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# TACKLING DEADLY DISEASES IN AFRICA: KEY CONSIDERATIONS FOR EPIDEMIC RESPONSE AND PREPAREDNESS IN CÔTE D'IVOIRE

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# TACKLING DEADLY DISEASES IN AFRICA: KEY CONSIDERATIONS FOR EPIDEMIC RESPONSE AND PREPAREDNESS IN CÔTE D'IVOIRE

Firmin Kra & Megan Schmidt-Sane

## EXECUTIVE SUMMARY

Côte d'Ivoire experienced military-political crisis for nearly a decade (2002-2011), an experience that shaped the erosion of the state's capacity to manage its health system. Côte d'Ivoire faces a double burden of disease of both communicable and non-communicable diseases. As indicated by the Ministry of Health, several factors have limited epidemic preparedness, including low coverage of infrastructure; poor condition and under-equipment of facilities; inadequacy and uneven spatial distribution of health personnel; patchwork and insufficient health care access for people in rural areas; low vaccination coverage; and limited access to medicines. Despite these challenges in the health sector, the nation has seen positive economic growth for several years post-crisis and there is opportunity to expand support to health systems.

Key overarching summary points and implications are presented below:

- Despite relative political stability and robust economic growth since the conflict ended, the recovery of the health system has lagged.
- A lack of political interest and financing contribute to a weak health system, including lack of infrastructure, few skilled and motivated personnel, poor quality services, shortfalls in supplies, medication, and equipment, concentration of resources in Abidjan, limited access to health facilities in rural areas, and underfunding of primary care. The national health system to give primacy to curative medicine. Prevention remains essentially reduced to chemoprophylaxis. This means that in the process of finding solutions, the biomedical dimension remains privileged to the detriment of

sociological aspects. As a result, the national public health system is highly medicalised.

- Government financing of the health sector should be improved, without which it will not be possible to sustainably improve health infrastructure and human resources for health.
- Long-term planning and policies should attend to the social dimensions and drivers of disease.
- A prevention focus in public health should not be side-lined by treatment approaches.
- The private health sector works in parallel to the public health sector, making it difficult to systematise collaborations among allopathic providers and coordination across allopathic and alternative medical practice.
  - Leverage existing informal mechanisms of coordination to improve public-private cooperation.
  - Alternative medical practitioners must also be included in any coordination.
- Côte d'Ivoire's military and socio-political crises resulted in the destruction of several historical databases. There is a lack of institutional memory, which translates into a data archiving problem, resulting in a lack of traceability of certain regulations. These include decrees and orders relating to the functioning and organisation of health structures at both the central and decentralised levels. There is also little data on vulnerable populations and in areas without infrastructure to facilitate sufficient access. This problem of lack of data is an obstacle to the development of epidemic response in Côte d'Ivoire. Patchwork or missing data will limit epidemic preparedness and response efforts. Basic surveillance data may not be available from rural areas.
  - Instead, it may be possible to leverage community health workers and existing village-level infrastructure to build reporting mechanisms from the ground up using low-tech solutions like text messaging.
  - Referral and reporting systems must be strengthened, starting at the village level.
- The series of crises that the country has gone through has deeply eroded social ties and trust in the political authorities.
  - To improve trust, health care coordination should be diffused across district and local levels. Health service provision can then be adapted to local customs and needs, and health staff and volunteers should be recruited locally whenever possible to improve local ownership of health care.

- The lack of access to public health facilities in the rural area means that few seek care there and many seek care from alternative providers. Health inequality impacts care in two ways: it limits what poor and vulnerable populations can access and this then influences perceptions of the health sector, also negatively affecting trust in the health system.
  - State-sponsored public health infrastructure should be improved in rural areas and health worker capacity in rural areas should be bolstered.
- Communities are rarely engaged in the health sector or epidemic response. There is a problem of communication between the authorities and the population around a disease or epidemic. This lack of communication often leads to acts of popular protest based on rumours.
  - Develop inclusive communication approaches to encourage people's support.
  - Work to identify the social, economic, cultural, political logics that lead to misinterpretation and misinformation in the context of an epidemic.
- While a major challenge is in the health infrastructure, health services should also be attentive to local vulnerabilities, health beliefs, and cultural logics. A lack of adaptation of care offers to the realities of the sick leads to practices of concealment or migration of affected people.
  - Key vulnerable groups like the urban poor, pregnant women and children, and highly mobile populations would need additional social protections during an epidemic.
  - A community health worker model can be tailored or scaled up to improve linkages between communities and the health system and rebuild trust.
  - Alternative health providers should be engaged for surveillance, risk communication, and delivery of treatments and referral to biomedical services.
  - A systematic social science survey of local etymologies and understandings of disease is necessary to facilitate intercultural understandings in the clinic and to tailor risk communication to specific populations.
- Previous infectious disease challenges like Ebola Virus Disease (EVD), malaria, and HIV/AIDS have demonstrated important lessons for future epidemic response and preparedness.
  - The response to the 2014-16 West African Ebola epidemic included intersectoral training and collaboration at local levels. This contributed to decentralised decision-making and management, shifting power toward regions and districts and bringing

important health decisions closer to the community level. This model should be supported and scaled up throughout the country.

- o Malaria control efforts have shown the burden of the cost of health care in a country with little public financing of the health sector. Instead, treatments should be free and high quality as much as is feasible, while in the long-term Universal Health Coverage (UHC) and primary health care must be strengthened.

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# INTRODUCTION

Côte d'Ivoire's recent history (2002-2011) of military and socio-political crisis and instability led to an erosion of state capacity and health systems. From 2011 onward, Côte d'Ivoire has recorded robust economic growth and its leadership has attempted to build peace in the country. Despite these gains, the country's health system is in dire need of improved coordination, funding and quality. The country's health outcomes are among the poorest in the region and globally.<sup>1</sup> Although the noncommunicable disease (NCD) burden is growing, communicable diseases remain the leading cause of disability and death in Côte d'Ivoire. The country's health system is ill-equipped to prevent and identify NCDs, meaning that preventable deaths are high and NCDs are a major issue of concern.

This technical brief draws on a review of both academic and grey literature, as well as inputs from social scientists and other public health experts in Côte d'Ivoire. The technical brief is laid out as follows: i) background and overview of the country's health system; ii) key issues related to infectious disease outbreaks, response, and preparedness; iii) health governance and key actors; v) community experiences and responses; and iv) key implications for outbreak preparedness and response. This technical brief was prepared by the Institute of Development Studies to support the embedding of social science and anthropological perspectives in UK AID-supported Tackling Deadly Diseases in Africa (TDDA) technical assistance and its Early Response Mechanism.

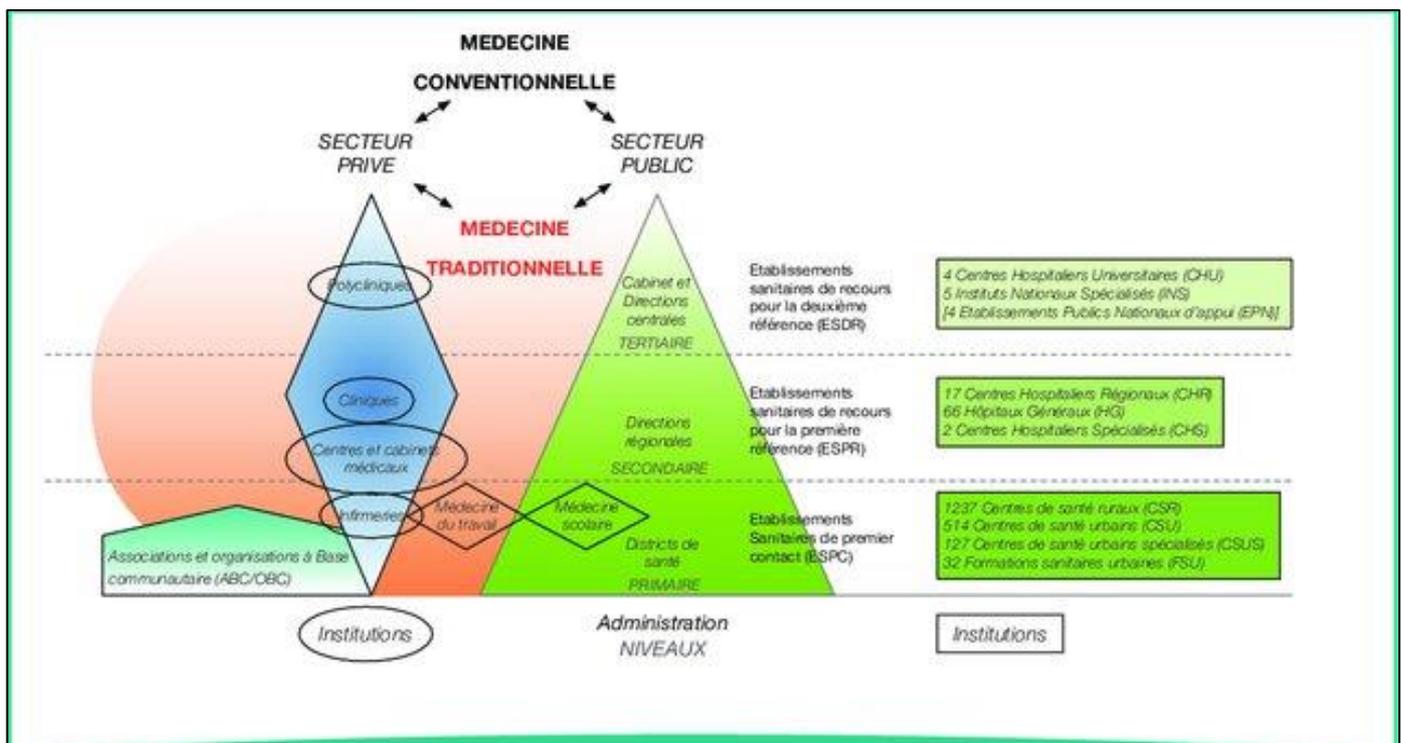


**Map of Côte d'Ivoire.** Côte d'Ivoire's population of 26.4 million includes more than 60 ethnic groups, many of which have cultural ties to neighbouring countries. Source: <https://bit.ly/3vOcq1g>

# HEALTH SYSTEM

Organised in a pyramid fashion, the Ivorian health system brings together the public, private and community sectors in a continuum and complementarity of care provision (Figure 1).<sup>2</sup> This system includes an administrative dimension and a provider or operational dimension that represents the care supply side. Traditional medicine also plays a relatively important role in the Ivorian health system.<sup>3</sup>

**Figure 1:** Health pyramid in Côte d'Ivoire (Canivet and Lecocq, 2019: 28) (see Appendix for translation)



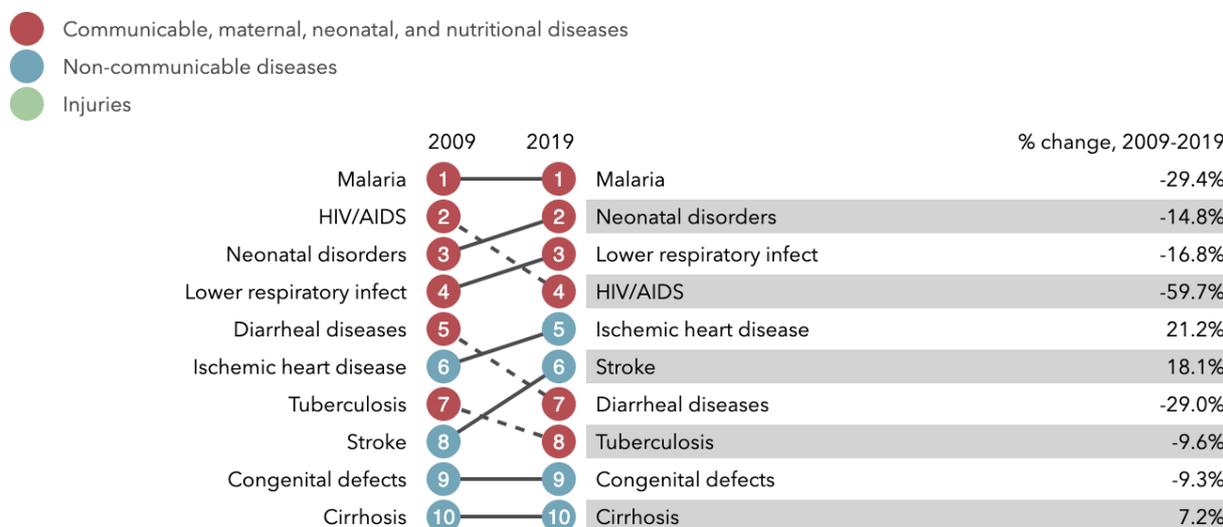
The figure shows a circular and itinerant relationship between what is known as ‘conventional’ medicine, the public sector, the private sector and traditional medicine. Many of these interactions are informal and not uniform. These relationships would be important to systematise and leverage for an epidemic response that is culturally adapted and community engaged. These components are detailed in the following sections.

## BURDEN OF DISEASE

Côte d'Ivoire has long suffered and continues to experience high burdens of disease, particularly from communicable disease, neonatal disorders, alongside a growing burden of non-communicable disease. The top five causes of death in 2019 were malaria, neonatal disorders, lower respiratory infections, HIV/AIDS, and ischemic heart disease (see Figure

2). The human immunodeficiency virus (HIV), tuberculosis (TB) and malaria, combined, constitute over 24% of annual deaths.<sup>4</sup> Life expectancy at birth has improved over the last thirty years, from 58 (female) and 52.1 years (male) in 1990 to 65.3 (female) and 60.1 (male) in 2017.<sup>5</sup> While improvements have been made in reducing communicable disease deaths, noncommunicable diseases (NCDs) remain a significant challenge to life expectancy in Côte d'Ivoire. There is late diagnosis of NCDs, which increases mortality.<sup>1</sup> In addition, there is high maternal and under-5 mortality due to low access to health care in many parts of the country.<sup>6</sup> In the context of Ebola Virus Disease (EVD), Côte d'Ivoire shares a border with high-risk countries and is high-risk in its own right, meaning that the risk of epidemics and other emergency situations remains high.<sup>6</sup> Therefore, strengthening national capacities is of the utmost importance.

**Figure 2.** Top 10 causes of total number of deaths in 2019 and percent change 2009-2019, all ages combined in Côte d'Ivoire



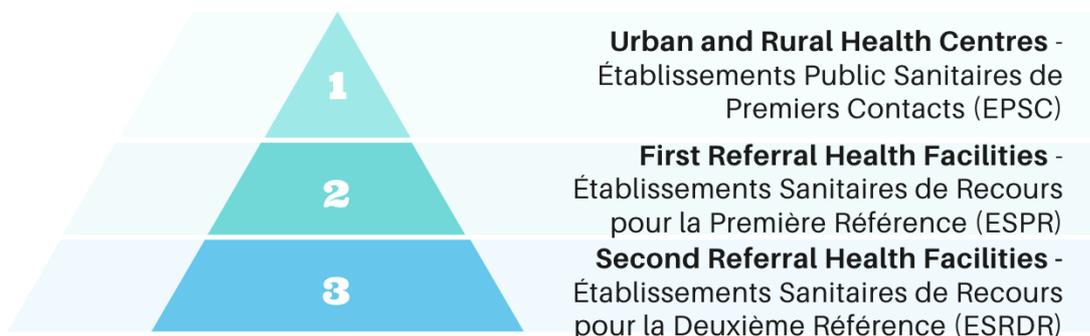
Source: Institute for Health Metrics, 2019: <http://www.healthdata.org/cote-divoire>

## THE PUBLIC HEALTH SYSTEM

The organisation of the public health system in Côte d'Ivoire is pyramidal with an administrative side and a health care side. There is a three-tiered health service delivery system (Figure 3), and each level provides different services. There are major inequalities in health system access, particularly between urban and rural areas. Drugs and supply chains are characterised by stock-outs. In the public sector, the quality of health care is very low, with the country ranked 187<sup>th</sup> in lowest quality of care out of 195 countries in terms of the prevalence of preventable mortality.<sup>4</sup> Current health spending in Côte d'Ivoire is about \$70(USD) per capita, with households as the largest source of financing.<sup>4</sup>

The government has only financed 9% of all primary care expenditure.<sup>7</sup> Indeed, hospitals in Côte d'Ivoire lacked adequate medical infrastructure or had obsolete equipment.<sup>8</sup> In fact, public health facilities generally have poor performance and low autonomy in the management of logistical, human and financial resources.<sup>9</sup> Not only is management centralised at state level, but the credits allocated do not really consider the actual needs and problems expressed by the establishments. Moreover, the budget allocated to health is low, especially the budget for public health prevention. The national health system gives primacy to curative medicine. Prevention remains essentially reduced to chemoprophylaxis. This means that in the process of finding solutions, the biomedical dimension remains privileged to the detriment of sociological aspects. As a result, the national public health system is highly medicalised.

**Figure 3.** Public Health System in Côte d'Ivoire



Source: authors (compiled from various sources)

**Figure 4:** Distribution of health regions and districts (MSHP, 2016)



The administrative side of the public sector includes a central level with the office of the Minister of Health and Public Hygiene, the services attached to the office, the general directorates, the central directorates and several health programmes.<sup>10</sup> The map (Figure 4) shows the distribution of public health regions and districts in the country, made up of an intermediate level and a peripheral level.

The intermediate level comprises regional directorates responsible for coordinating the activities of existing health services in their area. The peripheral level, representing the health districts, is the operational unit



(CHS) or National Specialist Institutes (INS) that do not have the status of National Public Establishment (EPN).<sup>13,14</sup>

### **Tier 3: Second referral health facilities (ESRDR)**

The University Hospital Centres (CHU), the Abidjan Heart Institute (ICA), the Raoul Follereau Institute (IRF) and the National Institute of Public Hygiene (INHP) are all regarded as ESRDRs. Also classified as tertiary level, but from the public sector, ESRDRs include the National Institute of Public Health (INSP), the National Institute for Health Workers Training (INFAS).<sup>13,16</sup> They also involve the New Public Health Pharmacy (NPSP), the National Blood Transfusion Centre (CNTS). The National Public Health Laboratory (LNSP) and the Emergency Medical Service (SAMU) are also components of the ESRDR. To these structures should be added the Pierre Richet Institute (IPR), the National Public Establishments (EPN), the National Public Health Laboratory (LNSP) and the Pasteur Institute of Côte d'Ivoire (IPCI). All these tertiary structures, which are made up of research centres and training centres for health workers, are supported by other ministries involved in the provision of health care through their health infrastructures to strengthen the health system.<sup>13</sup>

The National Office of Civil Protection (ONPC) created by decree (n° 2000-822 of 22 November 2000) should be mentioned as an important part of the health system.<sup>17</sup> Sometimes forgotten in the identification of public structures, this structure can play an important role in a health crisis. First, it is responsible for disaster prevention at national level. Transformed into a Directorate General in 2008, the ONPC has several mandates that could be useful during epidemics. These include the implementation of emergency resources to safeguard people and protect property and the environment against accidents, disasters, and catastrophes, whether natural, human, or technological in origin and whether accidental or deliberate. In view of its skills and experience, the ONPC is a public structure that can be mobilised in times of epidemic crises. The organisation of the health system is shown in the figure below.

## **THE PRIVATE HEALTH SECTOR**

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The private health sector comprises a for-profit sub-sector, a non-profit sub-sector, and a sub-sector linked to social protection (occupational medicine, mutual insurance and medical insurance).<sup>11</sup> In Côte d'Ivoire, private health care provision is made up of more than 2,036 facilities of all classes and categories.<sup>6</sup> The role of the private sector is significant in drug and supply chains, and the government does not have a high level of control over the production or distribution of medication.<sup>4</sup> The private health sector is booming and has been gradually developing in recent years with polyclinics, clinics, medical centres

and practices, private pharmacies and private infirmaries.<sup>3,13</sup> Since 1996, Decrees No. 96-877 and No. 96-878 have defined a framework for private health providers to operate and register.<sup>18</sup> However, governance structures overseeing private care are not well-defined or well-regulated. Each category of private care is detailed below.

### **The private for-profit sub-sector**

This sub-sector is mainly developed in large cities, where a 2007 report counted 813 infirmaries, 175 medical practices, 113 dental practices, 21 laboratories, 653 pharmacies, 75 clinics, 11 polyclinics.<sup>13</sup> There is an association of private clinics called the Association des Cliniques Privées de Côte d'Ivoire (ACPCI) with a number of members. However, about 800 of these private health facilities were operating without a licence. In addition, several shortcomings were identified in this sector of Ivorian health: a decline in performance and professional behaviour that has become problematic with absenteeism, deviations from professional ethics, racketeering practices, etc.<sup>13</sup> Despite the regulatory provisions setting out the conditions for authorisation and registration for the establishment of health professionals in the private sector, the private health sector has sometimes developed in an anarchic manner, with little collaboration between the private and public sectors and insufficient regulation of this sector.<sup>3</sup> This sector requires further investigation to better understand its functioning.

### **The private pharmaceutical sub-sector**

With four wholesale distributors, 1,100 private pharmacies and eight local drug production units (four of which are in operation), the pharmaceutical sector is extremely dynamic and occupies an important place in the health system with 80% to 90% coverage of the drug supply.<sup>1</sup> However, the World Health Organisation (WHO) notes a disproportion in the availability of generic medicines with 31.6% in the public sector against 56.6% in the private sector.<sup>1</sup> This situation could partly justify the high cost of care among poor people in particular, as studies have shown that the prescription of generic medicines helps to reduce the cost of care.<sup>19</sup>

### **The social protection sub-sector**

The social protection sub-sector refers to the private health insurance sector. In Côte d'Ivoire, it is dominated by large public and private companies that employ full-time or part-time doctors responsible for monitoring the health of their employees and sometimes their families.<sup>13</sup> The contribution of large public and private companies to the social protection of the population is thus limited to a small group with the sole aim of increasing their capital. Their share in public social protection policies for the poor remains unknown. Moreover, the government's Universal Health Coverage (CMU) project, which is poorly understood by the population, has resulted in low support.<sup>20</sup> Faced with

this situation, it is necessary to continue efforts, particularly in financial terms, and to devise new ways of providing essential services to the population, many of which are particularly vulnerable.<sup>a</sup>

### **The private non-profit sub-sector**

In regard to community health structures, three models can be identified: (i) the Urban Community Health Facilities model (37 UCFs), (ii) the community-based health facility model managed by an NGO, and (iii) the health facility model managed by an association of health professionals in collaboration with a user association. Offering almost exclusively primary care, the non-profit sub-sector is represented, on the one hand, by the faith-based sector (about 50 facilities) and, on the other hand, by community-based health facilities (37 in 2007).<sup>1,13,21</sup> In 2003, general medical consultations, paediatric consultations provided to children under 5 years of age, and the number of deliveries carried out in these facilities represented 46.2%, 43.9% and 45.3% respectively of the procedures recorded in Abidjan's primary care establishments. However, the absence of a unifying policy and the organisational inadequacy of NGOs are an obstacle to the expansion of the non-profit sector.<sup>3</sup> In 1999, the majority of people who declared a bout of illness and sought care were divided between the public and private non-profit sectors.<sup>22</sup> All this shows the important place of the non-profit sub-sector.

## **HUMAN RESOURCES FOR HEALTH**

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Human resources for health are inadequate given health care needs in Côte d'Ivoire (Table 1). Key challenges include: a lack of professional practice evaluation, a lack of appropriation of quality improvement initiatives, an inadequate supervision tool, inadequate coordination of quality improvement initiatives initiated by partners, poor accessibility to care, inadequate referrals and counter-referrals and inadequate certification and accreditation of public and private health establishments.<sup>13,23</sup> In this regard, a legal framework was developed in the 1990s to set the criteria for opening and implementing a health facility in a locality.<sup>2</sup> This legal framework defines the list of services and activities to be carried out in each type of health facility in Annex 1 of Order No. 74/MSP/CAB of 9 December 1996, which defines the minimum package of activities. However, relations between the public and private sectors are still not well regulated.<sup>9</sup> As this joint report points out, the private health sector is not integrated into the current

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<sup>a</sup> <http://fr.investiretplus.com/index.php/2019/01/27/secteur-prive-afrique-subsaharienne/>

definition of the national strategy and the public-private partnership is not addressed in the PND 2009-2013.

<i>Indicator</i>	<i>Statistic</i>	<i>Source(s)</i>
Doctors	1 doctor per 7,390 population (2019) 3,886 total doctors (2019)	MSHP, 2019b
Nurses	1 per 3,069 population (2011) 1 per 1,193 population (2016) 11,259 total nurses (2019)	Bandaman, 2018; MSHP, 2019b
Midwives	1 per 2,270 population (2011) 1 per 995 population (2016) 5,601 midwives (2019)	Bandaman, 2018; MSHP, 2019b

The total number of doctors practising in the public sector was 3,886 in 2017 with 3,325 in post in the different services. The national ratio in 2017 is therefore one doctor per 7,390 inhabitants. To reach the WHO standard of one doctor per 10,000 inhabitants, a total of 10,000 health workers consisting of doctors, pharmacists, surgeons, dentists, nurses, midwives, etc., were recruited over the period from 2015 to 2017.<sup>24</sup> This policy has contributed to improving the nurse/population ratio from 1 per 3,069 inhabitants in 2011 to 1 per 1,932 in 2016. As for the ratio of midwives to women of childbearing age, it went from one midwife per 2,270 to one midwife per 995 women, over the same period. It is reported that 68% of the population now live within 5 km of a health centre. However, only seven health regions had reached the WHO standard.<sup>14</sup> While it is true that human resources are trained in national or international schools, the alignment between academic knowledge and managerial management on the ground is still not evident in public health facilities.<sup>9</sup>

Furthermore, the practices of health professionals in the care of sick people are influenced by various social factors. The results of a study carried out by anthropologists from the RAEE on the management of suspected Ebola cases in Côte d'Ivoire and Senegal show that several medical, social and cultural factors influence the criteria for identifying suspected cases.<sup>25</sup> The interference of social representations in the care practices of Ivorians also highlights the influence of identity, cultural and religious affiliations on the care practices of health workers.<sup>26</sup> Furthermore, the apparent lack of adequacy between global and local knowledge systems and technologies is a permanent dilemma for medical and public health professionals.<sup>27</sup> Shortcomings have also been observed in midwives' management practices in the administration of immediate intrapartum and postpartum care.<sup>28</sup> The findings show that women who give birth in health facilities do not always receive the best practices needed to prevent poor birth

outcomes. Corrupt practices in the health sector (including absenteeism, theft of medical supplies, informal payments, fraud, opaque procurement procedures and misappropriation of health system funds) are common.<sup>21</sup>

## HEALTH-SEEKING AND LOCAL EXPLANATIONS OF DISEASE

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According to the WHO, traditional medicine 'is the sum of knowledge, skills and practices that are based on culturally specific theories, beliefs and experiences and that are used to maintain good human health and to prevent, diagnose, treat and cure completely or eliminate partially a physical, mental or social imbalance based on lived experience and observation transmitted from generation to generation, orally or in writing.'<sup>15</sup> The traditional medicine sector is composed of approximately 8,500 traditional healers in 2007 and constitutes, along with self-medication, the first recourse to care in the event of illness.<sup>11,20</sup> This sector constitutes an important alternative for families with limited resources. Thus, poor households tend to resort to self-medication, 55% for traditional medicines against 59% for modern medicines.<sup>22</sup> These so-called self-medication practices are to some extent home-based care practices that often constitute a first step in care.<sup>29</sup>

According to the Ministry of Health, several research and development activities have been carried out and have led to the granting of marketing authorisations for Improved Traditional Medicines (ITM).<sup>12</sup> This progress allowed the opening, in 2014, of a Traditional Medicine Unit (UMT) at the University Hospital of Treichville as part of a pilot project. However, collaboration between so-called traditional medicine and that considered modern is not always successful, as the box below indicates.

### **Box 1:** Traditional medicine and nursing, between collaboration and confrontation

In rural health centres (CSR), collaboration with traditional practitioners and dealing with local customs is essential. Because being six hours' walk and 1 hour's canoe from the nearest health centre, it is often only several days after having received initial treatment from a traditional practitioner that the patient goes to the health centre. For example, a child from a remote camp is bitten by a snake, comes to the health centre with a 'venom stone'<sup>b</sup> on the bite, referred by the traditional practitioner his parents consulted. The nurse treats the child and asks the parents to return to the rural health centre while continuing to take the healer's treatment if they wish, even though the therapeutic efficacy of this

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<sup>b</sup> A small stone stuck to the bite which, according to tradition, is supposed to suck out the venom and should never be removed. It falls off by itself when the venom is no longer present in the body.

treatment has been scientifically studied and is considered doubtful. The nurse explains to us that in this way he shows the community and the healers that the two medicines can be complementary. From a pragmatic point of view, maintaining good relations with the healers is, for the nurse, a matter of public health because 'as a health worker in charge of a population of several thousand souls, I refuse to let men and women die when we have the means to treat them. I need traditional healers and they need me.'

Vignette from Canivet and Lecocq (2019: 29)

Since 2016, the Ivorian health authorities, in accordance with WHO recommendations, have been trying to integrate traditional medicine into the population's healthcare alternatives to improve health coverage and reduce disparities and inequalities in access to quality care.<sup>12</sup> Medical practices in this sector are then regulated by Law n°2015-536 of 20 July 2015 and Decree n°2016-24 of 27 January 2016 on the Code of Ethics and Deontology of traditional medicine and pharmacopoeia practitioners. The creation of this legal framework has led to the legal definition of actors in the sector. Thus, this sector, which represents an alternative way of seeking health, is made up of Traditional Medicine Practitioners (TMPs) listed by the National Programme for the Promotion of Traditional Medicine (PNPMT), organised into national associations, in federations. According to the Ministry of Health and Public Hygiene (MSHP), the skills of actors in this sector have been strengthened in anatomy, conventional hygiene, techniques for the collection and sustainable conservation of medicinal plants, etc. Several research and development activities have been carried out and have led to the granting of marketing authorisations for Improved Traditional Medicines (ITM) (Dartran®, Dimitana® and Baume ALAFIA®). In addition, a Traditional Medicine (TM) Unit was opened in September 2014 at the Treichville University Hospital as part of a pilot project.<sup>12</sup>

**Health seeking and local explanations of disease.** Health-seeking behaviour and local explanations of illness are dependent on local social institutions. Analysis of the *a priori* and *a posteriori* causes of illness among the Senufo of Côte d'Ivoire shows that the modes of disease causality and disease logic are largely structured by the complex institution of the *sandogo*.<sup>30</sup> In the course of analysing this social institution, the authors concluded that for the Senufos the appearance of an illness is interpreted as the reactivation of a previous event. Moreover, the divinatory device has the function of re-feeding this memory with its own constitutive schemas. Consequently, the initiation into *sandogo* illustrates a general conception of causality based on the principle of repetition. The etiological inventory made among the Senufos shows that a given illness or symptom can be connected *a priori* or *a posteriori* to different causal categories. In this cultural area, the couple illness/health is lexically distinguished from that of luck,

happiness/unhappiness, misfortune. Furthermore, the therapeutic processes observed among the Fodonon highlight the complexity of the causal categories and interpretation that lead to the search for health.<sup>31</sup> Nevertheless, Sindzingre suggests, the analysis of the responses to the problems posed by an illness allows us to make sense of the notions of causality, efficacy, and rationality of care practices.<sup>30</sup>

Related to the above, some diseases are included in the common lexicon. Among many residents of Abidjan, malaria is referred to as *palu*, reflecting the incorporation of malaria into a local taxonomy of diseases.<sup>27</sup> Local meanings attached to the term *palu* seem to have more importance than biomedical malaria. On the one hand, this popular nosological term may describe other conditions and other drugs may be used to treat it, when in actuality malaria drugs are needed. On the other hand, it may lead to other types of alternative and concomitant treatments. Furthermore, with reference to the mosquito net, the context of a health device can shape its local uses. The choice of Western medicine is not necessarily inhibited by 'unscientific attitudes', but by political and economic forces and the availability of attractive alternatives.<sup>32</sup> Thus, the first step in the management of malaria in the home is the interaction between the provider and client that often lead to the purchase of drugs or herbs to treat symptoms.<sup>29</sup> The sequence of interactions can therefore guide choices in health research.

The assessment of vulnerable families' knowledge of the coronavirus disease (Covid-19) estimated that most had 'inaccurate knowledge.'<sup>33</sup> Respondents compared Covid-19 to malaria, while others are in denial and fatalistic. For the fatalists, the virus is a punishment from God or an invention of the Ivorian government to mobilise more resources. Subsequently, most of these people resort to traditional therapeutic alternatives based on the experience of the groups they belong to.

## **INFECTIOUS DISEASE OUTBREAKS, RESPONSE AND PREPAREDNESS**

Côte d'Ivoire is a hotspot for viral reservoirs, animal-human disease spillover, and infectious disease outbreaks. A study of a decimated chimpanzee community in the Taï National Park showed that these animals were victims of the Ebola virus in 1992 and 1994.<sup>34</sup> Although no human cases have been officially reported so far, Côte d'Ivoire remains a high-risk country for Ebola for several reasons. Not only does the country have a potential reservoir of Ebola virus, but it also borders countries such as Guinea and Liberia which were severely affected by the virus between 2014 and 2016.<sup>35-37</sup> This epidemic threat led the WHO to organise a workshop in 2014 to strengthen the capacity of health

authorities and health professionals to prepare for and respond to epidemics, particularly the Ebola virus.<sup>38</sup> However, this preparedness plan was only developed based on meetings between WHO teams and national actors. Beyond the logistical problems and availability of equipment, cultural and social drivers of the disease should shape the design of preventive measures.

Malaria is the most crucial public health problem in sub-Saharan African countries where 74% of the population lives in highly endemic areas.<sup>39</sup> Malaria is endemic in Côte d'Ivoire and resurgence occurs during the rainy season.<sup>40</sup> For example, a total of 1187 and 1264 people in 2010 and 2011, respectively, had prevalence of *Plasmodium* infection was 46.0% in 2010 and 56.6% in 2011.<sup>40</sup> Furthermore, malaria infection is likely to have a higher impact on people with hypertension.<sup>41</sup> The management of such co-morbidity is necessary in policy responses.

The resurgence of yellow fever epidemics in Côte d'Ivoire represents a major public health problem.<sup>42–45</sup> Several outbreaks were reported between 2001 and 2007, with an upsurge in cases during the rainy season.<sup>42</sup> In addition, in August 2010, five positive cases of yellow fever were reported in the Seguela region of northwestern Côte d'Ivoire.<sup>44</sup> Yellow fever re-emerges sporadically in some parts of the country. This in mind, in order to provide updated epidemiological data on zoonoses of this type, between 2012 and 2014, an epidemiological study was conducted in 63 villages in the north of Côte d'Ivoire.<sup>46</sup> In the same logic, to estimate the proportion of dengue and malaria cases among febrile patients and to describe the clinical and virological characteristics of diagnosed dengue cases, a prospective study was conducted in Abidjan, from December 2011 to December 2012.<sup>47</sup> The results of this study report that the dengue virus circulates in Abidjan outside of an epidemic. Prior to this study, the WHO had noted situations of dengue emergence in Côte d'Ivoire in 2008.<sup>48</sup>

Like several countries in the world, the HIV/AIDS pandemic has been a major health problem for Côte d'Ivoire since 1986.<sup>22,49,50</sup> Since 1998, it has become one of the leading causes of death among men and the second leading cause of death among women.<sup>51</sup> AIDS-related mortality is derived from low antiretroviral therapy (ART) coverage, which was 41% in 2016 far below global targets of 90%.<sup>4</sup> Relatedly, tuberculosis is a major health problem. With an estimated prevalence in 2010 of 156 cases per 100,000 inhabitants across all forms and an estimated incidence of 139 cases per 100,000 inhabitants for new cases, Côte d'Ivoire appears to be severely affected by tuberculosis.<sup>23</sup> This disease plays an important role in the deterioration of the health of HIV-infected people.<sup>52,53</sup>

Côte d'Ivoire is often the victim of episodic outbreaks of cholera, which is indicative of poor water, sanitation, and hygiene infrastructure. Since 1970, Côte d'Ivoire has experienced a series of constantly changing cholera epidemics: 1983, 1989, 1991, 1994, 2006 and 2011.<sup>54</sup> Thus, in 1995 the country suffered a cholera epidemic with 4993 cases, then in 2001 with 5912 cases.<sup>55</sup> In late 2014 and early 2015, while the Ivorian authorities continued, on the one hand, to publicise the absence of Ebola Virus Disease (EVD), on the other they were also silently fighting a cholera epidemic.<sup>56</sup> Indeed, the silence around its resurgence answers a political question of the image of a country experiencing growth and progress.

As instituted by the Ministry of Health since the declaration of the first case of Covid-19 on 11 March 2020 in Côte d'Ivoire, an update on the situation is made, first daily, then weekly. Thus, the MSHP has recorded 319 new positive cases of Covid-19, 129 cured and 5 deaths on its Facebook page<sup>c</sup> for 28 March 2021. Since the beginning of the pandemic, Côte d'Ivoire has had a total of 43,180 confirmed cases, of which 38,719 people have been cured, 237 deaths and 4,224 active cases, with a total number of 510,008 tests. This recent assessment shows that, if the Côte d'Ivoire was spared the Ebola epidemic of 2014 to 2016 given its proximity and borders with the affected countries, the Covid-19 pandemic is becoming part of the history of major epidemics in Côte d'Ivoire. The World Bank has announced that the pandemic will have a major impact on the production of large companies, but also on the lives of households, particularly those in the disadvantaged areas of Abidjan.<sup>7,57</sup> It should also be noted that certain diseases such as human African trypanosomiasis, onchocerciasis, bilharzia, lymphatic filariasis, trachoma and yaws still persist and require special attention.<sup>23</sup>

## BURDEN OF DISEASE

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The morbidity of epidemics, endemics or pandemics remains diverse and varies according to the categories of actors. Nevertheless, general morbidity in Côte d'Ivoire remains characterised by communicable diseases on the one hand and non-communicable diseases on the other in a dual burden of disease.<sup>13,14,20,40,42,58,59</sup> Communicable diseases are dominated by malaria, which continues to be the leading cause of morbidity with about 50% of the reasons for consultations in the ESPCs and its incidence increased by 106% in 2013 to 164% in 2014.<sup>12,13,23</sup> In Taabo, communicable diseases accounted for 58.9% of causes of death with a particularly high rate for malaria, AIDS and pulmonary tuberculosis.<sup>60</sup> Non-communicable diseases that are also causes of many deaths include mainly acute abdomen, unspecified heart disease, and digestive

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<sup>c</sup> <https://www.facebook.com/Mshpci/>

neoplasms. Communicable diseases, however, remain the predominant cause of death in rural Côte d'Ivoire. Malaria syndromes accounted for more than a third of the morbid episodes reported in a survey conducted in 1999 among the population of Abidjan.<sup>22</sup> Infant and child mortality is mostly related to malaria, malnutrition, respiratory infections and diarrhoea.<sup>2,18,61</sup>

The HIV/AIDS epidemic in Côte d'Ivoire is characterised by the presence of both HIV-1 and HIV-2.<sup>1,22</sup> Indeed, the number of people living with HIV is estimated at 450,000 and the number of orphans made vulnerable by AIDS was 440,000 and the prevalence among adults aged 15-64 years.<sup>12</sup> Furthermore, Côte d'Ivoire has one of the highest HIV/AIDS prevalence rates in the West and Central Africa (WCA) region.<sup>14</sup> Combined with sexually transmitted infections (STIs) and opportunistic, AIDS is one of the major causes of morbidity and mortality in the population. These few data on the seroprevalence of HIV/AIDS make it possible to grasp the burden of morbidity linked to the HIV epidemic, which represents the main reason for hospitalisation in certain hospital departments.<sup>1</sup> Even though Côte d'Ivoire seems to have begun its epidemiological transition, deaths are still linked to infectious diseases and perinatal causes and the Crude Mortality Rate (CMR) increased from 12.3% in 1988 to 14% in 2006.<sup>11</sup> The causes of this increase in mortality are said to be numerous, and are linked, among other things, to the resurgence of major tropical endemics and HIV/AIDS.

## **DISEASE RISK AND VULNERABILITY**

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Several socio-cultural, political, economic, and environmental factors contribute to the risk of disease. Inadequate sanitation and drinking water supply also aggravate these health problems, particularly with diarrhoea.<sup>11</sup> Floods in areas like Cocody are also likely to bring out infectious diseases and displacement of populations can have psychosocial impact.<sup>17</sup> Vulnerability to gastrointestinal diseases following the floods in the commune of Cocody would depend on the health status of the person and their gender, since women would be more vulnerable to diarrhoea than men. Vulnerability to disease also lies in contact with contaminated water in the flood zone, which can lead to respiratory and skin infections.

Due to livestock activities and large cross-border movements of livestock in the north of Côte d'Ivoire, these populations would be vulnerable to zoonotic diseases such as brucellosis, Q fever and Rift Valley fever (RVF), which constitute an important risk to be prevented.<sup>46</sup> Indeed, the climatological and geomorphological profile has a strong influence on the epidemiological profile of Côte d'Ivoire, characterised by a variety of tropical diseases, with a predominance of endemic disease, including malaria, cholera

and cerebrospinal meningitis.<sup>9</sup> Disease risk and vulnerability are therefore geographically dependent. For example, mapping of malaria transmission risks for children shows that high-risk areas were mainly in the north-central and western regions, while relatively low-risk areas were located in the north, north-east, south-east, around Abidjan, and in the central-west.<sup>62</sup> Furthermore, seasonal variation is a factor in the emergence or absence of a malaria epidemic.<sup>63</sup> In areas with higher rainfall, the higher the risk of a malaria epidemic. It has been shown in several reports and studies that diseases such as yellow fever and dengue fever are likely to emerge in humid zones as observed in recent years, notably in Abidjan.<sup>42-45</sup>

## VULNERABLE POPULATIONS

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**Social and spatial vulnerabilities.** The literature shows that vulnerable populations are diverse and vary by age, gender, socioeconomic status, and area of residence. The differences between places of residence and infection rates are remarkable. Populations vulnerable to HIV/AIDS are likely to be vulnerable to other disease outbreaks due to socioeconomic factors. The HIV/AIDS rate is higher in urban areas (7.4% for women and 3.2% for men) than in rural areas (5.5% for women and 2.5% for men).<sup>9</sup> Women are more vulnerable than men, with 2.9% compared to 1.7% and the age range is between 15 and 64 years. According to age categories, prevalence is at 8.7% in women aged 40-44 years and 6% in men aged 60-64 years. The 2008 HIV and syphilis sentinel serosurveillance survey among pregnant women showed a prevalence of 4.5% among pregnant women, with prevalence of 5.6% in urban areas and 2.9% in rural areas.<sup>12</sup> HIV/AIDS particularly affects women aged between 30 and 34 years.<sup>64,65</sup> The epidemic is feminised in Côte d'Ivoire.<sup>66</sup> However, the vulnerability of young girls depends on their ability to negotiate protected or unprotected sex. Statistics show that sex workers constitute a population at high risk.<sup>65,67,68</sup> Among these categories of vulnerable people are Men who have Sex with Men (MSM), Drug Users (DU) and Carceral Populations.<sup>14</sup> Young people (females 15-19 years: 0.3%; females 20-22 years: 3.7%; females 23-24 years: 5.8%; males 15-19 years: 0.2%; males 20-24 years: 0.3%) and migrants are the most vulnerable populations.<sup>12</sup> Ultimately, young people appear to be the population most at risk of HIV infection.

**Economic vulnerabilities.** A recent evaluation study showed that access to Insecticide-Treated Nets (ITNs) remains dependent on the income of social categories.<sup>40</sup> A joint report by the World Bank Group and other national and international institutions found that children in poor households are particularly disadvantaged in accessing ITNs, which are considered the most effective nets.<sup>9</sup> This finding leads Bassa to question the equity of ITN distribution.<sup>40</sup> In a special issue dedicated to the governance of Côte d'Ivoire under President Ouattara, Akindès returns to the persistence of social inequalities through his

evocative article entitled 'we don't eat bridges and tar.'<sup>69</sup> Meaning, that economic growth policies supported by the Ouattara administration have not benefitted everyone equally.

**Pregnant women and children.** Despite encouraging signs of improvement in the implementation of the national malaria control policy, malaria prevalence is twice as high among children as in the general population (MSHP, 2016). With a mosquito net usage rate of 17% among children, malaria is the main contributor to child morbidity and mortality. This rate of vulnerability observed in children is relative to the economic position of parents or family (WBG, AHDR and MSHP, 2010). The average age of malaria victims is generally 25 years <sup>61</sup>. Young people are therefore one category on the list of people potentially at risk of malaria. An assessment of yellow fever infections shows that most cases were just over 15 years old (Attoh-Touré, Dagnan and Tagliante-Saracino, 2010). Pregnant women also bear the brunt of malaria. In the context of the Covid-19 pandemic, weekly reports from UNICEF show that the ratio of male to female vulnerability is approximately the same, and children are only collateral victims (UNICEF, 2020b, 2020c).

**Forest populations and mobility.** The Eastern Guinean forests extend from the Sassandra River across the south-central and southeast portion of Côte d'Ivoire. The Kweni ethnic group, one of the forest populations, entered the forest under pressure from Malinké migration. In this region, some populations are highly mobile across a large geographic area, making them particularly vulnerable to disease epidemics.<sup>72</sup> Disease transmission is common near water areas (rivers, water holes). In contrast to settled village communities, forest populations are more likely to come into contact with vector-borne diseases and are at risk of zoonosis spillover. The results of the research carried out by the Ebo-CI programme in Côte d'Ivoire during the Ebola epidemic show that when borders are closed, people use trails to continue their trade activities.<sup>d</sup> From this point of view, vulnerability is not only linked to the natural environment, but also to the porosity of the borders, whose official closure leads to more informal exchange practices. Due to the very diverse vegetation of Côte d'Ivoire, with a dominance of the Guinean forest in the south and the Sudano-Sahelian savannah in the north, there is a climatological and geomorphological profile that is characterised by a variety of tropical diseases, with a predominance of endemic diseases, notably malaria, cholera and cerebrospinal meningitis.<sup>9</sup>

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<sup>d</sup> <https://shsebola.hypotheses.org/eboci>

**Urban poor.** Populations living in urban and peri-urban informal settlements face numerous challenges related to housing, water and sanitation, and economic stability, all of which contribute to vulnerability to diseases.<sup>73-75</sup> In Côte d'Ivoire, increasing urbanisation, rural exodus, and the socio-political crisis (2002-2011) contributed to the proliferation of unplanned and informal settlements.<sup>73</sup> These settlements are largely excluded from access to basic urban services, including sanitation and waste collection. During the socio-political crisis, large numbers of the population fled from the Northern, Central, and Western areas, settling in Abidjan.<sup>73</sup> This compounds their precarity and exacerbates vulnerability to malaria, typhoid, and other diarrheal diseases.

**Migrants.** Between 25-40% of the population consists of migrants from elsewhere in Africa; the largest number of migrants come from Burkina Faso, Mali, Ghana, Guinea, Nigeria, and other West African nations. Meanwhile, there are large numbers of rural-urban migrants, in what has been termed inaccurately a 'rural exodus.'<sup>76</sup> In practice, migration is more complicated as the country has also experienced urban outmigration.

## **EPIDEMIC RESPONSE AND GOVERNANCE**

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Since 2008, Côte d'Ivoire has set up an epidemiological surveillance system to regularly collect information on the health of the population and the state of the health system in order to remain attentive to the emergence of any epidemic and provide appropriate responses.<sup>77</sup> As part of this preventive approach, awareness-raising and health education campaigns aimed at preventing AIDS have been put in place by the National Programme to Combat AIDS, Sexually Transmitted Diseases and Tuberculosis (PNLS/MST/TUB).<sup>22</sup> Within the framework of this programme, a national policy for the treatment of opportunistic diseases during the course of AIDS was developed by the PNLS. This response policy remains limited to people considered potentially vulnerable and could be considered a model for other epidemiological surveillance systems.

The need to have reliable information and timely data to act in public health led the health authorities to equip Côte d'Ivoire, in 1995, with a National Health Information System called the Management Information System (SIG).<sup>3</sup> The main mission of this structure is to collect and map risk areas and categorise risks to enable the development of an adapted response plan. However, data collection remains limited outside of urban areas and this patchwork data is a major challenge to the effectiveness of the SIG.

### **Legacy of the 2014-16 West African Ebola Epidemic**

The 2014-16 West African Ebola epidemic placed all regional countries on high alert. During the peak of the crisis, the Côte d'Ivoire National Institute of Public Health (INSP)

mobilised a One Health cross-sectoral collaboration in the country's western regions that bordered Ebola-affected countries.<sup>78</sup> This included the establishment of committees to address the epidemic at the local level and enabled the delivery of response services directly to communities. Technical advisors were also placed at regional health offices to support integrated supervision visits, data validation workshops, coordination and communication.<sup>78</sup> In tandem, the USAID-funded Leadership, Management, and Governance (LMG) project which began in 2011 was expanded in 2015 and trained intersectoral stakeholders from a One Health approach, including regional and district health offices, hospitals, health centres, and the water, sanitation, agriculture, animal and fishery sectors.<sup>79</sup> This contributed to decentralised decision-making and management, shifting power toward regions and districts and bringing important health decisions closer to the community level. By June 2017, target districts were better equipped to respond to epidemic threats. In one referral hospital, the percentage of suspected cases of epidemic diseases reported to the national notification system increased from 26% to 100%.<sup>79</sup> The MSHP now has ownership of the programme and is scaling it up.

## **Malaria**

Faced with the resistance of the parasite responsible for the disease to almost all the anti-malarial drugs on the market and in the absence of an effective vaccine,<sup>80</sup> since 1996, a National Malaria Control Programme, consisting of distributing mosquito nets to the population, has been put in place.<sup>39</sup> To enable the Ivorian health system to further guarantee a supply of quality, financially and geographically accessible services and care, particularly for the poorest, Côte d'Ivoire has undertaken new reforms in the health sectors<sup>21</sup>. These include the introduction of Universal Health Coverage (CMU) with the basic package of health services as defined by the WHO.<sup>20</sup> Moreover, to combat malaria, which is the leading cause of morbidity, the Ivorian government has implemented a policy of free treatment for malaria in order to lift the financial burden of access to diagnosis and treatment.<sup>61</sup>

## **Covid-19 Pandemic**

To combat the Covid-19 pandemic, President Alassane Ouattara has emphasised 'togetherness and solidarity' to fight the scourge.<sup>81</sup> In response, some technical development partners and private sector companies have made several donations in cash or in kind to the state. Political actors and members of civil society have shown solidarity with the population. An economic support plan was developed to provide support funds aimed at the most disadvantaged populations to prepare for post-crisis recovery.<sup>7</sup> Similarly, a loan guarantee fund for small- and medium enterprises has been created to ensure continued access to financing for businesses hard hit by the crisis. These emergency response funds for the informal sector and vulnerable populations

could be used to stimulate development. The response plan includes the bolstering of the health system to limit the spread of the disease, by promoting the testing and treatment of cases.<sup>82</sup> This vision would be guided by the principles of precaution, optimal, integrated, continuous, and rational health delivery, and community-based participation and discipline. In terms of intervention, the plan envisages 8 strategic axes which consist of epidemiological and biological surveillance, contact tracing, case management, outbreak response, prevention of disease transmission, risk communication, social mobilisation, and community engagement, in addition to, operational research and the creation of a framework for emergency management, monitoring and evaluation of the action matrix and prevention measures. This response strategy is similar to the 2014-2016 Ebola virus disease threat response plan.<sup>37</sup> However, while for EVD the government communicated strongly about the risk of handling the body of a confirmed, suspected or deceased person, for Covid-19 there was very little communication about this risk of transmission, despite WHO recommendations and guidelines on this risk.<sup>1</sup>

## CASE STUDIES IN EPIDEMIC PREPAREDNESS AND RESPONSE

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The review selects three case studies for epidemic preparedness and response. The first is a 1994 research programme on the means of preventing and reducing maternal transmission of HIV in the maternal and child health services of the university hospital and a community health centre (Formation Sanitaire de Yopougon FSU) in Abidjan, which identified other difficulties.<sup>83</sup> This study consisted in evaluating the systematic screening programme for pregnant women. In fact, to reduce the risk of mother-to-child transmission of HIV, the first stage of this programme was the introduction of voluntary HIV screening for pregnant women, possibly during their first visit to the maternity hospital.

### **Box 2.** The fight against AIDS in Côte d'Ivoire

In 1995, Côte d'Ivoire became the second African country, after Zambia, to integrate its National Tuberculosis Control Programme (NTCP) into the National AIDS and STD Control Programme (NACP), a programme that had been in existence for a long time, was well established in the country and had a proven track record. At the same time, this new programme, the NACP/STD/TB, was equipped with a management service, thus breaking with the almost exclusively preventive vocation that had been the case for NACPs since their creation in Africa in the second half of the 1980s. The integration of the AIDS and TB programmes was an important step in the management of HIV patients, marking a shift from vertical HIV programmes to more integrated services. Indeed, as tuberculosis is the main opportunistic disease associated with HIV infection, the various anti-tuberculosis centres (CATs) in the country were called upon to strengthen the equipment of centres specialising in the care of these patients. However, while tuberculosis was

already described as a "social disease" and, as such, was treated in the low-cost TB clinics, HIV infection was never treated in this way, in a general context marked by the State's withdrawal from the health sector and by the policy of "recovery of health costs" from users, recommended by international organisations and initiated in Côte d'Ivoire in the early 1990s. Two main lessons were learnt from fighting HIV/AIDS: (1) vertical approaches to epidemic diseases are costly and often inefficient, while (2) social drivers of disease must be addressed in order to reduce disease vulnerability and future risk.

Source: Msellati, Vidal and Moatti (2001: 15-16)

The second describes the contribution of social factors to the response to the Ebola virus disease outbreak in West Africa from 2013-2016.<sup>84</sup> This article presents the results of research conducted in Côte d'Ivoire as part of the Ebo-CI programme, concerning the ban on funeral rites during this period. This work consisted of analysing the experience of these measures by the populations of the zones close to the countries affected by the epidemic.

### **Box 3.** Funeral rituals in Côte d'Ivoire during the 2014-2016 Ebola epidemic

During the epidemic, injunctions prohibiting funeral rituals were issued in affected or epidemic risk countries, as these rituals are considered the main mode of virus spread through contact with the bodies of people dying or dying of EVD. In Côte d'Ivoire, they are included in the category: "Dangerous traditional practices". The data collected in the framework of the Ebo-CI programme: "Côte d'Ivoire and MVE" in Abidjan, Noé and Tabou show that, despite the intensity of the preventive campaigns, these rituals remain unchanged. Another observation is their diversity according to cultural areas, within the same population, variability, and specificity according to the social status of the person; the type of death (bad/good, violent/expected, 'natural'/suspect); the etiological models of the event; the place of death. Diversity, variability, and specificity require an ethnographic knowledge of the rituals before proposing adaptations.

These rituals are also flexible and malleable. They are also associated with perceived risks, linked to their execution, and counter-rites proposed as prophylactic measures in the event of errors committed in their execution. Considered as the set of practices from the moment of death until ancestralisation, these rituals make it possible to objectify death, to find its cause, to reduce rumours and subjective discourses built on etiological hypotheses. They have the function of reducing the weight of responsibility in relation to the event and of blurring any guilt felt or asserted. They constitute resilience mechanisms constructed by societies in the face of death. Cultural imperatives, particularly religious,

appear in the collective imagination as a 'social norm', but above all as a practice that allows the maintenance of optimal sociability between the living and social reproduction. Inscribed at the heart of collective knowledge, they also contribute to an iterative restoration of the social order. The risks potentially induced by their transgression appear to populations to be much more important than the distant and hypothetical risk of a possible transmission of the EVD.

Even if they appear difficult to articulate with biosafety measures, better knowledge of these rituals would make it possible to construct adapted circumstantial procedures, using the malleable character of the practices, the perception of other types of risks induced by these rituals, or the counter-rites already existing locally.

Source : Kra F., Egrot M., Akindès F., 2017, Les rituels funéraires en Côte d'Ivoire en temps d'Ebola, in Descalux et al, (2017: 81)

The third case study, also based on the results of the Ebo-CI programme, is an extract from the Sonar-Global Project's curriculum aimed at developing a training manual for social science researchers for capacity building, but also for health professionals, particularly in African countries such as Côte d'Ivoire.<sup>85</sup> This manual was developed using a participatory approach under the supervision of a scientific committee and with international experts within the framework of the Funeral Rites and Epidemics in Côte d'Ivoire (RiF&piC)<sup>e</sup> programme, a follow-up to Ebo-CI.

#### **Box 4.** Social experiences of Ebola health measures on the borders of Noé and Sipilou

When the Ebola virus disease (EVD) epidemic was announced in December 2013 in Guinea, Ivory Coast was emerging from a post-election crisis that left thousands dead and a precarious security situation with deeply weakened social structures. Having just launched the national reconciliation process, the new president, who needs to guarantee internal social cohesion, but also to ensure the security of the populations against any external threat to establish his political legitimacy, must face an epidemic threat. This study shows how internal socio-political issues influence policies and strategies to combat the epidemic risk at borders.

As soon as the epidemic was announced, the Ivorian authorities set up surveillance measures and communication strategies at the borders. The recommendations are the

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<sup>e</sup> <http://www.lped.fr/rif-pic.html>

strengthening of epidemiological surveillance, the control of movements along the borders and the construction of Ebola Treatment Centers (ETC). The spread of the epidemic in Liberia, in March 2014, reinforced concerns because of the common border, but also social links and significant human mobility. As the threat became more pressing, the authorities decided to close certain land borders. After suspending all flights to infected countries on August 11, 2014, the authorities announced on August 23, 2014, through the voice of the Prime Minister, the official closure of land borders with the affected countries. And this, despite the instructions of the WHO, that recommended keeping the borders open to promote controlled passage.

This measure produced mixed result. While the government announced the closure of borders, checkpoints were maintained with law enforcement officers. In addition, popular practices persisted because of kinship ties between people or families in neighbouring countries (lineages on both sides), and which are also rooted in agricultural production systems (mutual aid in field work). In addition, trade in goods, services workers laborers for certain agricultural activities and other goods are important. Due to the official closure of the borders, populations of the three countries (Ivory Coast-Guinea-Liberia) participated in secret funerals. They sometimes repatriated remains by bypassing checkpoints, which were more frequented, which encouraged illicit trafficking in goods. This measure did not therefore prevent the usual practices obeying sometimes very strong socio-cultural or economic imperatives. It did not prevent the expression of compassion, sympathy or even empathy that existed between populations. On the contrary, the announcement of the closing of the borders encouraged the development of new strategies to continue to carry out daily activities and live together.

Reactions to people by passing checkpoints or engaging in potentially risky activities were also mixed. Traffickers of goods were seen as law breakers. When they were caught by the police, they sometimes negotiated their passage for a sum of money. In addition, individuals who attended funerals or illegally repatriated remains from an affected country to Ivory Coast were suspected of introducing the virus into the country. However, arrangements were made after medical advice to allow families to perform funeral rites.

Faced with clear-cut public health measures, the practices of border actors were based on the hierarchy of priorities and risks, articulated with internal political and security concerns and the risk of infection. Understanding the acceptability of border measures requires considering the social complexity, the dynamics of interactions between social actors and their interests, but also the socio-political context.

Source: Kra F. (2021), in Sonar-Global team. SPECIAL SOC EPIDEMICS: Training social scientists on the social dimensions of epidemics, Billaud et al, (2021: 88)

These case studies show how border response policies were organised, but also the experiences of local people. This last point will be discussed in the rest of the technical brief.

## COMMUNICATION AND TRANSPORT

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The country has extensive national road and ICT networks, and its public services have relatively high household coverage rates.<sup>86</sup> Roughly half (12.5 million) of the population uses internet and the country has more mobile connections (37.5 million) than population.<sup>87</sup> Like many African countries, Côte d'Ivoire has undergone an 'ICT revolution' over the past decade. The country is connected to the SAT3 submarine cable, which offers relatively good Internet connectivity. But the cost of communication has remained four times higher than elsewhere in the developing world. Thus, during the Covid-19 pandemic, virtually all households were informed about the pandemic and the government's response and the usual communication channels (television and radio) were used to inform the population.<sup>7</sup> Traditional media were seen as reliable sources of information to support alternative sources such as relatives and friends (3.8%), community leaders (3.7%), Facebook (2.4%) and other sources (1.6%).

In 1959, the newspaper *Le Monde Diplomatique*<sup>f</sup> estimated the size of Côte d'Ivoire's road network at about 1,575 kilometres of international roads and 8,150 kilometres of local roads, but these were mainly developed for the evacuation of raw materials. These efforts have continued since independence. In 2016, about 23% of global carbon emissions came from the transport sector and the majority came from roads.<sup>88</sup> Indeed, Côte d'Ivoire has relatively well-developed national and international road networks.<sup>86</sup> The road and rail networks are generally integrated with those of Burkina Faso. Furthermore, the rural accessibility index indicates that about 32% of the rural population live within two kilometres of an all-season road. However, about 40,000 kilometres of all-season roads would be needed for 100% of the rural population to live within 2 kilometres.

If the "road precedes development", its absence can, on the other hand, slow down development as described in Oura's article entitled: When the road slows down development in Bangolo (Côte d'Ivoire).<sup>89</sup> Based on a geographical study, the content of

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<sup>f</sup> <https://www.monde-diplomatique.fr/1959/10/A/23261>

this article makes it possible to grasp the content of the efforts that remain to be made in terms of road networks in rural areas, as shown in the image below.



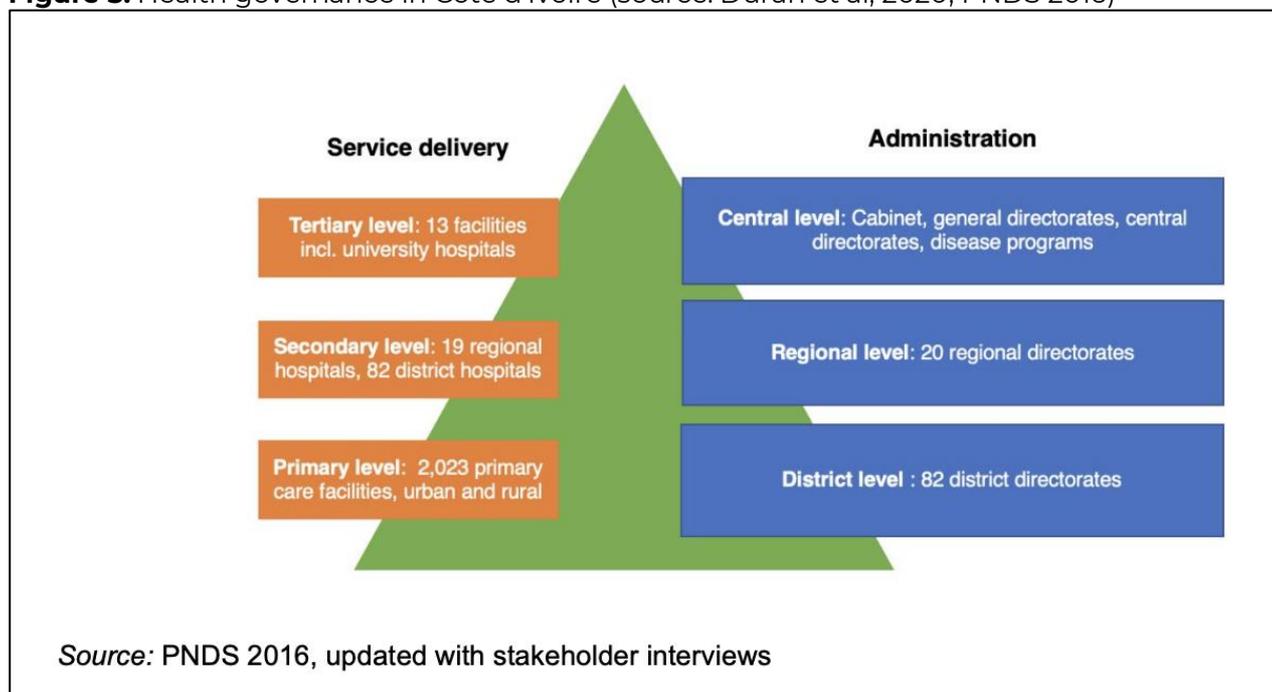
In this image from a geographical survey of the state of the roads in western Côte d'Ivoire, you can see wooden bridges built by local people to transport their products. However, this situation becomes more complicated during the rains. Thanks to investments in road infrastructure, people's access to health care has

improved considerably in recent years in Côte d'Ivoire, with more than 68% of the population now living within 5 kilometres of a health centre.<sup>24</sup> The diversity of the road network raises concerns about the management of epidemics at borders, as shown by the case study from the results of the Ebo-CI programme on the experience of health measures in Sipilou (Guinea-Côte d'Ivoire), Noé (Ghana-Côte d'Ivoire) and Tabou (Liberia-Côte d'Ivoire) during the Ebola epidemic in West Africa.<sup>85</sup> This question leads to an analysis of governance, particularly in times of epidemic, and the key actors involved.

## GOVERNANCE AND KEY ACTORS

The governance of the health sector is organised in a way that mirrors its tripartite structure (Figure 5). As mentioned, governance of the private sector is neither well-defined nor well-regulated. External financing sources are the MSHP's formal governance structure, which also provides services in the health sector. At the Ministry level, the Inspector General is in charge of the administration and finance of the health system, whereas the annual budgeting process is the main accountability mechanism.<sup>4</sup> The budget must be finalised and approved by Parliament by the end of the government's fiscal year (which corresponds to the calendar year). The budgeting process presents a number of challenges to ensuring that health priorities are funded. For one, priorities defined by the MSHP are not necessarily met.<sup>4</sup> Moreover, because the budget is decided after inputs are made by the Directorate of the Budget, the Council of Ministers, and the President. There is a lack of an integrated planning system and weak alignment between budgets and operational planning in the health sector.<sup>4,90</sup>

**Figure 5.** Health governance in Côte d'Ivoire (source: Duran et al, 2020; PNDS 2016)



### Health governance tools in Côte d'Ivoire

Governance tools can be divided into two categories. The first can be considered as intervention tools and the second as decision support tools. After a politico-military crisis, the country aspires to have an accountable, equitable and efficient health system using health intervention tools in which all Ivorians would have access to quality care throughout the national territory.<sup>11</sup> The National Health Development Plan (PNDS 2009-2013) which relaunched health programmes were endorsed by values of equity, social justice, ethics, and solidarity. The plan prioritised the restoration of the Ivorian health system in particular in the North Central and Western zones (CNO) (most affected by the war); the reaffirmation of a system based on Primary Health Care (PHC); the establishment of better availability and accessibility of health information; the establishment of a system of availability and accessibility of essential medicines; the adequate distribution of health personnel throughout the country; the gradual transition from health emergencies to health development; the establishment of new financing mechanisms; and the promotion of good governance in health. The 2012-2015 and 2016-2020 PNDS were designed along the same lines.<sup>12,91</sup> In addition, the National Strategic Plan for HIV and STI Surveillance (PSNS-VIH/IST) was introduced.<sup>14</sup>

Other tools considered as decision support tools have been developed for good governance of the health system. These tools include the National Health Accounts (NHA) created in 2007.<sup>11</sup> The NHA aims to describe, on a national scale and over a given period, all the activities of the health sector that contribute directly to the production of goods and services that ensure the health function. Since 1995, Côte d'Ivoire has also had a

national health information system called the Management Information System, which makes it possible to regularly collect health data for early warnings in the event of a recurrence of a disease, although its implementation is patchwork especially in rural areas.<sup>3,92</sup>

The state has also instituted the Côte d'Ivoire Demographic and Health Survey (EDSCI) programme, whose mission is to collect data on the health of the population and the risks to which they may be exposed in order to better guide the PNDS.<sup>93</sup> The EDSCI could not be updated in 2020 as planned due to the Covid-19 pandemic.<sup>9</sup> Created in 2012 as part of the security sector reform, and attached to the presidency of the republic, the National Security Council (NSC) has become a decision-making body for large-scale security issues such as the management of this health crisis.<sup>81</sup> This state body indeed played an important role during the West African EVD epidemic and in the management of the Covid-19 pandemic.

### **Key actors in Ivorian health policies**

The review identified a diversity of actors involved in the Ivorian health sector. These actors are composed of governmental and international institutions and local and international NGOs, but also technical and financial partners.

The Ministry of Health with its directorates and technical services represents the key actors in the government.<sup>92,94,95</sup> Other ministries participate in the provision of health care through their so-called 'parapublic' health infrastructures.<sup>1</sup> Decentralised structures are an important part as well, including the Union des Villes et Communes de Côte d'Ivoire (UVICOCI) and the Assemble des Départements et Districts de Côte d'Ivoire (ADDICI).<sup>92</sup> National health sector associations such as the Association de Soutien à l'Autopromotion Sanitaire Urbaine (ASAPSU), the Management Committee (COGES) for community participation and the professional orders and unions are also key actors in the health system in Côte d'Ivoire. The private sector plays an important role in the health system, but their inputs are within the logical framework of the Chamber of Commerce and Industry of Côte d'Ivoire (CCICI).

International key actors can be considered not only as technical partners because of their contribution to the implementation of certain health policies, but above all as financial partners.<sup>96</sup> Thus, MEASURE Evaluation is often involved in the evaluation of health programmes.<sup>20</sup> In addition to being an important external financial partner for HIV/AIDS,

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<sup>9</sup> <http://www.plan.gouv.ci/accueil/actualite/569>

the US government, through PEPFAR, is positioned as one of the main actors, along with the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). Other donors include WHO agencies, the French Development Agency (AFD) and the European Union.<sup>h</sup>

MEASURE Evaluation	UNDP	World Bank
UNAIDS	UNFPA	PEPFAR
UNHCR	UNODC	EGPAF
UNICEF	UN Women	ICAP
WFP	ILO	CARE International
UNESCO	WHO	GAVI Alliance
Global Fund to Fight AIDS, TB and Malaria	French Development Agency	European Union

The press and social networks are now key actors in governance and responses to epidemics. During the Covid-19 pandemic, in the face of measures banning gatherings and distancing, social networks and social media played an important role in maintaining social relations.<sup>33</sup> Thus, some funeral ceremonies were transmitted live on Facebook to allow people who could not travel to experience the event live. The importance of the online press in vaccination campaigns and in raising awareness about a risk is almost indisputable.<sup>8</sup> The press thus participates in the implementation of epidemic response policies.

## **COMMUNITY EXPERIENCES AND RESPONSES OF LOCAL SOCIAL ACTORS**

One of the strategies for combatting HIV/AIDS infection in the 1990s was to offer screening tests to pregnant women at the time of their consultation, but some women refused to be tested.<sup>83</sup> Several lessons can be drawn from the results of the evaluation of this programme. They show that most of the women who refused to be tested felt that they were probably HIV-positive. Some of the reasons are related to the perception of HIV infection in Africa as "the disease" that cannot be cured, which leads to the belief that there is no need to know one's HIV status. Refusal to be tested is also associated with

<sup>h</sup> <https://ci.usembassy.gov/fr/our-relationship-fr/pepfar-fr/quest-ce-que-le-pepfar/>

women's socio-economic vulnerability and their fear of exclusion. The social experiences described above show that not knowing one's HIV status is a way for pregnant women to avoid adding stress to the stress of pregnancy. This could be analysed as a resilience strategy in the face of the psychological vulnerability caused by pregnancy.

Another more recent experience is related to the Covid-19 pandemic. Indeed, in response to the outbreak of Covid-19 in the city of Abidjan, the Ivorian state decided to install screening centres in several districts of the city. However, the populations of Yopougon, Koumassi and Anono<sup>i</sup> have protested the installation of these centres in their neighbourhoods. The case of Yopougon, the most emblematic, is reported here as an illustration through the report of an online press.

**Box 5.** Covid-19: violent demonstration against the installation of a screening centre under construction in Yopougon<sup>j</sup>

On 5 April 2020, Côte d'Ivoire recorded 261 confirmed cases, 37 cured and 3 deaths due to Covid-19. In response to the outbreak, the government decided to set up screening centres in the neighbourhoods of Abidjan. A centre for voluntary testing was then set up in Yopougon, at the Anti-Riot Brigade (BAE) stadium. But rumours of a treatment centre for patients led to protests. It would have taken the intervention of the forces of order to prevent the future centre from being completely dismantled by furious demonstrators.

*Image : Burning barricades*



*"We are told that there are sick people in Cocody and Marcory, why not build centres there and come here in the middle of a district like Toit Rouge? We do not want it here; we do not have anyone ill with this virus! Who here has the means to go to Europe and then come and bring it here? It's them over there (Cocody and Marcory) who travel, so let them go and set up centres at home! exclaims one of the demonstrators."*

Source: Koaci.com (05 April 2020)

While government actions to respond to epidemics and social reactions to these responses are documented, the contributions of local actors are less explored and

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<sup>i</sup> <https://bit.ly/3f6rDUL>

<sup>j</sup> <https://bit.ly/3floupg>

analysed. In addition, although there is a diversity of actors intervening at the local level in the response to epidemics, Community Health Workers (CHWs) in Côte d'Ivoire do not benefit from a regulatory and legislative framework to ensure training standards and sufficient facilitation.<sup>97</sup>

## **Challenges and recommendations**

In response to the many health challenges, both in terms of infectious disease control and health system planning, new health policies have been developed to improve the quality of health care and services.<sup>23</sup> Similarly, several reforms have been undertaken in the health sector. These restructurings concern targeted free health care, which should give rise to hospital reform, performance-based financing, decentralisation of the organisation of community-based interventions, the organisation of emergencies and referral/counter-referral.<sup>21</sup> Thus, under the leadership of the MSHP and with the support of technical and financial partners, the Directorate General of Health (DGS) is coordinating the implementation of this ambitious vision of the CMU through major efforts aimed at improving financing and financial management, improving the supply, quality and use of services, with a focus on maternal and child health, and strengthening health sector governance.<sup>98</sup> To this end, a draft law on hospital reform has been under analysis since 2019.<sup>99</sup> All these projects show the government's desire to improve the health conditions of the population.

Efforts must be made in terms of policies to mobilise local actors and communication to build public confidence in an epidemic situation. The increase in human resources for health highlights three major challenges.<sup>100</sup> Firstly, there is no tool to assess the total number of staff for basic health services, standards, and specific models of care. Secondly, unfavourable socio-economic conditions combined with the structural adjustment measures recommended since 1996 have led to restrictions in the recruitment of health workers. As a result, the number of staff approved is often disproportionate to the real needs. Finally, the introduction of a competitive examination for entry into the civil service after the medical profession has caused a challenge in absorbing the available human resources.<sup>100</sup> From this point of view, and in conjunction with the current Covid-19 pandemic, considerable efforts are needed in terms of appropriate health financing and training of health professionals.<sup>101</sup> After the series of crises experienced by Côte d'Ivoire, there are also challenges to be met in terms of constant pooling of scientific knowledge to improve the health system and build effective and appropriate response policies.<sup>102</sup>

Faced with culturally formalised actors, the challenge for health workers is to adapt care practices to their living conditions and representations.<sup>103</sup> Several other challenges are related to public information, screening and diagnosis of certain infections, health care

infrastructures (reference centres and peripheral centres), training of health care personnel, methods of delivering medicines, structuring of laboratories involved in surveillance and strengthening community support.<sup>19,22</sup>

## KEY IMPLICATIONS FOR OUTBREAK AND EPIDEMIC RESPONSE

### SUMMARY OF KEY ISSUES

This section describes key political, economic, cultural, and social issues with operational recommendations for epidemic preparedness and response in Côte d'Ivoire. As the Ministry of Health itself notes, several factors impact epidemic preparedness, including: the low coverage of infrastructure; poor condition and under-equipment of facilities; inadequacy and uneven spatial distribution of health personnel; patchwork and insufficient health care access for people in rural areas; low vaccination coverage; and limited access to medicines are all factors that contribute to increasing the vulnerability of Ivorians to epidemic diseases.<sup>11</sup> A study conducted in the town of Grand-Bassam concluded that perceived distance, income of the head of household, perceived cost of care, household size, level of education and age of the household are factors that determine access to health services.<sup>104</sup> All these issues are likely to influence behaviour in the face of epidemic response policies and must be anticipated from the perspective of preparedness promoted by the WHO, particularly in relation to emerging epidemics.<sup>38</sup> In this section we review contextual factors that might hinder epidemic response.

### Building a society of fairness, equality, and trust after long periods of crisis

The documents consulted for this technical brief show, for the most part, that the series of crises that the country has gone through have deeply eroded social ties and trust in the political authorities. These crisis situations seem to create a climate of distrust and mistrust between the political authorities and the population, and between social groups.

### Key Implications

- Affirm commitment to the implementation of a policy to improve the quality of health care and services for all through the development of a quality policy statement.
- Work effectively to reduce social inequalities and promote an equitable society.
- Work to build trust between government authorities and the people, but also between the people themselves.

## **Community mobilisation and the use of health goods**

Almost all the ministry reports, and other articles consulted point to the challenges of mobilisation or community participation. This is notable both in the maintenance of health infrastructure and in the response to epidemics.

### **Key Implications**

- Theoretical and practical training in community health for nurses, midwives and doctors to establish the mechanism for behaviour change in the population.
- Support the quality of the organisation of services and care that are provided.

## **Establishing a clear legal framework**

There remains a lack of a clear legal framework to guide health care practices in the health centres. It was also noted that many people have little knowledge of their right to health. It was also noted that there is little respect for the legal norms of establishment in the private sector; this is buried in the absence of clear health coordination in Côte d'Ivoire.

### **Key Implications**

- Work to develop and implement a clear health code to guide care practices.
- Engage with social science research to implement a health code that considers the socio-cultural and economic realities of the populations.
- Raise awareness of what the law gives them in terms of health.
- Require health care workers to perform their work with the highest level of professionalism, integrity and trust as set out in the code of ethics enforced by health professional associations and colleges.

## **Training of health professionals**

The review highlighted the issue of training for carers as one of the challenges to be addressed. However, this training challenge should not be limited to biomedical practices. In a context of increasingly complex health care provision, it seems necessary that these health professionals be equipped with some elements of medical anthropology to enable them to better practice in a multicultural context. It is also necessary that social science contributions be adapted to the current contexts of emerging epidemics.

## Key Implications

- Develop health workers' abilities to immerse themselves in the socio-cultural environment of the patients or communities involved.
- Introduce social science courses in the training modules for health workers.
- Promote and collaborate with local social scientists and build bridges between social science and health professionals.

### **Universal Health Coverage (UHC)**

The national government is committed to achieving UHC and ensuring that health services will be made available to all populations. While this plan is ambitious, there is a need to ensure that it is carried out.

## Key Implications

- Advocate for improved funding, financial management; supply, quality and use of services; and strengthened governance of the health sector.
- Advocate with development partners for their technical and financial support for the implementation of a policy to improve the quality of health care and services within the framework of the CMU.

### **Community mobilisation, rumour, and violence in an epidemic situation**

The literature demonstrates that there is the challenge of communication between the authorities and the population around a disease or epidemic. This lack of communication has led to acts of popular protest based on rumours during the COVID-19 pandemic.

## Key Implications

- Establish mechanisms for measuring compliance with information and community engagement.
- Develop inclusive communication approaches to encourage people's support.
- Work to identify the social, economic, cultural, political logics that lead to misinterpretation and misinformation in the context of an epidemic.

### **Health inequality**

The issue of unequal access to health care, giving high priority to the wealthy, is an important issue in the history of the health system in Côte d'Ivoire.<sup>105</sup> Also, as Akindès notes, even if efforts are made to improve the Ivorian health system, the distribution pattern shows the persistence of social inequalities.<sup>106</sup> The national politics of Ivoirite (pre-2011) institutionalised an Ivoirian identity prior to the civil war that further marginalised

ethnic minorities and scapegoated immigrants. Ongoing tensions continue to persist and manifest in who has access to what. Health inequality impacts care in two ways: it limits what poor and vulnerable populations can access and this then influences perceptions of the health sector, also negatively affecting trust in the health system.

## Key Implications

- The context of inequalities (e.g., for forest populations, urban poor, migrants) is important in understanding how health system preparedness, epidemic response, and the pattern of spread of an epidemic might unfold in Côte d'Ivoire.
- The history of armed conflict and post-conflict reconciliation shapes who feels included in Ivorian society today, with implications for who might trust in a government-sponsored epidemic response program.
- The government's post-conflict plan to drive economic growth has not benefitted everyone in the country, and vulnerable groups feel left out and are still economically vulnerable. This has implications for who can seek care during an outbreak.
- Promote health equity in a strong and sustainable way as a principle to correct inequities experienced by less advantaged individuals or groups.
- To provide care during an epidemic between different groups of populations regardless of their geographic, economic, social, organizational or linguistic situations.
- To provide opportunities for wellness and quality of life in the context of epidemics rather than solving all the problems caused by poor health.

### **Availability and accessibility of data**

Very little health data is available and accessible, particularly online. One of the major difficulties and sources of controversy concerning the scale of the HIV epidemic in Africa is the inadequacy and fragility of the data available on the incidence of infection and prevalence.<sup>49</sup> Côte d'Ivoire has lived through a series of military and socio-political crises, during which several historical databases were destroyed. In this regard, the National Health Development Plan 2016-2020 (PNDS 2016-2020) notes a lack of institutional memory, which translates into a data archiving problem, resulting in a lack of traceability of certain regulations.<sup>12</sup> These include decrees and orders relating to the functioning and organisation of health structures at both the central and decentralised levels. There is also little data on vulnerable populations and in areas without infrastructure to facilitate sufficient access.<sup>107</sup> This problem of lack of data is an obstacle to the development of epidemic response in Côte d'Ivoire.

## Key Implications

- Patchwork or missing data will limit epidemic preparedness and response efforts. Basic surveillance data may not be available from rural areas.
- Instead, it may be possible to leverage community health workers and existing village-level infrastructure to build reporting mechanisms from the ground up using low-tech solutions like text messaging.
- Referral and reporting systems must be strengthened.
- Observe rigor in the management of information and establish a standard data recording model.
- Define a multidisciplinary institutional framework for epidemiological surveillance.
- Involve health socio-anthropologists in the process of data collection include data broken down by sub-populations in the evaluation and monitoring of indicators.

## Governance and leadership

Studies by the Ministry of Health and its partners have identified a multitude of problems related to governance and the question of leadership. Our analysis of the health system reveals several challenges, including:

- An absence of a quality policy and strategic plan, inadequate planning and coordination of health actions, poor dissemination of documents (policies, directives, and guides) drawn up at national level,
- Inadequate transfer of competence from the ministry to the local authorities,
- Inadequate public-private partnership,
- A lack of defined status for community partners and service providers in the health system,
- Inadequate intersectoral coordination, and
- A lack of regulations ordering the Departmental Health Directors (DPS) and other local health authorities to make budgetary and financial information available to the population.<sup>12,23</sup>

This technical brief has noted the absence of a strategy to raise awareness and inform the population about their health rights. Nevertheless, the majority of decisions come from the local health district, which works in collaboration with the COGES.<sup>9</sup> These Management Committees, although responsible for monitoring the proper implementation of the cost recovery policy for the provision of care and medical consumables, are not elected and are not very representative. In terms of community

participation, community involvement in the management of health facility activities is low or non-existent.

## Key Implications

- Maintain a high level of openness, effectiveness, efficiency, transparency and accountability in the development and management of the response to the epidemic but more importantly to the national health system in general.
- The current structure of governance may not be strong enough to rapidly respond to an outbreak. Health systems governance must be scaled up and strengthened, from the village to the national level.
- Health systems and epidemic response planning should be strengthened at a national level.
- Management Committees can be made to be more participatory.
- Intersectoral collaboration can be encouraged, modelled on other country's National Task Forces for epidemic response (e.g., Uganda's NTF).

## Human resources for health and health infrastructure management

With regard to human resources for health, the main problems identified are the uneven distribution of health infrastructures and health personnel throughout the country.<sup>18,21,93,100</sup> The lack of incentives for health personnel, the low management skills of health personnel, the lack of training modules related to quality management of health care and services in training establishments should be highlighted. The national strategic plan for HIV and STI surveillance 2020-2024 reviews efforts to recruit doctors in the public sector.<sup>14</sup>

## Key Implications

- Health workers' contribution to the epidemic response is vital and will should include knowledge, understanding and acceptance of the constraints in terms of cost, time and quality of health care and services.
- Health systems workforce varies from rural to urban areas, with rural areas facing workforce shortages.
- There have been improvements in nurse and midwife staffing, and these individuals should be engaged in epidemic response workforce trainings.
- The public health system workforce should be sufficiently compensated and trained (and re-trained regularly) to improve linkages to epidemic response systems.

## Community involvement

Community health mobilisation must be led by local authorities, in particular COGES. The example below describes the functioning of the COGES and how it enables the participation and mobilisation of local actors in the management of health problems.

### Box 6. Community participation through COGES

In Cote d'Ivoire, initiatives for community participation in health services are part of the implementation of the Primary Health Care (PHC) strategy. In concrete terms, the initiatives in this area consisted of the establishment of Management Committees (COGES) at the level of each health facility and the use of community relays including Community Health Workers (CHWs). In urban areas, the SMC is chaired by the Prefect. The community is represented through the elected representatives of the decentralised authorities. Each year, the management report and the draft budget are drawn up by the head of the health facility and submitted to the SMC for approval. In rural areas, a large place is given to the participation of the communities. Each locality belonging to the health facility's health area is represented by a member. The functions of chairperson and treasurer are held by the community. Only the secretarial function is entrusted to health staff. However, the COGES perform their role on a voluntary basis and their functioning is characterised by little involvement in the life of the health facilities and little participation in activities. Moreover, their decision-making power is limited, particularly with regard to the management of human resources and equipment. With regard to the COGES of community-based health facilities, there is good ownership of the management of health care production tools, but financial management is approximate and there is little participation of the beneficiary population in the community management system and frequent conflicts with the health personnel assigned by the Ministry of Health.

Source: GBM et al, (2010 : 86-87)

At the level of community health care partners, there are several problems that could constitute an obstacle to the response to an epidemic.<sup>108,109</sup> These include, among others, the lack of knowledge of the rights and duties of populations in terms of health, the lack of involvement of local actors in decision-making in health facilities, and the absence of a framework for evaluating the experience of care practices in health facilities. Further, there is an absence of a platform for collaboration between groups of patients and managers of health facilities.<sup>108,109</sup> These problems are both structural and cyclical and vary between rural and urban areas. A joint report by several institutions specifically identified three challenges related to community participation, including: '1) rare attendance at health centres, 2) low participation in the management activities of the health centre, 3)

limited power in the decision-making process, particularly in the management of human resources, equipment and the preparation of the budget of the health facilities.<sup>110</sup>

However, the COGES seem to function better in the Urban Community Health Centers and in the Urban Community-based Health Units. The above-mentioned joint report states that in these public health establishments, there is a better appropriation of the management of health care production tools and approximate financial management.<sup>110</sup> Nevertheless, there is little participation by the beneficiary population in the community management system, conflictual relations with the health staff provided by the supervisory authority and a deterioration in the quality of services provided to users. In spite of these problems, these health facilities are more frequented by the population, certainly because the fees are better respected and they are more welcoming.<sup>9</sup>

## Key Implications

- Epidemic preparedness should consider the role of communities in identifying local priorities, vulnerabilities, and strategies to mitigate outbreaks.
- Promote community resilience to help community members organize, overcome their challenges, and improve their daily lives vis-à-vis epidemics.
- Communities can act as a 'first line of defence,' notifying regional health authorities of outbreaks for rapid response.
- Public health facilities can be encouraged to work collaboratively with community members, through community health workers or other existing mechanisms. Relationships should be fostered long before an outbreak to improve health worker-community member cooperation during an emergency.
- COGES can play an important role in epidemic preparedness and response policies, especially in mobilising local actors. But for this to happen, they need to be empowered and better valued within communities.

## Traditional medicine

In Côte d'Ivoire, the practice and organisation of traditional medicine and pharmacopoeia are regulated by Law No. 2015-536 of 20 July 2015 and Decree No. 2016-24 of 27 January 2016 on the Code of Ethics and Deontology for practitioners of traditional medicine and pharmacopoeia.<sup>14</sup> According to the MSHP, traditional medicine has more than 8,500 Traditional Medicine Practitioners (TMPs) identified through the National Programme for the Promotion of Traditional Medicine (PNPMT). In 2010, 1204 TMPs were trained; some in anatomy and conventional hygiene, and others in intellectual property rights.

## Key Implications

- In Côte d'Ivoire, as in other parts of the African continent, traditional medicine is culturally entrenched, accessible, and affordable and serves as one of the primary sources of healthcare.
- Engagement with traditional medical practitioners might include training on referrals, and acknowledgement of treatment and prevention practices with local meaning.
- Health care seeking is often multipronged and may include both traditional and biomedical sources of care. While providers may collaborate, these collaborations can be encouraged so that infectious disease cases are referred by traditional healers to local health authorities.

### **Vulnerabilities, education, and health behaviour**

This lack of adaptation of care have historically led to practices of concealment or migration of infected people.<sup>m</sup> Lessons learned from malaria control point to the practice of mis-prescribing antimalarial drugs which indicate a need for better knowledge of their effectiveness and use in various social, cultural and economic environments and the geographical distribution of insecticide-resistant vectors before effective strategies can be devised.<sup>80</sup>

## Key Implications

- Health care during an ongoing epidemic must be tailored to the worldviews of local populations, including their social and cultural realities. A lack of sensitivity to cultural views may encourage people to conceal illness or migrate to other areas for care.
- Require a priori availability of health workers at the time of epidemics in order to be closer to the populations and build understanding and trust.

### **Health facilities**

In 2014, the WHO noted that Côte d'Ivoire spends only 5.7% of its GDP on health, making it one of the African countries that spends the least on this sector.<sup>k</sup> However, between 2015 and 2016, the Ivorian government built and equipped around 3,000 new primary health care facilities.<sup>24</sup> However, many challenges remain to be met to deal effectively with an epidemic crisis.

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<sup>k</sup> <https://docplayer.fr/175372751-Partnership-ready-cote-d-ivoire-le-secteur-de-la-sante.html>

## Key Implications

- Health infrastructure needs to be bolstered to deal with future infectious disease outbreaks. Specifically, there is a need for facility autonomy to manage resources and meet facility needs.
- Health systems spending is low at the national level and must be improved.

### **Neglected tropical diseases and other infectious diseases**

Much can be learned from the management of neglected tropical diseases (NTDs) in Côte d'Ivoire. In fact, despite governmental efforts, it should be noted that the fight against NTDs has encountered difficulties, namely: the low skills of health personnel in the diagnosis and management of NTDs, the low capacity of health structures in the management of NTD cases, the low integration of diagnosis and management of NTDs in health structures, the absence of strategies for active case-finding, the under-reporting of NTD data in the MIS, under-funding of NTD control interventions.<sup>12</sup> In the 1990s, the increase in mortality rates of AIDS in Côte d'Ivoire was attributable to so-called opportunistic infections and parasitic diseases.<sup>49</sup> Epidemiological data on vulnerability in relation to the current pandemic show that, apart from age, it is also people with co-morbidities who are most at risk.<sup>7,33,93</sup> Combatting such diseases requires a better understanding of the neglected diseases and opportunities and social practices surrounding them.

## Key Implications

- Existing illness and disease will pose a challenge to future infectious disease outbreaks, particularly those that prey on individuals with comorbidities.
- Epidemic response should be built within existing health systems to cooperatively manage any outbreak in addition to existing health threats.

### **Quality of care and hospital-acquired infections**

The issue of hygiene in hospitals and nosocomial infections is a major problem in hospital settings. In fact, hygiene in health establishments is poor in Côte d'Ivoire.<sup>9</sup> The issue of hygiene and the assessment of its impact on nosocomial infections invite reflection. In 1999, in the University Hospital of Cocody and Yopougon the prevalence of nosocomial infections was 9% and 11% in the University Hospital of Treichville.<sup>112</sup> In 2006, the prevalence of nosocomial infections related to hygiene issues in the intensive care unit of the Yopougon University Hospital reached 85%, leading to its temporary closure.<sup>112</sup> This demonstrates that the issue of hygiene in health facilities and nosocomial infections is a real problem that can have a strong impact on epidemic response strategies. However, given the persistent threat of the disease, ignorance of certain aspects of the disease

could constitute a weakness in the prevention of nosocomial transmission of the disease.<sup>112</sup>

## Key Implications

- In past outbreaks on the African continent, nosocomial infections have put health workers and patients at risk. Hospital and health facility hygiene is vital, to both ensure worker safety and ensure that community members know a facility is safe and clean.
- Nosocomial infections can also impact how community members perceive health facilities and whether they would seek care.

## KEY ACTORS

### SOCIAL SCIENCE INSTITUTIONS

**l'Université Alassane Ouattara** (<https://accueil.univ-ao.edu.ci/>) – Together with the UNESCO Chair in Bioethics (<http://www.chaireunescodebioethique-uao.com/>) and the Department of Anthropology and Sociology, the Centre de recherche pour le développement, Université Alassane Ouattara is a key social science research school in the country, with a long history of research on health and development in Côte d'Ivoire. Since the Ebola epidemic in West Africa (2013-2016), the UNESCO Chair in Bioethics has taken a particular interest in the anthropology of death, with a project to develop a pole of anthropology of epidemics at Université Alassane Ouattara. This project is supported by the Anthropology of Emerging Epidemics Network (RAEE) (<https://shsebola.hypotheses.org/>) of which the UNESCO Chair in Bioethics has been a member since 2014 with Firmin Kra as focal point. In this dynamic of anthropology of epidemics, the UNESCO Chair in Bioethics, through Firmin Kra and Francis Akindès, has just joined an International Research Group (IRG) supported by the Institute of Research for Development (IRD) <https://www.ird.fr/node/8>. The partnership could include qualitative and mixed-methods assessments of perspectives on the response to the epidemic and the adoption of related behaviours and services.

**Centre Suisse de Recherches Scientifiques en Côte d'Ivoire (CSRS)** – (<https://www.csrs.ch/>) is placed under the dual supervision of the two ministries in charge of scientific research in Côte d'Ivoire and Switzerland, which are co-signatories of a scientific cooperation agreement between the two countries. In addition to being a research center, the CSRS is involved in funding research through calls for projects. However, its priority fields are research on economic development.

Centre Ivoirien de Recherches Economiques et Sociales (CIRES) – ([https://www.cires-ci.com/Mission\\_Objectifs.php](https://www.cires-ci.com/Mission_Objectifs.php)) the missions of the center are basically to undertake research activities concerning the economic and social problems of Côte d'Ivoire and the countries of the Sub-Region; establish regular relations with the maximum number of public or private economic bodies, and publish research works concerning economic and social disciplines.

Université Félix Houphouët Boigny – (<https://www.univ-fhb.edu.ci/index.php/ufr-shs/>) with the Department of Anthropology and the Department of Sociology of the UFR Humanities and Social Sciences, the Université Félix Houphouët Boigny also interested in health issues in general, but also ageing.

PAC-CI – (<https://pac-ci.org/>) From an agreement between the Ivorian Ministry of Health and the ANRS, PAC-CI has two objectives: (i) the training of health personnel in medical research on HIV/AIDS; (ii) the implementation of research on HIV/AIDS, the results of which would be useful to the affected populations. In 2010 the objectives of the PAC-CI were extended to all infectious diseases.

#### **National Researchers:**

- Firmin Kra, anthropologist – is at the Department of Anthropology and Sociology at Université Alassane Ouattara. He is associated with the UNESCO Chair in Bioethics and the Population, Environment and Development Laboratory (UMR 151, IRD-AMU). He is a member of a Young Team Associated with the IRD (JEA), entitled RiF&piC (Funeral Rites and Epidemics in Côte d'Ivoire). He is the coordinator of the Anthropological axis of this JEA. He is the representative in Côte d'Ivoire of the Réseau Anthropologie des Epidémies Emergentes (RAEE). He is the coordinator of the funerary rites and epidemic axis of Covid-19 of the [COMESCOV](#) programme financed by the ANR in France. His field of research includes the anthropology of epidemics, the anthropology of funeral rites, the analysis of prevention and response policies to epidemics, and social marketing in health.
- Francis Akindès, sociologist – is a professor at the Université Alassane Ouattara. President of the Scientific Council of the Université Alassane Ouattara, he is also Director of the UNESCO Chair of Bioethics. In terms of his scientific influence, we note that he is, among other things, Vice-President of the Scientific Council of the French Red Cross Fund, member of the Scientific Council of the AFD (French Development Agency), member of the Scientific Council of the Swiss Centre for Scientific Research and of the Board of Directors of Osiwa. His scientific interests are varied and include political transitions, political violence, political economy of inequalities in health, public policy analysis and crisis exit policies.

- Dimi Théodore Doudou, sociologist – is a medical sociologist and a member of the Center for Research and Development (CRD) at the Université Alassane Ouattara.

## ORGANISATIONS INVOLVED IN EPIDEMIC RESPONSE IN CÔTE D'IVOIRE

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### International organisations

**Centers for Disease Control and Prevention (CDC)** – the CDC works closely with the national government on HIV, malaria, and tuberculosis. They also work closely with the government to strengthen its laboratory, surveillance, and workforce capacity to respond to disease outbreaks in support of the Global Health Security Agenda. <https://www.cdc.gov/globalhealth/countries/cote-d-ivoire/default.htm>

**International Committee of the Red Cross (ICRC)**- The ICRC works with on cross-border reunification between Liberia and Côte d'Ivoire. During outbreaks and epidemics, the Red Cross works with authorities in places of detention (e.g. prisons) and border crossings. They work to strengthen standard practices such as medical screening of new arrivals and distribute hygiene materials. <https://www.icrc.org/en/where-we-work/africa/cote-divoire>

**MSF (Médecins Sans Frontières/Doctors without Borders)** – works with the MSHP on maternal health care. In Hambol Region, they support the improvement of obstetric and neonatal emergencies. <https://www.msf.org/c%C3%B4te-divoire>

**Médecins du Monde:** an independent international movement of active activists who provide care, bear witness and support social change, Médecins du Monde works to empower excluded people and their communities to access health care while fighting for universal access to care. <https://www.medecinsdumonde.org/fr/pays/afrique/cote-divoire>

**Health Alliance International** - has worked in partnership with Côte d'Ivoire's Ministry of Health and Public Hygiene (MSHP). <https://www.healthallianceinternational.org/ci/>.

### Ivorian NGOs

The Ministry of Health lists 258 (<http://www.serviceong-sante.ci/>) NGOs, some of which are not on this list although they are active, are presented here.

**Association de Soutien à l'Autopromotion Sanitaire Urbaine (ASAPSU)** - improves the socio-sanitary conditions of vulnerable and disadvantaged populations in urban and peri-urban areas. <http://asapsu-ci.org/>

**La Fédération Nationale des Organisations de Santé de Côte d'Ivoire (FENOS-CI)** provides technical and financial support to civil society organisations and works closely with government and international partners to improve health in the country. <https://fenosci.org/>

**PSI Côte d'Ivoire (PSI CI)** – is a fully incorporated branch office of PSI and is a regional hub for PSI's network members in Francophone West Africa. <https://www.psi.org/country/cote-divoire/>

**Centre Solidarité et Action Sociale (CSAS)** - has been working for the fight against HIV-AIDS in Côte d'Ivoire, first by providing psychological and social support to patients in the early days of the pandemic when no treatment was available in the country, and then through a relentless fight for : the provision of antiretroviral drugs to all patients who test positive; the extension of a range of prevention, care and support services to people living with HIV (PLHIV) and their families. <https://plateforme-elsa.org/structure/centre-sas/>

**Bouaké Eveil** – Aims to improve the quality of the overall care of PLHIV in the Gbêkê region; respond to the medical, social, economic, psychological and legal needs of people infected or affected by HIV and tuberculosis patients; integrate people living with HIV/AIDS (PLWHA) into their families and the community in case of rejection; provide preventive education to affected families and the community to reduce discrimination and stigmatisation; Contribute to the reduction of the spread of STIs, HIV and tuberculosis; Contribute to the treatment of OVC/HIV and advocate for them; fight against Gender Based Violence (GBV) against PLHIV. <https://ongbouakeeveil.wordpress.com/>

### **United Nations agencies**

**International Organization on Migration (IOM)** – is a key partner in cross-border movement and border crossings during an epidemic like Ebola. They conduct operations related to emergency response, primarily focused on refugees and asylum seekers.

**UNICEF (United Nations Children's Fund)** - has supported the government in developing communication strategies and community mobilisation efforts for epidemic response. It could help leverage efforts to reach difficult-to-reach populations in the case of future epidemics.

**World Health Organization (WHO)** – is the key partner of the Ivorian government on health issues. It provides support for the financing and development of policies for epidemic preparedness and response.

**Joint United Nations Programme on HIV/AIDS (UNAIDS)** – Bringing together the efforts of 11 UN bodies, UNAIDS is designed to coordinate the work of the various UN agencies in the fight against the HIV/AIDS pandemic. As in several countries, in Côte d'Ivoire, it is an important financial partner of the government in the implementation of policies to fight AIDS.

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**Tackling deadly diseases in Africa**



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## KEY TO MAIN FIGURES

<b>Figure 1.</b> Health pyramid in Côte d'Ivoire (Canivet and Lecocq, 2019: 28)	
Médecine conventionnelle	Conventional medicine
Secteur privé	Private sector
Secteur public	Public sector
Médecine traditionnelle	Traditional medicine
Polycliniques	Polyclinics
Cliniques	Clinics
Centres et cabinets médicaux	Medical centres and practices
Infirmeries	Infirmaries
Associations et organisations à Base communautaire (ABC/OBC)	Community-based organisations and associations
Institutions	Institutions
Médecine du travail	Occupational medicine
Médecine scolaire	School medicine
Cabinet et directions centrales TERTIAIRE	Cabinet and central directorates TERTIARY
Directions régionales SECONDAIRE	Regional directorates SECONDARY
Districts de santé PRIMAIRE	Health districts PRIMARY
NIVEAUX	LEVELS
Etablissements sanitaires de recours pour la deuxième référence (ESDR)	Second referral health facilities (ESDR)
Etablissements sanitaires de recours pour la première référence (ESPR)	Primary level referral health facilities (ESPR)
Etablissements sanitaires de premier contact (ESPC)	Health facilities of first contact (ESPC)
4 Centres Hospitaliers Universitaires (CHU) 5 Instituts Nationaux Spécialisés (INS) 4 Etablissements Public Nationaux d'appui (EPN)	4 University Hospitals 5 National Specialist Institutes 4 National Public Support Bodies
17 Centres Hospitaliers Régionaux (CHR) 66 Hôpitaux Généraux (HG) 2 Centres Hospitaliers Spécialisés (CHS)	17 Regional Hospital Centres 66 General Hospitals 2 Specialist Hospital Centres
1237 Centres de santé ruraux	1237 rural health centres
514 Centres de santé urbains	514 urban health centres
127 Centres de santé urbains spécialisés	127 Specialist urban health centres
32 Formations sanitaires urbains (FSU)	32 Urban Health Units

<b>Figure 4.</b> Distribution of health regions and districts	
Région sanitaire	Public health region
District sanitaire	Public health district
Limite état	State boundary
Mer	Sea

## OVERVIEW OF GEOGRAPHY, POLITICAL AND ECONOMIC CONTEXT

### Geographical characteristics and territorial organisation

Located in West Africa in the sub-equatorial zone between northern latitude and western longitude, Côte d'Ivoire covers an area of 322,462 km<sup>2</sup>. It is bordered to the north by Burkina Faso and Mali, to the west by Liberia and Guinea, to the east by Ghana and to the south by the Gulf of Guinea. This geographical position explains the climatic variations. The four seasons typically follow one another. On the one hand, there is a long and short rainy season, a long and short dry season, and on the other hand, the two main vegetation types, namely forest in the south and savannah in the north.<sup>92-94</sup> The country's vegetation is determined by the diversity of climatic zones and the unequal distribution of rainfall between the north and the south. With vegetation dominated by forest and savannah, Côte d'Ivoire is not immune to climate change.<sup>93</sup> This is reflected in the numerous and recurrent floods observed in recent years, particularly in certain parts of the city of Abidjan.<sup>17,113</sup>

### Organisation of the territorial administration

**Map 2:** New administrative division of Côte d'Ivoire. Source : (WHO, 2016, p. 17)



In 2008, Côte d'Ivoire was subdivided into 19 regions, two autonomous districts, 70 departments, 718 communes, 335 sub-prefectures and over 12,000 villages.<sup>114</sup> The acceleration of the decentralisation process is due to the creation of several communes and general councils. However, Article 52 of Law No. 2014-151 of 5 August 2014 on the general organisation of territorial administration repeals Order No. 2011-262 of 28 September 2011 on the general organisation of territorial administration.<sup>13</sup> Still having 2 autonomous districts, the country now has 31 regions, 108 departments, 509 sub-prefectures and 197 communes. The country has more than 8,500 villages (WHO, 2016).

### **Economic characteristics**

Côte d'Ivoire's economy is based on three sectors of activity: the tertiary sector, the secondary sector and the primary sector.<sup>13</sup> Agriculture remains the mainstay of the Ivorian economy and is the source of income for two-thirds of households. The country is also developing food crops, including rice, plantain, cassava, yams, and maize. Côte d'Ivoire produces gas and oil, however, most of the mining activity is located in the central and northern part of the country.<sup>86</sup>

### **Socio-demographic and cultural characteristics**

The latest UN estimates put the Ivorian population at approximately 26.38 million in 2020.<sup>116</sup> With French as its official language, Côte d'Ivoire has about 60 ethnic groups divided into four main groups - Akan, Mandé, Krou, Voltaic - with Christianity, Islam and traditional religions as their main religions.<sup>12</sup> This brief description provides an overview of the diversity and variability of cultural practices. The census shows that the population is young (41.5% are under 15 years old and 77.7% are under 35 years old). Nevertheless, life expectancy in Côte d'Ivoire is 56 years.<sup>13</sup>

As a crossroads of economic and cultural exchanges due to its geographical and historical location, Côte d'Ivoire has a high level of immigration and urbanisation is very high, with an estimated rate of 46% in 2001.<sup>94</sup> Current figures show that the population living in urban areas represents 50.2% against 49.8% in rural areas.<sup>1</sup> The 2015 Living Standards Survey (LSS) notes that the economic situation of the population has declined to 46.03%.<sup>13</sup> Since the end of the post-election crisis, real GDP per capita has increased by more than 20% over the period 2012-2014. Literacy levels are relatively low at 45% and vary depending on the area of residence and income.<sup>23</sup>

### **Political crisis and its impact on the health system**

The Ivorian health system experienced the most difficult period in its history over the last decade, initially due to the socio-economic crisis of the 1980s.<sup>117</sup> This precariousness led to a planning process that resulted in the adoption of the National Health Development

Plan (PNDS) 1996-2005. The years following the adoption of this PNDS were marked by a real desire to accelerate the implementation of the reforms initiated within the framework of the Human Resources Development Programme (PVRH) carried out between 1991 and 1994.<sup>94</sup> However, the interruption of financial and technical cooperation with a variety of development partners, following the military coup of December 1999, hindered the development of the health system.<sup>94</sup> The 2010 elections in Côte d'Ivoire and the electoral violence that followed is an extension of these crises. President Alassane Ouattara began his term in 2011, starting an era of rebuilding Ivorian society and governance. The crisis recovery process has been marked by policies to drive economic growth, encourage socio-political reconciliation, and build lasting peace. This context serves as a backdrop for epidemic response in the country.

Indeed, the series of socio-political crises that culminated in the rebellion of 19 September 2002 exacerbated the deterioration of the health situation.<sup>94</sup> These military-political or even socio-political crises contributed to worsening the already worrying health situation with the destruction and looting of health infrastructures.<sup>96</sup> They have led to a reduction in the number of health workers in the public and private sectors, the suspension of condom distribution and the low supplies of antiretroviral drugs.<sup>90</sup> Public health programmes, including vaccination planning, were suspended and essential drugs were out of stock in several locations. Also, as a result of insecurity the majority of health staff moved, fled, or were unable to work.

Several factors thus hampered the implementation of the 1996-2005 PNDS which are still relevant as challenges to health today.<sup>92</sup> Action Santé en Crise (ASC) estimated in November 2004 that around 70% of health structures were not functioning.<sup>100</sup> Promoting health that considers the satisfaction of the basic and essential needs of populations, particularly the most exposed and the most deprived, was becoming more complicated. The aim of this technical brief is to analyse and describe the context of epidemic preparedness and response in Côte d'Ivoire.

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