged; and inability of some children to travel to clinics for routine care and insulin refills.



3. IMPLICATIONS AND RECOMMENDATIONS

The CDiC Programme is overall well structured, with a motivated staff at the central coordination unit. The main weakness, especially within the Programme's continuation phase, has been the reduction in support due to the withdrawal of some key stakeholders and overall reduction funding. Hence, the main recommendation for the Government of Cameroon is to **identify novel local and international stakeholders to give a fresh impetus to the Programme and ensure long-term sustainability.**

- The Programme's **sustainability is a major concern**, transitioning from donor support to a viable locally funded initiative. These challenges are due to policy and Programme implementation strategy and are also related to the level of involvement of both non-state and governmental actors, though it has been suggested that in the long term, the government must be responsible for providing insulin to children. It is therefore advisable that when implementing such partnerships, **transitional arrangements and sustainability ought to be at the forefront of stakeholder discussions.**
- Compared with other diseases, one possible **barrier to obtaining scarce government funds is the perceived small scale of the T1D disease** burden in

children and adolescents. Much of the disease burden is hidden, as many remain undiagnosed, fail to receive treatment, and eventually die. Although awareness has improved recently, with an increase in the number of campaigns related to NCDs, it remains low compared with awareness of communicable diseases. It is recommended to consider **initiatives / approaches to raising awareness of potential donors and funders about the T1D in Cameroon.**

- The CDiC programme in Cameroon is yet to develop a **clear sustainability plan**. The absence of such a plan may jeopardize the ability to mobilize both internal and external funding to continue and ensure the long-term survival of the Programme's activities. The CDiC Programme is **strongly recommended to develop a comprehensive sustainability plan stipulating several scenarios of funding sources.**
- The government of Cameroon is currently progressively deploying Universal Health Coverage (UHC). The inclusion of diabetes care services to these children and young adults who extremely need care into the UHC package is **highly recommended and may serve as a strong foundation for future sustainability.**

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