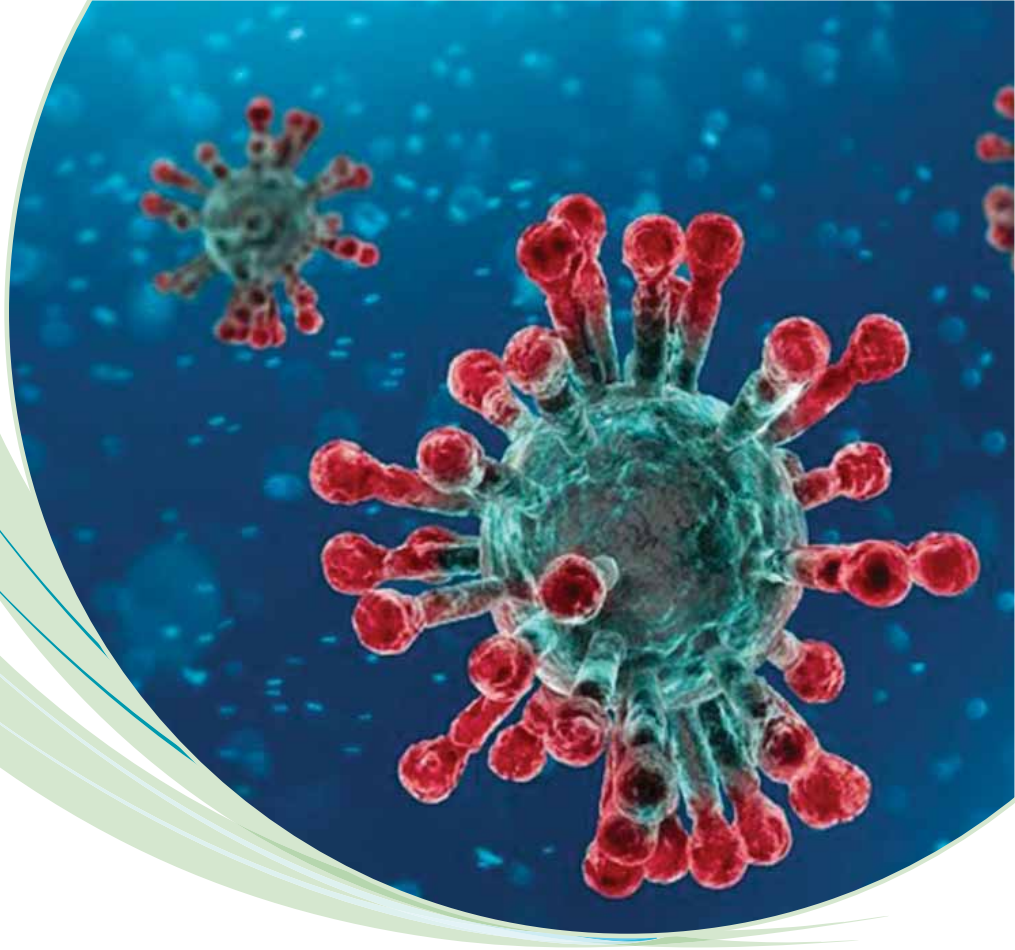

RESPONSE STRATEGY COVID-19 - DIABETES 2020

Santé Diabète

Innover ensemble
pour lutter contre le diabète en Afrique

April 2020

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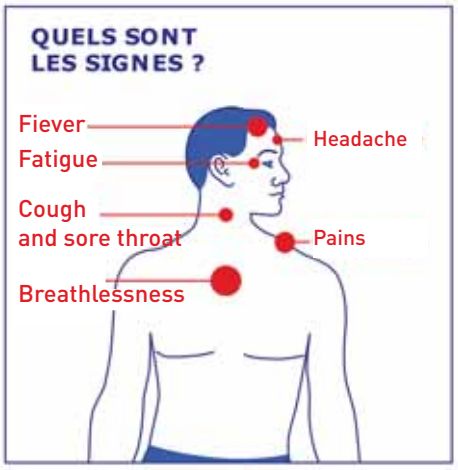
I. General information on COVID-19

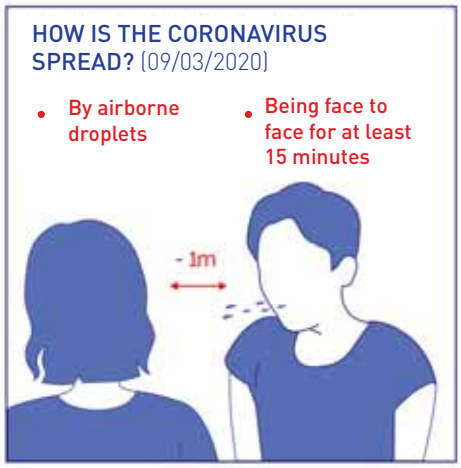
1. Definition

COVID 2019 disease, which means «Coronavirus Disease 2019», is caused by a virus from the Coronaviridae family, SARS-CoV-2. This infectious disease is a zoonosis (disease and infection whose agents are naturally transmitted from vertebrate animals to humans). It emerged in December 2019 in the city of Wuhan in China. It then spread from China causing a global epidemic. On Wednesday, March 11, the Director General of the World Health Organization (WHO), Dr. Tedros Adhanom Ghebreyesus announced that the COVID-19 epidemic is a «Pandemic».



2. Symptoms

The most common symptoms of COVID-19 are fever, fatigue and a dry cough. Some patients experience pain, nasal congestion, runny nose, sore throat, diarrhea, disturbed taste and smell. These symptoms are generally mild and appear gradually. Some people, although infected, have no symptoms and feel good. Most (about 80%) of people have much more severe symptoms, including dyspnea (difficulty breathing), respiratory distress, and can lead to death.



3. Modes of transmission

COVID-19 is transmitted by people carrying the virus. The disease can spread from person to person by respiratory droplets expelled from the nose or mouth when a person coughs or sneezes. These droplets can be found on objects and surfaces near the person in question. People can then contract COVID-19 if they touch these objects or surfaces and then touch their eyes, nose or mouth. It is also possible to contract COVID-19 by inhaling droplets from an infected person who has just coughed or sneezed. This is why it is very important to observe very strict prevention measures.

4. Preventive measures

It is possible to reduce the risk of being infected or spreading COVID-19 by taking a some simple precautions:

- **Wash your hands frequently** and thoroughly with a hand sanitizer or with soap and water
- **Stay at least one metre away** from others who cough or sneeze
- **Avoiding touching** your eyes, nose or mouth
- **Wear a mask**, even if they are handcrafted, to reinforce the barrier measures by preventing your hands from moving towards the nose and the mouth
- Ensure that you comply with the rules of respiratory hygiene and that those around you do the same. **If you cough or sneeze, you must cover your mouth and nose** with your bent elbow or a tissue and throw away the tissue immediately afterwards

5. Screening

If you start to feel sick and even have mild symptoms (headache, mild fever (from 37.3 °C) and moderate runny nose), you should call a doctor. Taking the symptoms into account, if he/she deems it necessary, the doctor will screen for COVID-19. It is mainly performed using polymerase chain reaction tests after reverse transcription for the detection of viral RNA (RT-PCR). It can also be done by serological tests.

- **PCR or Polymerase Chain Reaction (chain reaction using polymerase):** is the recommended screening method currently used in analytical laboratories. It is based on genetic analysis and on the genome of the virus. To be able to carry out this analysis, the virus is taken from the nasopharyngeal / oropharyngeal secretions of the suspected case using a swab.
  It should however be mentioned that according to several studies, cases of false negatives can represent more than 30% of the patients tested.

- **The serological test** makes it possible to measure the body's response to the virus by looking for the presence of antibodies which represents the signal of a reaction of the immune system when faced with viral aggression. It requires a drop of blood placed on a test strip containing the specific antigens. If the strip reacts, the test is positive for the coronavirus. Unlike the nasal test, the serological test will show whether the person is immune to COVID-19.
  However, it should be mentioned that the test is negative in the first days of contamination because the immune system has not yet produced enough antibodies.

- Finally, it is also possible to use **the pulmonary scanner** which is normally a routine imaging tool for the diagnosis of pneumonia. In fact, research has shown that the sensitivity of the scanner for the detection of COVID-19 was 98%. Researchers conclude, in the journal Radiology and in the journal Lancet Infectious Diseases, that the pulmonary scanner is a sensitive technique to detect COVID-19, even in asymptomatic subjects, and could be considered as a screening tool complementary to RT-PCR. The only constraint is of course the cost and accessibility of imaging in many countries.

6. Care

As of today, no approved vaccine or medication is available to eradicate the virus. Some medicines, which are meant for other conditions, are being tested to treat the infection. Pending the results of these clinical trials, care remains symptomatic treatment:

- Analgesic - antipyretic against fever and pain,
- Expectorants / decongestants against coughs / rhinitis,
- Vitamin C against asthenia (excessive fatigue)
- Antibiotics against secondary bacterial infections
- Oxygen therapy, ventilation in case of respiratory distress
- Hospitalization in intensive care unit for severe cases
- Care of associated pathologies (diabetes, hypertension, etc.)

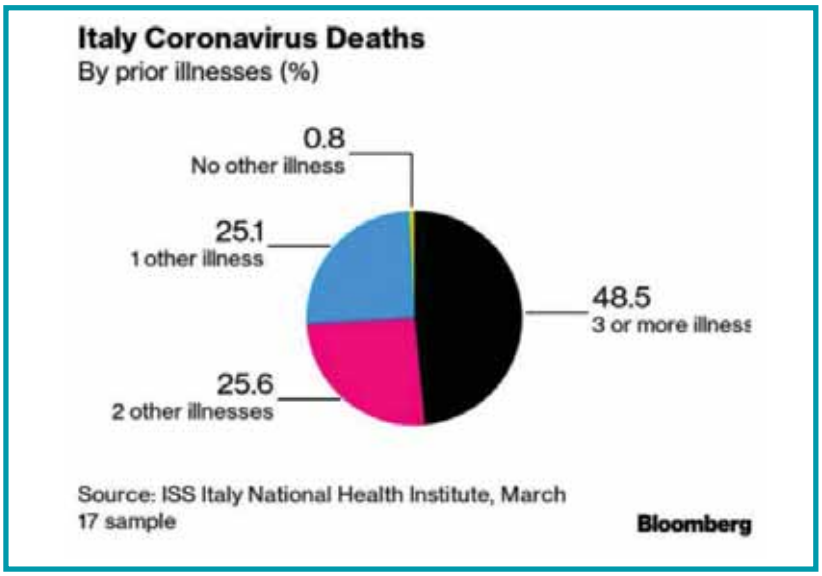
II. COVID-19 Risks and Non-Communicable and Communicable Chronic Diseases

People over the age of 60 and people living with Non-Communicable Diseases are more vulnerable to becoming seriously ill if they are infected with the coronavirus. This is in particular for people living with :

- Cardiovascular disease (e.g. Hypertension, people who have had or are at risk for a heart attack or stroke);
- Chronic respiratory disease (e.g. COPD);
- Diabetes;
- Cancer;
- Obesity ;

Smokers are also likely to be more vulnerable to COVID-19.

Finally, it is also important to note that people with HIV / AIDS with immunosuppression (CD4 ≤ 350 cells / µl), detectable viral load and comorbidities are likely to be at higher risk of infection and serious illness..



Mortality data in Italy show that patients with additional comorbidity represent 25.1% of mortality, 2 additional comorbidities 25.6% and 3 additional comorbidities 48.5%. Patients with comorbidities therefore represented 99.2% of mortality in Italy. These data illustrate the enormous influence of NCDs on the severity of illness and mortality.

The China Center for Disease Control and Prevention has shown an increase in mortality among people with diabetes (2.3% overall and 7.3%, patients with diabetes)[1].

In France, while 17% of adults in France are obese, they represent 83% of patients infected with COVID-19 in resuscitation units.

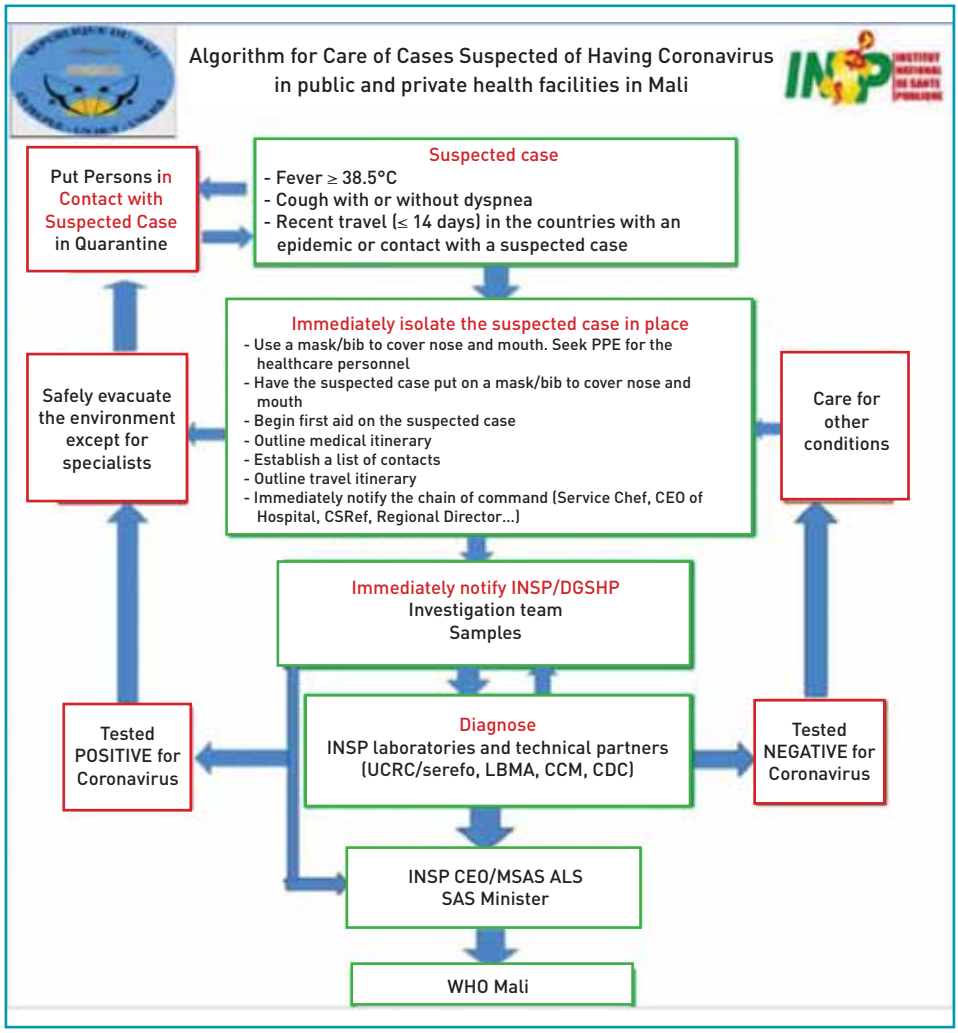
1. Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72,314 cases from the Chinese center for disease control and prevention. J Am Med Assoc 2020 Feb 24. https://doi.org/10.1001/jama.2020.2648.

III. COVID-19 in Mali, in Burkina Faso and in the Union of the Comoros

1. COVID-19 in Mali

The first cases of COVID-19 were recorded in Mali on March 25, 2020. In an address to the nation, Ibrahim Boubacar Keïta, the President of the Republic of Mali, has declared a state of emergency and instituted a curfew from 9 p.m. to 5 a.m. Additional measures are taken by the government as the epidemic progresses.

As of 04/20/2020, Mali officially had 246 infected people, including 14 deaths and 56 people healed. The epidemic affected, at that date, 5 regions of Mali: The district of Bamako, the region of Kayes, Mopti, Koulikoro and Sikasso.



As everywhere in the world, a large proportion of deceased patients presented comorbidities such as diabetes, obesity...

For the care, Mali has implemented the response schematized below:

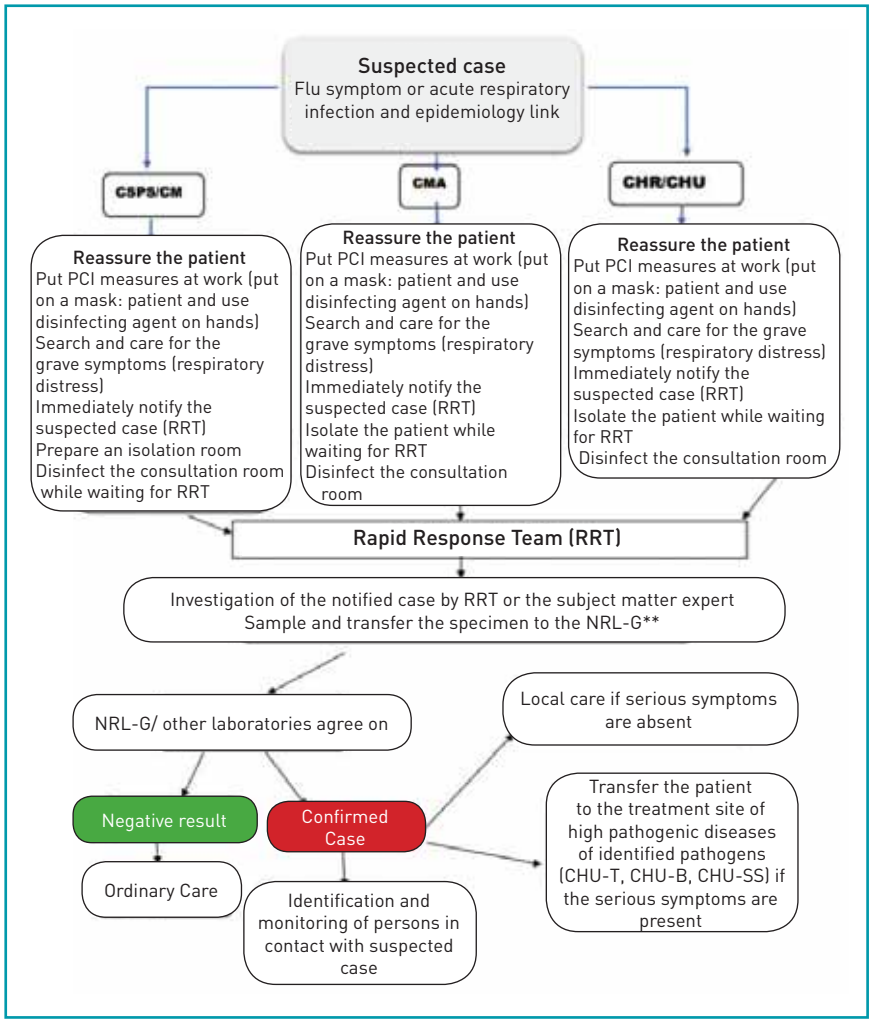
246 people infected

14 deaths †

56 people recovered

2. COVID-19 in Burkina Faso

The first cases of COVID-19 were recorded in Burkina Faso on March 09, 2020, making Burkina Faso the sixth country affected in sub-Saharan Africa after Cameroon, Nigeria, Senegal, South Africa and Togo and the fourth in West Africa. To deal with the epidemic, the Burkinabe authorities quickly activated their epidemic management system, which had been set up during the Ebola epidemic in West Aferica in 2013-2014. Additional measures are taken by the government as the epidemic progresses.



As of 04/20/2020, Burkina Faso officially counted 581 people infected, including 38 deaths and 357 people healed. The epidemic affected, at that date, 9 regions of Burkina Faso: the Center, Hauts-Bassins, Centre-Nord, Plateau Central, Cascades, Centre-Sud, Sud-Ouest and the Sahel.

As everywhere in the world, a large proportion of deceased patients presented comorbidities such as diabetes, obesity...

For the care, Burkina Faso has put in place the response schematized below.

581 people infected

38 deaths

357 people recovered

3. COVID-19 in the Union of Comoros

As of April 14, 2020, there are still no positive cases in the Union of the Comoros. The Santé Diabète strategy described below will therefore be deployed initially in Mali and Burkina Faso before being deployed in the Comoros depending on the evolution of the situation.

IV. Response strategy implemented by Santé Diabète

1. In-house strategy

In order to protect its staff, Santé Diabète has taken a certain number of measures since the start of the epidemic in the various countries where Santé Diabète has salaried teams (France, Mali, Burkina Faso and Union of the Comoros):

- **Containment and telework** for all staff;
- **Provision of hand sanitizer and surgical masks** for all staff;
- For healthcare professionals who will be in contact with patients, **provision of FFP2 mask and gloves;**
- Finally, management asked all employees to take the following online training: **https://www.institutbioforce.fr/stopcovid19/**

2. External strategy

This strategy will be implemented in support of the national response plans to COVID-19 for the Republic of Mali and Burkina Faso. At the international level, it will be part of the work carried out by the Working Group on COVID-NCDs of the World Health Organization (WHO).

2.1 International advocacy strategy

Santé Diabète will develop an advocacy campaign in order to sensitize international actors on the importance in Africa of:

- **Prevent COVID-19** in people with diabetes who are at risk for major complications;
- **Adequately allocate resources from the health system** to ensure quality care for patients with chronic diseases.
- Through a coalition of 22 international organizations[2], Santé Diabète will carry out an action which will aim:
  - **Identify shortages of insulin and other essential diabetes supplies** (syringes, blood glucose strips, oral anti-diabetics, etc.), as well as other difficulties in diabetes care, which result from the disruption caused by COVID-19;
  - **To mobilize support and share best practices** in order to best meet these needs.

2. Life for a Child, JDRF, Insulin for Life, ISPAD, The Helmsley Trust, Direct Relief, IDF, Marjorie's Fund, Santé Diabète, Diabetes in Humanitarian Crises group, International Insulin Foundation, Harvard Medical School/Partners in Health, American Diabetes Association, T1International, Sonia Nabatea Foundation, GPED, Stichting Vluechteling, Beyond Type 1, ACCISS group , Defeat-NCD, Changing Diabetes in Children

2.2 Strategy implemented in Mali and Burkina Faso (then in Union of the Comoros)

2.2.1 National technical assistance

In the countries, Santé Diabète will develop technical assistance to the Ministries of Health in order to support them to ensure:

- **Adequate distribution of the resources** of the health system to ensure quality care for patients with chronic diseases;
- **Adequate prevention of COVID-19 in people with diabetes** and more generally with chronic diseases who are at risk of major complications;
- **Accurate identification of shortages of insulin and other essential supplies for diabetes** (syringes, blood glucose strips, oral anti-diabetics, etc.), as well as other difficulties in diabetes care, which result from the disruptions caused by the pandemic of COVID-19;
- **A mobilization of partners to best meet these needs (example:** program of the pharmaceutical laboratory Novo Nordisk to provide free 6 months of insulin stocks for humanitarian actors working in countries at risk of insulin shortages linked to the crisis of COVID-19).

2.2.2 Prevention in people with diabetes and other chronic comorbidities

People with diabetes and other chronic comorbidities are particularly at risk of developing serious forms if they are infected with COVID-19. It is therefore urgent that people with diabetes and other comorbidities have access to clear and precise information on the measures to be adopted to:

- **Maintain adequate monitoring and treatment of diabetes** and / or other chronic comorbidities;
- **Prevent COVID-19 infection;**
- **Have access to early and effective treatment** in the event of COVID-19 infection.

To achieve these 3 objectives, Santé Diabète, in collaboration with the Ministries of Health, specialist health professionals, patient associations and national and international partner NGOs, will develop prevention actions targeted at people with diabetes and / or other chronic comorbidities.





This response will take place in four stages:

- **Produce and broadcast TV shows, radio shows and newspaper articles** in the international press (broadcast in our intervention countries like RFI and TV5 for example) and in the national press;

- **Sending an SMS campaign to people with diabetes** who are members of patient associations in capitals but also in regions of different countries (National Federation of Diabetics in Mali, Burkinabé Association for Aid to Diabetics, Association Vivre avec son Diabète, regional and local associations);

- Provide patients wishing to use **two whatsapp exchanges** with specialists in diabetologists or endocrinologists to carry out teleconsultations to enhance prevention and better monitor the progress of the chronic disease, while avoiding traveling around health structures. This monitoring will also help to better manage the Ramadan period for people with diabetes in this epidemic context.
  - the whatsapp channel will be created for children and adolescents with type 1 diabetes. All children, young adolescents and their families will be offered to register;
  - the whatsapp channel will be created for adults with type 2 diabetes. They can register through their associations but also by a link contained in the prevention SMS..

- **Develop content (Videos, posters, etc.)** that will be broadcast on whatspp channels, but also content that can be displayed in diabetes consultations;

- **Develop a web page** containing all of these recommendations and tools. It can be consulted by patients but also by their families;

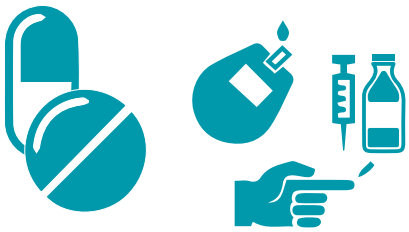
2.2.3 Managment of diabetes

We will boost collaboration between specialists working in COVID units and specialists in endocrinology and diabetology so that doctors in COVID-19 units can adequately manage infectious disease as well as chronic disease.

We will also offer:

- **Continuous training for healthcare professionals** working in COVID units on diabetes management according to the needs identified during the care of the first patients;

- **Supply of medicines** (insulin, syringes, anti-diabetics, etc.) and blood glucose monitoring equipment (blood glucose meters and strips) for indigent patients with diabetes and infected with COVID.



2.2.4 With other partners

Links have been identified with national or international NGOs and will be deepened as the response is implemented. These include, for example:

- **Distribution of masks and hydroalcoholic solutions** (SHA) for patients with diabetes in partnership with MSF;
- **Development of specific messages and tools** for partners like MSF, the Red Cross or the Walé NGO who will be able to develop community prevention actions.
- **The possibility of providing, in Mali, continuity of care at home** with the nurses of the «Santé Mobile» company.

2.2.5 Search

Two national and one international research actions will be developed to monitor and evaluate this response:

National:

- **An assessment of the knowledge of people with diabetes who received the SMS campaign** (a pre test with a questionnaire carried out before the start of the campaign and a post test with a questionnaire carried out after the last message of the campaign);
- **A qualitative survey** on the contribution of the whatsapp channels set up for people with diabetes;

International:

- We will invite all our patients to register for the French version of:

https://beatcovid19now.org/

which is a «symptom tracker» developed by the team of Pr Richard Osborne (Australia), translated into French by the team of Dr Debussche and validated by the World Health Organization (all three partners of the NGO Santé Diabète). It will make it possible to monitor the state of health of our community of patients and their families and to set up an early warning system in the event of proven symptoms. In fact, it asks you questions about the symptoms you are experiencing or not experiencing at the moment and allows you to follow them day by day. it also poses other questions related to COVID-19. At the end, you get an overview of your current symptoms. By tracking them daily, it allows you to track changes over time.

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