



Policy Paper

Diabetes and other cardiovascular risk factors

Technical Resources Division
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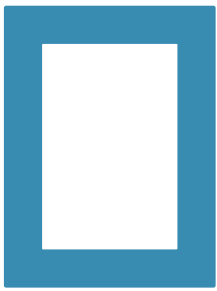
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Policy Paper

Diabetes and other cardiovascular risk factors

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“Cardiovascular disease is one of the leading causes of death for people with diabetes and can account for 50% or more of deaths due to diabetes in some populations.”

“The economic impact of diabetes can be huge, through spending a large proportion of income on care, loss of income or work, or reduced productivity. For example, in India up to 25% of annual household income is spent on diabetes care. The economic burden of diabetes and disability from complications can push poor families into destitution and poverty. At a national level the diabetes epidemic threatens to overwhelm health systems, and potentially reverse development gains made in low-income countries. As a result, efforts to eradicate extreme poverty will be impeded.”¹

Foreword

This document is an operational guideline produced specifically for Handicap International's programmes. It is intended to provide them with guidance and a framework for each stage of the project cycle (project development, implementation, monitoring and evaluation) for projects tackling the theme of diabetes and other cardiovascular risk factors (CVRF).

It follows on from the preliminary framework document² drawn up in 2006 when Handicap International first started working on the theme of diabetes. Since then, diabetes prevention and control projects have been implemented by Handicap International in Nicaragua, the Philippines, Mali, India and Thailand, followed by Kenya, Burundi and Tanzania. These experiences have allowed us to enhance the preliminary framework document and set new development priorities to 2015.

This revision mainly involved:

- Integrating the lessons learned since 2006, some of which have been formalized through a lesson learning process³
- Updating the data presented in the 2006 preliminary framework document
- Changing the format to make it more operational
- Bringing the document in line with Handicap International's mission, actions and principles of intervention (as updated in 2009) and with the 2011-2015 federal strategy
- Integrating a systemic vision of access to services, in accordance with the approach implemented by the Technical Resources Division⁴.

This policy paper is mainly focused on diabetes, but also covers potential synergistic actions on other cardiovascular risk factors (arterial hypertension, lipid disorders, excess weight etc.). Indeed, for Handicap International, diabetes has been a gateway into working on non-communicable diseases. It has allowed us to start supporting health and social systems through the changes required to manage these chronic diseases as well as acute diseases. The HIV/AIDS epidemic has already contributed to this change in health system organisation, in particular in Sub-Saharan Africa.

Instead of adopting a vertical, disease-based approach, Handicap International is moving towards a more integrated approach to non-communicable diseases. For example, the projects in the Philippines and Nicaragua have already moved in this direction: since 2009 they have integrated both diabetes and other cardiovascular risk factors.

In September 2011, a United Nations High-level Meeting on Non-communicable Diseases was held in New York. The international context regarding State and funding body commitments is therefore set to change over the next two years.



This international context and the experience acquired by the programmes will allow Handicap International to enhance and redefine its frameworks and priorities as of 2015. Furthermore, the association will also develop parallel technical notes and/or framework documents on the development of projects incorporating other non-communicable diseases such as chronic respiratory diseases and cardiovascular diseases. Handicap International's added-value and expertise in rehabilitation work with people living with disabilities resulting from these non-communicable diseases will further develop as these "new diseases" are integrated in our work.

This document is intended as a complement to other internal documents on the theme of diabetes, notably the Needs Assessment Guide on Diabetes Control and Prevention Projects⁵, and Handicap International strategic positioning documents on health^{6,7}. It presents the theme of diabetes, the reasons for Handicap International's work in this sector, the target populations and intervention strategies. The reader will also find an analysis of the theme using the disability creation process model; examples of the objectives, expected results, activities and indicators used to draw up a logical framework; a job description for the position of Diabetes / Non-communicable Diseases Project Manager etc.

Dr Pauline Guimet
Dr Estelle Pasquier



Summary

This document is primarily aimed at Handicap International's programmes, and is intended to provide them with guidance and a framework for each stage of the cycle for projects tackling the theme of diabetes (associated with other cardiovascular risk factors). It is a complement to the Needs Assessment Guide on Diabetes Control and Handicap International's strategic positioning documents in health. Diabetes offers a gateway into setting up more integrated action on non-communicable (disabling) diseases. This document specifically deals with Handicap International's action on diabetes, but explains how step-by-step, the strategy will integrate other non-communicable diseases in a less vertical manner, notably with regards to primary prevention work, access to medical products and laboratory analyses and advocacy.

Diabetes is a chronic disease which develops when the pancreas is no longer capable of producing enough insulin, or when the organs in the body become insulin resistant. This results in high blood sugar levels: a condition called hyperglycaemia. If the diabetes goes untreated or is not correctly managed, chronic hyperglycaemia will induce disabling symptoms in the short term (tiredness, thirst, increase in urine volume), and multiple disabling complications in the long term, including sight loss, stroke (causing paralysis), heart failure, renal failure, diabetic neuropathy, which can lead to lower limb amputation.

According to the World Report on Disability⁸, estimations show that non-communicable diseases are responsible for 66.5% of the years lived with a disability in low and middle-income countries⁹. 90 % of non-communicable diseases deaths under the age of 60 occur in low and middle income countries. According to the WHO, "non-communicable diseases, mainly cardiovascular diseases, cancers, chronic respiratory diseases and diabetes, are the main cause of death and disability in the world, representing 63% of deaths. 80% of cases of premature cardiovascular diseases and stroke, 80% of type 2 diabetes and 40% of cancers could be avoided by eating healthily, doing regular physical exercise and not smoking." According to the International Diabetes Federation "it is estimated that around 285 million people throughout the world, i.e. 6.6% of people in the 20 - 79 year age group, will develop diabetes in 2010, of which 70% live in low or middle-income countries. These figures will probably increase by over 50% over the next 20 years unless prevention programmes are put into place. By 2030, it is estimated that there will be around 438 million people suffering from diabetes, representing 7.8% of the adult population."

The main underlying causes of non-communicable diseases are urbanization and the ageing population. The risk factors for non-communicable diseases are divided into two categories, modifiable (poor diet, sedentary lifestyle, smoking) and non-modifiable (age, hereditary and genetic factors). Non-communicable diseases can cause individuals and families to be plunged into poverty and caught up in a spiral of disease and poverty. In many low or middle-income countries, the fight against poverty requires investment in programmes to prevent non-communicable diseases."

For the moment, Handicap International implements projects on this theme in development contexts. Handicap International is committed to diabetes and other cardiovascular risk factors control for three main reasons:

- In our intervention zones, the needs concerning non-communicable diseases are huge (especially for diabetes and cardiovascular risk factors)
- Diabetes, as a disabling disease, falls within the organisation's scope of activity
- International mobilisation against this epidemic is still emerging.

The year 2011 was important for non-communicable diseases globally, particularly regarding international mobilisation through the United Nations High-level Meeting on Non-communicable Diseases, held in New York in September 2011, mobilising 133 States, of which 34 were represented by Heads of State.

This global interest is one reason why diabetes, along with other chronic diseases, features as one of the priority themes for achieving impact, as defined by Handicap International in its 2011-2015 federal strategy.

Handicap International adopts a comprehensive approach in order to:

- Prevent diabetes and other non-communicable diseases through actions targeting risk factors
- Ensure prevention, health care and rehabilitation services are available, adapted and accessible
- Build capacities of local partners, such as Ministries of Health, local NGOs etc
- Promote social participation
- Promote the rights of people with diabetes and other cardiovascular risk factors
- Ensure policies and services include vulnerable people and in particular those with disabilities.

In most developing countries, awareness of the problem of diabetes and non-communicable diseases is a recent phenomenon. Some programmes have been developed locally with a small number of international stakeholders. This means a large range of possible interventions are open to Handicap International. Based on an initial needs assessment, the intervention methods will depend on the context and existing local resources (analysis of stakeholders, available health care offer, notably in the field of rehabilitation).

The reinforcement of health services and access to medication is essential for improving the health of people with diabetes and other cardiovascular risk factors, as in the vast majority of cases, a change in lifestyle is not sufficient to manage the disease. According to Handicap International's principles of intervention, the favored level of intervention is that of local services (community-based services, primary and secondary health care centres).

Where it is possible to set up partnerships with other international stakeholders and/or when the local health system already offers quality care management for people with diabetes (and with cardiovascular risk factors), Handicap International focuses its action on its high added-value activities, in particular rehabilitation for people with disabilities resulting from diabetes or other cardiovascular risk factors.

This reinforcement of the health system should be done using a comprehensive, integrated approach to the prevention and control of non-communicable diseases, and to provide care management for chronic wounds and lymphoedema.

The main perspectives regarding diabetes and other cardiovascular risk factors over the next five years, according to the key principles set out in Handicap International's 2011-2015 federal strategy are to:

- Strengthen and consolidate existing prevention and control projects targeting non-communicable diseases such as diabetes
- Develop new projects, focusing specifically on the countries or areas with the lowest Human Development Index (HDI) in Asia, North Africa, and the Middle East. The diabetes epidemic is the worst felt in these regions with low and middle incomes with an average comparative prevalence of between 7.5% and 10% of the adult population, with peaks of up to 18% in some cities in South Asia¹⁰
- Develop Handicap International's added-value in rehabilitation for people with disabilities resulting from diabetes and other cardiovascular risk factors
- Strengthen the link between the treatment of non-communicable diseases, rehabilitation care and psychosocial support
- Develop expertise in strengthening the needs analysis, ordering and distribution systems for drugs and medicines
- Ensure interventions are more inclusive of vulnerable persons, in particular people with disabilities
- Develop Handicap International's approach to primary prevention activities to move towards an integrated approach targeting several non-communicable diseases and a health promotion approach: promoting healthy lifestyle through multi-sectorial responses, combining different types of activities such as education and advocacy.





Philippines, 2011

Principles and benchmarks

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Definitions, importance and context

A

Diabetes, cardiovascular risk factors and non-communicable diseases

The World Health Organization defines “non-communicable diseases” as non-infectious chronic diseases, as opposed to communicable (infectious) diseases. The main diseases in the category of non-communicable diseases are cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. These diseases share certain risk factors: Tobacco consumption, poor diet, sedentary lifestyle, excessive alcohol consumption. This category has been built based on the possibility for implementing joint prevention interventions. Mental disorders, including disorders relating to the use of psychoactive substances (alcohol, drugs), also form part of the group of non-communicable diseases.

These diseases are more likely to develop in people subject to **risk factors known as cardiovascular risk factors (CVRF), mainly diabetes, arterial hypertension, blood lipid disorders (dyslipemia), smoking, excess weight and obesity, a family history of similar diseases.**



Cardiovascular diseases are diseases affecting the heart and blood vessels. The main disabling cardiovascular diseases include:

- Stroke leading to paralysis of certain parts of the body
- Heart attacks leading to heart failure and therefore severe breathlessness at the least effort
- Arteritis of the lower limbs leading to difficulties with walking.

B

Definitions of diabetes

Diabetes is a chronic disease which develops when the pancreas is no longer capable of producing enough insulin, or when the organs in the body become insulin resistant. This results in high blood sugar levels: i.e. hyperglycaemia.

There are **four types of diabetes**¹¹:

- **Type 1 diabetes** is characterised by a lack of insulin secretion by the pancreas due to the total destruction of the cells which secrete this hormone. Insulin is a hormone which allows glucose to pass from the blood into cells. It mainly affects young people (under 30 years old) and has clearly visible symptoms, severe and rapid weight loss, tiredness, hunger, thirst and an increase in urine volume, malaises, stomach pains, loss of consciousness, coma and death if not urgently provided with insulin. Sufferers cannot survive without this vital hormone, administered by injection 2 - 4 times daily. The prevalence of type 1 diabetes varies widely from one country to another. It is lowest in countries with no access to quality health care as survival rates are extremely low.
- **Type 2 diabetes** is characterised by progressive organ resistance to insulin. It mainly affects people aged 30 years and over. While **hereditary and genetic factors** play an important role, this type of diabetes can also result from a lack of physical exercise, a diet high in fat and sugar, excess weight and obesity. It can remain asymptomatic for several years, after which symptoms can remain very low level for a long period of time. This is why, in developing country contexts, where access to health care is difficult, the disease is often not diagnosed until the onset of chronic complications.

Treatment may simply involve following recommendations for a healthy lifestyle, completed if required by oral anti-diabetic drugs, or even once or twice daily injections of insulin in certain cases. This is by far the most common type of diabetes (around 80 - 85% of all people with diabetes).



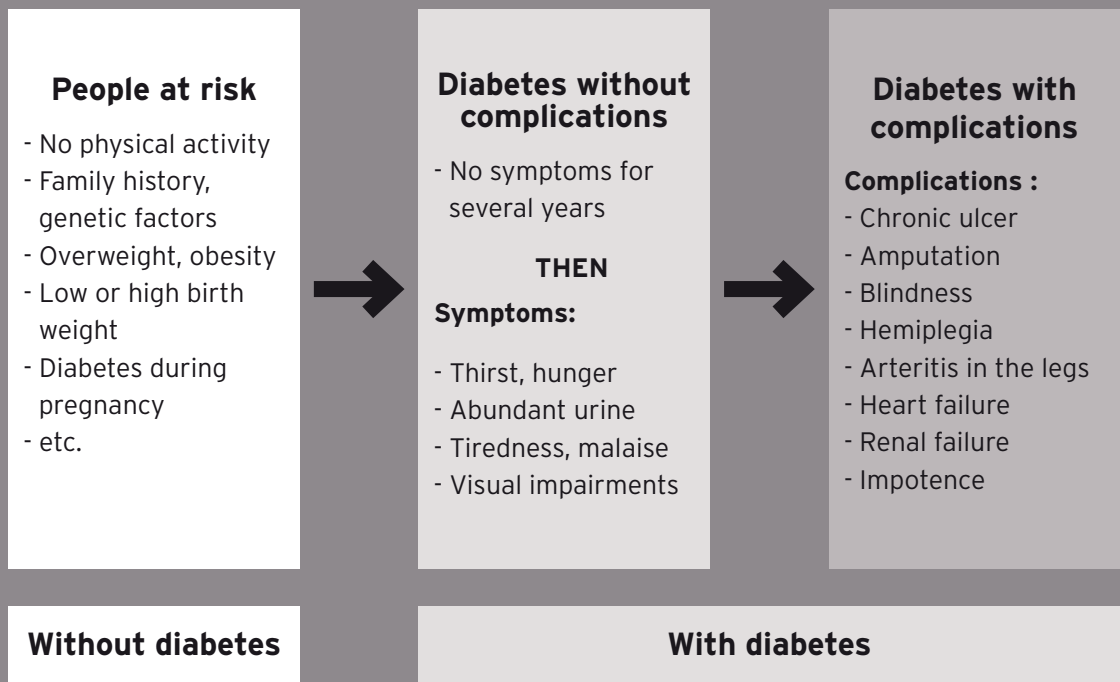
Focus

Type 1 and type 2 classification does not necessarily apply in all contexts. In Sub-Saharan Africa, a specific type of diabetes “ketosis prone diabetes” represents a significant proportion of all total cases^{12,13}. This type of diabetes presents certain type 1 characteristics, such as the need for insulin, and certain type 2 characteristics, such as its prevalence in overweight or obese patients.

- **Gestational diabetes** is a form of diabetes which develops during pregnancy and can cause congenital malformations in the child and complications during birth. Women suffering from gestational diabetes and their child have an increased risk of developing type 2 diabetes several years on.
- **Secondary diabetes** results from the destruction of the pancreas, a genetic anomaly etc.

**Natural history of type 2 diabetes:
evolution of the disease without treatment**

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Why intervene

Handicap International is committed to diabetes control for three main reasons:

- In the countries where we work, the needs, in terms of the diabetes and other cardiovascular risk factors epidemic, are immense
- As a disabling disease, diabetes falls under the organisation's scope of activity
- The international mobilisation against this epidemic is still emerging.

For the moment, Handicap International implements projects on this theme in development contexts.

A

Diabetes, non-communicable diseases and disability

According to the World Report on Disability¹⁴, estimations show that **non-communicable diseases are responsible for 66.5% of the years lived with a disability in low and middle-income countries¹⁵**.

Diabetes, a disabling disease

If not correctly managed, diabetes has a high potential for creating disabilities, related to its symptoms and potential long-term complications.

Long-term disabling complications are as follows¹⁶:

- **Diabetic retinopathy** (10% to 47% of diabetics): The retina is altered due to poor irrigation by the blood vessels. The patient may then become partially or totally **blind**.
- **The obstruction of arteries in the brain:** stroke often results in **hemiplegia or hemiparesis** (1% - 12% of diabetics).
- **Heart failure** leads to severe breathlessness under the slightest effort and chest pains. It mainly results from heart attacks, due to the obstruction of arteries in the heart (1% - 43% of diabetics).
- **Renal failure** results from diabetic nephropathy (0.3% - 33% of diabetics). In the terminal stage patients require dialysis (which cleans the blood through a machine) several times a week or a kidney transplant.

- **Diabetic neuropathy** (nerve lesions, mainly on the lower limbs) develop in 13% - 65% of diabetics and lead to reduced sensitivity in the feet, then the legs making the patient more susceptible to wounds which are slow to heal. Associated with arteritis (obstruction of arteries in the lower limbs), it can result in the onset of multiple **chronic ulcers** (malum perforans pedis/neurotrophic ulcer or **diabetic foot**) and **lower limb amputations**. 0.2% - 4.8% of diabetics are also amputees. 15% of people with diabetes develop foot ulcers during their lifetime; the rate of recurrence of a foot ulcer over the next five years is 70%, and 85% of lower limb amputations in people with diabetes are preceded by a foot ulcer.
- The same neurological complication and obstruction of the arteries can also cause **erectile dysfunction** in men.
- Multiple cerebrovascular complications can, with age, lead to **vascular dementia** (a cause of **intellectual impairment**).
- Living with a chronic disease can cause problems in terms of people's daily lives, grief that is impossible to come to terms with, personality, mood, and behavioural disorders, or even disabling mental disorders (depression, trauma pathologies, phobias, obsessive compulsive disorders etc.). Suffering from a disabling disease often leads to psychological and moral distress which requires specialist help. Chronic diseases are often the cause of **psychosocial and/or mental disorders**.¹⁷

The Convention on the Rights of Persons with Disabilities defines people with disabilities as "Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others."

The **Disability Creation Process** is an approach to which Handicap International refers. This defines people with disabilities as "persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others, justifying the introduction of compensatory measures and work on the environment."

The aforementioned diabetes-related impairments can lead to long-term physical, sensorial, psychosocial, psychological (Refers to "mental" as used in the Convention on the Rights of Persons with Disabilities) and intellectual (dementia) impairments which, in interaction with various environmental and social barriers may hinder the full and effective participation in society of persons living with diabetes and thus place them in disabling situations.

People with diabetes, an at-risk population?

In the WHO World Report on Disability¹⁸, several studies showed that persons with disabilities have a greater risk of developing non-communicable diseases than persons without disabilities. For example, a study has shown that the prevalence of diabetes in persons with schizophrenia is around 15% compared to a prevalence of 2 - 3% in the general population in the same geographical area¹⁹.

This difference may be due to the adverse effects of treatments, but also to the higher prevalence of the behavioural risk factors for non-communicable diseases in certain persons with disabilities compared to persons without disabilities²⁰. Persons with disabilities would seem to be more likely to be obese, to smoke and to do less physical exercise than persons without disabilities^{21, 22, 23, 24}.

Diabetes and the Disability Creation Process

Handicap International's approach to disability is based on the Disability Creation Process (DCP)²⁵, developed by Patrick Fougeyrollas. Beyond the impairment itself, this approach places a focus on the processes and mechanisms for creating "disabling situations". With the DCP, disability is not seen simply as the result of impairment, but as an interaction between different factors which either will or will not place someone in a disabling situation. Both environmental and personal factors play an important role in determining levels of social participation.

Diabetes can be analysed using the Disability Creation Process (DCP). Personal and environmental factors interact with the life habits of people with diabetes and can contribute to their full social participation or, on the contrary, to the creation of a disabling situation.

The DCP provides a holistic model to analyse the different factors that influence the social participation of individuals living with diabetes. By identifying these factors and explaining how they are interlinked, the DCP approach can help to highlight key areas for intervention, in order to improve an individual's participation, regardless of the stage of the disease.

The person is therefore at the heart of this process, to ensure that all the different factors which may impact on his or her life are incorporated into any support provided. For example, if some of the middle onset, diabetes-related impairments, such as loss of visual acuity or nerve damage, are not balanced by an adequate social support from the peer network, or alleviated by proper legislation that facilitates access to infrastructure, they can contribute to the progression from impairment to situation of disability.

However, any given person with diabetes may live in a situation of full social participation or restricted participation or even a disabling situation.

Risk Factors

- **Biological** risk factors
- Risk factors related to **individual behaviour**
- Risk factors related to **the physical environment**
- Risk factors related to **social organisation**
- Risk factors related to **social behaviours**



Personal Factors

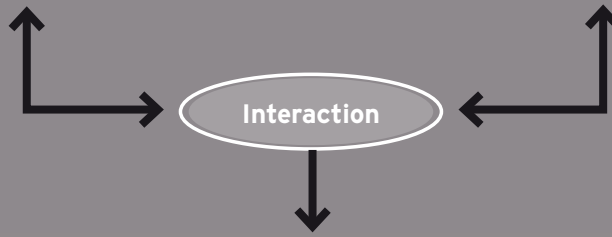
Physical factors <ul style="list-style-type: none">- Pancreas- Insulin receptor- Arteries- Nerves- Lower limbs- Eyes- Kidneys- Heart- Brain- Etc. Psychological factors	Physical capacities <ul style="list-style-type: none">- Sensibility- Motricity- Walking- Seeing- Breathing- Speaking- Thinking- Etc. Psychological Capacities
--	--

Impairment ↔ Integrity Incapacity ↔ Capacity

Environmental factors

- Professional environment
- Education / information environment
- Availability of primary and specialised health services
- Familial environment
- Economic environment
- Social environment
- Etc.

Obstacle ↔ Facilitator



Life habits

- Nutrition
- Interpersonal relationships
- Leisure activities
- ...

Restricted participation ↔ Full social participation

– The risk factors for developing diabetes

The following **impairments** are related to **biological risk factors**:

- Modifiable: Excess weight and obesity, low birth weight and over-feeding after birth, gestational diabetes, mother malnutrition,
- Non-modifiable: Old age, family history of type 2 diabetes, genetic factors related to ethnic origin (Asia, Latin America and Africa).

Risk factors related to **individual behaviour**:

- Diet high in fat and sugar and low in fibre
- Lack of physical exercise
- Regular self-monitoring of blood glucose (SMBG) and the administration of medication (oral or injectable), and foot care require a significant personal and a time commitment. If this daily care is not carried out, the patient risks developing complications or seeing these worsen in the case of those already suffering from complications.

Risk factors related to the **physical environment** can also be risk factors for impairments and disabilities (non-comprehensive list):

- **Urbanisation and economic transition** have led to lifestyle changes with increasingly sedentary lifestyles (lack of physical exercise) and poor diet
- Access to **sports and leisure facilities** reduces the risk of diabetes.

Risk factors related to **social organisation**:

- **Organisation of primary and secondary health services and systems**: The absence of a national policy on this increasingly important public health issue is a risk factor for impairments (existence or absence of a system for covering health costs, including for the poorest populations etc.). The availability and quality of health care for diabetic

patients are also risk factors for the onset or worsening of impairments (screening, patient education, access to treatment, medical, paramedical and rehabilitation care: Nutritionists, chiropodists, orthoprosthetic technicians, etc.).

- **Educational environment**: The availability of information and education on the disease, its risk factors and the disabilities it can lead to, has an impact on individual's choices about lifestyle.
- **The dietary and advertising context**: the presence of fast food, or street stalls selling food high in fat and sugar, supported by advertising that promotes this type of diet (sometimes even making false claims regarding fake anti-diabetic drugs for example or incorrect dietary information) creates an environment that fosters increased risk of developing diabetes.

The risks related to **social behaviors**:

Nutritional and sporting habits within a given society, **awareness** of the diabetes problem and its risk factors amongst the general population, and **cultural representations** can greatly influence the onset of diabetes and the lifestyle of those already suffering from the disease.

– Personal factors

- The **biological factors** (see diagram),
- **Personal psychological factors** refer to the extent to which a person has a positive perception of their disease and the disabling complications it may lead to: some diabetics will accept their pathology without much difficulty, for others it will be a source of anxiety and a feeling of constraint, or even inferiority which may lead to desocialisation.

─ Environmental factors

These also encourage or discourage the full social participation of the person with diabetes whether they also have a disability or not. See below for a non-comprehensive list of examples:

- **The professional environment and educational system** may or may not facilitate full social participation. Some employers or educational establishments do not accept diabetic staff or students taking insulin through fear of hypoglycemia. This situation is an obstacle to the full social participation of persons with diabetes.
- The existence of a **tertiary health system** (rehabilitation, orthopaedic fitting centres, etc.) encourages the social participation of persons with diabetes with impairments/disabilities.
- The person's **family environment** is a potential facilitator if it provides support for the person with diabetes (with or without disabilities) in terms of their lifestyle, diet and daily care. Conversely, in some families, the person with diabetes may be excluded from sharing the communal family meal due to a lack of knowledge on nutrition, or the family may not support the person with diabetes in their efforts to change their lifestyle.
- Depending on the **economic environment**, the percentage of the family budget represented by health costs may hinder or facilitate full social participation. If the disease has a heavy financial impact, this may result in delays in receiving treatment, difficulties accessing health care or even socioeconomic consequences for the

family as a whole (in India, 18% - 59% of the household's income is used to cover the cost of treatment for the person with diabetes^{26, 27}).

- The **social environment** can also play a facilitating role depending on the ability of public-sector or civil society organised social services to provide social and personal support for the person with diabetes.

─ Interaction with life habits

These two types of factors (personal and environmental) will interact with the diabetic patient's personal life habits, allowing them to lead a life of full social participation or meaning they find themselves in a disabling situation. It is important to note that these life habits are specific to each individual according to their culture and age etc. These habits should be analysed individually for each person. Here are some examples of life habits which may or may not encourage the full social participation of persons with diabetes.

- **Nutrition:** A person who is used to a diet that is high in fat and sugar will find it more difficult to achieve full social participation, as they will be obliged to change their eating habits and adapt family habits, as they may be obliged to have separate meals (communal dishes in Mali for example). Conversely, someone who is used to eating a balanced diet will find it easier to achieve full social participation. An enabling environment, promoting balanced diet, will be key for the person to achieve full social participation.

- **Leisure:** People who do not do play sports will need to adapt to do a minimum amount of physical exercise each day. Another example, a person with diabetes who does a lot of sport and is taking insulin may need to restrict their activity in order to avoid hypoglycemia. However, they will be able to achieve full social participation when they manage to find the right balance between their nutritional needs, their need for insulin and their high levels of physical activity. For this, an enabling environment for physical activity will be indispensable.

- **Interpersonal relationships:** Depending on the person, these relationships may be more or less disrupted by the disease. Generally speaking, relationships with other people are intimately connected with personal psychological factors (acceptance of a constraining chronic disease) but also to cultural environmental factors. Furthermore, intimate interpersonal relationships may be compromised by erectile dysfunction resulting from the disease, which can also have serious psychological consequences.

B

The needs are immense

The needs relating to the diabetes epidemic and non-communicable diseases are immense. Whilst there are low cost, effective interventions which can be put into place, the health systems in developing countries are not always able to do so.

The global non-communicable diseases epidemic

According to the World Health Organization, chronic diseases, such as heart disease, stroke, cancer, chronic respiratory diseases and diabetes, are by far the leading cause of mortality in the world, representing 63% of all deaths. 90 % of non-communicable diseases deaths under the age of 60 occur in low and middle income countries. **As previously stated, estimations show that non-communicable diseases are responsible for 66.5% of the years lived with a disability in low and middle-income countries²⁸.**

“At least 80% of all cardiovascular disease, 80% of type 2 diabetes and over 40% of cancer could be avoided through healthy diet, regular physical activity and avoidance of tobacco use.”

The main underlying determinants of non-communicable diseases are globalization, urbanization and population ageing²⁹. The nutrition transition partly explains the increase in the incidence of non-communicable diseases. The nutrition transition refers to “the change from a diet that is monotonous but rich in starch and fibres, and low in fat, with a physically active lifestyle, to a diet that is more varied but high in sugar, saturated animal fats and processed foods, low in fibre, fruit and vegetables, with a sedentary lifestyle.”³⁰

Among the main risk factors for non-communicable diseases, some are modifiable (unhealthy diet, physical inactivity and tobacco use) whereas some are not modifiable (age, heredity, genetic factors).

“Chronic diseases can cause poverty in individuals and families, and draw them into a downward spiral of worsening disease and poverty. Investment in chronic disease prevention programmes is essential for many low and middle income countries struggling to reduce poverty.”³¹

The global diabetes epidemic

According to the International Diabetes Federation, “some 366 million people worldwide, or 8.3% of adults, are estimated to have diabetes in 2011. About 80% live in low- and middle-income countries. If these trends continue, by 2030, some 552 million people, or one adult in 10, are projected to have diabetes.”

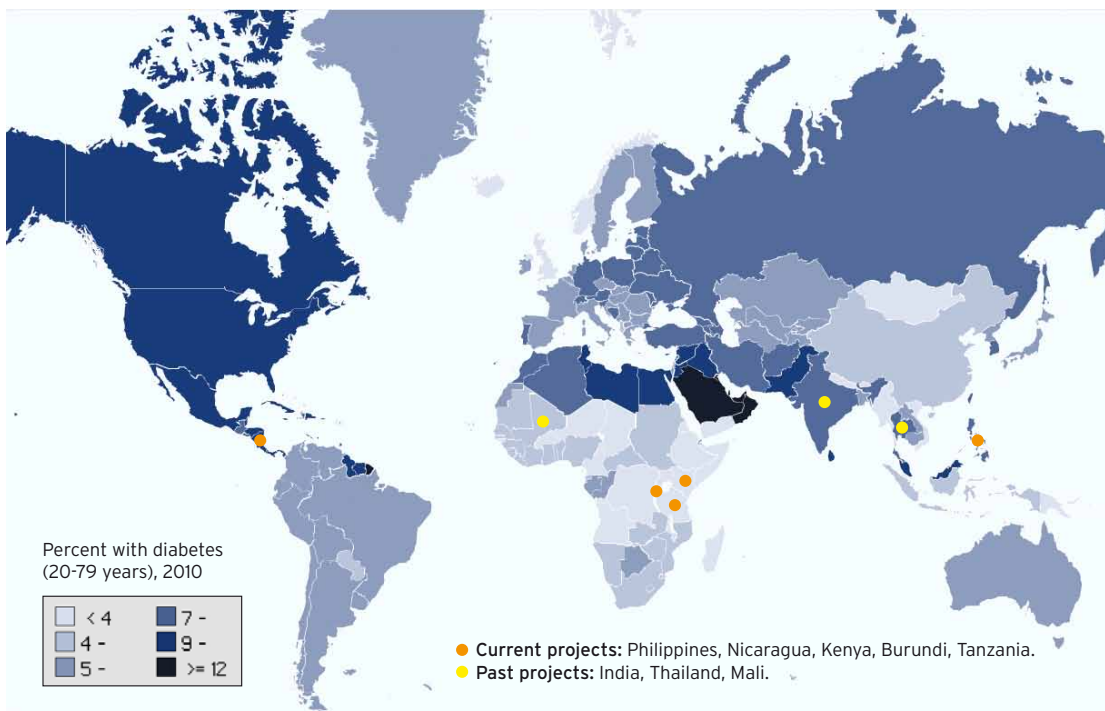
“It has been a consistent finding of population-based diabetes studies that a substantial proportion of all people found to have diabetes had not been previously diagnosed. The uncovering of new cases when mass blood testing is undertaken is primarily because of the lack of symptoms associated with the early years of type 2 diabetes, meaning that those with diabetes may be unaware of their condition and therefore not seek medical attention for it.” There are more persons with diabetes in urban areas than in rural ones.



Focus - Sugar wrongly blamed

It is important to remember that the main underlying causes of non-communicable diseases, notably diabetes, are globalisation, urbanisation and the ageing population³². It is a common fallacy that sugar consumption is entirely to blame for the increase in the prevalence of diabetes. This misconception often results from linguistic confusion, as diabetes is often called “the sugar disease” in local languages. Prevention activities should avoid placing the blame solely on sugar and take a more comprehensive approach to promoting healthy lifestyles (of which moderation of sugar consumption is just one part). This healthy lifestyle will help populations to “age well”, including by preventing diabetes.

Prevalence of diabetes in the world (20-79 years), 2010



Source : <http://archive.diabetesatlas.org/map>

Regional overviews³³

- Africa: 78% of people with diabetes are undiagnosed
- Europe: the highest prevalence of type 1 diabetes in children
- Middle East and North Africa: 6 of the top 10 countries by diabetes prevalence
- North America and Caribbean: 1 adult in 10 has diabetes
- South and Central America: 12.3% of all deaths were due to diabetes
- South-East Asia: almost one-fifth of the world's people with diabetes live in just seven countries
- Western Pacific: 132 million adults have diabetes, the largest number of any region

Regional estimates for diabetes (20-79 years), 2011 and 2030

REGION	2011			2030			Increase in the no. of people with diabetes
	Population MILLIONS	No. of people with diabetes MILLIONS	Comparative diabetes prevalence %	Population MILLIONS	No. of people with diabetes MILLIONS	Comparative diabetes prevalence %	
AFR	387	14.7	4.5	658	28.0	4.9	90
EUR	653	52.8	6.7	673	64.2	6.9	22
MENA	356	32.6	11.0	539	59.7	11.3	83
NAC	322	37.7	10.7	386	51.2	11.2	36
SACA	289	25.1	9.2	376	39.9	9.4	59
SEA	856	71.4	9.2	1,188	120.9	10.0	69
WP	1,544	131.9	8.3	1,766	187.9	8.5	42
World	4,407	366.2	8.5	5,586	551.8	8.9	51

"In North Africa and the Middle East, diabetes prevalence is quite high (11%) while the total population affected, in absolute numbers, is estimated at 32.6 million. By contrast, prevalence in the western Pacific region is lower (8.3%), while the total population affected, in absolute numbers, is much higher, estimated at 131.9 million."

The availability of prevalence and incidence data for sub Sahara Africa is very limited, with the result that data had to be extrapolated from distant and probably dissimilar countries and populations. It is widely regarded that Africa will have the

greatest increase in prevalence in the next 20 - 30 years.

There can be variations in the prevalence of diabetes between countries, and within countries between ethnic groups. These variations can be explained by demographic profile, lifestyle and the genetic characteristics of each population. Indeed, research on diabetes in minorities in the United States of America showed that all minorities living in this country, except Alaska Natives, have a prevalence of type 2 diabetes that is two to six times greater than that of the "Caucasian" population³⁴.

C

Limited capacities of health systems

The regular studies carried out by the World Health Organization to assess State capacities in the field of the prevention and control of non-communicable diseases, as well as other sources, have identified serious shortcomings³⁵, including:

- The absence of policies and data on non-communicable diseases
- The lack of availability and insufficient levels of competence of health professionals
- The lack of availability and financial accessibility of essential medicines/ drugs.

According to the World Health Organization, the spectacular spread of chronic diseases requires innovative measures³⁶, notably a change in paradigm, from a health care model designed to manage acute diseases to a health system which also addresses chronic diseases. It is important to ensure regular monitoring between acute episodes, and health care systems need to be reorganised to ensure this monitoring. This involves placing the person and their family at the heart of the system, a significant deviation from current clinical practice which often considers the person as the passive recipient of health care. In order to effect these changes, health professionals need to include therapeutic patient education in the services they provide.

However, inexpensive and effective diabetes prevention and control interventions do exist³⁷ (see part 2).

D

Emerging international mobilisation

Despite the threat posed by this epidemic, the international community both in the North and the South has been slow to react. In many developing countries, cardiovascular diseases and diabetes, the main causes of mortality and morbidity (potential causes of disability), rarely feature amongst the priority areas of action. However, the World Health Organization and the International Diabetes Federation (IDF) have carried out joint advocacy work which resulted in the United Nations adopting resolution 61/225 on 20th December 2006³⁸. In this resolution, diabetes is recognized as “a chronic, debilitating and costly disease associated with severe complications, which poses severe risks for families, Member States and the entire world and serious challenges to the achievement of internationally agreed development goals including the Millennium Development Goals.”

In addition, diabetes stakeholders have now grouped together with those working on other non-communicable diseases (cancer, cardiovascular diseases, chronic respiratory diseases) in order to carry out joint advocacy work which led to the United Nations General Assembly adopting resolution A/64/L.52 in 2010. The Assembly is “convinced of the urgent need to undertake multilateral efforts at the highest political level to address the rising prevalence, morbidity and mortality of non-communicable diseases worldwide and to raise the priority accorded to non-communicable diseases in development cooperation, by enhancing such cooperation in this regard”.³⁹



Focus - United Nations High Level Meeting on Non-communicable Diseases

Various networks (including the NCD alliance, and NCDnet lead by the WHO) carried out advocacy work prior to the United Nations High-level Meeting on Non-communicable Diseases held in September 2011. This meeting was similar to that held on HIV/AIDS ten years ago. Handicap International was very active in promoting the inclusion of rehabilitation and disability in the political declaration. The international context regarding State and funding body commitments is therefore set to change over the next two years. The WHO has not yet published recommendations for Member States on developing prevention and control policies for non-communicable diseases, but this is included in the 2008-2013 action plan for the WHO secretariat.

Non-communicable diseases do not feature in the Millennium Development Goals, which target a limited number of diseases considered to be a priority (HIV infection, malaria, tuberculosis) and maternal and child health. However, as good diabetes management is a basic condition for ensuring the successful treatment of tuberculosis in people with diabetes, advocacy work has been carried out by the International Diabetes Federation and the World Health Organization to ensure that there is a genuine political commitment from the international community on non-communicable diseases, whose burden is still not sufficiently taken into account.

A certain number of stakeholders working specifically on diabetes are highly active in developing countries. The International Diabetes Federation brings together associations of patients and health care professionals from across the world, coordinates a large number of projects and organises a biannual international diabetes conference. The World Diabetes Foundation, founded by the Danish pharmaceutical company Novo Nordisk, funds numerous local projects implemented by governments and/or local associations. Furthermore, various specialist companies or medical foundations are also active in this field (International Insulin Foundation, Insulin For Life, etc.).

However, to our knowledge, few International NGOs are currently involved in diabetes control actions in countries of the South. In Mali, the NGO Santé Diabète has achieved encouraging results. In the development context, Médecins Sans Frontières and Médecins du Monde sometimes provide care for people with diabetes or those living with other non-communicable diseases, mainly via their HIV programmes. Universities and NGOs in the English-speaking world have implemented projects on non-communicable diseases: PATH (A catalyst for global health), Project Hope, Population Services International (PSI) etc. networks that Handicap International hopes to explore by 2015. Handicap International is currently stepping up its efforts as one of the first International NGOs to make a long-term commitment to diabetes control on a global scale. Its operational role in developing countries means the organisation is well placed to campaign for this pathology to be recognised as a priority, as broad international mobilisation is required and could limit the diabetes-related mortality and disabilities.



Principles of intervention and scope of activity

A

Diabetes as part of Handicap International's scope of activity

Diabetes, a disabling disease, features in Handicap International's reference documents, including the Scope of Activity and 2011-2015 Federal Strategy. Indeed diabetes, as well as other chronic diseases, is defined in the latter as one of the priority themes for achieving impact.

People living with disabling diseases constitute one of the categories of beneficiaries listed in Handicap International's Scope of Activity: "Persons suffering from a usually chronic disease which affects the integrity and function of one or several organs and may lead to activity restriction. Without treatment or adequate care management the disease may at some point result in irreversible physical, sensorial or mental impairments."

B

Principles of intervention

As previously stated in this document, the prevention and control of diabetes and non-communicable diseases requires access to prevention, medical care and rehabilitation services.

This section presents the target populations for each action and recommendations will be made to help to define Handicap International's strategic positioning on this theme in each given context, in relation to the various stakeholders involved.

This will be followed by a summary of Handicap International's principles of intervention concerning geographical and financial access to quality services. Finally, the key aspects of Handicap International's approach, defined in relation to internal (notably, Handicap International's principles of intervention) and external guidelines (WHO guidelines) will be outlined.



Target populations

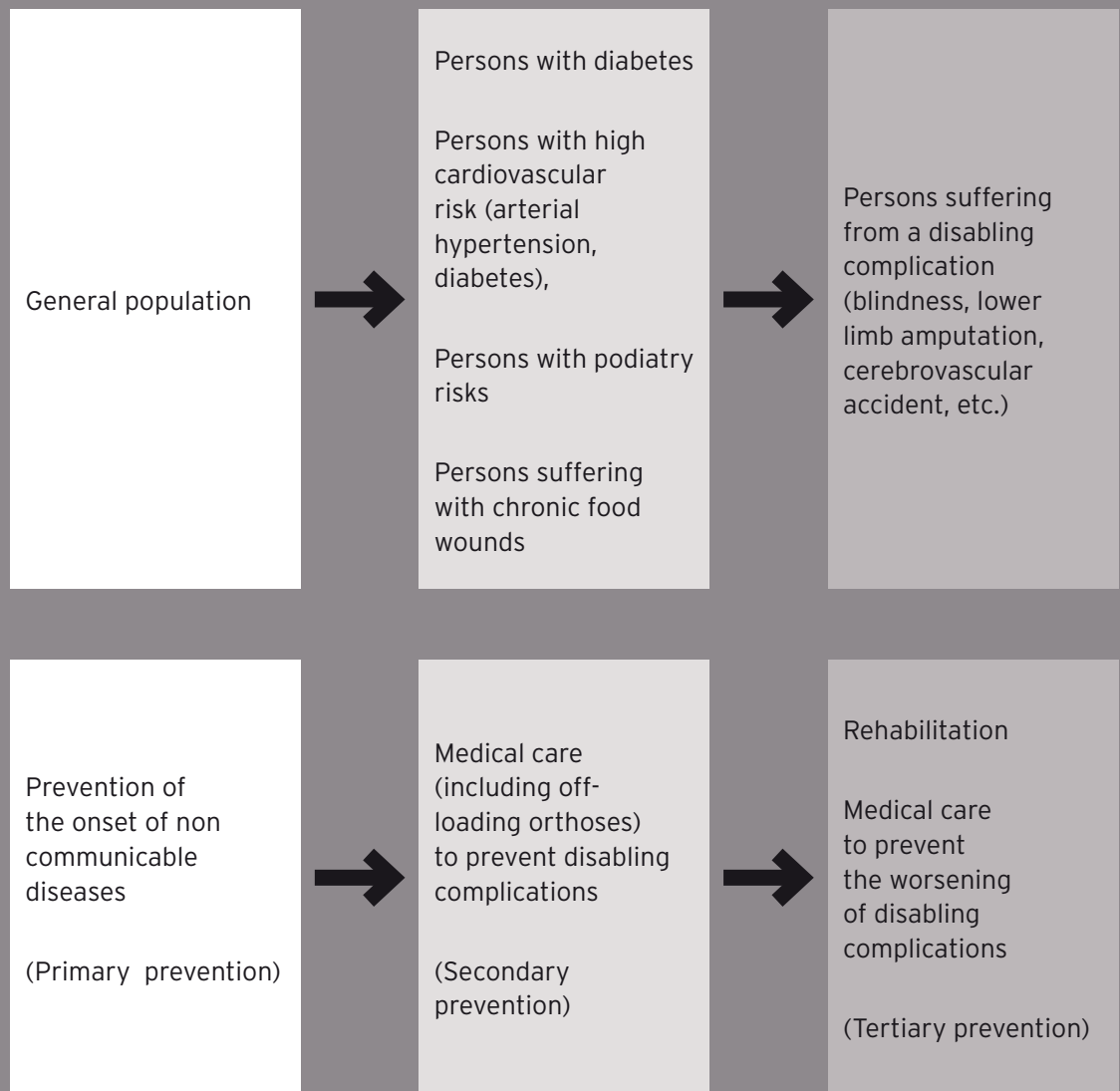
Depending on the timing of the intervention (before the onset, or at an early or late stage of the disease), the interventions can be grouped together in three main categories with different target populations and objectives: Primary prevention, medical care (secondary prevention) and rehabilitation (tertiary prevention).

- Primary prevention of non-communicable diseases within the general population, and in particular for those who are most at-risk, aims to avoid the onset of diseases.
- Medical care provided, including off-loading orthoses, to people with diabetes and those with a high cardiovascular risk, aims to treat symptoms and prevent long-term complications (secondary prevention).
- Rehabilitation for people with diabetes refers to preventing disabling situations (tertiary prevention). This is achieved in synergy with other actions to encourage economic, social and educational inclusion, as well as advocacy and action to address environmental factors
- As diabetes is a chronic disease, it is important to target the families and entourage of the person with diabetes, as project beneficiaries, as they play a vital role in supporting the person with diabetes.

Handicap International strives to target vulnerable populations within the target groups above. According to Handicap International's scope of activity, vulnerable populations are: "persons or population groups who, due to their health status or social conditions, cannot meet their basic needs. They are most at risk and, consequently require the implementation of specific measures."

The definition of a vulnerable person differs according to the context, but in the context of non-communicable diseases, the focus is to ensure that interventions also target the poorest populations who have difficulties accessing health care, people with disabilities who are at greater risk of developing diabetes and other cardiovascular risk factors⁴⁰, elderly persons, children and people affected by conflicts or natural disasters.

Major categories of intervention which can be implemented according to the stage of diabetes



Handicap International's principles of intervention applied to diabetes

The Disability Creation Process (DCP) model, a reference model for Handicap International

Using the DCP model, Handicap International adopts a comprehensive approach to disability. According to the needs identified in each situation, actions on disability prevention, rehabilitation, the social and economic inclusion of people with disabilities and advocacy can be implemented (see the analysis of diabetes according to the DCP model in the section "Diabetes, Non-communicable Diseases and Disability").

Local interventions

In line with Handicap International's principles of intervention, the favoured level of intervention is that of local services (community-based services, primary and secondary health care centres). This conforms to the World Health Organization guidelines which for decades have warned that health systems have been placing too much emphasis on specialised curative care in tertiary health care centres.

Partnerships with local stakeholders

Handicap International has chosen to prioritise, where possible, to incorporate its projects into existing health, associative and educational structures in place and to reinforcing these where required. The organisation will therefore take care not to create additional services where existing services are already available, but will instead seek to reinforce the capacities of existing services.

An approach based on partnerships with institutions and/or a local association is therefore recommended, with the aim of ultimately ensuring that the partner can manage projects autonomously. This is necessary to ensure the sustainability of the actions put into place.

Achieving impact

"Achieving the broadest possible, positive and measureable impact on the end beneficiaries' living conditions is what guides our choices of programming, methods and actions."

Therefore, when drawing up projects, Handicap International prioritises interventions with the broadest possible impact. For example, the treatment of arterial hypertension in order to prevent renal failure, will take priority over dialysis.

Gender approach

Actions concerning diabetes should take gender into account, in terms of analysis and programming. The estimations of prevalence presented in the diabetes atlas⁴¹ show that there are more women with diabetes than men with diabetes, although the difference in prevalence related to gender does not seem to be significant. Inequalities in terms of access to health care between women and men with diabetes have been reported in developing countries in several continents^{42, 43}, and this issue should be given special consideration. The programming of Handicap International projects should therefore take into consideration possible differences and inequalities between men and women for each activity, in order to promote equal opportunities. Using gender-sensitive monitoring indicators is a way of ensuring this issue is taken into account in the actions implemented.

In addition, the specific needs of men suffering from erectile dysfunction should be taken into account. These problems should not be neglected, as they cause difficulties relating to infertility and also have significant psychosocial consequences.

Legal references

A certain number of legal references can be used to ensure the rights of people with disabilities are respected.

The right to health is set out as a fundamental human right in various treaties including the 1946 constitution of the World Health Organization, and the 1948 Universal Declaration of Human Rights. Article 25 of the latter states that "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services"⁴⁴

The International Convention on the Rights of Persons with Disabilities⁴⁵, adopted by the United Nations in 2006, can also be used as a reference text. Indeed, large numbers of people with diabetes fall under the definition of people with disabilities used by this convention, when diabetes or other chronic diseases lead to long-term physical impairments which, in interaction with a non-adapted environment, create a disabling situation.

Quality approach and impact

The quality of an action is, in part, based on the assessment of its results.

Specific diabetes indicators are presented in intervention methods and in appendix to the model logical framework and teams are encouraged to integrate a monitoring/evaluation system that measures these indicators into the project design from the outset.

It is recommended that the activities are launched via pilot projects deployed across limited geographical areas. This pilot phase will make it possible to define, draw up, evaluate, improve and model intervention methods, training content, different tools etc at local level. It is then possible to replicate the intervention model in another area, or to carry out advocacy work for the institutional implementation of the intervention model, or support this implementation, whilst ensuring that the end users do genuinely benefit from the action.

Strategic positioning in relation to external guidelines

In accordance with Handicap International's principles of intervention, "We interpret and use external sources and guidelines critically so as to draw from them any aspects that conform with and are useful to our mandate, our status as a non-government actor and the interests of the organisation."

The main external guidelines in the field of diabetes come from the World Health Organization on policy, and the International Diabetes Federation on clinical practice (for more details, please refer to the section "Additional concepts for consideration"). As a general rule, it is recommended that Handicap International's actions are designed to conform to these guidelines. Should these guidelines not be relevant

to a given context, the organisation can justifiably take up a different position. However, this position should be explicit, justified, documented and shared where appropriate in order to contribute to debate at international level.

An approach inclusive of vulnerable groups

In line with its scope of activity⁴⁶, Handicap International asserts its remit to work with the most vulnerable and excluded populations, with special consideration for persons in disabling situations. Handicap International's actions should allow equal access to services (health, education, economic and professional integration, leisure, social inclusion etc.) and to information for these vulnerable populations, particularly persons with disabilities as stipulated in the Convention on the Rights of Persons with Disabilities⁴⁷. "This approach is all the more important for diabetes and cardiovascular risk factor projects where numerous people living with these pathologies may be in disabling situations and people with disabilities may be at greater risk than people without disabilities of developing non-communicable diseases"⁴⁸.

"When adopting a disability mainstreaming approach as set out in the Convention on the Rights of Persons with Disabilities and the DCP, it is crucial to assess, implement and monitor project activities through a cross-impairment lens. Concretely this means that diabetes and other cardiovascular risk factor-related projects take conscious and planned steps to systematically address barriers and promote facilitators related to access to services (in particular health services) for women and men of all types of impairments: physical,

sensory, intellectual and mental - and at all levels: services, community, attitudes, policy and environment. For example, when providing diabetes awareness-raising or capacity-building, service providers and stakeholders need to be cognisant of the need for accessible communication formats. Information and prevention messages should be disseminated in formats accessible to people with intellectual or sensory impairments (though Braille, large print, sign language and plain language). For more information on integrating disability into projects, see the experience developed by Handicap International in its HIV projects:

- The Disability Mainstreaming Guideline and its annexes on disability assessment checklists produced by Handicap International in Cambodia
- Two training manuals on inclusive HIV and SRH services from Handicap International in Ethiopia⁴⁹.

These documents provide details on including disability in interventions, particularly for the health sector."⁵⁰

The first five years of Handicap International's experience on diabetes have primarily focused on developing services for the general population (including vulnerable persons and persons with disabilities), as these services are generally non-existent. From 2012 onwards, Handicap International will continue to develop services, paying special attention to the inclusive approach required to ensure the full participation of all beneficiaries.



Philippines, 2011

Intervention methods

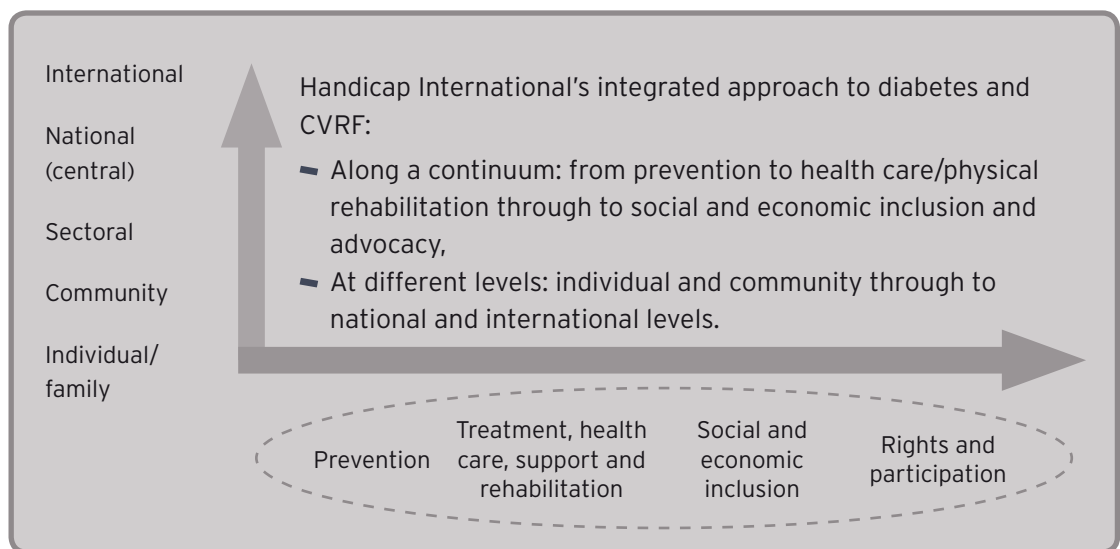
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The intervention methods

In line with the Disability Creation Process, the organisation uses an integrated approach which places the person themselves at the heart of the process, to help them go about their day-to-day life and maintain their quality of life. This approach not only targets support interventions for people living with diabetes-related disabilities or cardiovascular risk factors (CVRF). It is also intended to bring about the integrated prevention of non-communicable

diseases (primary prevention), to provide health care for all those living with diabetes and CVRF, and to support advocacy work in order to encourage full social participation at all levels. Depending on the needs in each context, preventative, curative, rehabilitation, social and economic inclusion and advocacy actions can be implemented by Handicap International, using **cross-disciplinary expertise in synergy with community networks**.

Handicap International's integrated approach applied to non-communicable diseases⁵¹



This diagram shows the possible interactions between the different components of the integrated approach from community to national level and through the range of activities from primary prevention to promoting the right to social participation. The different components along the two axes should not be seen as linear but multi-dimensional.

Handicap International is not the only stakeholder to promote each activity but some activities can be promoted by a

consortium of organisations working as a network. Furthermore, as previously stated, Handicap International will reach its objectives by providing the greatest possible support for local stakeholders so they can implement their own actions. Therefore, wherever possible, the association will prefer not to take direct action.

This comprehensive approach can translate into the promotion and implementation of services, as described in the intervention methods below.



Indicators which can be objectively verified often require prior or post-intervention epidemiological or qualitative studies. To date, it has not been possible to identify easily collectable indicators for non-communicable disease control programmes in countries with limited incomes. This situation should improve with the development of programmes which will allow public health information systems to include indicators which will be far easier for Handicap International to collect. In the meantime, all suggestions for new, easily collectable, indicators are welcome, as this will improve the evaluation of the effectiveness (impact) of our actions.

A

Promoting services for the prevention of non-communicable diseases (primary prevention)

In order to prevent the onset of non-communicable diseases such as diabetes, interventions to promote healthy lifestyles can be set up for the general public and groups particularly at risk of developing diabetes. This can be done under governmental authority in the health, social services, education and agro-food sectors. This can take the form of laws intended to create a healthy environment and mass communication campaigns to promote healthy lifestyles including physical exercise, a balanced diet, regulating alcohol and eliminating tobacco consumption. Awareness-raising actions should not only target the at-risk person themselves, but also their family and entourage. This change in lifestyle is a long-term process, in particular in countries where excess weight and obesity are seen as signs of social status and wealth. Nonetheless, well-implemented interventions can reduce the risk of diabetes by 50% in at-risk populations, and 20% in all other groups^{52, 53, 54, 55}. Furthermore, according to the WHO, 80% of premature cases of cardiovascular diseases and cerebrovascular accidents, 80% of type 2 diabetes and 40% of cancers could be avoided by eating healthily, doing regular physical exercise and not smoking. These primary prevention actions can be first set up in schools where these education activities can bear fruit in the long term. To ensure maximum impact, these interventions should take into account the different roles of men and women in relation

to food in the home (regarding who makes decisions concerning meal composition, manages the food budget, buys the food, prepares the meals).

Recommendations concerning primary prevention activities

- ▀ Adopt an integrated approach that covers the prevention of non-communicable diseases in general, not just diabetes and CVRF
- ▀ Special care should be taken not to stigmatise people who are overweight or obese during prevention activities
- ▀ Partnerships with the tobacco industry should not be developed as their activity is incompatible with the objectives of non-communicable disease prevention and control
- ▀ Adopt a health promotion approach i.e. one which combines education for the general and at-risk populations with an improvement in the environment (provision of food services, physical exercise and sports etc.).

Examples of expected results related to primary prevention

Type of action	Expected results	Objectively verifiable indicators	Sources of verification
Primary prevention: Prevention of the onset of non-communicable disabling diseases	The level of community awareness regarding CVRF and how to prevent them has increased, with the aim of encouraging people to adopt health lifestyles, which prevents the onset of non-communicable disabling diseases.	At least X% of the adult population (> 20 years) in the intervention zones can correctly answer at least 80% of questions in a survey on CVRF awareness and CVRF.	STEPwise studies (WHO methodology) or Results of cross-sectional before/after (here/there) studies into the population's awareness of CVRF.
		At least X% of the population under the age of 20 years attending schools in the intervention zones can correctly answer at least 80% of questions in a survey on CVRF awareness and prevention.	Results of before/after testing on CVRF awareness in schools.
	The whole of the population in the intervention zone has access to prevention services for non-communicable disabling diseases.	The local non-communicable disease control programme includes a primary prevention plan and this is implemented.	There is a policy document outlining the non-communicable diseases control programme. Primary prevention activity reports.

Examples of activities related to primary prevention

Type of action	Target population	Activity	Type of support
Primary prevention of NCDs	Public health authorities at national or local level.	Studies to monitor NCDs risk factors (STEPwise).	Technical support in the public health sector (mobilisation of public health expertise, such as the WHO).
		<p>Drawing up, implementation, monitoring and evaluation of public policies on:</p> <ul style="list-style-type: none"> - The prevention of non-communicable diseases using a health promotion approach - The development of public policies acting on the environment (developing urban policies to encourage physical exercise, regulations on tobacco and alcohol, regulation of the agro-food industry, catering industry etc.) - Promoting health in schools, - Developing guidelines, curriculums and initial and professional training modules (in collaboration with competent companies). <p>Ensuring these policies and guidelines are inclusive (persons with disabilities are at a greater risk than the general public of developing non-communicable diseases).</p> <p>Training public health authorities on disability and developing tools to ensure accessibility for persons with different types of disabilities.</p> <p>Promoting the policies implemented (presentation at national or international conferences).</p>	<p>Training.</p> <p>Technical support.</p> <p>Support in organising meetings (logistics support, payment of per diem to the participants).</p> <p>Advocacy at national and international level to ensure that diabetes and NCDs become a public health priority. Handicap International can, on request, participate in drawing up national diabetes, cardiovascular risk factor and non-communicable diseases control programmes.</p> <p>Advocacy to improve the environment, to encourage physical exercise and the regulation of tobacco and alcohol, targeting agro-food companies and the catering industry at local, national and multi-national level to engage them to become stakeholders in promoting healthy lifestyles.</p>

Type of action	Target population	Activity	Type of support
	General public.	<p>Organisation of awareness-raising campaigns on healthy living aimed at the general public, that are inclusive of disability (via the public health authorities and/or local associations):</p> <ul style="list-style-type: none"> - Development of inclusive Information Education and Communication (IEC) tools - Implementation of campaigns. Various information channels can be used: Media, community discussion groups, door-to-door campaigning by community health workers, theatre, films, disabled people organisations etc. <p>Before/after awareness studies (evaluation).</p>	<p>Organisational and technical support.</p> <p>Carrying out studies (via research institutes).</p>
	Community health workers, leaders, associations, health professionals.	<p>Development of training modules on the prevention of non communicable diseases through health promotion.</p> <p>Then training on the prevention of non communicable diseases through health promotion.</p> <p>Before/after awareness studies (evaluation).</p>	<p>Technical development support.</p> <p>Training.</p> <p>Conducting studies.</p>
	Schools.	<p>Developing school policy on non communicable disease prevention.</p> <p>Integration of a module on healthy lifestyles into the curriculum.</p> <p>Training primary school teachers on healthy lifestyles.</p> <p>Developing environmental activities within the school.</p> <p>Before/after awareness studies (evaluation).</p>	<p>Technical support.</p> <p>Training.</p> <p>Monitoring.</p> <p>Carrying out studies (via research institutes).</p>

B

Developing access to medical care (secondary prevention)

The vital medical care required to manage patients with diabetes can only be dispensed by a multi-disciplinary health care team (doctor, nurse, pharmacist, shoemaker, ortho-prosthetic technician, physiotherapist, etc.).

Diabetes screening / Identification of persons with high cardiovascular risk factors

Recommendations on diabetes screening activities

- ─ Diabetes screening activities and the identification of people with high cardiovascular risk factors can be put into place, if the health care system is equipped to provide the care required by these patients⁵⁶
- ─ Genetic differences between ethnic groups with regards to diabetes mean that screening policies have to be adapted to each group or country⁵⁷.

Blood sugar levels and other cardiovascular risk factors control (arterial hypertension, lipid disorders, tobacco consumption)

- ─ Such control must first comprise of a general cardiovascular risk assessment for the individual. This includes the patient's medical and personal history, cardiovascular symptoms, symptoms of depression, a full clinical examination, laboratory tests and a risk classification using the model proposed by the United Kingdom Prospective Diabetes Study Group (UKPDS) for people with diabetes (or the Framingham criteria if there is no diabetes or coronary heart disease).
- ─ This monitoring then incorporates **therapeutic patient education** to help them adopt a healthy lifestyle.
- ─ Monitoring often also includes the **prescription of medicines/drugs**. In Handicap International's intervention contexts, the main drugs prescribed are:
 - Type 2 Diabetes: Oral anti-diabetics
 - first as a monotherapy (Metformin as the first-line therapy unless contraindication) then as bitherapy in second-line therapy and final associated with insulin treatment as the third-line therapy
 - Type 1 Diabetes: Insulin treatment from the outset
 - Antihypertensives if mainly hypertension: Diuretics, calcium channel blockers, ACE inhibitors, Beta-blockers, Angiotensin II receptor antagonists, alone or in association. The choice of therapy needs to take into account the patient's history, adverse effects, other ongoing treatments, the cost and each person's history. It should be noted that the ACE inhibitors and Angiotensin II receptor antagonists are less effective in patients of African origins
 - Lipid-lowering drugs, in the case of a blood lipid disorder (statin as front-line therapy if no contraindication)
 - Low doses of aspirin in the event of high cardiovascular risk or in patients already suffering from cardiovascular complications
 - Counseling, coaching and medical treatments to stop smoking
- ─ Finally through regular monitoring (laboratory tests and clinical examination).

This monitoring of cardiovascular risk factors makes it possible to prevent the onset of diabetes complications and cardiovascular complications.

Recommendations on access to medical products and laboratory analyses for diabetes and non-communicable diseases

Sustainable, suitable, affordable and high quality access to medical products and laboratory analyses should be a priority for all projects on non-communicable diseases. In cases where this access is not available, Handicap International does not distribute medicines/drugs.

In order to provide such access, there are several possible intervention methods according to the contexts and needs:

- Technical support for the national supply chain for drugs/medicines and laboratory reagents, after an in-depth study of the factors hindering its effective operation. In order to do this, Handicap International will prioritise partnerships with the relevant competent stakeholders.
- Support for civil society (organisations of people living with non-communicable diseases or health care professionals) in lobbying the State and private-sector for access to medical products and laboratory analyses for all, including the poorest populations.
- Support for health structures to obtain the laboratory equipment required. This intervention method can only be implemented if local partners take responsibility for maintaining the equipment and associated operating costs.
- Work with people living with diabetes and cardiovascular risk factors on treatment observance, with the aim of improving their own care management and also making it easier for health structures to plan their supply of medical products.

- Support for setting up social funds and/or health insurance systems.
- Development of income-generating activities for people living with diabetes, cardiovascular risk factors and/or their organisations.

It is important, where possible, to adopt an integrated approach to the main non-communicable diseases when working on the sustainable access to medical products and laboratory analyses.

The early detection and management of complications such as visual impairments, heart complications, retinopathy, neuropathy and diabetic foot, arteriopathy, renal failure or coronary heart disease^{58, 59, 60}. Primary health care workers should be trained in the early detection of diabetes complications in order to refer patients to the appropriate structures, offering specific health care management for complications.

Prevention of foot wounds: Identification of patients with diabetes with a high risk of developing foot complications in order to prevent the onset of foot wounds. If ordinary shoes are too tight fitting (due to deformations of the foot) or if there are signs of anomalies in terms of pressure distribution (for example, redness, hyperkeratosis, ulcers), patients should be advised on purchasing shoes from ordinary shoe shops, on possible modifications to shop-bought shoes, the production of orthopaedic shoes or orthopaedic soles (see the guidelines produced by the International Diabetes Federation's International Working Group on the Diabetic Foot⁶¹). Therapeutic patient education on daily foot care is also essential. If the patient requires adapted footwear, they should be referred to a shoemaker (as there are very few pedorthists in developing countries).

Education for persons with diabetes or persons living with CVRF and their families will support them to acquire the skills needed to take on the self-management of their disease at home. The training of a network of community health workers (which should include the families and patients themselves), the involvement of patients' organisations, peers (peer education), and even pharmacists, depending on the context^{62, 63}, are all possible strategies. These education actions, focused on good life hygiene and, if required, following treatment regimes (adherence), have already been proven to be very effective in terms of controlling blood glucose levels⁶⁴. Health education should also support communities, families and patients to detect complications, which requires them to attend a specific health structure. Other approaches, such as motivational interviewing⁶⁵, are highly effective in helping people with diabetes to change their behaviour.

Psychological support for the client is also essential to help patients accept their illness, and allow them to change their behaviour and maintain this over the long term⁶⁶, and to help patients cope with the day-to-day difficulties related to their disease. This support can be provided by community workers, associations or health professionals. Various tools such as the Conversation Maps⁶⁷, promoted by the International Diabetes Federation, have been recently developed, in order to support the patient towards accepting the disease and becoming capable of self-managing their disease. Handicap International has also developed specific expertise in providing psychosocial support for people suffering from psychological distress⁶⁸.

Physical activities, adapted to people with diabetes or cardiovascular risk factors, can be put into place, supervised by trained professionals, such as physiotherapists or sports educators. Handicap International's expertise in improving access for people with disabilities to physical exercise and sports activities can also be put to use in order to develop this type of activity.

Recommendations on adapted physical exercise

- ▀ Physical exercise adapted to people with diabetes should be supervised by a trained professional (physiotherapist or sports educator).
- ▀ In each intervention context, if intending to implement this type of activity, it is important to analyse existing professions and reinforce skills where required. In Mali, Handicap International has developed recommendations⁶⁹ which can be used by other programmes.
- ▀ Handicap International's expertise in improving access for people with disabilities to physical exercise and sports activities can also be put to use in order to develop this type of activity.

In general, for each country of intervention, Handicap International projects on diabetes follow national recommendations where they exist. This is on the basis that such recommendations are adapted to the context and aligned with the most up-to-date international recommendations on the subject.

Indeed, at international level, Handicap International encourages the application of the clinical practice guidelines on the management of patients with type 2 diabetes produced by the International Diabetes Federation⁷⁰.

There are also clinical practice guidelines available for other cardiovascular risk factors^{71, 72, 73, 74, 75}. The medical technical advisor will carry out an in-depth critical analysis of these guidelines in order to bring those which are most relevant and best-adapted to a given context to the attention of our teams.



Examples of expected results related to secondary prevention

Type of action	Expected results	Objectively verifiable indicators	Sources of verification
<p>Secondary prevention: Prevention of CVRF-related disabilities</p>	<p>Persons in the intervention zone, living with CVRF have geographical and financial access to high quality CVRF screening services and care management.</p>	<p>Indicator of the overall effectiveness of this expected result</p> <p>The percentage of people with diabetes whose blood sugar levels are correctly managed (HBA1c<6.5%) has increased by X% between the start to the end of the project.</p> <p>The percentage of patients with hypertension, with satisfactory arterial blood pressure (B<p<14/9) has increased by X% between the start to the end of the project.</p> <p>The percentage of patients monitored for living with CVRF with BMI<25 has increased of X% between the start and the end of the project.</p> <p>The percentage of patients followed for CVRF who claim to do at least 30 minutes of physical exercise, 3 times a week, has increased by X% between the start and the end of the project.</p>	<p>Cross-cutting prospective before/after (here/there) studies into patients' state of health (blood sugar levels according to HBA1c measurements, measuring of arterial blood pressure).</p>

Type of action	Expected results	Objectively verifiable indicators	Sources of verification
		<p>Indicator of the effectiveness in improving geographical accessibility</p> <p>The percentage of primary health care centres delivering care management services for persons living with CVRF in the intervention zone has increased by X% between the start and the end of the project (or reaches X% by the end of the project).</p> <p>The annual number of consultations at primary health care centres has increased by X% between the start and the end of the project.</p> <p>The percentage of patients with diabetes and other CVRF with access to laboratory analyses at least once a year (HBA1C, creatinine, lipid testing, microalbuminuria, etc.) has increased by X% between the start and the end of the project.</p> <p>The percentage of patients living with CVRF with access to psychosocial support has increased by X% between the start and the end of the project.</p>	<p>Public health information system (service activity data).</p> <p>Patient registers (if available).</p>
		<p>Indicator of the effectiveness of screening</p> <p>The number of new cases diagnosed has increased by X% per year.</p>	<p>Public health information system (service activity data).</p> <p>Patient registers (if available).</p>

Type of action	Expected results	Objectively verifiable indicators	Sources of verification
		<p>Indicator of the effectiveness in improving health care quality</p> <p>100% of trainees can correctly answer at least 80% of questions in the post-training tests (the marks in the practical and theoretical post-training tests are higher than for pre-training tests).</p> <p>Health structures in the project zone improve their clinical audit scores (evaluation of professional practices according to guidelines) by X% between the start and the end of the project.</p> <p>The rate of satisfaction of persons visiting structures providing care management for CVRF has improved by X% between the start and the end of the project.</p>	<p>Training evaluation report.</p> <p>Clinical audit.</p> <p>Patient satisfaction survey on the services delivered.</p>
		<p>Indicator of the availability and cost of medical products in health centres</p> <p>The number of days per month the health centre has no anti-diabetics, anti-hypertensives and lipid lower drugs in stock has been reduced by X% between the start and the end of the project.</p>	<p>Health structures' registers of medical products or Studies monitoring the availability and price of essential medical products (WHO methodology).</p>

Examples of activities related to secondary prevention

Type of action	Target population	Activity	Type of support
Secondary prevention: Prevention of non-communicable disease-related disabilities	Public health authorities at national or local level.	<p>Drawing up, implementation, monitoring and evaluation of public policies on:</p> <ul style="list-style-type: none"> - Non-communicable disease control, - Developing clinical practice guidelines, curriculums and initial and professional training modules (in collaboration with competent companies). <p>Ensuring these policies and guidelines are inclusive (persons with disabilities have a greater risk of developing non-communicable diseases and many of those living with non-communicable diseases are in disabling situations).</p> <p>Training on disability for public health authorities.</p> <p>Promotion of the policies implemented (presentation at national or international conferences).</p>	<p>Training.</p> <p>Technical support.</p> <p>Support in organising meetings (logistics support, payment of indemnities to participants, reimbursement of transport costs, payment of meals).</p> <p>Advocacy for the financial accessibility of health care for all (advocacy to pharmaceutical companies and manufacturers of medical equipment, the State, implementation of social funds etc.).</p>

Type of action	Target population	Activity	Type of support
	<p>Medical services for persons with diabetes within primary, secondary or tertiary health care centres,</p> <p>or</p> <p>Medical services providing integrated care management of cardiovascular risk factors with persons with a high cardiovascular risk.</p>	<p>Launching / reinforcing medical services for persons with diabetes / persons with high cardiovascular risk within primary, secondary or tertiary health care centres:</p> <ul style="list-style-type: none"> - Support for improving initial and further professional training for health professionals - Support for joining the HINARI initiative lead by the WHO to access scientific publications - Construction or renovation of infrastructures, - Medical equipment - Support for diabetes screening activities for the persons at risk and the identification of persons with high cardiovascular risk, in screening campaigns (outreach activities) or in health centres (on the condition that a health care offer is available): <ul style="list-style-type: none"> · Development of screening tools, · Organisation of screening policies and campaigns. - Approaches to improve the quality of health care: <ul style="list-style-type: none"> · Organisation of health care, · Drawing up health protocols, patient referral/counter-referral protocols between health care professionals, · Development of patient diagnosis, treatment and monitoring tools, · Development of training modules, 	<p>Funding.</p> <p>Technical support for developing training modules.</p> <p>Carrying out renovations, providing equipment (with +/- participation of beneficiaries).</p> <p>Development of tools. Training. Organisational support.</p> <p>Technical support for re-organisation.</p> <p>Steering the development of protocols, tools, modules etc.</p>

Type of action	Target population	Activity	Type of support
		<ul style="list-style-type: none"> · Theoretical and practical training of health professionals in screening and care management, · Training supervisions, monitoring of health professionals, · Participation in international conferences, · Before/after, here/there clinical audits, - Improvement of access to medical products, - Development of patient education: <ul style="list-style-type: none"> · Development of education tools, · Development of training modules for educators, · Training of educators (nurses etc.), · Organisation of education (individual, group, etc.). - Integration of non-communicable diseases into the Medical Information System (MIS), - Ensuring health services are inclusive: <ul style="list-style-type: none"> · Development of inclusive internal policies, · Training on disability for health professionals, · Development of tools to ensure services are accessible for persons with different types of disabilities 	<p>Training support.</p> <p>Carrying out studies (via research institutes).</p> <p>Development of tools and modules.</p> <p>Training.</p> <p>Organisational support.</p> <p>Technical support for developing. Medical Information Systems.</p> <p>Technical support.</p> <p>Training.</p>

C

Developing tertiary prevention activities

In terms of tertiary prevention (the management of disabling complications leading to impairment), Handicap International has already developed the management of:

- Diabetic foot
- CVRF-related amputations

Over the next five years, the association will continue to develop care management for both of these complications and to also further develop care management for:

- Cerebrovascular accidents
- Low limb arteritis
- Heart failure
- Certain visual impairments (cataracts).

This does not mean that Handicap International will not take care of people with other disabling complications. These people will be referred to existing structures and the organisation will support the development or reinforcement of specific services through pilot projects on a case-by-case basis according to needs and feasibility.

For the six pathologies described above, care management includes medical care, nursing care, medical products and specific functional rehabilitation. Partnerships with medical NGOs will be the preferred option for maintaining our focus as far as possible on the organisation's core activity: Rehabilitation.


The mainstays of this care management are:

- Strict control of CVRF (see secondary prevention care management). Diabetes, arterial blood pressure disorders, blood lipid disorders etc. should also be managed by the administration of medical treatments, and close, strict monitoring in order to balance out the possible objectives, preventing the worsening of disabling complications.
- Treatment of vascular wounds or diabetic foot, in order to avoid amputation and ensure recovery: Daily local care for chronic wounds according to international guidelines (see IDF global clinical practice guidelines on managing diabetic foot⁷⁶), an off-loading cast if required (total contact cast) or Barouk therapeutic footwear, Rocker Sole footwear, weight distribution foot orthosis.
- High quality surgical amputation, daily medical care for the stump in line with international guidelines, provision of prosthesis.
- Treatment with a drug regimen and regular medical monitoring in line with international guidelines, with subsequent functional rehabilitation for:
 - stroke
 - lower limb arteritis
 - chronic heart failure
- Surgical treatment of cataracts and glaucoma followed by functional rehabilitation, if required.

Development of functional rehabilitation services

Development efforts will specifically focus on rehabilitation services for people with diabetes or living with CVRF, suffering from disabling complications provided by health centres or in the community (Community-Based Rehabilitation) notably in order to:

- Prevent the onset of diabetic foot by developing soles, adapted footwear, orthoses etc. including regular monitoring and patient education
- Provide care management for diabetic and/or vascular-related chronic wounds: With, if required, off-loading casts (total contact casts), Barouk therapeutic footwear, Rocker Sole footwear, weight distribution foot orthosis along with regular monitoring and therapeutic patient education
- Production of prostheses for lower limb amputees
- Functional rehabilitation for people suffering from paralysis following a stroke
- Access to simple eye surgery and functional rehabilitation for people with visual impairments
- Cardiovascular rehabilitation (including endurance exercises) for people with arteritis or a chronic heart failure
- Psychosocial support (see secondary prevention) from trained professionals and/or peer support groups.

 Medical care is still required at this stage, in order to treat the symptoms of diabetes and prevent the worsening of existing complications.

Recommendations concerning orthopaedic fitting activities for people with diabetes

- High quality amputation is a pre-requisite for the orthopaedic fitting of amputees. Surgeons must be trained to provide this and in prescribing orthopaedic fitting and providing the indications required.
- Special attention must be given to the quality of the prostheses delivered, to avoid injuries and reduce the risk of recurrence.
- Developing specific appropriate technologies for the production of prostheses.
- The standard footwear available in the shops should be considered as an interesting solution for people with a grade one risk of developing podiatry complications. In these cases the footwear will protect the foot and prevent ulcers.
- Orthopaedic fitting services should offer a range of fittings from foot orthoses to lower limb prostheses through various total or partial off-loading devices and walking aids such as crutches, walking sticks, walking frames and wheelchairs.
- Pay special attention to patient monitoring and education in order to avoid the onset of complications (injuries, infections) due to poorly adapted or poorly maintained fittings or poor hygiene.
- Adapt the training content to the target population: Primary and community health care workers, nurses, general practitioners, specialists, diabetologist / endocrinologist, ortho-prosthetic technicians, shoemakers etc.
- Specific technical training on orthopaedic fitting for feet should be dispensed by a professional pedorthist.
- Total Contact Cast (TCC) is the recommended treatment for the off-loading of non-infected ulcers, malum perforans pedis in the forefoot resulting from diabetic neuropathy in patients with no signs of critical limb ischemia.

The intervention methods

Generally speaking the use of total contact sockets, if possible Ischial Ramal Containment Sockets or Contoured Adducted Trochanteric-Controlled Alignment Method sockets, for transfemoral amputees is recommended. Handicap International does not recommend the use of electrotherapy for pain management.

Guidelines on the specificities of functional rehabilitation for disabling complications (diabetic foot / chronic vascular wounds, amputation, post-cerebrovascular accident paralysis, heart failure, lower limb arteritis, visual impairments) will be developed over the next three years.



Examples of expected results related to tertiary prevention

Type of action	Expected results	Objectively verifiable indicators	Sources of verification
Tertiary prevention: Care management and support for people living with CVRF-related disabilities	<p>Persons living with CVRF with incapacitating disabling complications have improved geographical and financial access to medical services, including high quality rehabilitation services.</p> <p>[In order to do this, list the relevant complications, notably those around which Handicap International has decided to develop its actions: Diabetic foot, amputation, hemiplegia, heart disease, lower limb vascular disease].</p> <p>If the project targets diabetic foot and amputation, it should include:</p> <p>1-Medical management of diabetic foot, including the prescription of orthoses and off-loading devices by health professionals: "Health care professionals are capable of providing care management for diabetic foot complications, including the prescription of foot orthoses and off-loading devices, and of referring patients to orthopaedic fitting services".</p> <p>2-Surgical management of diabetic foot and amputation if required: "Surgeons are capable of providing the correct surgical indications for diabetic foot and of prescribing the required orthopaedic fitting and functional rehabilitation care."</p>	<p>In the centres providing care management for diabetic foot the rate / number of amputations has decreased by X% between the start and the end of the project.</p>	<p>The registers of centres providing care management for diabetic foot.</p>
		<p>Attendance of orthopaedic fitting / rehabilitation centres for the management of CVRF complications has increased by X% between the start and the end of the project.</p>	<p>The registers of orthopaedic fitting centres.</p>
		<p>Patients' functional capacities have improved post-orthopaedic fitting / rehabilitation.</p>	<p>Prospective qualitative study following 10 persons who have benefited from orthopaedic fitting services.</p>
		<p>Indicator of the effectiveness in improving health care quality (medical, rehabilitation)</p> <p>100% of trainees correctly answer at least 80% of questions in the post-training tests (the marks in the practical and theoretical post-training tests are higher than for pre-training tests).</p> <p>Health structures in the project zone improve their clinical audit scores (evaluation of professional practices according to guidelines) by X% between the start and the end of the project.</p>	<p>Training evaluation report.</p> <p>Technicians' pedagogical files.</p> <p>Clinical audit.</p>

Type of action	Expected results	Objectively verifiable indicators	Sources of verification
	<p>3-Supply of orthoses and off-loading devices by ortho-prosthetic technicians: "Ortho-prosthetic technicians are capable of providing foot orthoses and weight distribution off-loading insoles for people with diabetes with foot complications."</p> <p>4-Supply of prostheses adapted to amputees following CVRF: "The ortho-prosthetic technicians are capable of producing adapted lower limb prostheses for amputees (including persons with diabetes or cardiovascular diseases)."</p> <p>5-Identification and monitoring of persons with diabetic foot and/or amputees: "Community-based workers and other health workers are capable of identifying at-risk feet, dispensing adapted patient education, referring patients to health professionals for personalised treatment and following up on counter-referred patients."</p>	<p>The rate of satisfaction of persons visiting structures providing care management for CVRF has improved by X% between the start and the end of the project.</p>	<p>Patient satisfaction survey on the services delivered.</p>

Examples of activities related to tertiary prevention

Type of action	Target population	Activity	Type of support
Tertiary prevention: Care management for cardiovascular risk factor-related disabilities	Medical services for persons with diabetes with complications within primary, secondary or tertiary health care centres, or Medical services providing integrated care management of cardiovascular risk factors with persons with disabling complications.	<p>Launching / reinforcing medical services for persons living with disabling complications within primary, secondary or tertiary health care centres.</p> <p>Fields of intervention:</p> <ol style="list-style-type: none"> 1. Diabetic foot 2. Amputation 3. Cerebrovascular accidents 4. Lower limb arteritis 5. Heart failure 6. Cataracts <ul style="list-style-type: none"> - Support for improving initial and further professional training for health professionals, - Support for joining the HINARI initiative lead by the WHO to access scientific publications, - Construction or renovation of infrastructures, - Medical equipment, - Approaches to improve the quality of health care (including surgery): <ul style="list-style-type: none"> · Organisation of health care services, · Drawing up health protocols, patient referral/counter-referral protocols between health care professionals, · Development of patient diagnosis, treatment and monitoring tools, · Development of training modules, · Training of health professionals (theoretical and practical) in screening for and managing complications, · Training supervisions, monitoring of health professionals, 	<p>Funding.</p> <p>Technical support for developing training modules.</p> <p>Carrying out renovations, providing equipment (with +/- participation of beneficiaries).</p> <p>Organisational support.</p> <p>Development of tools.</p> <p>Steering the development of protocols, tools, modules etc.</p> <p>Training support.</p>

Type of action	Target population	Activity	Type of support
		<ul style="list-style-type: none"> · Participation in international conferences, · Before/after, here/there clinical audits, - Development of patient education, - Integration of the complications of non-communicable diseases into the Medical Information System (MIS), - Ensuring health services are inclusive: <ul style="list-style-type: none"> · Development of internal inclusive policies, · Training on disability for health professionals, · Development of tools to ensure services are accessible for persons with different types of disabilities. 	<p>Carrying out studies (via research institutes).</p> <p>Technical support for developing Medical Information Systems.</p> <p>Technical support.</p> <p>Training.</p>
	<p>Orthopaedic fitting / rehabilitation services</p>	<ul style="list-style-type: none"> - National and regional study of suppliers of the equipment and supplies required. - Renovation and fitting of functional rehabilitation structures. - Development of functional rehabilitation care management protocols. - Support to organise the service. - Development of care management and monitoring tools. - Development of training modules. 	<p>Technical support for studies, and developing tools and protocols.</p>

D

Developing advocacy work

The legitimacy of Handicap International's advocacy work is derived from its observations and operations in the field. Through the implementation of projects, the organisation aims to show that it is possible, even in situations where resources are limited, to implement cost-effective actions to prevent and control chronic diseases. Where possible, this will involve modeling the interventions put into place and assessing their impact in order to produce a documented foundation on which advocacy can be built.

As for primary prevention and access to medication, our advocacy work aims to adopt an integrated approach to the main non-communicable diseases.

At international level, Handicap International aims to contribute to the international dynamic currently underway, to ensure non-communicable diseases become a public health priority. This dynamic led to the United Nations High-level Meeting on Non-communicable Diseases being held in September 2010. Thanks to the active advocacy of Handicap International and other disability NGOs at this meeting, rehabilitation was included in the care continuum for persons living with non-communicable diseases and the inclusion of disability is starting to be considered. It is recommended that the project teams join national stakeholder alliances and

define an intervention strategy for Handicap International in each country adapted to the specific context. The main focus of the advocacy is to ensure that rehabilitation and disability are incorporated into the commitments made by the State Parties.

Other areas of advocacy can also be developed, according to the needs, notably:

- in line with a health promotion approach, advocacy aimed at agro-food companies and the catering industry (at local, national and multi-national level) to encourage them to become stakeholders in promoting improved life hygiene
- advocacy on access to health care⁷⁷ (advocacy with pharmaceutical companies and those supplying medical devices, the State, setting up social funds etc.) including access to medication and laboratory analyses.

Examples of expected results related to Advocacy

Type of action	Expected results	Objectively verifiable indicators	Sources of verification
Development of civil society and local advocacy	Local organisations of people with diabetes (or living with CVRF): <ul style="list-style-type: none"> - Are set up - Offer different activities including psychosocial support - Know their rights and exercise these by carrying out advocacy work with local authorities in order to... Provide access to medical products, improve the quality of health care etc.). 	Each organisation has a legal status by the end of the project.	Statutes of the organisations.
		Each organisation has implemented at least X activities per year.	Activity reports from the organisations.
		Each organisation has an advocacy plan and implements this (indicator of successful advocacy: Availability of medical products in primary health care structures etc.).	Activity reports from the organisations.
National and international advocacy	The needs of persons with diabetes in neglected areas are documented and communicated to decision-makers.	The results of studies carried out during the project are put to use for advocacy campaigns (publications, presentations, awareness-raising amongst the general public, funding bodies, decision-makers etc.).	Publications. Seminar proceedings.

Examples of expected results related to Advocacy

Type of action	Target population	Activity	Type of support
Organisation of associations and advocacy work.	Local associations of persons living with cardiovascular risk factors.	Organisational diagnostic of associations.	Support in carrying out the diagnostic.
		Capacity building for associations, according to their needs.	Training Monitoring. Support for project development.
		Peer psychosocial support.	- Training, - Support/guidance, - Calls for proposals with support for the project development process, implementation, monitoring and evaluation, - Provision of office furnishings
		Therapeutic peer education (notably on lifestyles).	As above
		Advocacy work directed at decision-makers to improve the accessibility and quality of the health care offer (including access to essential medical products). Allowing associations to participate in the decisions made by public health authorities.	As above
		Advocacy to improve the environment (urban, rural to encourage physical exercise, regulation of tobacco, alcohol, the agro-food and catering industries etc.).	As above

Type of action	Target population	Activity	Type of support
		Community awareness-raising on diabetes, carried out by people with diabetes.	As above Information, Education, Communication (IEC). Situation analysis, defining strategy then designing communication supports (content design, layout, printing).
		Actions to promote the social inclusion of people with diabetes. Example: the setting up of a network of people with diabetes, including people with disabilities, to exchange on good practices.	As above
		Support for implementing physical exercise and sports activities adapted to people with diabetes / high cardiovascular risk.	As above
		Support for setting up screening activities (on the condition that these are delivered by health care professionals and that a health care offer is available).	As above
		Ensuring people with diabetes can find their way through the health system: Developing a directory of services.	As above
		Ensure associations of people with chronic diseases are inclusive: <ul style="list-style-type: none"> - Diagnosis, - Training, - Development of education tools adapted to different types of disabilities. 	As above

E

Developing actions to improve access to services

In the area of diabetes, the aims of Handicap International's activities are to:

- Prevent diabetes-related disabilities and disabling situations
- Ensure prevention, health care and rehabilitation services are available, adapted and accessible
- Build capacities, promote social participation and the application and exercising of the rights of people with diabetes and living with CVRF.

Handicap International's interventions to ensure geographical and financial access to high quality services make use of partnerships with three main categories of stakeholders⁷⁸: Service providers, decision-makers and people with diabetes and living with CVRF. These interventions are intended to be implemented simultaneously to develop synergies.

Interventions in partnership with service providers

- Approaches to improve service quality (in particular training for health professionals and setting up of therapeutic patient education processes). It should be noted that diabetes management is inherently multi-disciplinary. It requires the expertise of a wide range of professionals: Doctors, nurses, nutritionists, chiropodists, pedorthists, ortho-prosthetic technicians, physiotherapists, social workers.

Recommendations on training activities

- For these actions carried out at all levels of the health system (primary, secondary, tertiary), Handicap International promotes the inclusion of diabetes issues in the curriculums of initial and ongoing professional training courses for health professionals (nurses, physiotherapists, doctors, ortho-prosthetic technicians, nutritionists, chiropodists etc.).
- Where necessary, whilst waiting for fully-trained professionals to emerge from training pathways, it will implement this specific training itself (community-based educators, orthoprosthetic technicians etc.), ensuring where possible that it is recognised by the State.
- Improving infrastructures (renovation, construction).
- Supplying medical equipment.

Interventions in partnership with decision-makers (national authorities)

- Support for developing, implementing, monitoring and evaluating cross-sector public health policies.
- Advocacy for the allocation of resources for non-communicable disease prevention and control policies, in particular to ensure the sustainable, affordable and universal access to medication.

Interventions in partnership with service users (persons with diabetes)

- Awareness-raising, community mobilisation and advocacy for access to high quality, affordable and available primary prevention, health care and rehabilitation services
- Psychological and social support for persons with diabetes
- Needs assessment of people with diabetes in neglected areas for advocacy purposes
- Support for organisations of people with diabetes (or other chronic diseases) for developing advocacy for allocation of resources for non-communicable disease prevention and control policies, in particular to ensure the sustainable, affordable and universal access to medication
- Therapeutic peer education.

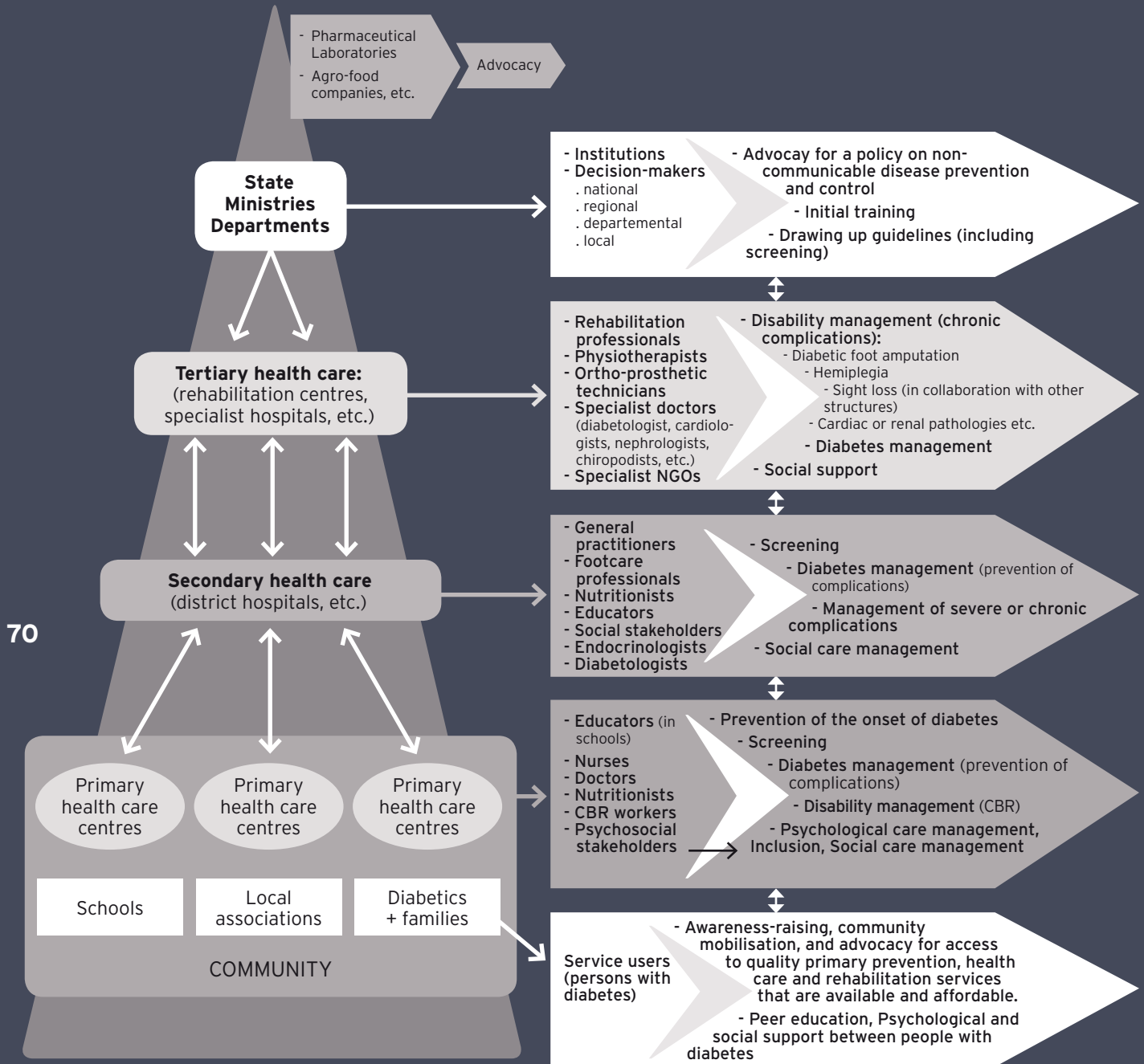
Examples of expected results related to stakeholder coordination

Type of action	Expected results	Objectively verifiable indicators	Sources of verification
<p>Coordination.</p>	<p>There is effective coordination between the different service providers supplying services to persons living with CVRF, including an effective referral / counter-referral system.</p>	<p>The number of persons referred to primary health care centres for screening and/or care management has increased by X% per year.</p> <p>The number of persons referred to orthopaedic fitting centres and specialised care management centres has increased by X% per year.</p> <p>The number of persons counter-referred to primary care centres has increased by X% per year.</p> <p>The proportion of counter-referrals out of the total number of referrals has increased by X% between the start and the end of the project.</p> <p>The delay between amputation and the provision of rehabilitation has been reduced by X% between the start and the end of the project.</p>	<p>There is a document available outlining the referral / counter-referral system.</p> <p>Statistics on the annual number of referrals / counter-referrals.</p>

Example of activities related to stakeholder coordination

Type of action	Target population	Activity
Coordination.	All services and stakeholders.	<ul style="list-style-type: none">- Coordination meeting.- Referral/counter-referral system :<ul style="list-style-type: none">· Development of tools (referral sheets, booklet, etc., patient pathway, existing services directory, etc.),· Development of policy,· Implementation of the system,· Monitoring of the system.

Handicap International's different possible diabetes control interventions



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Referral / Counter-referral



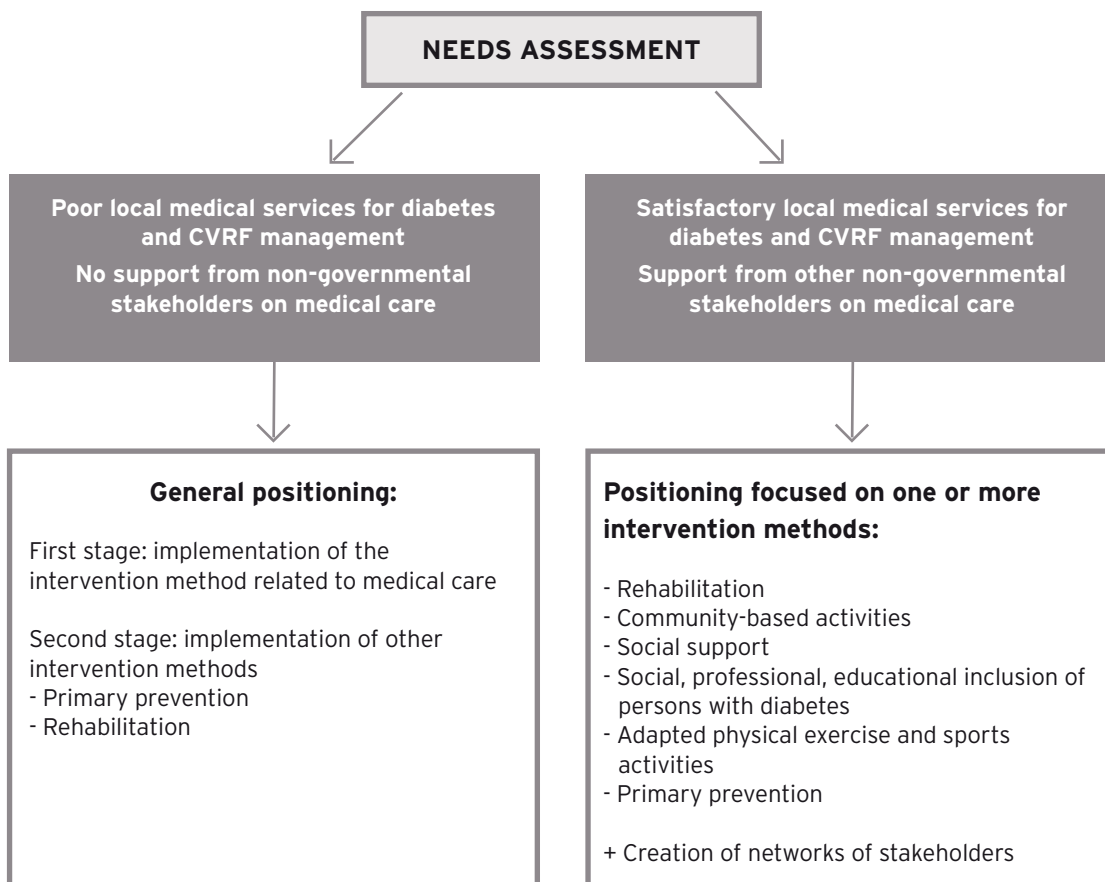
Interdependent actions

Strategic choices

The strategic choices and intervention methods put into place by Handicap International in relation to diabetes and other cardiovascular risk factors (CVRF) are shaped by the stakeholders present locally. Awareness of the problem posed by diabetes and other cardiovascular risk factors is a recent phenomenon in low and middle-income countries. Only a small number of programmes have been developed locally

with very few international stakeholders. This means Handicap International has a large range of possible interventions. The strategic options therefore depend on the context and the actions already in place. Based on an initial needs assessment⁷⁹, the intervention methods will depend on the context and local resources in place. There are two main strategic options.

Diagram of the two main strategic choices



A

General strategic positioning

Handicap International can adopt a general strategic position which takes into account three levels of intervention (primary prevention, medical care, rehabilitation), and which is intended to coordinate the efforts of different stakeholders.

This strategic positioning is justified in cases where no other non-governmental stakeholders are working on diabetes control in the field.

In this case, in terms of the chronology of actions, it is recommended that Handicap International first addresses the issue of medical care to prevent disabling complications (secondary prevention).

It is then possible to implement disease prevention activities (primary prevention) and rehabilitation for diabetics and people living with CVRF with disabilities (tertiary prevention). We do not recommend starting with screening as this leads to a situation in which the people with diabetes have been identified but cannot be referred to high quality health centres. It is therefore recommended to strengthen the care offer prior to implementing screening actions.

When planning interventions, teams should rank them according to their effectiveness. In contexts where there are limited resources available, Handicap International will not give priority to costly interventions targeting a minority of patients, such as hemodialysis for renal failure, kidney transplants, laser surgery for retinopathies or vascular surgery.

Access to drugs/medicines must be the cornerstone of all actions targeting non-communicable diseases. It is important to bear in mind that lifestyle changes are generally not sufficient to control diabetes and other cardiovascular risk factors, and that generally speaking, medical treatment must also be provided.

It is vital that within the health care team, someone has podiatrist expertise in order to prevent at-risk diabetics from developing foot wounds, and to treat these wounds in order to prevent lower limb amputations.

B

Positioning focused on one or more intervention methods

This positioning is justified in cases where other non-governmental stakeholders are active in the field. In this case, it is recommended that Handicap International encourages the creation of networks of stakeholders and implements, to complement the actions of other stakeholders, specific actions according to the needs identified and the organisation's core activities (value-added):

- Strengthening rehabilitation services for diabetics and people living with CVRF with disabling complications by preventing the onset of diabetic foot, providing care for amputees, and patients with paralysis, hemiplegia, visual impairments, arteritis or heart failure
- Social and psychological support for people with diabetes
- Social, professional and educational inclusion of people with diabetes
- Adapted physical and sports activities
- Primary prevention.

Nonetheless, access to medical products must remain a key concern with regards to non-communicable diseases, although actions in partnership with the competent authorities should be made a priority.

According to the capacities of the rehabilitation services in the intervention zone, Handicap International may decide to strengthen these services as a whole or focus this reinforcement on the rehabilitation services provided for people with specific podiatry risks, people with chronic foot wounds and amputees.

Please note, a project limited to the rehabilitation of people with diabetes and / or CVRF suffering from disabling diseases only makes sense if the capacities of the local

medical services are fit for purpose. Indeed, CVRF and diabetes complications in the lower limbs are entirely due to poor disease management.

A primary prevention project alone can be envisaged if the situation analysis shows that the care offer for people with diabetes and other cardiovascular risk factors is already of good quality and is relatively accessible. The project will then adopt a health promotion approach (healthy lifestyle promotion) and will form part of the overall prevention of non-communicable diseases (diabetes, cardiovascular diseases, chronic respiratory diseases, cancers). This strategic choice is explained in the section: "Principles of Intervention".

However, if the situation analysis shows that the health structures are not capable of providing care management for people with diabetes and other cardiovascular risk factors, developing a non-communicable diseases primary prevention project would be unacceptable as it would create a demand for screening and care which could not be met. Implemented at community level, health awareness-raising and education and peer education can only truly bear fruit if coupled with activities to reinforce the services intended to provide medical care for patients. According to its strategic positioning, Handicap International will build its advocacy work with States and decision-makers on its locally-acquired experience and legitimacy, to ensure diabetes becomes a priority for health policy and that it includes rehabilitation provision.

Links between the theme of diabetes and other sectors of activity

This section has been the subject of discussion between Handicap International's technical advisors in order to identify potential synergies across themes. Handicap International's federal strategy reinforces the links between non-communicable diseases and two other highly relevant sectors of activity: rehabilitation and social support.

Rehabilitation services

Rehabilitation services and the accessibility of health centres are essential for people with diabetes with a disabling complication, in particular blindness, paralysis (hemiplegia), chronic ulcer and lower limb amputation. The expertise of pedorthists is also required at earlier stages, not with the aim of providing rehabilitation for people with disabilities but with the aim of preventing amputations. The reinforced collaboration between Handicap International's Prevention and Health Unit and the Rehabilitation Services Unit, which has been encouraged over recent years, has already made it possible to integrate rehabilitation components into diabetes projects (Mali, Nicaragua, Philippines).

HIV/AIDS, mental health and neglected tropical diseases

Diabetes shares a number of characteristics with other themes that form part of Handicap International's health sector activities, namely HIV/AIDS, mental health and neglected tropical diseases. Persons living with chronic diseases often suffer from related psychological disorders. It is therefore important to put Handicap International's expertise in psycho-social support to use within projects. Mental disorders, including disorders relating to the use of psychoactive substances

(alcohol, drugs), also form part of the non-communicable diseases category. Like HIV/AIDS and mental disorders, diabetes is a chronic disease which requires changes to be made to health systems which in many cases were designed to meet acute health problems. It is important to ensure regular monitoring between acute episodes, and health care systems need to be reorganised to ensure this monitoring. For both chronic diseases and neglected tropical diseases the patient has an active role to play in his or her care management, which means that health professionals need to include therapeutic patient education actions as part of the services they offer. This is all the more important in the case of diabetes and lymphatic filariasis where the main form of treatment is self-management at home.

Economic inclusion, social inclusion and inclusive education

According to the context, economic or social and/or educational inclusion actions can be put into place to reinforce diabetes projects. Indeed, people with diabetes may well have difficulties accessing education or employment or participating in the social norms of their peers (marriage for example). It may also be appropriate to set up physical exercise sessions adapted to people with diabetes with the aim of improving their health and social inclusion.

In order to allow a person to choose his or her own life habits and to ensure optimal social participation, Handicap International aims to take action on personal and environmental factors by means of:

- The implementation of economic support to allow access to health care and medication for the poorest populations

- The development of sports and leisure activities for people with diabetes, but also upstream amongst the general population, including those with disabilities (targeting a sedentary, primarily urban society)
- The social integration of people with diabetes by providing support in organising their daily life (meals, care, work, sexuality and education of their children, etc.), awareness-raising and encouraging their entourage to participate in supporting the person with diabetes in their daily life (meals, medication, etc.)
- Professional and educational inclusion if required (some employers may refuse to insure people taking insulin for example)
- Finally, under the framework of health education activities implemented in schools, it is entirely appropriate to make use of the expertise developed in terms of inclusive education.

Prevention

Primary prevention is a fundamental component of Handicap International's non-communicable diseases policy. It is possible to take action on the modifiable risk factors of these diseases, and thereby prevent the onset of over half of cases of non-communicable diseases. Prevention interventions are particularly effective. Furthermore, current World Health Organization guidelines recommend implementing integrated prevention programmes for non-communicable diseases, mental health and trauma.

Civil society support

Diabetes projects can incorporate support for civil society, in particular support for organisations of people with diabetes to implement their projects and assert their rights.

Natural disaster and conflict preparedness

In areas subject to natural disasters, preparedness activities should be put into place, notably in order to prepare people with diabetes to cover long distances on foot and to prepare a reserve of contingency medical supplies to constitute an alternative supply in case supplies to health centres are interrupted.

Anti-personnel landmines

There is a certain amount of common ground between mine risk education activities and health education to prevent non-communicable diseases, as both call on pedagogical theories and methods for influencing behavioural change.

Emergency and reconstruction contexts

In emergency and reconstruction contexts, actions can be implemented to identify people with chronic diseases and refer them to functional health care centres. Handicap International can also develop the links between organisations providing emergency **supplies of insulin** for patients who depend on this medication⁸⁰. It will be important to carry out more in-depth analysis with the Emergency Response Department to define the potential scope of Handicap International's interventions in these contexts.

Strategic positioning in relation to external public health guidelines

The comprehensive, integrated approach to non-communicable diseases promoted by the World Health Organization

The concept of an “integrated approach” to a disease is opposed to that of a “specific approach”. It is recommended to follow and even promote an integrated approach, in order to increase the positive impact of Handicap International’s projects in this sector of activity, in order to optimise resources and avoid fragmenting the health system⁸¹. This concept already underlies, or is fully implemented in some of Handicap International’s projects.

This approach has been transposed into the WHO 2008-2013 action plan which aims to coordinate the interventions of all public health stakeholders⁸².

This recommendation covers the main categories of activities:

- Primary prevention services should not solely focus on diabetes prevention, but also more broadly on promoting health lifestyles (physical exercise, healthy diet, no tobacco and moderate alcohol consumption) to prevent non-communicable diseases (diabetes, cardiovascular diseases, chronic respiratory diseases, cancers).
- Health care services should be strengthened to improve care management for people with diabetes and control other cardiovascular risk factors (arterial hypertension, tobacco consumption, dyslipemia).

- Rehabilitation services should be reinforced for the initial target population, people with diabetes suffering from a disabling complication, and also for people with disabilities with similar needs.
- Given the scale of the epidemic of non-communicable diseases, and as there were very few international stakeholders involved, Handicap International decided in 2006 to develop its support for beneficiaries with one of the main diseases - diabetes, according to the demand and needs identified in the field. This pathology has constituted a gateway into the theme of non-communicable diseases. It has allowed Handicap International to develop its expertise, test intervention methods, and made it possible to gradually adapt health systems to provide care management for chronic pathologies as well as acute pathologies. The organisation is now gradually integrating other non-communicable diseases and their risk factors, in order to allow health systems to avoid as far as possible adopting vertical approaches, sometimes a source of inequality in terms of access to health care.



Focus - Integrated care management of chronic wounds and lymphedema

Over the last few years, Handicap International has been promoting an integrated approach to chronic wounds and lymphedema⁸³. The recommendations on integrated clinical practice, published in 2010⁸⁴ now provide a tool for implementing this approach under the framework of chronic disease prevention and control projects.

The approach to health promotion, promoted by the World Health Organization

It is recommended that the World Health Organization's approach to promoting health is followed. This approach is based on combining different types of multi-sector activities (education, advocacy, etc.), notably in the areas of education, health and food production. "Health promotion is the process of enabling people to increase control over, and to improve, their health"⁸⁵. Indeed, it is important to remember that prevention is not solely limited to information, education and communication actions. Indeed, the actions which aim to change the environment to ensure it is favourable to health, are often primordial and should not be forgotten.

In school settings, Handicap International recommends that primary prevention activities are implemented under the Global School Health Initiative⁸⁶ piloted by the World Health Organization and UNICEF.

International Diabetes Federation guidelines

Global clinical practice guidelines on care management for persons with diabetes have been published by the International Diabetes Federation⁸⁷. These guidelines have often been used as a reference for drawing up recommendations at regional or national level. Under the framework of Handicap International's projects, we advise following the recommendations made at national level, if these conform to the most recent international guidelines, and are adapted to the context. If these do not exist, we then suggest referring to international recommendations such as the highly informative guidelines drawn up by the International Diabetes Federation. This organisation has also worked to rank interventions, and defined three levels of care according to the available resources: "standard care, minimal care, comprehensive care". The guidelines are drawn up by experts according to a highly rigorous methodology which takes into account the level of evidence and cost-effectiveness of each intervention. Specific guidelines on diabetic foot have been drawn up by the International Working Group on the Diabetic Foot and are also a reference at international level⁸⁸.

Project monitoring and evaluation

A

Recommendations on project monitoring and evaluation

- Indicators will be obtained from various sources of information:
 - The national health information system (data collected routinely and incorporated into the treatment delivered by health professionals).
 - Periodic studies conducted to monitor non-communicable disease risk factors (STEPwise studies). These studies are run by ministries of health with support from the World Health Organization and should ideally be conducted every five years. They enable useful information for health policy management to be collected.
 - Studies conducted as part of the project by Handicap International. In this case, it is strongly recommended to establish a partnership with a national or international epidemiology organisation, whose expertise is recognised by its peers. The following studies are recommended for project evaluation purposes: clinical audits, patient satisfaction surveys and studies of patient health.
- Indicators concerning the state of health of people with diabetes should be obtained, particularly the patients' average HBA1c, and the proportion of patients whose HBA1c falls within the therapeutic target range. It is by far the most relevant indicator and it is recommended that resources should be allocated to obtain it and so that the start and end-of-project figures for this indicator can be compared.
- Weight is not a good indicator of good health, as weight loss occurs when diabetes is not correctly managed. It is a variable that will be collected when carrying out studies to describe patients, but it should not be used as an indicator of good health.
- Collecting indicators on disabling complications is not recommended. Although one of the long-term objectives is to reduce the incidence of disabling diabetes complications, projects do not normally last long enough for the impact of the intervention to be perceived (average project length is three to four years). Indeed, disabling complications develop if diabetes has not been correctly managed for several years and as a result of other cardiovascular risk factors. Several years are therefore needed before the impact of prevention work on these disabling complications becomes apparent.

B

Recommendations on carrying out studies

- According to the needs identified, Handicap International can call on different disciplines, including epidemiology, anthropology and sociology. It is strongly recommended that these studies are carried out in partnership with a research organisation whose expertise is recognised by its international peers. The choice of expert must be approved by the technical advisor with the support of the research advisor if necessary. Sufficient human, technical, logistical and financial resources must be available to carry out a quality study.
- Particular care needs to be taken if clinical research is planned. In this case, it is best to work with a research organisation with recognised expertise and in compliance with the current rules, notably ethical rules. As some Handicap International projects are funded by pharmaceutical industry corporate foundations, it must first be checked whether the foundation agrees to contribute towards funding this type of activity.
- As the study constitutes applied research, the possibility of supporting the adaptation of global clinical practice guidelines to countries with limited resources can be considered, as has been done by Handicap International when it has developed appropriate rehabilitation technology.



An insight into the non-communicable disease monitoring system

Be aware that it is not recommended to routinely collect exhaustive data on diabetes. There is no need to set up monitoring systems for the early detection of sources of infection for non-communicable diseases. Consequently, the World Health Organization's recommended model for a non-communicable disease monitoring systems differs considerably from the infectious diseases model. It is mainly based on two systems:

- The Ministry of Health is responsible for setting up the national health information system (supported by the WHO): data is routinely collected by health professionals and incorporated into the treatment delivered. This data is mostly activity-related (number of consultations and number of hospital admissions) and enables the health authorities to allocate resources effectively.

- Non-communicable diseases risk factor monitoring studies (STEPwise studies) run by the Ministries of Health, with the support of the World Health Organization, should ideally be conducted every five years. They enable useful information for health policy management to be collected. It is better to support STEPwise studies rather than conduct KAP studies (knowledge, attitude and practice), as the latter are less relevant in the field of non-communicable diseases.

Strategic positioning

It is not recommended that Handicap International commissions diabetes prevalence studies. Prevalence estimations, based on extrapolations of results of studies conducted in neighbouring countries, exist and are available via the Diabetes Atlas (IDF). Diabetes is not an infectious disease. It occurs in all parts of the world with its distribution primarily being linked to the population age pyramid. Conducting prevalence studies with the support of a research organisation can only be considered if there is suspicion of particularly high prevalence or of atypical forms of diabetes, and only in these cases.



Perspectives for 2011-2015

The main perspectives regarding diabetes and other cardiovascular risk factors over the next five years, according to the key principles set out in Handicap International's 2011-2015 federal strategy, are:

- Reinforce and consolidate existing non-communicable diseases - such as diabetes - prevention and control projects
- Develop new projects, particularly focusing on the countries and areas with the lowest HDI in Asia, North Africa and the Middle East. The diabetes epidemic is most prevalent in these low and middle income regions with prevalence varying on average between 7.5% and 10% of the adult population, with peaks of 18% in some South Asian cities
- Develop Handicap International's added value in terms of the rehabilitation care needed by people with impairments linked to diabetes and other cardiovascular risk factors
- Strengthen the link between the treatment of non-communicable diseases, rehabilitation care and psychosocial support
- Develop skills so as to strengthen needs analysis, ordering and medical product distribution systems
- Make Handicap International's projects even more inclusive for vulnerable people, particularly for people with disabilities
- For primary prevention initiatives, change Handicap International's approach, moving towards an integrated approach targeting several non-communicable diseases and focusing on health promotion. Promote a healthy lifestyle using a multi-sectoral response, combining a range of different activities, such as educating the population in general and the at-risk populations and lobbying political decision-makers and environmental stakeholders (areas for physical exercise, agro-food industry etc).



End of Intervention Methods

Intervention
methods

81



Nicaragua, 1980

Appendices

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Useful information when producing a logical framework

This section proposes model components extracted from logical frameworks produced for previous projects. These components should be adapted to the needs identified during the needs assessment and should be discussed with the Technical Advisor to find a satisfactory compromise between local situation and technical guidelines. However, the examples given here are intended to

help formulate the general objectives, specific objectives, objectively verifiable indicators and sources for verification, required to implement the project. They are also to complete with examples of results and activities proposed in Section 2 on intervention methods.

Examples of general objectives for a diabetes and cardiovascular risk factor (CVRF) control project

General objectives	Objectively verifiable indicators	Sources of verification	Comments
A reduction in diabetes and CVRF-related mortality	Mortality due to cardiovascular disease is reduced by X% over Y years in zone Z. X% of people with diabetes, beneficiaries of the project have their HbA1c reduced by 1% over 2 years in zone Z (proxy indicator).	The mortality register for the intervention zone Z. Public health information system (if this takes into consideration non-communicable diseases and HbA1c). Otherwise before/after (here/there) studies into the health status of the diabetic beneficiaries.	It has been proven that for type 2 and type 1 diabetes, a reduction of 1% in the level of glycated hemoglobin in the blood (HbA1c) over 10 years leads to a 25% reduction in mortality (DCCT and UKPDS studies ^{89,90}).
A reduction in the prevalence of diabetes / CVRF.	The prevalence of diabetes is reduced by X% over Y years in zone Z.	Studies into the prevalence of diabetes / CVRF under the framework of the STEPwise studies conducted by ministries of health with support from the World Health Organization.	

General objectives	Objectively verifiable indicators	Sources of verification	Comments
<p>A reduction in diabetes and CVRF-related impairments / disabilities.</p>	<p>The incidence of diabetic and vascular amputations is reduced by X% over Y years in zone Z.</p> <p>X% of people with diabetes, beneficiaries of the project have their HBA1c reduced by 1% over 2 years in zone Z (proxy indicator).</p>	<p>National public health information system (or study of the registers of surgical interventions across the intervention area).</p> <p>Public health information system (if this takes into consideration non-communicable diseases and HbA1c). Otherwise before/after (here/there) studies into the health status of the diabetic beneficiaries.</p>	<p>The impact of these secondary prevention actions will be felt 10 years after the intervention.</p> <p>It has been proven that for type 2 and type 1 diabetes, a reduction of 1% in the level of glycated hemoglobin in the blood (HBA10c) over 10 years leads to a 25 - 35% reduction in disabling complications (DCCT and UKPDS studies^{91,92}). Indeed, this reduces by 35% the risk of loss of vision (retinopathy), lower limb nerve lesions (neuropathy) and renal disease, by 22% the risk of arteritis (difficulties walking), by 11% the risk of cerebrovascular accidents and by 18% the risk of heart attacks.</p>
<p>An improvement in the quality of life and social participation of people living with diabetes and CVRF.</p>	<p>X% of persons with non-communicable diseases, beneficiaries of the project, claim that their quality of life and social participation has been improved at the end of the project.</p> <p>The persons with diabetes, beneficiaries of the project, claim that their quality of life has been improved thanks to the project.</p>	<p>Cohort studies or before/after (here/there) studies into the quality of life of persons with non-communicable diseases.</p> <p>Or</p> <p>Qualitative study of a group of beneficiaries into the impact of the project on their lives.</p>	<p>The impact of these actions can be measured as of the implementation of the intervention.</p>

Examples of specific objectives

Specific objectives	Objectively verifiable indicators	Sources of verification
Local stakeholders (health care personnel, local government and persons at risk of developing cardiovascular diseases) are capable of implementing quality care management for diabetes and cardiovascular risk factors, and coordinating their action to ensure the best possible access for populations to services.	<p>There is a national (inclusive) / regional / local diabetes and CVRF control policy in place.</p> <p>The stakeholders meet regularly to coordinate their actions.</p> <p>The quality of health care in health care and rehabilitation structures has improved.</p>	<p>Policy document.</p> <p>Minutes of meetings.</p> <p>Results of before/after (here/ there) studies into the quality of health care (clinical audits, patient satisfaction surveys).</p>
Prevention, care management and support methods for disabling situations brought on by CVRF are understood and adopted by key health and rehabilitation stakeholders in zone Z.	There are policies, care and budget protocols in place in health, rehabilitation and social structures for prevention, care management and support for people with diabetes.	<p>Policy documents.</p> <p>Treatment / care management protocols.</p> <p>Guidelines available.</p>
Persons living with CVRF in zone Z have access to improved care management for their disease and related complications.	The quality of health care in health care and rehabilitation structures has improved.	Results of before/after (here/ there) studies into the quality of health care (clinical audits, patient satisfaction surveys).

Standard profile of a diabetes project manager

NB: Clinical expertise (treating patients) differs from public health expertise (health policy).

Different forms of expertise are required for treating diabetic feet - medical, surgical, nursing care, chiropody and podo-orthotic expertise.

	Compulsory	Desirable
Qualifications	<ul style="list-style-type: none"> - Health professional - Master's degree in Public Health (or equivalent) 	<ul style="list-style-type: none"> - Training development - Health promotion / Health education - Non-communicable diseases / Chronic diseases
Experience	<ul style="list-style-type: none"> - Significant professional public health experience - Professional experience in developing countries or in disadvantaged areas. 	<ul style="list-style-type: none"> - Professional clinical experience of non-communicable diseases.

It is vital that sufficient technical support is available on the project to implement the technical, medical and public health aspects.

- A temporary ortho-chiropody trainer.
- A temporary physiotherapist

For the **rehabilitation component**, the specialised human resources needed as a minimum requirement to implement a diabetes project are:

It is vital that sufficient technical support is available on the project to implement the rehabilitation components.

- An orthopaedic / plastic surgeon - trainer.
- A temporary ortho-prosthetic trainer.

Glossary

Body mass index (BMI)

The body mass index is a formula that makes it possible to assess the health risks of excess weight.

Dyslipidemia or dyslipidaemia

Abnormal amount of lipids in the blood (cholesterol and / or triglycerides).

Groups of diseases

Diabetes and cardiovascular risk factors can be included in different groups of diseases, depending on whether their timeframe or risk factors are taken into consideration, or whether we define them in comparison with another group of diseases, or we refer to Handicap International's mandate.

- Diabetes and cardiovascular risk factors are often included in the group of **chronic diseases**. According to the World Health Organization (WHO), chronic diseases are long-term ailments that generally evolve slowly. The timeframe involved means that adjustments must be made to health systems, which were often designed to respond to acute health problems. HIV, one of the main infectious diseases, has become a chronic disease now that antiretroviral treatment is available.
- The WHO promotes the term **non-communicable diseases**, which are the opposite of communicable (infectious) diseases. The main diseases in the non-communicable disease category are cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. These diseases share the same risk factors, namely smoking, poor diet, a sedentary lifestyle and excessive alcohol consumption. This group was built on the possibility for implementing joint prevention interventions. Mental disorders, including disorders relating to the use of psychoactive substances (alcohol, drugs), also form part of the non-communicable diseases category.

- The term **lifestyle disease**, stressing chronic disease risk factors, is gradually being abandoned as it is deemed to be guilt-inducing and simplistic.
- At Handicap International, the terms **disabling diseases** (referring to the organisation's mission statement) and **chronic diseases** are used in internal reference documents (scope, principles of intervention, federal strategy). These terms therefore encompass HIV/AIDS, non-communicable diseases such as diabetes, and neglected tropical diseases.

HbA1c measurement = Glycated haemoglobin

A laboratory blood test to monitor the body's glycemic balance.

Prevalence and incidence

Prevalence and incidence are two different concepts. Although they are linked, they should not be confused.

Prevalence is the number of cases of a disease or of any other health problem in a given population at a given time.

Incidence is the number of new cases of a disease or health-related event in a given population over a known period of time.

Incidence is the measure of the number of new cases whereas prevalence accounts for all cases, both new and old.

Prevention

A set of measures to be taken to prevent or reduce the number and seriousness of diseases, accidents and impairments.

Depending on the stage of the disease, the three prevention levels are:

- Primary prevention aiming to reduce the onset of new cases.
- Secondary prevention aiming to reduce the development of the disease.
- Tertiary prevention aiming to reduce the onset of disabilities caused by the disease.

Referral and counter-referral system

A system enabling continuous and coordinated care management of patients from one health care level to another. For example, a district hospital (secondary health care provider) refers a person with diabetes who has recently undergone an amputation to an orthopaedic centre (tertiary health care provider). This is known as **referral**. Once an orthopaedic device has been fitted, the person is referred back to the secondary health care provider (hospital) so that they can be medically monitored and the disease managed. Their stump will also be monitored to ensure that the prosthesis does not cause complications (wounds, rubbing etc). This is known as **counter-referral**.

It is important that there is effective coordination between the two medical entities so that information circulates between them and the system works smoothly.

Rehabilitation

“Rehabilitation of people with disabilities is a process aimed at enabling them to reach and maintain their optimal physical, sensory, intellectual, psychological and social functional levels. Rehabilitation provides disabled people with the tools they need to attain independence and self-determination.”

This WHO definition demonstrates that rehabilitation is a key component in the overall reinclusion process for people with disabilities. The definition applies to numerous pathologies and diseases. Diabetes, a chronic disease that can become extremely disabling, is not an exception to the rule.

Risk factor

According to the Quebec Disability Creation Process (DCP) model, a risk factor is an element (personal or environmental) likely to cause a disease, trauma or any other form of damage to a person’s integrity or development.

- It is important to specify the type of risk when using the term ‘risk factor’. For example, smoking is a risk factor for cardiovascular disease.
- As a reminder, diabetes is both a cardiovascular risk factor and a disease.

STEPwise approach to Surveillance (STEPS)

The WHO STEPwise approach to Surveillance (STEPS) is a simple, standardized method for collecting, analysing and disseminating data in WHO member countries. By using the same standardized questions and protocols, all countries can use STEPS information not only for monitoring within-country trends, but also for making comparisons across countries. There are currently two primary STEPS surveillance systems, the STEPwise approach to risk factor surveillance and the STEPwise approach to Stroke surveillance.



Sector-specific funding bodies

Main funding bodies for diabetes:

- Sanofi Espoir Foundation (the foundation has been supporting Handicap International since 2006):
<http://www.fondation-sanofi-espoir.com/>
- World Diabetes Foundation:
<http://www.worlddiabetesfoundation.org>

The following **institutional funding bodies** have been supporting Handicap International's projects since 2008:

- Luxembourg Ministry of Foreign Affairs.
- The European Union.

Following the United Nations High-Level Meeting on Non-communicable Diseases in September 2011, it is likely that new institutional funding bodies will focus more on these issues.

It is useful to look into other innovative sources of funding such as:

- Private partnerships with stakeholders working to improve the environment (physical exercise etc).
- People from the developing world who live with chronic diseases sponsoring projects.



Major technical documents and websites

Diabetes epidemiology

Diabetes Atlas

<http://www.idf.org/diabetesatlas>

Epidemiology of non-communicable diseases

World Health Organization, Chronic Diseases and Health Promotion

<http://www.who.int/chp/en/>

World Health Organization, STEPwise approach to surveillance (STEPS)

<http://www.who.int/chp/steps/en/>

<http://www.who.int/chp/steps/manual/en/index.html>

Non-communicable diseases (including diabetes) and disability

World Health Organization - World Report on Disability

<http://www.who.int/disabilities/world-report/2011/en/index.html>

Non-communicable diseases and mental health

World Health Organization

<http://www.who.int/nmh/en/>

Essential medicines and pharmaceutical policies

World Health Organization

<http://www.who.int/medicines/en/>

Guidelines on clinical practice

International Diabetes Federation:

<http://www.idf.org>

Reference documents:

- Global guidelines on type 2 diabetes
- Global guidelines on managing diabetic foot

For an up-to-date list of external reference documents and tools, the reader can visit the Handicap International Technical Resources Division's website (Skill Web), which is regularly updated and where a number of diabetes-related tools can be found:

<http://www.hiproweb.org/>

This site can be accessed in-house by obtaining a password from the Knowledge Management Unit.

Over the next two years, a methodological guide to implementing interventions under these types of projects, a result of lesson-learning from Handicap International's experience, will be developed.



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Diabetes and other cardiovascular risk factors

This policy paper describes Handicap International's mandate and values in operational terms as applied to the theme of diabetes and other cardiovascular risk factors.

It presents the approaches and references for Handicap International's actions, choices and commitments. It aims to ensure coherence in terms of practices whilst taking into account different contexts.

Essentially this is a guidance document for programme staff which defines the topic and outlines the target populations, methods of intervention (expected results, activities) and indicators for monitoring and evaluation.

This policy aims to ensure that all projects carried out by Handicap International programmes are consistent with the methods of intervention presented.

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