



Ministère de la Santé
et de l'Action Sociale



PROGRAMME NATIONAL
DE LUTTE CONTRE
LES HEPATITES

STRATEGIC PLAN AGAINST VIRAL HEPATITIS IN **SENEGAL** (2019-2023) POLICY BRIEF

INVESTING IN THE FIGHT AGAINST HEPATITIS B AND C IN SENEGAL

NATIONAL STRATEGIC PLAN

(2019-2023)

Policy Brief

1. General Overview

Hepatitis B and C place a significant public health burden on the Senegalese population. Hepatitis B is highly endemic in Senegal. Comparatively, hepatitis C is less endemic but many individuals are still affected. In Senegal, recent studies have assessed the burden of viral hepatitis B and C with a prevalence rate of 8 to 9% for HBV and of 2% for HCV.

Senegal has made significant strides in reducing the incidence of hepatitis B. Due to the introduction of universal hepatitis B vaccination for newborns in 1999 and the introduction of hepatitis B vaccine for children under five in the Expanded Program on Immunization (EPI) the global seroprevalence of HBsAg has decreased from 17% to 9% over the last two decades.

The seroprevalence of HCV and driving risk factors are still largely unknown or unconfirmed. Among blood donors and pregnant women, the prevalence of hepatitis C is low, at less than 2%. In certain high-risk populations, such as injecting drug users (IDU) and men who have sex with men (MSM), this prevalence may be higher than 10%, according to concordant studies.

Senegal must strengthen and scale-up its program against hepatitis to effectively protect the health of its population. Epidemiological modeling suggests that a large proportion of the Senegalese population currently living with hepatitis B and C is undiagnosed. Unless diagnosed and initiated on treatment, these individuals will go on to suffer complications from advanced liver disease, including hepatocellular carcinoma or even death.

The Ministry of Health and Social Action has launched a major program for the prevention and treatment of viral hepatitis. In 2017, the Ministry initiated the development of a 5-year strategic plan for viral hepatitis. The strategy covers the five hepatitis viruses (A, B, C, D and E), but it focuses on hepatitis B and C due to their large public health burden.

The fight against viral hepatitis in Senegal is being led by the National Program Against Hepatitis. The mission of the PNLH, in partnership with other key stakeholders, was to first develop this national plan. The PNLH will also be tasked with assuring effective implementation of the plan.

The general objective of the national plan is to significantly reduce the transmission of viral hepatitis B and C, aligning the morbidity and mortality of individuals with chronic viral hepatitis with the global strategy goals against hepatitis for 2030.

- 90% reduction of new cases of chronic hepatitis B and C
- 65% reduction of deaths associated with hepatitis B and C
- 80% treatment coverage for individuals with chronic hepatitis B and C who are eligible for treatment

The impact on public health will be significant. Many deaths will be prevented and Senegal will see an even greater reduction of hepatitis B infections, cancer cases, and advanced liver diseases.

To implement the National Strategic Plan (NSP), it is estimated that it will cost 51.5 billion CFA francs (US\$97.2 million). The annual cost will increase from 5 billion CFA francs (US\$9.4 million) in 2019 to \$17.6 billion CFA francs (US\$33.2 million) in 2023.

The financing gap as of mid-2018 and considering current expenditure for the fight against the hepatitis, will be a total of 40.5 billion CFA francs. On average, the annual financing need will be 8 billion CFA francs but the annual needs will grow over time (3 in 2019, 7 in 2021 and 15 billion in 2023).

Overall, the 5-year estimated cost of the program is significant but potentially affordable if domestic and external funds are effectively mobilized during the second half of 2018.

2. Hepatitis in Senegal: Existing programs

Vaccination

- **From 1999 to 2004, the PNLH ensured newborns received the birth-dose against hepatitis B** through public and private health structures, and children aged 24 to 59 months received it from the staff of public and private preschool establishments.
- **After 2005, vaccination activities for infants aged 0 to 11 months were integrated into EPI and the PNLH guaranteed immunization of children aged 12 to 59 months.** In EPI, pentavalent vaccine (DTPHepBHib) includes hepatitis B and is administered at 6, 10, and 14 weeks.
- **Since 2016, the birth-dose has been re-introduced and vaccination coverage was 82% by December 2017, according to official estimates.**
- **Healthcare staff and healthcare professionals in-training (medical students, pharmacology, odontology, nursing students, etc.) are screened and vaccinated if are found to be vaccine naïve** (3 doses in total, with 1 dose every other month). This intervention has allowed for the vaccination of more than 10 000 students of the school Medicine/Pharmacology/Odontology and the UFR of health in Thies, 8000 health care staff within the last 5 years.

Screening and surveillance system

- **During the 2017, 8757 new cases were screened HBsAg positive.**

- **For hepatitis C, 585** hwere screened positive in 2017 among health care staff and blood donors.
- **The screening of pregnant women for HBV is not currently mandatory**, but many midwives and OB/GYN integrate screening into prenatal checkups (few among those receive PMTCT based on antiretrovirals).
- **The current surveillance system does not include viral hepatitis.** The system will have to be reconfigured to allow for the reliable detection of new cases of hepatitis.
- **A common database is being developed and will allow for the global and systematic reporting of hepatitis test results.** Preliminary work is also in the process of establishing registries of patients with hepatitis and enabling timely follow-ups.

Treatment of patients with hepatitis B and C

- **Tenofovir, the main therapy used is available at PNA (Pharmacie Nationale d'Approvisionnement, Central Medical Store in charge of importing and distributing health products for the public sector), principal hospitals in Dakar, and from the PLNH.** Important efforts have been made to increase the affordability of the drugs, which cost currently 5,000 FCFA for patients with health insurance, 2,500 FCFA for patients without health insurance, and are free of charge for indigents listed among the beneficiaries of family transfers.
- **In December 2017, 893 patients underwent treatment** and additional patients were recruited.
- **For hepatitis C, there is no current national effort.** Negotiations with pharmaceutical companies has begun, and current prices range from 200,000 CFA to 250,000 CFA for a 12-week course of treatment. Due to the high cost of the drugs, it will be essential that HCV has favorable cost-effectiveness ratios in relation to other diseases such as the HIV or tuberculosis. The number of individuals undergoing treatment is still limited since treatment costs often must be covered by the patient and his or her family.

3. Strategic Plan for the Fight Against Hepatitis 2019-2023

The NSP envisions a Senegal free of new viral hepatitis infections, where all people living with chronic hepatitis B and C know their status and have access to high quality health services and treatments without discrimination and/or stigmatization.

The 5-year objectives of the Plan are framed by those of the WHO, and consider both financial and human resources limitations, as well as the other health priorities of Senegal.

The specific objectives of the NSP have been defined as the following:

- ▶ **Objective 1** : Raise community awareness of viral hepatitis and reduce stigmatization and discrimination
- ▶ **Objective 2** : Strengthen hepatitis epidemiological data through research and surveillance
- ▶ **Objective 3** : Prevent transmission of viral hepatitis
- ▶ **Objective 4** : Improve the diagnosis and treatment of chronic hepatitis

The most critical interventions of the action plan relate to prevention and treatment, and are described below.

- Vaccination of health professionals
- Vaccination of new health care staff or in training
- Birth-dose vaccination
- Screening for HBsAg
- Treatment for viral hepatitis B and C

Table 1. Number of patients treated 2019-2023 (projections)

Projections	2019	2020	2021	2022	2023	Total
HBV	2,000	4,000	6,000	8,000	10,000	30,000
HCV	300	600	1,500	3,000	6,000	11,400

The plan aims to increase existing prevention efforts and implement a solid infrastructure of awareness raising, clinical training, epidemiological surveillance, monitoring and evaluation, and supply chain management to launch high quality programs that could rapidly expand over the next decade.

The next 5 years will see not only a substantial reduction in new HBV infections, but also health system strengthening, which will allow the programs to evolve and develop rapidly and efficiently, which will be important given the expected growth in treatment demand.

4. The Impact of the Action Plan

In collaboration with epidemiological modeling research teams at Imperial College London, the long-term impact of the NSP on the hepatitis B and C epidemics was projected.

We have assumed that the NSP activities will be continued beyond 2023 and, as a result, the impact of the interventions was modeled until 2050. Two scenarios, the « gradual » and « rapid » scenarios, were designed and compared to the « status quo » scenario, the counterfactual to scale-up.

HBV Scenarios

In the gradual scenario, treatment coverage continues to grow beyond 2023 at the same rate as during the first five years of the NSP. For the rapid scenario, treatment coverage increases two times faster after 2023 and represents an intensification of efforts.

Table 2. HBV: Number of new patients treated (annual and cumulative)

Projections	2019	2020	2021	2022	2023	Total 2019-2023	Cum 2019-2030
Gradual scenario	2,000	4,000	6,000	8,000	10,000	30,000	150,000
Rapid scenario	4,000	8,000	12,000	16,000	20,000	60,000	300,000

HCV Scenarios

For HCV, the progressive scenario assumes that treatment coverage reaches 6,000 patients per year after 2023. Treatment coverage under the rapid scenario continues to increase linearly until 12,000 patients are treated per year in 2026, after which it stabilizes.

Table 3. HCV: Number of new patients treated (annual and cumulative)

Projections	2019	2020	2021	2022	2023	Total 2019-2023	Cum 2019-2030
Gradual scenario	300	600	1,500	3,000	6,000	11,400	53,400
Rapid scenario	300	600	1,500	3,000	6,000	11,400	89,400

Impact on Hepatitis B

- The gradual and rapid scenarios considered in the NSP will prevent more than 50% of the new infections that would occur under the status quo by 2030.
- By 2050, the two scenarios would prevent 65% of the new infections that would occur under the status quo – more than 190,000 infections averted.
- By 2030, the gradual scenario would reduce the total number of deaths by 21%, while the rapid scenario would reduce the total number of deaths by 40%.

- In the long term, by 2050, the gradual scenario would avert 70,000 deaths (57% of the status quo), while the rapid scenario would prevent around 80,000 deaths (66% of the status quo).

Table 4. Summary of disease impact of HBV treatment scenarios

	2019-2030				2019-2050			
	Number of deaths	Deaths averted	Number of new infections	New infections averted	Number of deaths	Deaths averted	Number of new infections	New infections averted
Status quo	39,994	-	176,172	-	121,240	-	295,723	-
Gradual scenario	31,622	8,372 (21%)	87,659	88,513 (50%)	51,658	69,582 (57%)	105,049	190,674 (64%)
Rapid scenario	23,819	16,175 (40%)	84,410	91,762 (52%)	41,697	79,543 (66%)	100,098	195,625 (66%)

Impact on Hepatitis C

- By 2030, the gradual scenario would reduce new infections by 6% compared to the status quo and the rapid scenario by 8% compared to the status quo. In total, that is equivalent to 4,462 and 6,211 infections averted.
- By 2050, the gradual scenario would reduce new infections by 31% compared to the status quo and the rapid scenario by 47% compared to the status quo.
- In the gradual scenario, cumulative deaths would decrease by 6% by 2030, compared to under the status quo. A reduction of 8% could be achieved by 2030 under the rapid scenario.
- By 2050, the gradual scenario would avert a total of 20,171 deaths in comparison to the status quo (a reduction of 24%), while the rapid scenario would avert 34,558 deaths (a reduction of 41%).
- By 2023, the NSP alone would reduce the prevalence of decompensated cirrhosis by 4% and liver cancer by 5%.
- Under the gradual scenario, by 2030 the number of liver cancer cases would decrease by 9% and the number of decompensated cirrhosis cases by 8% compared to the status quo. By 2030, the rapid scenario would reduce the number liver cancer cases by 14% and the number of decompensated cirrhosis cases by 12% in comparison to the status quo.

Table 5. Summary of disease impact of HCV treatment scenarios

	2019-2030				2019-2050			
	Number of deaths	Deaths averted	Number of new infections	New infections averted	Number of deaths	Deaths averted	Number of new infections	New infections averted
Status quo	27,944	-	74,502	-	84,050	-	232,346	-
Gradual scenario	26,235	1,709 (6%)	70,040	4,462 (6%)	63,878	20,172 (24%)	160,093	72,253 (31%)
Rapid scenario	25,521	2,432 (9%)	68,291	6,211 (8%)	49,492	34,558 (41%)	123,361	108,985 (47%)

5. Action Plan Costs

For 2019-2023, the total cost of the NSP implementation is estimated at 51.5 billion CFA francs (US\$97.2 million). The annual costs will increase over time from 5 billion CFA francs (US\$9.4 million) in 2019 to 17.6 billion CFA francs (US\$33.2 million) in 2023.

The most expensive component of the NSP is objective 4 (Improvement of diagnosis and treatment): 25.8 billion CFA francs (US\$49 million) representing 50% of total costs. The cost is composed of treatment of chronic HBV patients (11.2 billion) and treatment of chronic HCV patients (5.6 billion), screening for hepatitis B (11.2 billion CFA francs) and screening for hepatitis C (5.6 billion CFA francs).

In total, the prevention activities, diagnosis and treatment, represent around 95% of the total cost of the implementing the NSP over the 5 years.

Figure 1. Break-down of total costs by objective (%)

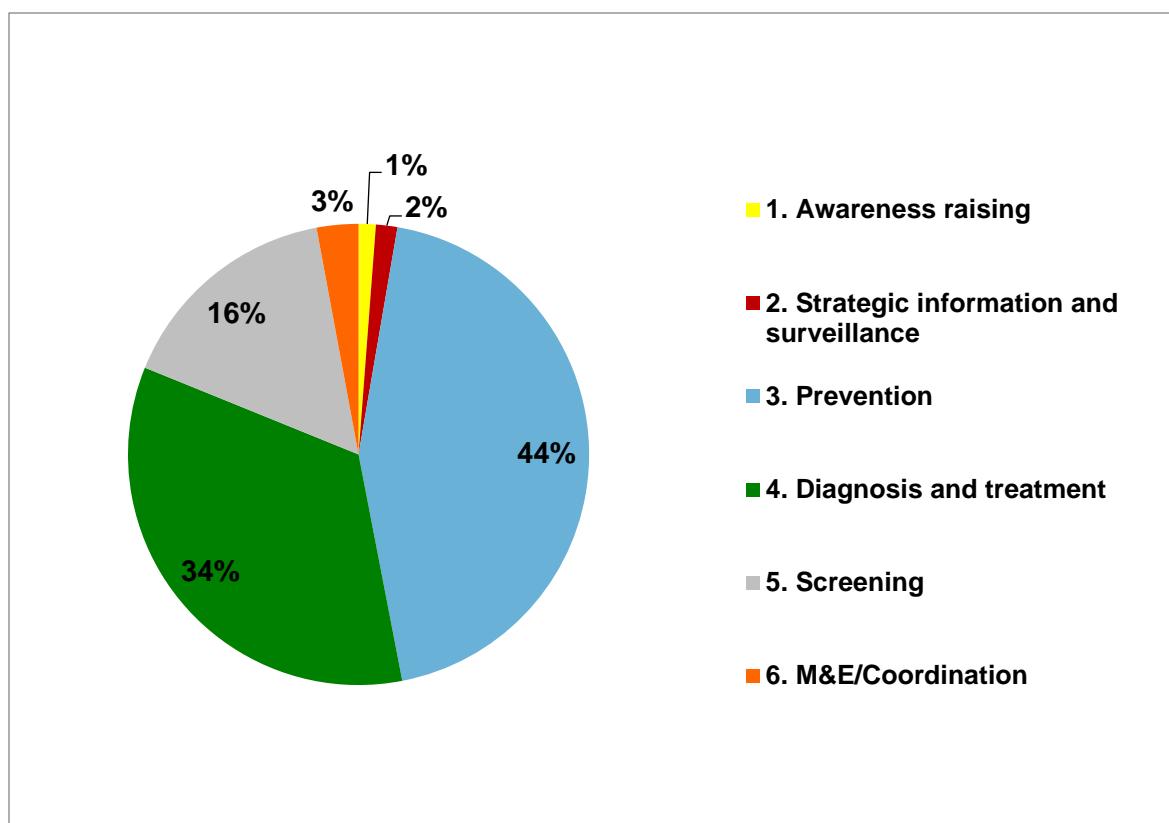


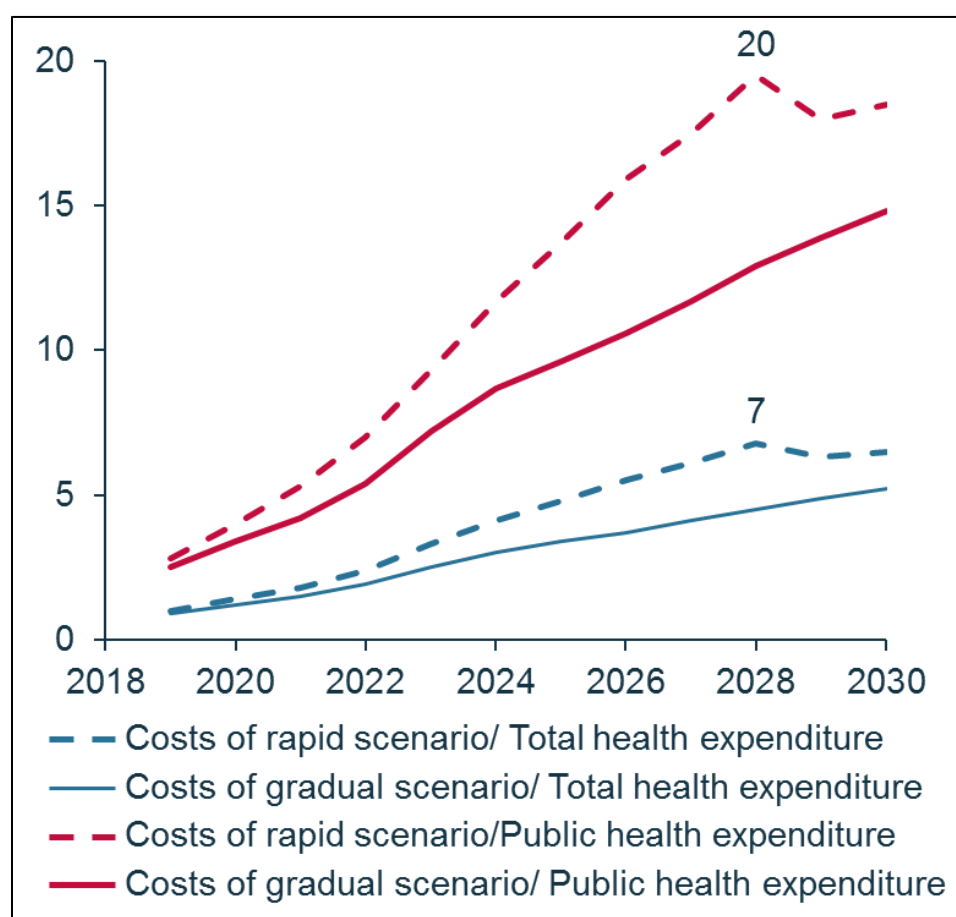
Table 6. Total costs 2019-2023, by objective

(Billions CFA)		2019	2020	2021	2022	2023	Total
Objective 1	Raise community awareness of viral hepatitis and reduce the stigma and discrimination	0.1	<0.1	0.1	0.1	0.1	0.6
Objective 2	Strengthen hepatitis data through research and an effective epidemiological surveillance system	<0.1	0.2	0.1	0.2	0.1	0.7
Objective 3	Prevent the transmission of viral hepatitis	3.6	4.4	4.6	4.9	5.2	22.8
Objective 4	Improve the diagnosis and treatment of chronic hepatitis	1.1	2.2	4.1	6.8	11.6	25.8
Objective 5	Strengthen, management, coordination and monitoring and evaluation	0.1	0.2	0.3	0.4	0.5	1.5
Total		5.0	7.1	9.3	12.5	17.6	51.5

Under the gradual scenario, the cost of NSP would represent on average of 5.5% of the projected future budget of the Ministry of Health over the next 5 years. In 2019, the amount would be more modest, around 3% of the budget, and it would increase annually until reaching 8% in 2023.

After 2023, assuming all else remains constant, the cost of the gradual scenario would increase from 10% of total public health expenditure to around 15% in 2030. However, it is important to note that this proportion would decrease strongly if the investment in health and the universal coverage goal are maintained and actively followed since these targets would result in much greater public sector health spending.

Figure 2. Costs of the NSP in % of public health expenditures and total health expenditures 2019-2050



6. Financing needs

In total, Senegal currently spends around 906 million CFA francs of domestic resources on all activities related to hepatitis, such as hepatitis B birth-dose vaccination, blood safety measures, hepatitis B treatment with tenofovir, and the coordination of the national program.

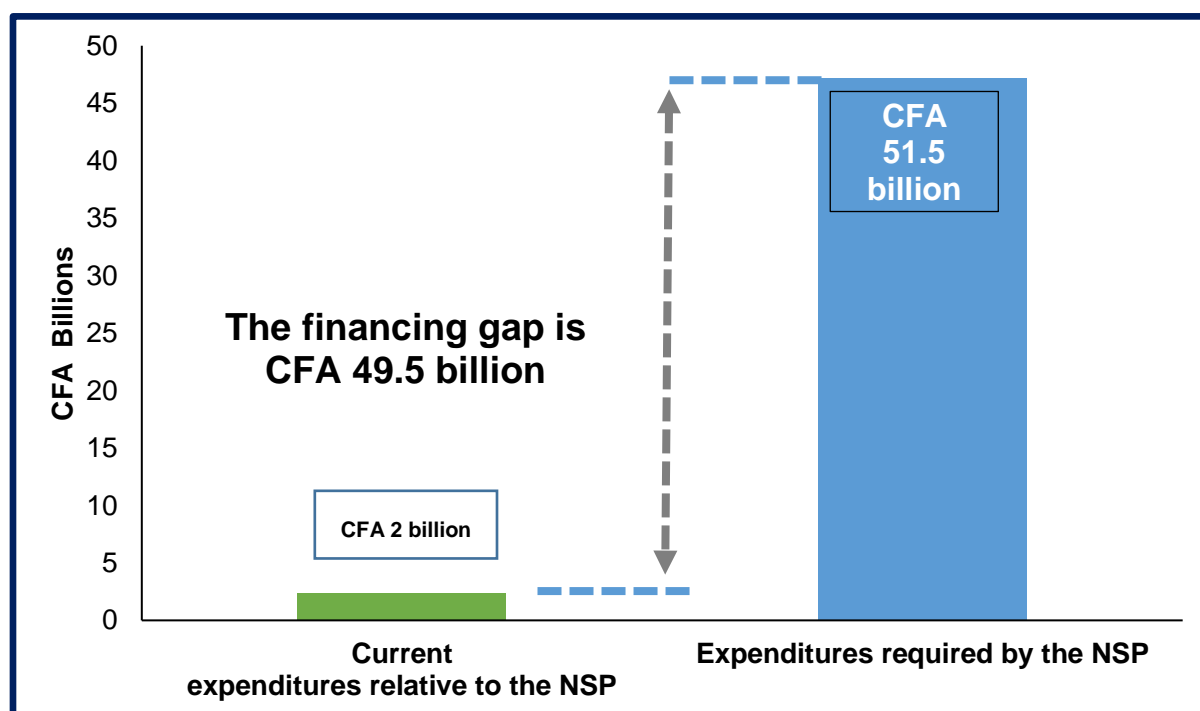
Donors currently fund approximately 1,200 million CFA francs for activities associated with the fight against hepatitis. About 450 million CFA francs of this total are for the activities included in the NSP (in particular birth-dose vaccination).

Under the assumption that the current domestic funds (406 million CFA) for the activities included in the NSP are continued at their current level from 2019-2023, around 2,030 million CFA of the total NSP costs of 51,500 million CFA can be assumed to already be funded.

Table 9. Resource gap financing the NSP 2019-2023

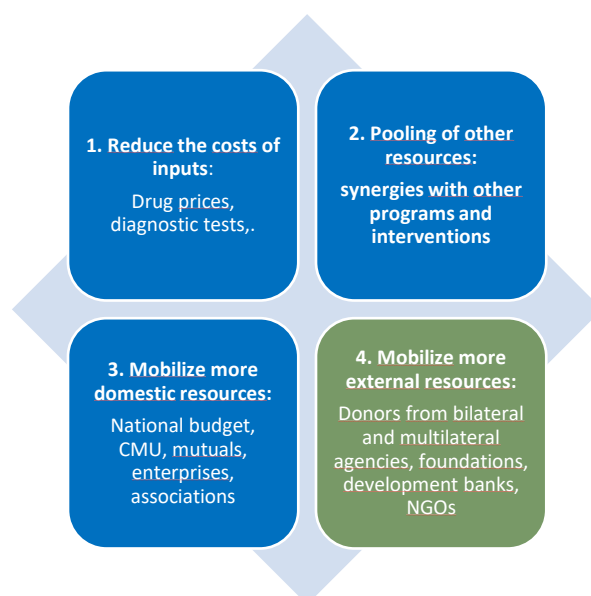
	2019	2020	2021	2022	2023	Total 2019-2023
Current expenditure	0.4	0.4	0.4	0.4	0.4	2.0
HBV birth dose vaccination	0.3	0.3	0.3	0.3	0.3	1.5
Treatment & Coordination	0.1	0.1	0.1	0.1	0.1	0.5
Total NSP	5.0	7.1	9.3	12.5	17.6	51.5
Resource gap	4.6	6.7	8.9	12.1	17.2	49.5

Figure 3. NSP financing gap 2019-2023, cumulative



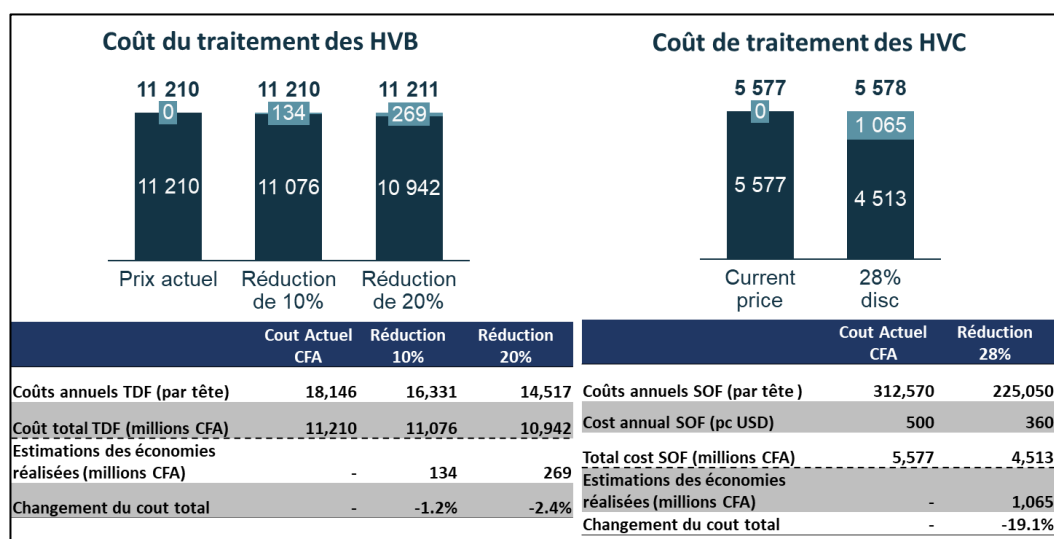
7. Going forward in the fight against hepatitis

The resource mobilization strategy is based on four pillars that are also sub strategy actions: two refer to the efficient use of existing resources and two on the mobilization of additional resources.



1 REDUCING THE COST OF INPUTS Reducing the cost of inputs and components of the national strategic plan will help optimize the resources available and those to be mobilized. For example, we will look to reduce the cost of drugs, specifically the DAAs, screening tests, and other inputs in prevention, screening and treatment of hepatitis B and C.

Graph 4. Impact of reducing hepatitis B and C drug prices on the total cost of the NSP



2 POOLING OF RESOURCES This is about creating and promoting synergies and finding opportunities to integrate hepatitis activities with other priorities, programs, and health interventions. Known complementary programs include HIV/AIDS, tuberculosis and malaria, the extended vaccination programs, and reproductive health. Additional potential synergies could also be carefully explored, such as the fight against cancer. Other capacity building functions, such as strengthening the health system through its HSS platform, as well as recruitment and management of health care workers or WCC enlargement efforts, are also accounted for in the NSP.

③ MOBILIZATION OF DOMESTIC RESOURCES To fill the financing gap for the implementation of the NSP, the Government of Senegal, as well as all national and local actors involved, will have to set an example and commit to financing a significant part of the activities outlined by the NSP.

Public domestic resources :

- It will first be necessary to rely on the national budget through that of Ministry of Health and Social Affairs to substantially increase the amount of funding currently allocated to the fight against hepatitis (see table with values below). This increase over several years' budgets for NSP-allocated public funds could combine domestic fiscal and extra-fiscal resources and the use of soft loans from development banks including the World Bank, Islamic Development Bank, or African Development Bank.
- Beyond the Ministry of Health, other ministries and public entities can be engaged in the mobilization and allocation of resources to the NSP.
- Public and parapublic companies can be approached according to various modalities assessed on a case by case basis.

Private domestic resources :

- Private, for-profit and not-for-profit organizations can support the implementation of the NSP in a variety of ways.
- Foundations of large, private companies in Senegal are to be mobilized first in parallel with large charitable organizations in solidarity

④ MOBILIZE GREATER EXTERNAL RESOURCES

Some external funding currently contributes to the fight against hepatitis, with the most important being from the Gavi Alliance for hepatitis B vaccination and the Global Fund for blood donor screening activities. However, current external funding for hepatitis control remains very modest in Senegal, as in other countries around the world. Donors and partners will mobilize when they are convinced that investing in hepatitis control is cost-effective in terms of its public health impact and economic benefits for the country and affected populations.

The main priorities for resource mobilization before the end of 2018 include:

- ① Incorporate budget lines in the national budget for 2019 to finance the NSP, specifically for hepatitis B vaccination and the procurement of additional drugs for hepatitis B and C treatment, assuring competitive prices**
- ② Agree on receiving multi-year funding from the Ministry of Finance for the fight against hepatitis (domestic option or Development Banks, including the IDB)**
- ③ Obtain at least 25% of the financing needs for 2019 and 2020 from multilateral agencies**
- ④ Obtain at least 25% of the financing needs for 2019 and 2020 from bilateral agencies**
- ⑤ Agree with local and external foundations to receive multi-year financing targeting the interventions with multiplier effects**