

TACKLING DEADLY DISEASES IN AFRICA: KEY CONSIDERATIONS FOR EPIDEMIC RESPONSE AND PREPAREDNESS IN CAMEROON

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EXECUTIVE SUMMARY AND KEY IMPLICATIONS

With high ethnic diversity, weak investment in health and several ongoing humanitarian crises, Cameroon faces important challenges in epidemic response and preparedness. Key overarching summary points from the brief and implications for operational response are presented below:

- **Vulnerability** may look different across local contexts and can change over time. That said, key vulnerable populations in Cameroon include women, who have limited representation in decision making at all levels and face disease risk through caring roles; children, who are most susceptible to disease and under-immunised; elderly and disabled people; displaced and conflict affected people; historically, marginalised groups such as the Baka and Bororo; and prisoners.
 - **Assess vulnerabilities early and throughout an emergency.** Social scientists who are typically side-lined in epidemic response in Cameroon can support identification and inclusion of particularly vulnerable groups throughout preparedness and response activities. They can also help in socio-epidemiological aspects of outbreak investigation.
 - **Make specific efforts to engage and adapt response to different communication channels and needs.** For instance, women may be reached through local savings clubs (tontines/njangis), while indigenous and mobile communities need specific

linguistic, cultural and logistical strategies (e.g. mobile outreach) that epidemic responders must cater for.

- **Culturally appropriate, clear communication.** Cameroon is highly culturally and linguistically diverse, with low rates of literacy among older people, particularly women. Communication on COVID-19 mitigation measures has been poor and inappropriate, yielding lessons for responses to future health emergencies.
 - **Identify and utilise dialects/languages preferred in local contexts** including Camfranglais, Cameroonian Pidgin -English, Ewondo, Maka, Ffulde and Arab Choa as these may be preferred over the official languages of French and English in some communities.
 - **Utilise radio, town criers and visual imagery,** especially in rural areas. Television and social media may be more appropriate in urban areas where even most women and youth have access to mobile phones.
 - **Emphasise dialogue-based communication** over top-down messaging (e.g. Q&A, community dialogues) and adapt response and further communication to people's priorities and understandings.
 - **Strive for consistent, clear, and honest messaging** to avoid confusion and proliferation of rumours and conspiracy theories as has occurred during the COVID-19 pandemic.
- **Local knowledge and health practices.** Cameroonians may very often attribute illness to social forces (e.g. witchcraft, transgression of norms) which can shape health seeking. Overall, both biomedicine and traditional medicine are popular. However, financial constraints and perceived weakness of the healthcare system lead people to self-medicate, and to only go to formal health facilities or hospitals when their conditions are advanced.
 - **Identify how local people understand and seek help for outbreak-prone disease,** recognising that local frameworks may not align with biomedical perspectives. Medical anthropologists may be particularly helpful.
 - **Acknowledge and incorporate local understandings of disease** into communications and response in respectful, non-dismissive ways.
 - **Work with both formal and informal private health actors** including faith-based providers, traditional medicine practitioners, and sellers of herbal and biomedical drugs as they can play key roles in surveillance and response and may be trusted in communities.

- **Ensure financial barriers do not prevent people** from engaging in preventive behaviour and accessing health care during an epidemic response (including by providing free care and travel, and mitigating livelihood losses).
- **Ongoing conflicts, displaced people, and host communities.** There are well over a million displaced Cameroonians and regional refugees living in the bush, camps, or in host communities. Populations in conflict affected areas – especially Anglophone and northern regions – are highly vulnerable and may be difficult to reach, especially as health actors may face attacks.
 - **Employ decentralised, community-based surveillance and response,** such as through local community health workers or trained volunteers already embedded in these areas.
 - **Recognise that not all displaced people live in camps** and make efforts to identify and reach them in other areas as well.
 - **Support sustainable water, hygiene, and sanitation improvements** in host communities to support development for all.
 - **Support vulnerable people’s multiple needs** including access to food, and support for other health conditions and social needs such as education, all of which have been compromised by insecurity.
- **Locally embedded response for trust.** Mistrust in the central government is widespread in Cameroon.
 - **Identify locally trusted leaders and networks,** recognising that this may vary across local contexts. Do not assume local leaders such as chiefs are trusted, as they may be perceived as corrupt. Religious leaders (e.g. priests, ministers, pastors, and imams) are influential in many communities.
 - **Avoid partnership with overtly political actors** and be mindful of the local political orientations of local populations who may be less trusting of certain political parties or actors.
 - **As far as possible, do not involve military actors** as they have been implicated in recent atrocities against civilians, especially in conflict affected areas of the Anglophone regions and the Far North.
- **Health system considerations and inequalities.** Cameroon’s public health system is severely under-resourced, particularly regarding personnel, and northern regions are disproportionately underserved.

- **Advocate for health system strengthening** including greater empowerment and autonomy for local health workers, especially community health workers, and even 'expert patients' who may improve quality of care for others.
- **Integrate disease-specific activities** as much as possible into routine health care as vertical and parallel programmes can damage provision and access to other important forms of care.
- **Monitor the impact of epidemic response to routine health services** and strive to adapt and support critical services such as routine immunisation and antenatal care.
- **Support collaboration between different health system actors** (public and private, formal and informal, biomedical, faith and traditional) as together, they reach many more people, and can complement and learn from one another in ways that improve epidemic response.

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INTRODUCTION

A kaleidoscope of over 240 ethnic groups and with ecological zones spanning from Sahelian desert to dense tropical forests, Cameroon is often called 'Africa in miniature'. This diversity, alongside ongoing conflicts in Anglophone regions and in the Far North, as well as high numbers of displaced people, are key considerations for epidemic response and preparedness. To draw out key implications of these and other critical issues for epidemic preparedness and response, this social science briefing draws on a review of both English- and French-language academic and grey literature, as well as consultations with several Cameroonian anthropologists and operational public health actors with expertise and experience in Cameroon. It is structured as follows: 1) an overview of the country's health system, including both the public and private health sectors; 2) key issues related to infectious disease outbreaks, response, and preparedness; and 3) a list of key actors with which early responders may want to engage in response activities. The brief closes with specific implications and recommendations for future epidemic preparedness and response in Cameroon. Annexes provide additional discussion of history, political economy, and society, although key implications of these are illustrated throughout the main sections. This brief was prepared by the Institute of Development Studies to support embedding social science and anthropological perspectives in UK AID-supported Tackling Deadly Diseases in Africa (TDDA) programme technical assistance as well as its Early Response Mechanism.



Map of Cameroon. Cameroon has a population of nearly 26 million, 57% of which live in urban areas. Western and northern areas have the highest concentrations of people, while the eastern and southern areas are more sparsely populated. Source: [Nations Online](#)

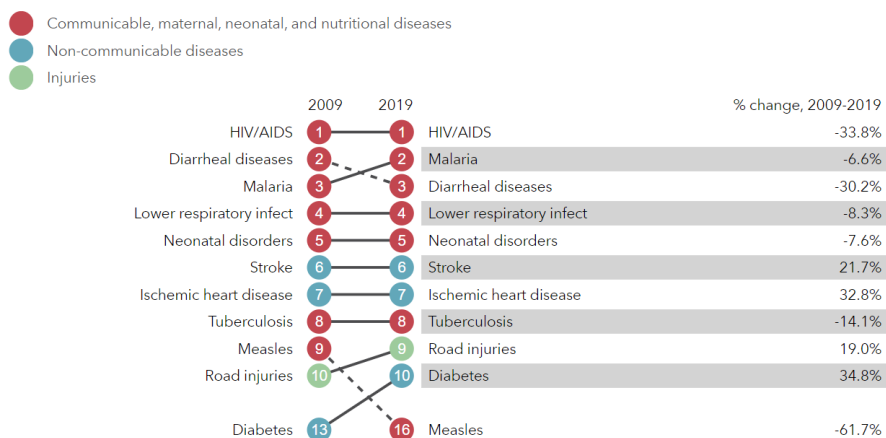
HEALTH SYSTEM

Like many countries in sub-Saharan Africa, Cameroon's health system consists of a mix of public and private (including faith-based, NGO (Non-Governmental Organisation) and traditional) health services. Access to these services – particularly public and private biomedical services – remains a challenge for many, and no formal universal medical coverage or insurance is available.

BURDEN OF DISEASE

Cameroon is currently facing an epidemiological transition with the growth of non-communicable disease due to changes in lifestyle, particularly in urban areas.¹ However, despite improvements in life expectancy resulting in part from improved access to potable water, hygiene and sanitation, still frequent occurrence of epidemics, natural disasters (e.g. floods, landslides) and population movements constitute serious and persistent health threats. Consequently, communicable diseases remain the main causes of morbidity and mortality.² As reflected in **Figure 1**, the top five causes of mortality have remained the same since 2009: HIV/AIDS, malaria, diarrheal diseases, lower respiratory infections, and neonatal disorders.³ Women are disproportionately affected by HIV, and maternal mortality has been on a worrying upward trend.⁴ Children are particularly affected by malaria, acute respiratory and diarrheal diseases.² Malnutrition is also increasing due to conflicts that have made it difficult for people to grow crops or engage in livelihood activities, increasing risk for infectious illness. It is important that epidemic responses provide holistic support for people's multiple needs. This can result in more effective response, increased trust, and better overall well-being of affected communities.

What causes the most deaths?



Top 10 causes of total number of deaths in 2019 and percent change 2009-2019, all ages combined

Figure 1 Top 10 causes of total number of deaths in Cameroon in 2019 and percent change 2009-2019, all ages combined

PUBLIC HEALTH SYSTEM

In Cameroon, the public health system has its origin in colonial hospital and military medicine under the French (see Annexe).^{5,6} The central government's investments in the system following independence were rolled back under structural adjustment reforms in the 1980s and 1990s which resulted in salary cuts and freezes to recruitment and health system development.⁷ The legacy of these cuts is still felt today as the system remains significantly under-resourced. Indeed, the ratio of public healthcare workers (HCWs) per 1,000 people ranges from 2 in the Centre region, to only 0.2 in North and Far North regions, and all regions fall short of the WHO's recommended 2.3 healthcare workers per 1,000 people. These discrepancies are linked to worse health outcomes (e.g. higher maternal mortality, child malaria deaths) in lesser served areas.⁷ Additionally, 55% of HCWs are concentrated in the cities of Yaounde, Douala and Bafoussam.⁸

Public health workforce. There are noted challenges to recruitment and retention of a public health workforce including low salary, heavy workloads, limited autonomy, minimal technical resources, and few opportunities for career progression, while the recruitment process is highly centralised and slow moving.^{7,9} In areas affected by conflict, HCWs face further risks. At the time of writing, they have been targets of violence in Anglophone regions, and many have been forced to cease operation.^{10,11} It is critical that epidemic responders be aware of the availability and challenges of HCWs in areas experiencing health emergencies and be prepared to augment and support a likely demoralised and under-resourced public workforce.

Community Health Workers (CHWs). Given their proximity to local communities, CHWs represent an important, yet critically unsupported health cadre in Cameroon. CHW have been active in localised programmes addressing specific health issues (such as onchocerciasis treatment and control activities) since the 1990s. For instance, CHW were involved in malaria treatment and prevention in Ndop Health District beginning in 2016, with their services being paid for through Roll Back Malaria financing.¹² In 2018, *Minsante* expanded training and support of CHW throughout the country to offer care for uncomplicated childhood illnesses, respiratory infections, and family planning. Their work includes performing rapid tests for malaria, medical assessment, treatment, and referral, and seems to be dependent on external donor and international NGO support.¹³ CHW could be mobilised in epidemic response, but would need additional training, supervision, and pay for this work.

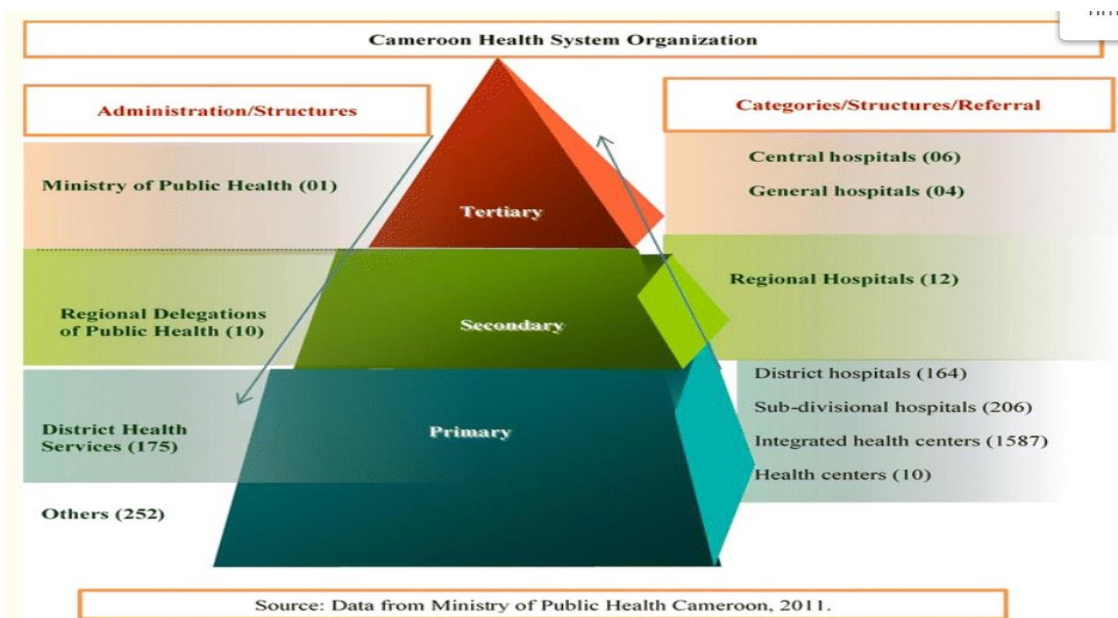
Financing. Households provide the bulk of public health system financing (mostly through user-fees), followed by donors and the Cameroonian government which continues to fall short of its commitment to dedicate 15% of its annual budget to health (dedicating only 3.8% in 2018).^{3,14}

While some health services and treatments, such as malaria treatments for children under five and antiretroviral therapy (ART) are meant to be free, people must pay for most other services at point of care. The introduction of user fees – the primary mechanism through which health facilities are funded – has been associated with limited utilisation of public services and delays in treatment seeking as costs are a major barrier to ordinary people. This makes it critical for epidemic response to provide free prevention and treatment services, as well as transport and other forms of financial support.

Public health system structure and governance

Following a process of decentralisation in the 1990s, Cameroon’s public health system is structured pyramidally with a centralised administration running from the Ministry of Public Health which is in charge of policy-making and strategy development, down through regional and district administrative levels.¹⁵ At the smallest administrative level are district health management teams, led by a District Medical Officer. They oversee district health facilities - ‘district hospitals’ and smaller health centres found in ‘health areas’ - as well as the collection of medical data and coordination of staff and health activities district-wide. While doctors may theoretically be found in district and subdivisional hospitals, health centres are staffed by nurses and auxiliaries. In principle, health centres also have boards to support and guide their operations, made up of staff and community members. District health committees, themselves part of district development committees, also support health implementation. Epidemic responders should ensure to engage with all relevant health governance actors at the different levels of the health system, recognising that each will face challenges. For instance, although decentralisation was intended to allow for greater autonomy of health services at the community level, it rendered many facilities quite dependent upon and under the control of central authorities. **Figure 2** illustrates the administrative and operational actors of the health system.

Figure 2 Structure of health services and personnel at each level



Graphic from: Tandi, T. E., Cho, Y., Akam, A. J. C., Afoh, C. O., Ryu, S. H., Choi, M. S., ... & Choi, J. W. (2015). Cameroon public health sector: shortage and inequalities in geographic distribution of health personnel. *International journal for equity in health*, 14(1), 1-12.

PRIVATE HEALTH SECTOR

There are a wide variety of private sector health actors operating in parallel to the public system. **Formal actors** include faith- or NGO-affiliated biomedical hospitals, clinics and services, private doctors and pharmacies and even some large corporations (e.g. industrial agriculture) which offer medical services to their workers living in company camps.¹⁶ Faith-based, particularly Christian health providers, have played an especially important role in Cameroon. Some networks, such as the Catholic Health Association of Cameroon (representing 266 hospitals) are firmly established and have international links, while others, such as the Protestant Health Association of Cameroon, are smaller, more decentralised and made up of independent sub-networks and providers.¹⁷

Other important formal health actors include international organisations such as Doctors Without Borders (MSF) who actively provide care to people in conflict affected regions in Anglophone Cameroon and the Far North.¹⁰ Disease-specific health programmes sponsored by international donors, especially to address HIV/AIDS and malaria (such as the Global Fund to Fight AIDS, TB and Malaria), have also had a strong presence in the country.¹⁸ While these programmes have made improvements in the specific areas they have aimed to address,¹⁹ they have also had significant negative impacts on day-to-day health activities such as outpatient and antenatal care and routine vaccination in some settings.²⁰

The many **informal health actors** active in Cameroon include small drug shops, roadside and mobile drug vendors, and traditional and herbal healers. Small and informal drug sellers are popular as they offer lower prices and smaller doses and are much more accessible within communities. A large proportion of drugs sold informally are thought to be of low quality or counterfeit,⁹ but there is evidence that formal health facilities may often stock the same products, and sometimes sell them directly to informal sellers. Indeed, the proliferation of informal sellers has been linked to the lack of medication in health facilities, as well as limited regulatory oversight.²¹ Workers in formal pharmacies may also recommend patients buy directly from them through informal avenues for better prices rather than through the pharmacy itself.²²

Traditional medicine has also remained extremely popular in Cameroon due to the comparatively prohibitive cost of biomedical care (although some traditional treatments may be more expensive)²³, widespread poverty (56.8% in rural areas and 8.9% in urban areas in 2014) and the persistence of popular beliefs about disease aetiology.²⁴ Traditional healers, also easily accessible in communities, may use a combination of witchcraft, spirits, magic, ritual therapeutics, herbs, and divination.²⁵ This may vary by locality or ethnic group. For instance, Fulani ethnic groups (residing primarily in the north), may favour infusions, talismans and Islamic medicine.²⁶ Although traditional healers may also send their patients to biomedical clinics or hospitals, especially in urban areas²⁷ and vice versa, traditional and biomedical practitioners mostly work independently of one another,²⁸ and there is a general mistrust between the two sectors.²⁵ This lack of integration presents challenges for epidemic responders who should nevertheless seek to engage and harness the strengths of health service providers across public and private, formal and informal, and biomedical and traditional/religious sectors due to the substantial reach and popularity of private health actors. Faith healing through prayer among Christian communities is also increasingly popular and common and should also be integrated into response.

ACCESS, DELIVERY AND EXPERIENCES OF HEALTH SERVICES

Ordinary people's negative perceptions of public health services in Cameroon have long been documented. Observers in the 1970s and 1980s recorded patients' frustrations with the need to 'know someone' or pay bribes to get treatment,²⁹ as well as poor or discriminatory conduct of staff, and lack of medicines and materials.³⁰ More recent research cites similar perceptions and experiences of a general lack of warmth, as well as tendencies of health providers to 'moralise' health or 'abstract' illness into biomedical terms that local people do not understand.³¹⁻³⁴ Expectations that equipment, medicine and staff will not be available if public services are sought have also been documented.^{31,35}

Indeed, many health facilities, particularly in rural areas, are extremely underequipped, and experience regular essential medicines stockouts.³⁶

Discrimination is also experienced by ethnic groups such as the historically marginalised and highly mobile Baka in the southeast. Often unable to speak official/common languages and frequently excluded from local cash economies rendering them unable to pay, they are sometimes refused service. This may be even if, according to official guidelines, the services they seek should be provided by the health facilities without payment.^{35,37} Due to laws against homosexuality, people engaging in same-gender sexual activity (such as ‘men who have sex with men’) may also experience stigmatisation as a barrier to accessing care.¹⁸ Lack of knowledge about entitlements to free care, and as previously mentioned, conflict and violence in Anglophone and northern regions, also impede health service access. The most widespread barrier to access to care, however, is cost – not only of services, but of transport to reach them. People may only seek formal biomedical care when their illnesses have become very severe.³⁸ People greatly fear chronic illnesses such as Hepatitis B in part due to worries about being able to pay for long-term treatment.³⁹ Hospitals are also known to detain patients unable to pay for their treatment, which can deter people from accessing needed care.^{40,41}

As earlier suggested, public health workers experience their own myriad challenges and demoralising pay and conditions which limit their ability to provide quality care. Performance-based financing, a policy attempt to improve the quality of health services in Cameroon over the last decade through bonus pay incentives has had mixed results.⁴² Some researchers have described the strategies of patients themselves to obtain better service,⁴³ while others have described flexibility of some health facilities with regard to payment such as offering payment plans, or accepting alternative forms of payment (e.g. chickens, labour etc.).^{35,44} ‘Expert patients’ volunteering at health centres have also been recognised as providing a more caring reception and improving experiences of care, particularly for HIV patients.⁴⁵ Recognition of issues of access and widespread perceptions of the limited quality of care is critical for epidemic responders as people’s ability and willingness to seek biomedical care will likely be influenced by this on a local level. Efforts to ensure care is accessible, relevant and caring – including through engagement with ‘expert patients’ and volunteers from the community – should improve engagement with response.

HEALTH-SEEKING AND LOCAL EXPLANATIONS OF DISEASE

Cameroonians across urban, rural, class and ethnic contexts tend to resort first to **self-medication and home care** (provided by female household members) in the event of

illness with drugs and herbal medicines already in their possession, or purchased from private, often informal road-side vendors.³⁸ Advice about what to take may be sought from family members, friends, or other trusted social connections. Even when drugs may be acquired cheaply in health facilities, people may prefer private routes as they may not expect facilities to actually have medicines.¹⁶ One study revealed perceptions of traditional herbal remedies as more effective for treating certain conditions such as malaria or typhoid, and of biomedicine as actually causing these illnesses to return stronger in the future.³⁸ Traditional treatments may also be preferred by some as they are generally cheaper, and lack unpleasant side-effects. However, it is common to use both biomedical and traditional medicine to 'cover all bases,' and to only seek more formal biomedical care after self-medication and home care have failed, and illness is advanced. In such cases, people may seek loans or donations from family, friends or neighbours, or loans or cash may be obtained from *njangis/tontines* (informal financial institutions) or through sale of personal assets.^{38,44} In urban areas, cheaper 'quart doctors' – medical students who are not yet legally qualified practitioners may be consulted.³⁸ Decisions about accessing further care outside the home are ultimately made and financed by male household heads.

Health seeking is also profoundly shaped by **how people understand illness**, which in Cameroon is closely linked to and determined by both natural and social processes. In addition to hygienic, environmental, and climatic factors,^{16,35,46} illness is also often perceived to be caused by social transgressions (e.g. sexual taboos, consumption of certain foods, greed etc.), by evil spirits or offended ancestors, or by sorcery/witchcraft committed by third parties.⁴⁷⁻⁵⁰ There are also many illnesses that do not map neatly or at all onto biomedical categories of illness (see Annexe). In such cases, traditional or faith-based healing is likely to be the first port of call. In contrast, biomedical treatment is more accepted in cases of illness understood to be 'natural' or 'hospital diseases. People among the Baka for instance, may believe that only biomedicines are effective against diseases they perceive to have been 'named by white people' (e.g. HIV, TB).³⁵ Determining whether a disease is natural or social may entail an initial visit to a traditional healer who can verify this.⁵¹

Stigma also influences health-seeking. Tuberculosis for instance, is considered a shameful illness related to poverty. This may drive patients to seek care at night or in health facilities outside of their communities to preserve their confidentiality.⁴⁹ Discriminatory attitudes towards people living with HIV/AIDS also continue to be widespread, especially in rural areas.⁵²

It is critical that epidemic responders seek to understand local perceptions of disease and potential stigma during outbreaks, and the ways in which these social meanings influence care seeking. In a context of high ethnic and cultural diversity, it is likely that such understandings are very locally specific. Thus, collaboration with traditional and faith-based healers in addition to biomedical actors at the local level may be very valuable.

INFECTIOUS DISEASE OUTBREAKS, RESPONSE AND PREPAREDNESS

DISEASE RISK AND VULNERABILITY

Water and sanitation. As suggested, infectious diseases are widespread in Cameroon. Despite improvements, nearly 17% of urban dwellers and 75% of rural citizens still lack access to improved sanitation, while 6% of urbanites and 45.4% of rural people lack access to improved drinking water, with northern areas most affected.¹⁴ Inadequate water and sanitation remains a major disease risk, especially for diarrheal diseases such as hepatitis A, typhoid, and cholera. Risk is more pronounced in camps and communities hosting displaced people.

Insect and animal vectors also pose disease risks. Fast expanding unplanned urbanisation and urban agricultural practices provide ideal habitats for mosquito vectors, which are increasingly resistant to insecticides.⁹ Schistosomiasis is also highly endemic, particularly in northern regions.⁵³ Frequent human-animal contact in forested regions where bushmeat is a key source of protein and livelihoods, poses zoonotic spill over risk. In the Mount Cameroon region for instance, human-bat encounters through plantation agriculture, and hunting, carcass preparation, sale and consumption have raised concerns about henipavirus, lyssavirus and Ebolavirus.⁵⁴

Endemicity and inadequate vaccination. Northern Cameroon lies within the African meningitis belt, and seasonal outbreaks occur here in dry seasons.⁵⁵ Outbreaks further south have prompted concerns that climate change may be broadening the reach of this endemic disease.⁵⁶ Inadequate vaccination coverage for diseases such as measles and polio is also a rising concern.⁵⁷ Already low coverage is being further hampered by conflict in affected regions.⁵⁸

International ports, and cross-border movements. The cities of Douala, Yaounde, Garoua, Kribi and Limbe are considered most vulnerable to COVID-19 due to their international air and seaports. Porous borders and continued influx of refugees from

neighbouring countries also pose COVID-19 and other infectious disease risk (e.g. polio, measles). Cross-border movement is also economically and socially important in some regions, as it enables livelihoods.^{59,60} Epidemic responders should collaborate with cross-border actors (including but not limited to formal authorities) to control but not stop movement to address cross-border risks.

Social aspects of disease risk such as stigmatisation of infected people,⁴⁹ or more limited access to information about disease transmission or lesser social agency to avoid exposure by some people (particularly women)⁶¹ make it critical for epidemic responders to be aware of, actively work to mitigate, and avoid exacerbating stigma and inequalities.

Table 1 reflects notable outbreaks and epidemics that have occurred in Cameroon over the last 20 years. Although important in the country, HIV and malaria have not been included as their transmission and prevalence is more persistent and widespread.

Table 1 Notable disease outbreaks in Cameroon 2000-2020

Disease	Notable outbreaks since 2000	Context
Meningitis	2001, 2005, 2010 (Admaoua), 2017 (Yaoundé prison)	Northern Cameroon falls within Africa's 'meningitis belt' and experiences regular dry seasons outbreaks. A large 2010 outbreak in Adamoua caused concern that the 'belt' is expanding southward. ⁵⁶
Cholera	2004 (8 months, Douala, 5k cases) ⁶² , 2010, 2011, 2014 (3,355 cases – Far North), 2018, 2019	Cholera emerged in Cameroon in 1971 and has recurred periodically with a general increase in cases and case fatalities since, despite the efforts of the state and private actors. ⁶³ The drier northern regions and the coastal regions have been most affected. ⁶⁴
Measles	2008-2009 (Maroua), 2015, 2016	Measles occurs yearly, although cross-border movements of refugees from neighbouring countries with measles outbreaks have increased risk in receiving areas, as have challenges to immunisation programmes.
Polio	2008-2009, 2015, 2016	Polio elimination efforts using oral polio vaccine have been successful in rapidly reducing wild polio, but inadequate vaccine coverage and cross-border movement has given rise to the risk of vaccine-derived cases, especially in the Far North. ⁶⁵

Yaws	2017 (East region), 2019	Thought to eradicated in Cameroon, yaws was rediscovered in 2010. Mass treatment with antibiotics have been deployed in response to outbreaks. ⁶⁶ Recent research has suggested other conditions may often be taken for yaws. ⁶⁷
Avian flu	2006, 2016-2017	The most notable outbreak occurred in Yaoundé and Bafoussam in 2016. No human cases were identified, but zoonotic spill over remains a risk. ⁶⁸

Source: authors (compiled from various sources)

VULNERABLE POPULATIONS

While millions of people in Cameroon are vulnerable to a range of acute health, social and economic risks (6.2 million were recently identified as in need of humanitarian assistance),⁶⁹ epidemics are likely to have disproportionate impacts on some groups.

Women and girls. Women and girls' marginal social position and their roles as carers for the sick contribute to their potentially greater exposure to disease and lesser ability to mitigate risk and obtain care (see Annexe).⁶¹ Nearly three times as many women were infected with meningitis during the 2010 outbreak than men,⁵⁶ and HIV prevalence is also much higher among women in Cameroon.⁶¹ Women-headed households find it more difficult to meet their basic needs, and would be at higher risk in an epidemic scenario.⁶¹

Children. Limited child immunisation and inadequate water, sanitation and hygiene (WASH), particularly among conflict-affected, rural, poor, and displaced populations put children at risk of preventable diseases including polio and measles.⁷⁰ Children, and especially boys, are also disproportionately affected by malnutrition which increases disease susceptibility.⁶¹ Child mortality rates are worst in northern areas, where 20% may die before reaching age five.⁷¹

Elderly and people with disabilities. As elsewhere, elderly and people with disabilities, particularly those who live alone or with little social support, are likely to face heightened vulnerability to infectious disease and limitations in their ability to access information, support, and care in the event of an epidemic.

Refugees, displaced people and host communities. Cameroon hosts hundreds of thousands of refugees. The largest group and longest residing are those from the Central African Republic (CAR) who reside in camps and host communities in East, Adamaoua and North regions and who have been integrating locally in recent years. The Far North

region in particular, also hosts Nigerian, Chadian and other refugees from the region. Nearly a million Cameroonians are also internally displaced by Boko Haram violence in Far North and by the Anglophone crisis in the Northwest and Southwest regions.⁷² Drought, floods and landslides also cause displacement.⁷³ Displaced people face unsafe, overcrowded and unsanitary conditions in the bush or in camps and communities which have limited baseline resources, and are thus at increased risk for epidemics. They also have less resilience to withstand, respond to and recovery from shocks than more established or stable communities. It is critical that epidemic preparedness and response actors recognise and provide support in the multiple settings in which displaced people are located – not just in camps – and also consider the needs of host communities.⁷⁴

People in conflict affected areas. Many households in the Far North, Northwest, Southwest and East regions (the latter in which violent groups from CAR occasionally operate) remain in place and may struggle to meet their basic needs and access health and other services. International organisations supporting in some of these areas have been forced to leave by government, leaving these communities even more vulnerable. They are in desperate need of more resilient forms of support. This is likely to require supporting local actors and networks embedded and already active in these communities.¹⁰

Indigenous and mobile/nomadic communities. The indigenous Baka (who should not be referred as 'pygmies' as this term is considered offensive) of the southeastern forests are extremely marginalised by the state and discriminated against by other local communities.⁷⁵ They have half the life expectancy of other Cameroonians, and due to their semi-nomadic lifestyle, unique needs in relation to services such as health.^{35,37} Like the similarly mobile Bororo herders (a Fulani subgroup found across the country), most do not speak official/common languages. Although wealthier, Bororo face other challenges, including conflicts with farmers over increasingly scarce land.^{76,77} Bororo involvement in military exercises in the Anglophone crisis threatens to open a new ethnic dimension to on-going conflict between Anglophone separatists and the Francophone dominated state.⁷⁸ Epidemic responders must adopt strategies sensitive to the mobility and cultural sensitivities of these unique groups, and make efforts to mitigate stigma (including potential blaming) against them. Appropriate immunisation services are particularly important for these groups, due to their mobility. See Annexe for more on these groups.

Imprisoned people. Prisoners in Cameroon face overcrowded and unsanitary conditions which make them highly vulnerable to disease.⁷⁹ In practice, prisoners who cannot pay for medical care beyond the most basic may not receive it. While outbreaks may receive attention,⁸⁰ such responses may be highly inadequate as has been the case with COVID-

19.⁸¹ It is critical that the specific needs of this highly vulnerable, often overlooked population be addressed in both preparedness and response activities.

EPIDEMIC AND OUTBREAK RESPONSE GOVERNANCE

The National Public Health Observatory (NPHO) within the Ministry of Public Health was created in 2010 and oversees health information (SNIS) and epidemiological surveillance, including health information departments in each of the country's ten regional public health offices.⁸² The traditional role of the NPHO however, is mostly carried out by the Directorate of Disease, Epidemics and Pandemic Control of the Ministry.

Several initiatives and systems have been established in the country to prevent and respond to infectious threats through a One Health approach. *Le Réseau d'Epidémiosurveillance des Maladies Animales du Cameroun* (RESCAM) was created in 2014 as a part of the Ministry of Veterinary Health, and the country has been a member of the One Health University Network (AFROHUN- formerly known as OHCEA) network since 2015. Funded largely by USAID, AFROHUN supports One Health Workforce development services by partnerships with the *Université des Montagnes* Veterinary School, and University of Buea Faculty of Health Sciences and Faculty of Agricultural and Veterinary Sciences.⁸³ These capacity building efforts are intended to work in partnership with the National Program for the Prevention and Fight against Emerging and Re-emerging Zoonoses (PNPLZER) and the NPHO.⁸⁴ However, it seems like many of these potential resources are not being mobilised to their full potential, challenged by security concerns, other urgent health priorities, and logistical hurdles.⁸⁵

There are no dedicated health information services at the health district level, except for parallel programmes that monitor specific diseases that are managed by separate autonomous structures. Most data come from health facilities, but this is often incomplete and underused.⁸² New technologies may not match the realities of limited infrastructure on the ground. In 2017, training on the country's new DHIS2 health information software was conducted with 788 staff members from all 10 regions and 189 health districts.⁸⁶ However, internet access at health facilities remains low at only around 32%.⁸⁷

Although World Health Organisation Cameroon lists 18 priority infectious diseases as under surveillance in the country.⁸⁸ only four infectious diseases are mentioned in the Ministry of Public Health's most recent monitoring plan: HIV, hepatitis B, tuberculosis, and measles. Monthly reports from health facilities and DHS studies are cited in the plan as

sources of data for potential increases in incidence.⁸² Health districts in the North and the Far North are cited as providing the least complete health data.⁸⁹

Community Health Workers (CHW). CHWs are an important and overlooked key health cadre in surveillance and response for epidemic-prone disease and deserve greater support and attention. They have worked to support community-based disease surveillance, and studies have shown that when adequately trained and supported, they can be quite effective in identifying cases of outbreak-prone diseases (e.g. measles, tetanus) including in conflict-affected areas of Cameroon.^{90,91} CHW have also been involved in the current COVID-19 pandemic, with 87 having been trained in Douala by the World Health Organisation (WHO) in August 2020 to help trace the contacts of individuals who had tested positive in 2020.⁹² However, this cadre, like other public health workers, typically do not have the support and tools to consistently perform community-based work, unless supported by external funders.

OUTBREAK RESPONSE AND PREPAREDNESS EXPERIENCE

Large-scale epidemic preparedness and infectious disease control activities, particularly for infectious disease threats such as HIV, TB, and malaria, have often been led by external international actors in Cameroon, with the government playing a more strategic role. Decision-making and planning have also been dominated by biomedical, epidemiological, and public health actors. Social scientists have only been marginally involved, invited occasionally to conduct early perception studies, but it is not clear whether or how this knowledge informs operational activities. For this reason, information on past responses also tends to emphasise technical aspects. Some examples, and possible implications of past experiences for the future, are outlined below:

Colonial-era forced interventions. The French conducted forced vaccinations and treatment for diseases such as sleeping sickness and smallpox in Cameroon.⁶ Use of unsterilised needles during these campaigns are thought to have been responsible for the spread and persistence of Hepatitis C in the country long after independence.⁹³ French colonial authorities concerned about malaria enforced hygiene and sanitation in urban areas, including by threat of jail for non-compliant households.⁹ The legacy of these forced interventions and resulting disease in the case of Hepatitis C, may have implications for ordinary people's trust in health actors and interventions from outside Cameroon, as well as those seen as led by the central government who may be perceived to be under the influence of foreign actors.

Malaria and mass control efforts. WHO-led malaria elimination efforts in the 1940s and 1950s were unsuccessful due to the complex epidemiology of malaria, and challenging terrain.⁹ A shift to treatment and prophylaxis through mass chloroquine used from the 1960s to the 1990s then led to the appearance of resistance, and yet a further shift toward the use of insecticidal treated nets (ITNs) and long-lasting insecticidal nets (LLINs). Large-scale net distributions, along with the establishment of net impregnation units and initiatives to promote usage through local groups have been credited with significant reduction in malaria, although this is regionally variable.⁹ Free, universal malaria chemoprevention for children under five, net distributions targeting pregnant women in northern areas, and larviciding and drain construction in urban areas have been recent activities undertaken by government and donor partners.⁹ The networks, channels and infrastructure that have been built up over the years around net distribution and malaria prevention and care can be leveraged to implement epidemic response in relevant areas.

Donor-led HIV/AIDS response. Cameroon remains one of the most impacted countries in relation to HIV/AIDS, the initial escalation of which coincided with an economic crisis from 1985-1993.^{94,95} This left the country entirely dependent on donors – particularly the Global Fund and later the United States government – who have responded through a series of vertical programmes. The state's role has been widely critiqued. It has been seen by some to be more interested in building international relationships through these programmes than improving citizens' health.^{94,96} Partnership with donors has vastly expanded the availability of ARTs, although the extent of actual access on the ground is unclear. Like with many medicines, people may expect ARTs to be out of stock, or to have to pay for them even if they should be free or low cost. That said, the decades-long response has been considered successful overall, although HIV/AIDS remains the leading cause of death. The response has also had significant social consequences. The identification of 'key populations' (e.g. sex workers, men who have sex with men - MSM) highlighted existing social stigmatisations, created new ones, and meant some people have been overlooked.⁹⁵ Tension between local political actors and international partners played out in a particularly public way with the inclusion into response of MSM as homosexuality is illegal and highly stigmatised.¹⁸

Other epidemic diseases. As mentioned, Cameroon has also experienced other outbreaks and epidemics including of yellow fever, meningitis, cholera, polio, measles, and Avian influenza, for which response has also largely relied upon donor support. For example, donor funding supported mass administration of antibiotics to 5,000 people infected with cholera and 150,000 of their contacts in Douala during an eight-month outbreak in 2004. While this funding also provided for support and supervision of health workers during the outbreak, such support was not sustained after the epidemic.⁹⁷ This

illustrates a 'fire-fighting' approach to infectious disease in the country, and lesser concern for health system strengthening.

Preventive vaccination-based approaches supported by donors such as Gavi have been taken in vulnerable areas such as the Far North for cholera and meningitis.^{63,98} Vaccination drives have followed outbreaks of yellow fever,⁹⁹ polio and measles,¹⁰⁰ although these diseases are also targeted in routine immunisation.¹⁰¹⁻¹⁰³ In response to the West African Ebola outbreak, the government permanently banned bushmeat trade, although it continues in secret.⁵⁴ The country has also participated in Ebola vaccine trials. Avian influenza response was supported by WHO, the US Centers for Disease Control and the Food and Agriculture Organisation (FAO). Affected flocks were culled without financial compensation to farmers,⁶⁸ a practice which, like other measures that negatively impact livelihoods, should be avoided or appropriately mitigated as they can disincentivise farmers from reporting disease.

COVID-19. Although COVID-19 has reached all regions of the country, Cameroon has not yet seen extremely high numbers of cases or deaths although many believe available data is incomplete.¹⁰⁴ That said, cases are on the rise at time of writing. Although it never instituted a full lockdown, the government closed schools, banned mass gatherings and closed to international arrivals early on during the first wave, and has maintained restrictions on arrivals from some regions in the current wave.¹⁰⁵ Authorities have been criticised for overly centralised and top-down response,¹⁰⁶ and for using the pandemic as pretext to arrest protestors and restrict political opposition.⁷⁸ There has also been little transparency with regard to how response funds have been dispersed and used, to the detriment of already fragile public trust.⁷⁸ Anthropologists consulted for this brief also highlighted that late, confusing and inconsistent messaging coming from authorities has contributed to the public's greater embrace of alternative information sources such as social media which has resulted in the proliferation of rumours and conspiracy theories (more on this below).¹⁰⁷ The pandemic has had broader health and economic affects including increased food insecurity.⁶⁹ A recession is feared unless substantial investments in public health and affected economic sectors are made.¹⁰⁸ The experience of COVID-19 illustrates how critical it is for responses to empower local level actors, to operate transparently and to communicate effectively and consistently with publics.

COMMUNICATION AND TRANSPORT

Language. French and English are the official national languages in Cameroon and while most people can communicate in at least one, a diversity of other languages are also spoken at regional and local levels and may be used more frequently in daily life. These

include Ewondo, spoken in the Centre and South regions; Maka, spoken by some in East region; and Ffulde and Arab Choa which are spoken in northern regions where a greater number of people speak neither French nor English. A cholera outbreak in the region was only able to be stopped when information began being transmitted in Ffulde.¹⁰⁹ Literacy and education levels are also lower in these regions, particularly among women.

Dialects of French and English, including Cam-franglaise, a mixture of French and English, Pidgin English, and Cameroonian Pidgin English are also spoken, including across class divides. Many Bororo herders and the indigenous Baka may only fluently speak the language of their own ethnic group.

Key communication channels. In addition to appropriate languages, epidemic responders must use effective communication channels to reach target populations. These vary by context and social group. Radio and town criers are good ways to reach rural communities where television is made impractical by frequent power outages or a lack of access to electricity. 'Edutainment', such as song and dance, which when aligned with artistic traditions of specific ethnic groups such as the Baka, may also be effective.

Broadcast media is dominated by the state, and few private broadcasting licenses have been granted although there are growing numbers of broadcasters (especially on the radio) operating without licenses.¹⁴ Both formal and informal channels may be useful in reaching people, although state channels may have little legitimacy in the eyes of many, particularly in Anglophone regions where the government has tried to silence dissent by cutting off internet connections.¹⁰ Mobile phone subscription is also widespread, including among women and youths especially in urban areas. Nearly a quarter of the population are considered 'internet users,'¹⁴ which is most often accessed by mobile phone. Social media channels may be a particularly important in urban contexts, and indeed, have been key sources of information about COVID-19.¹¹ That said, while mobile and social media engagement is important, it should be a part of broader strategies which make use of multiple channels in order to reach those who still lack mobile access.

It is also critical that communication strategies emphasise two-way dialogue and listening (e.g. call-in radio shows, community dialogues) to enable responders to develop and adapt operations in line with citizen's understandings, capacities and priorities in real time. Hyper local strategies focused on existing trusted social institutions, networks and leaders are also important channels for communication, especially for reaching more marginalised people. Churches, mosques, and microfinance groups (locally known as *tontines* or *njangji*)¹² to which many ordinary people, particularly women, belong, would be important to these strategies in Cameroon.

Transportation. Only about 5,000 of the nearly 78,000 kilometres of roads in Cameroon are thought to be paved,¹⁴ and thus travel by vehicle can be challenging, particularly in the rainy seasons. The East region is said to have particularly poor roads, which make it difficult to reach remote communities,⁹ including high numbers of refugees in the region. Domestic rail links exist between Douala, Kumba, Yaounde, and Ngaoundere.

GOVERNANCE AND KEY ACTORS

It is crucial that epidemic responders engage with and through actors and institutions trusted by ordinary citizens – without this, citizens are unlikely to collaborate with and may even actively resist response and interventions.

Mistrust in the central state government is widespread among Cameroonians, with major implications for epidemic response and preparedness. Although technically a multi-party democracy, President Paul Biya and the Cameroon People's Democratic Party (CPDM) have been in power since 1982. Some have suggested the party has maintained power by exploiting rifts between opposition parties, and winning elite support across ethnic groups through strategic appointments and clientelism (see Annexe).¹¹³ Although most districts are considered CPDM 'strongholds', especially in the Centre, South and East regions,¹¹³ ordinary people may resent the state due to perceptions of corruption and experiences of neglect. People in opposition strongholds and 'swing' districts, including the Anglophone regions, West and pockets of Littoral and northern regions,¹¹³ are likely even less trusting of the central state.

Research has highlighted land dispossession as a key factor in people's mistrust of the state, as well as of other international, national and local elites who stand to gain from the economic activities for which land is claimed at local people's expense.¹¹⁴ A lack of transparency regarding revenue from natural resources, and the lack of direct benefit to local people from extraction has deepened this mistrust.¹¹⁵ Epidemic responders should be mindful of the political leanings of the communities in which they work, recognising that political or state partners may be more or less trusted by local people, especially if an area has a history of land dispossession or natural resource exploitation by outsiders.

Identifying trusted local leaders. As suggested, local leaders may also be (or be perceived as) principally concerned with self-enrichment, and seen as extensions of the central state.^{77,114} Thus, it should not be assumed that chiefs for instance – themselves political appointees – are ideal key actors with whom to engage locally. Furthermore, formal local leadership may not be representative of all local people, being almost exclusively male for instance.⁶¹ Similarly, active local civil society organisations may also

not be very representative. In the southeast for instance, local NGOs are run by Bantu people, who while claiming to also represent the interests of indigenous Baka, may rather be involved in their exploitation.³⁷ That said, widespread mistrust of the central state makes it essential that response does identify and work with locally trusted leaders, including those who are *informally* influential (e.g. shopkeepers, entertainers etc.). This is likely to differ between communities, and also within them, and can also change during an emergency.

Engaging Anglophone Cameroonians. Having been a British colony from 1916-1961, Anglophone Cameroon in the Northwest and Southwest regions has a different institutional and cultural history than the rest of Francophone Cameroon, which was part of the French administration during its colonisation from 1916-1960. These two areas of the country were united following independence but, remain divided in many ways. Making up about 20% of the population – Anglophone Cameroonians’ mistrust of the central government runs particularly deep as it is rooted in a sense of historic marginalisation and ‘recolonisation’ (see Annexe).¹¹⁶ Since 2016, violent conflict has been ongoing between the central government and armed Anglophone separatists, both of whom have terrorised civilians.⁷⁸ It is currently very difficult to respond to health crises in the region as health actors have been targeted by violent groups.⁶⁹ Although ordinary Anglophones do not necessarily support the separatists, they are likely to resent representatives of the central government. In these communities, Anglophone leaders and health actors are more likely to be listened to and engaged with by the population.

Avoiding military involvement. Military actors should as far as possible, not be involved in epidemic response as they are implicated in human rights abuses against civilians in areas where they are actively responding to on-going conflicts. In the Far North where they are fighting against Boko Haram, this includes forcing citizens to undertake military operations without training, evicting them from their homes without support or compensation, and committing extrajudicial killings.¹¹⁷ In Anglophone regions where they are fighting separatists, they have committed massacres, rapes, looted properties and burned homes, and regularly extract bribes from civilians.^{78,118} Ordinary people are likely to fear and mistrust members of the Cameroonian military.

International actors are not necessarily trusted. International organisations have been implementing vertical health programmes as well as epidemic responses in Cameroon for decades. While these programmes may well have contributed to improved health, ordinary Cameroonians do not always perceive actors ‘from outside’ to be benevolent. This suspicion traces back to the colonial and post-independence eras when nationalist movements sought freedom from the French, and later resented the close relationship

between Cameroon's first (unelected) president, and the French whom they perceived to be still controlling the country (see Annexe).¹¹⁹ Suspicion of external (particularly Western) actors when it comes to health is also rooted in colonial era coercive public health campaigns, and later interventions such as tetanus vaccines which became widely perceived to cause infertility (see next section).⁶ Mistrust of international actors is playing out particularly dramatically in the context of the COVID-19 pandemic with rumours circulating about the supposed nefarious intentions of Western or Chinese actors towards African populations. While the support of international actors is critical to supporting epidemic responses in a context of scarce resources like Cameroon, responses should be designed in and implemented by and through local communities and networks as much as possible.

Importance of faith leaders and religious communities. Given widespread mistrust of the government, non-state actors who are close to people are likely to represent the most appropriate partners to engage communities for epidemic response. All anthropologists consulted for this brief confirmed that religious leaders – Catholic priests, Christian pastors and ministers, and Muslim Imams for instance – are widely trusted by Cameroonians and are key to communicating with and mobilising publics to modify their behaviour. Involvement of faith leaders can also support more holistic responses to traumatic events like deadly epidemics which may leave communities psychologically traumatised and in need not only of medical attention, but also social and spiritual support.

COMMUNITY RESPONSES TO OUTBREAKS AND OFFICIAL RESPONSES

Reflecting the lesser priority put on community perspectives, little published research details the responses of communities themselves to acute outbreaks of disease, or their perceptions of epidemic responses in Cameroon. That said, social science research from elsewhere, particularly in the context of Ebola outbreaks, has demonstrated how critical it is to understand communities' understandings of disease, their priorities in relation to and strategies for dealing with it, and what they perceive the intentions of responders to be.

Understandings of disease influence community responses. As earlier suggested, Cameroonians may interpret disease to be caused by supernatural forces, and as socially rather than biologically transmitted.⁴⁹ Where this is the case, people may not engage with epidemic responses which are dismissive of these alternative frameworks, and only emphasise biomedical models. Additionally, social influences have been shown to be stronger shapers of health behaviour, even when biomedical understandings are

accepted. For example, research on HIV in Cameroon revealed that, despite knowledge about HIV transmission, condom-use was shaped by perceptions of the social or moral categories of 'risky' partners (e.g. sex workers or secondary partners).^{95,120}

Community-embedded preparedness, surveillance, response and resilience. As earlier highlighted, health seeking almost always begins with self-medication and home care, and may entail biomedicine, traditional medicinal plants, and possibly consultation with traditional health practitioners. Accessing formal health facilities or hospitals is generally a last resort due to cost and low expectations, and thus outbreaks may be well under way before formal responders are mobilised. This indicates a need for building capacity to recognise and respond to disease within communities, including among biomedical and traditional medicine sellers whom local people may encounter prior to formal health system actors. Research has also shown that local health actors including traditional practitioners and community health workers can play key prevention and surveillance roles.^{27,91}

It is also important to better understand existing institutions, practices and sources of resilience that may already be embedded in communities to prevent or manage outbreaks as these can be leveraged, complemented and bolstered by formal response. These may include infection prevention and care protocols like community clean-up campaigns,³⁸ spiritual rituals to ward off disease, or collective strategies to pool resources.³⁵ There is also a wealth of knowledge about medicinal plants among some communities such as the Baka³⁵ which can be integrated into response. Prayer and faith healing in Christian churches is also increasingly popular and represents another way people may seek to respond, and through which community-based surveillance could take place.

Reframing and learning from community 'resistance'. There is also a need for responders to learn from past and present experiences of active community resistance to public health measures to better respond in future. The profoundly social forces behind such 'resistance' are often overlooked. Two illustrative examples drawn from Cameroon are detailed below.

Case study: sterility rumours, tetanus vaccination and political turbulence

In 1989, the government, in partnership with international agencies, embarked on a mass tetanus vaccination campaign targeting girls of childbearing age. Rumours quickly spread across the country that the vaccine would cause infertility.⁶ Schoolgirls, parents, teachers and faith leaders alike questioned the vaccine's purpose and intentions of

authorities. Some schools refused entry to vaccination teams, and children escaped through school windows.

Multiple factors have been linked to this resistance. Firstly, the timing of the campaign was significant. It was initiated during an ongoing economic crisis, and shortly after the violent repression of a political opposition party. Unsurprisingly, the rumour emerged in the Grasslands region, the opposition's stronghold, and an area with a history of grievances against the central state. The government had also begun shifting from a pro-natalist to population control narrative, and new family planning interventions had been recently introduced. Secondly, the vaccine was free and mandatory. The expectation of service fees for health services increased people's suspicion, while the coercion elicited collective memories of forced vaccination during the colonial era. Thirdly, health workers had been oriented to practical efficiency rather than communication and care, and many girls received little or no information about before teams arrived at their schools. In addition to an understandable reaction to the poor execution and communication of this campaign, this resistance can also be seen as a means through which local people sought to protect their reproductive potential and autonomy from the central state and international agencies who they had reason not to trust. The episode had lasting consequences with a rise in teenage pregnancies and abortions shortly following the campaign as girls sought to 'test' their fertility. Girls and their families also attributed health problems to the vaccine even years later.⁶ This experience illustrates the importance of communication and engagement to build up understanding and trust between health actors and populations, and of considering how broader political events can influence communities' responses to health interventions. Resistance to other vaccines, such as for cholera, cervical cancer and other health conditions in recent years may reflect similarly inadequate engagement.

Case study: non-adherence to COVID-19 prevention measures

As earlier mentioned, there seems to be widespread 'resistance' – or at least non-adherence – to COVID-19 control measures such as social distancing, mask wearing, treatment seeking and vaccination. One 2020 study identified the following determinants to Cameroonians' adherence: perceptions of severity and vulnerability, optimism bias, peer norms, sense of self-efficacy, a need to assert independence and a desire to preserve cultural identity.¹²¹ These explanations, however, do not illuminate the deeper reasons people may for instance, not perceive they are vulnerable. Conversations with Cameroonian anthropologists revealed concerns about widespread conspiracy theories, including that the disease is not real, or that it only affects white people and 'white-washed' or deviant Africans. Among those who acknowledge it as a real threat, some may believe it was created by sorcerers, or by white people to kill black Africans.¹²²

All of these sentiments reflect mistrust borne of historical exploitation and coercion, and a failure of formal responders to adequately communicate and engage publics. Failure to allow people to bury their dead with dignity early in the pandemic further damaged trust.¹²³ Lack of attention to people's economic needs, such as the need to continue working to meet basic needs despite disease risk, is also a key issue which can affect people's ability to adhere to measures.¹²⁴ Failure to take these needs into account when planning responses may damage their trust.

While COVID-19 vaccines are not yet widely available, rumours about them as unsafe abound, and 85% of respondents to a recent survey expressed hesitance to eventually take one.¹¹¹ This too is linked to rumours and a confusing media (especially social media) environment, and poor communication from authorities to cut through the noise – all fanned by the flames of deep-rooted mistrust. That vaccines have been developed by external actors is also not lost on Cameroonians who may worry about sub-optimal vaccines being supplied to Africa,¹¹¹ or even that their purpose is 'to cut down the population of blacks in Africa'.¹²⁵ Many may believe that African traditional medicines can prevent or cure COVID-19,¹²⁵⁻¹²⁷ and may ultimately prefer indigenous prevention and treatment unless earnest efforts are made to integrate approaches and reassure people of the safety of vaccines.¹¹¹

Given the scale of the COVID-19 pandemic, the many scientific uncertainties and the onslaught of information and misinformation, response is undoubtedly challenging. The key lesson from this and from previous experiences, however, is the need to meaningfully and continuously engage with and listen to people's concerns and priorities, and to include them in decision-making.

KEY IMPLICATIONS FOR EPIDEMIC PREPAREDNESS AND RESPONSE

As outlined in this brief, Cameroon faces many ongoing challenges in relation to epidemic response and preparedness. These include factors related to technical capacity which are the most readily identified and commented upon. Just as critically however, are factors related to social and political context. Below, we outline our recommendations for strategic and especially operational actors based on the implications of the material reviewed in this briefing.

TECHNICAL CAPACITY AND DYNAMIC DISEASE RISK RECOMMENDATIONS

Expanding capacity of health services to better perform, including in fragile contexts, can increase people's trust and utilisation of them, which in turn, will ensure outbreaks are identified early, and that people will be more comfortable engaging with response teams and healthcare systems. That said, the dynamic disease risk faced in Cameroon also require technical adaptations.

Invest in public health resources. Investments in health personnel, particularly at the lower levels of health system, are desperately needed – especially in rural and northern regions. Equipment, diagnostics, medicines, and internet are also needed to support health workers' ability to do their jobs, including the notification of critical infectious diseases to trigger response. In the meantime, partners/donors should be mindful of public health workers' limitations, and seek to augment their capacities during emergencies, while lobbying for their empowerment in 'peace time'.

Innovate models for responding in conflict-affected areas. Decentralised approaches are needed to reach the growing number of people in Cameroon living in areas affected by conflict where it may be dangerous or impossible for outside responders to operate. Make efforts to support community-based surveillance and response models, which leverage committed and trusted community health workers, volunteers and mobile teams.⁹¹ Additionally, people in these areas may require additional psycho-social support in the event of an epidemic, as they may experience compounding trauma due to violence.

Focus on local-level, community-based capacity building. Local, community-based actors such as community health workers are not only critical in conflict-affected areas, but also across Cameroon – especially in rural communities far from health facilities. They should be supported with adequate pay, training and resources which will better enable them to play key roles in prevention, surveillance, and response.

Make and encourage investments in sustainable WASH. Many people in Cameroon, especially those who are rural or displaced, are still without access to adequate water, sanitation, and hygiene services on a sustainable basis. As well as an urgent matter for epidemic disease prevention, this is a critical development issue and can improve wellbeing and trust overall.

Pivot from vertical disease models to integrated approaches. External donors have long focused on implementing vertical disease-specific programmes in the country,

which while potentially having positive impacts, can negatively impact routine health services.²⁰ Similarly, single-disease focused epidemic response can compromise care for other critical health issues that may even be more of a priority for local people. Integrate epidemic response as much as possible within existing health systems and infrastructure, and ensure that people's multiple health – as well as social, spiritual, and economic needs – are supported, and not damaged.

SOCIAL AND POLITICAL CHALLENGES AND RECOMMENDATIONS

Less often are the social and political challenges of disease response paid attention, even though they are critical to successful response, particularly regarding public trust. Key recommendations in this area include:

Engage local social scientists in response from conception through implementation and evaluation phases. Social scientists are frequently side-lined in epidemic response in Cameroon, sometimes being requested only to provide initial studies at the outset of an emergency. As illustrated throughout this brief however, social science intelligence (e.g. on vulnerability, understandings of disease, trust etc.) is critical to inform and adapt response strategies, as well as to evaluate past experience to learn lessons.

Identify and focus on the needs of vulnerable groups. Some ethnic groups may already face heightened vulnerability, such as the indigenous Baka. Vulnerable people also exist *within* communities – such as women-headed households, or disabled people – and should be identified at the outset of an emergency, along with ways to include and support them. Vulnerabilities can also shift during a crisis, including due to unintended consequences of response (e.g. stigmatisation of infected). Recognising these shifts when they happen can help responders adapt response for more effective outcomes.

Ensure engagement, care and prevention services (including transportation) are free in an epidemic response and communicate this clearly so that people know they will be able to access support. Free services in a context where other services are not free, may however raise suspicion. Thus, the public health reasons why services are free must also be clearly articulated.

Engage in listening and two-way dialogue with communities. Cameroonians may have alternative models for understanding illness, and priorities and concerns that are unrecognised or even dismissed by responders. Engage in 'social listening' and prioritise specific channels through which community members are explicitly invited to share their perspectives and help shape response in locally appropriate/acceptable ways. This can

also help in identifying community-based capacities (e.g. social networks, local institutions) that can be leveraged and supported.

Integrate traditional and biomedical approaches in response. Traditional medicine remains popular (and in some cases preferred) in Cameroon, and yet traditional medicine practitioners and public health and biomedical actors remain mostly alienated from one another. As many people already utilise medicines from both spheres, they may be more receptive to a response which recognises the value of both.

Work with private sector health actors. In addition to traditional health practitioners, private sector health actors including faith-based and NGO-run services, as well as formal and informal drug sellers, should also be considered critical partners. As self-medication and home care is almost always a first resort, it may be drug sellers in particular who first encounter people suffering from outbreak-prone disease. They can assist in surveillance and response.

Identify and work with trusted local actors, recognising they may not be obvious. Mistrust in the central government is widespread and thus, it is critical that response be as locally embedded as possible. However, local leaders such as chiefs may not necessarily be trusted by local people who may perceive them to be corrupt. Faith leaders such as priests, pastors and imams are more likely to be locally trusted, although response should also be tuned to identifying other less obvious trusted actors, who may vary according to the community.

Avoid partnership with military, or overly political actors. Cameroon's current political landscape is highly charged. It is important to avoid politicisation of response and may be best to avoid partnerships with overtly political actors as this may damage trust. Cameroonian military actors should also be avoided in response if possible, as their involvement in the harassment, rape and murder of civilians, particularly in conflict-affected areas, is likely to mean citizens fear and mistrust them.

Be transparent with funds and resources. Corruption is perceived to be widespread among power holders and elites in Cameroon. Questions about how COVID-19 funds have been dispersed have further damaged people's trust in authorities, and thus their willingness to engage in control measures. Be as transparent as possible and establish clear mechanisms for accountability that are visible to people.

Be consistent with communications and prepared to admit and communicate uncertainty. A lack of consistent messaging from central authorities, in addition to an

onslaught of misinformation to which people have turned to fill information gaps about COVID-19 has resulted in a situation where many Cameroonians feel confused, fearful and suspicious. Dialogue about uncertainty, including at the sub-national and community level in the absence of national leadership, may be helpful.

Utilise languages and communication channels most appropriate to local context.

Cameroon is extremely ethnically diverse, and several languages are spoken in addition to French and English including Ewondo in the centre and south, Ffulde and Arab Chao in the north, and dialects including Cam-franglais, Pidgin English and Cameroonian Pidgin English. Communication materials and engagement should be translated or held in locally appropriate languages, as well as emphasise imagery for illiterate citizens. The best channels for dissemination may vary. In rural areas, radio and town criers are good options, while in urban areas television and social media may also have good traction, including among women and youth. Remember that *who* disseminates a message is as important as what the message says and make efforts to identify and tap into trusted networks.

Support community resilience before and after outbreaks to support recovery, and bolster disease prevention and response in the future. Resilience approaches entail supporting the establishment or functioning of existing community organisations, institutions and social networks, and integrating community knowledge, resources, skills and leadership into preparedness and response activities.¹²⁸ Communities disrupted by conflict and displacement are least likely to have robust capacities and resources for resilience, and should be especially supported.

KEY ACTORS

This section presents a list of key actors identified in the process of researching for this brief with whom early responders may want to engage.

SOCIAL SCIENCE INSTITUTIONS

Institute for Population Studies (IFORD) – [IFORD](#) is an intergovernmental training and research institute focused on social sciences based at the University of Yaoundé. Social scientific expertise and collaboration for response might be possible.

Cameroon Centre for Evidence Based Health Care (CCEBHC) promotes a culture of evidence-based health care, service delivery and policy in Cameroon and beyond. It is a Joanna Briggs Institute Centre of Excellence based in the Faculty of Health Sciences of

the University of Adelaide. It seeks to generate and synthesise the best available evidence and promote its use by policy makers. CCEBHC can assist with social science support in preparedness and response activities. **Contact:** (see Dr Asahngwa below)

Muntu Institute – The [Muntu Institute](#) aims to bring together the social sciences with public, private and civil society actors in Africa and beyond to respond to key societal challenges. Headquartered in Yaoundé. **Contact:** contact@muntu-institute.africa

Pan African Association of Anthropologists – The [PAAA](#) is an association of anthropologists from and who focus on African contexts, through which social science researchers might be recruited to support response. Headquartered in Bamenda. **Contact:** nkwi70@yahoo.com

INDIVIDUAL SOCIAL SCIENTISTS

The following social scientists (alphabetical order) consulted for this brief gave permission for their names and contact details to be included below as potential contacts to support epidemic response and preparedness:

Dr Asahngwa Constantine is a medical anthropologist focusing on infectious, non-communicable and neglected tropical diseases. He is also the Director of the Cameroon Centre for Evidence Based Health Care (see above) where he serves as an evidence synthesis and utilisation specialist. He is also a lecturer at the department of Anthropology, University of Yaoundé I, Cameroon. **Contact:** Asahngwa@gmail.com

Modeste Deffo is a Cameroonian medical anthropologist currently engaged in epidemic preparedness programme with the Red Cross Movement. He is a passionate mid-career professional undertaking field and management activities, including research, programme development and implementation to improve public health in Africa and beyond. **Contact:** def_modeste@yahoo.fr

Dr Ngambouk Vitalis Pemunta is a medical anthropologist interested in gender, human-animal interaction, disease transmission, vulnerable population groups and intersectionality, and with specific focus on women's human rights. He presently teaches at the School of Public Health and Community Medicine, University of Gothenburg, Sweden. He is a Country of Origin Expert on Cameroon and Sierra Leone for the UK-based Rights in Exile Project. **Contact:** vitalispemunta@gmail.com

Tabi Chama-James Tabenyang holds an MA in Applied Anthropology from Walter Sisulu University, Mthatha South Africa, and is currently pursuing a PhD at the Witwatersrand University, Johannesburg South Africa. His research interests include indigenous knowledge systems in healthcare practices in Africa, and the anthropology of natural resources exploitation.

Dr Tatah Peter Ntaihah is a bilingual social scientist with experience in health, environment, forestry, energy, mining and transport issues. He has been regularly involved in health situation analyses, disease burden assessments, and health programme implementation. Dr Tatah is currently Director of Archives and Statistics in the National Civil Registration Office Yaoundé Cameroon. **Contact:** peterntaihah@gmail.com

Dr Wogaing Fotso Jeannette is a Cameroonian anthropologist focusing on motherhood, maternal mortality, and women in the academy, medicine, and in prisons. She is also interested in questions relating to the human condition. She is currently based at the University of Douala's Laboratory of Anthropological Research. She has recently published on the COVID-19 pandemic in Cameroon. **Contact:** wogaing@yahoo.fr

ORGANISATIONS INVOLVED IN EPIDEMIC RESPONSE IN CAMEROON

International organisations

Several inter-agency initiatives have been established to bring together stakeholders in public health and humanitarian response in the country, including the Task Force on Humanitarian-Development-Peace Nexus focused on Sustainable Development Goals in crisis-affected areas. See the [Revised Humanitarian Response Plan](#).

Action Contre la Faim began work in Cameroon in 2013. While it does not primarily focus on epidemic response, it responds to the [most pressing needs and emergencies](#) affecting the most vulnerable communities (particularly in insecure areas or areas with displaced populations) as well as building long-term resilience.

Alliance for International Medical Action (ALIMA) has been focusing its interventions on the [Far North of Cameroon](#) since 2016, especially in conflict zone.

International Medical Corps work in Cameroon [focuses on displaced populations](#) and refugee camps.

International Red Cross has a strong history of being active in epidemic preparedness and response [in the most vulnerable areas](#) of the country and has trained over 200 local volunteers to be mobilised in the case of an emergency. See:

International Rescue Committee has been [working in Cameroon since 2016](#) with a focus on displaced people, including responding to and working to prevent epidemics such as cholera.

Medecins sans Frontiers/Doctors without Borders (MSF) has supported and delivered humanitarian assistance in the country for over thirty years. Already active on the ground focusing on other issues, they were one of the first NGOs involved [in COVID-19 response](#).

Norwegian Refugee Council began work in Cameroon in 2017. [Focused on displaced people](#), including providing health services and epidemic response.

Plan international's work [focuses on children and young people](#) who may be particularly vulnerable and excluded from other programmes.

Première Urgence Internationale [provides a multi-sectoral response](#) to the population's needs with a focus on displaced populations.

Solidarités International leads [emergency and development programmes](#) in the country in partnership with other NGOs and government agencies.

US Centers for Disease Control (CDC) has been [very active in Cameroon](#) beginning with HIV/AIDS work in the '90s. For [COVID-19 response](#), the CDC supported Cameroon's MOH to activate the country's Emergency Operations Centre and mobilise response actors, many of whom had been involved in the 2014-2016 Ebola response.

United Nations Agencies including [WHO](#), [UNICEF](#), [UNFPA](#), [WFP](#), and [UNHCR](#) have also been active in epidemic response in Cameroon, including to cholera in 2010 and COVID-19 in 2020-2021. The [work of agencies](#) can be particularly valuable to address the multi-faceted impacts of epidemics in areas with intersectional challenges and vulnerabilities (e.g. food security, child health, displacement, security issues).

Cameroonian organisations

Care and Health Program (CHP)- CHP was founded in 1996. CHP has supported the Ministry of Public Health implementing health programmes in the areas of HIV/AIDS,

family planning, and epidemic and pandemic preparedness with funding from various international donors including PEPFAR, USAID, CDC and the Global Fund.

Cameroon National Association for Family Welfare (CAMNAFAW)- CAMNAFAW was created in 1987 and has emerged as the leading Cameroonian organisation for the promotion of access to sexual and reproductive health (SRH) services.

SWAA CAMEROON was created in 1991 to fill the gap of female leadership in the management of HIV/AIDS programmes as women are among the most vulnerable.

ACKNOWLEDGMENTS

The authors would like to thank the following individuals who provided expert social science and operational input during the research phase of this briefing: Dr Wogaing Fotso Jeanette, Dr Tatah Peter Ntaimah, Tabi Chama-James Tabenyang, Dr Ngambouk Vitalis Pemunta, Dr Asahngwa Constantine and Aimé Gilbert Mbonda Noula.

This briefing was reviewed by: Aimé Gilbert Mbonda Noula, MD, MPH, PhDc, MBAc, and current Community Epidemic and Pandemic Preparedness Programme Manager for IFRC (Central Africa Cluster based in Yaoundé); and Dr Ngambouk Vitalis Pemunta, a medical anthropologist currently teaching at the School of Public Health and Community Medicine, University of Gothenburg, and current Country of Origin Expert on Cameroon.

Suggested citation: Hrynicky, T, Deffo, M and Sams, K (2021) Tackling Deadly Diseases in Africa: Key Considerations for Epidemic Response and Preparedness in Cameroon, *Briefing*.

Published June 2021



Tackling deadly diseases in Africa



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ANNEXE: ADDITIONAL HISTORY AND CONTEXT

This annexe provides additional contextual information on aspects presented in the brief, as well as additional issues which responders may want to know about.

BASIC CONTEXT

Geography and agroecology

Cameroon is a country at the intersection of West and Central Africa bordered by Nigeria, Chad, Central African Republic, Congo, Gabon and Equatorial Guinea, as well as 400km of Atlantic coast. It is administratively divided into 10 regions, most with directional names ('North Region', 'Far North Region', etc.). The country has a wide range of geographical/ecoclimatic domains which span from a dry Sahelian environment in the Far North region, to dense tropical forests in the southern part of the country. In between can be found dry savanna, humid savanna, highland, forest and coastal environments.

More specifically, drier Sahelian and then Sudanian savanna climates can be found in the Far North and North respectively. Adamaoua region is characterised by a Guinean forest climate and high plateau, the Northwest and West are characterised by highland humid savanna, interrupted by mountains. This region is also referred to by a range of other names including the Western Highlands, Western Grassfields, and Bamenda Highlands. The Southwest, Littoral, Centre, East and South regions have much more humid climates and are characterised by dense forest. Rainy seasons are shortest in the north and longest in southern regions.

Population

There are an estimated 25.9 million people in Cameroon,¹²⁹ 57% of whom live in urban areas.¹³⁰ The population is most dense in western and northern areas, with southern and eastern areas being more sparsely populated. Although predominantly rural, the population of northern regions has swelled with influxes of migrants fleeing drought or Boko Haram violence. The major cities of Yaounde (in Centre) and Douala (in Littoral) have populations of about four million each and are characterised by rapid demographic growth, unplanned urbanisation, fast development of informal settlements, and a large amount of urban agriculture.¹⁴ Cameroon's ten regions can be ranked from most to least urban (% urbanisation rate) as follows: Littoral (96%), Centre (75%), West (49%), Southwest (48%), East (42%), Northwest (42%), Adamaoua (40%), South (39%), North (27%) and Far North (24%).³¹

Livelihoods, socio-economic status and economic activity

Overall, Cameroon is classified as a lower-middle income country by the World Bank. However, poverty has been increasing in recent years as poverty reduction has lagged behind population growth. Poverty, estimated at 37.8% in 2014, is also increasingly concentrated in northern regions where 56% of the poor in Cameroon live.¹³¹ In rural areas, most ordinary people are primarily engaged in agriculture although they may grow both subsistence and cash crops. The main subsistence crops are plantains, beans, potatoes, yams, manioc, maize, oil palm and millet, while the main cash crops are cocoa, coffee, cotton, bananas, palm oil and tea.¹³² Large-scale natural resource extraction of oil, timber, and increasingly minerals by large, often multi-national corporations attracted by favourable tax incentives, have not benefitted most ordinary people, and rather, dispossessed many of their ancestral or traditional lands.¹¹⁵ Electrification stands at 70% overall, with 98% of urbanites and only 32% of rural people being connected to electrical grid.¹⁴

POLITICAL ECONOMY AND HISTORY

A triple colonial heritage

Prior to the colonial period, the territory of modern Cameroon was ruled by powerful chiefdoms. Parts of it would come under the control of the Germans from the 1880s until the end of World War I, after which it was divided between the French and British as 'international trusteeships' under the League of Nations (and later UN).^{119,133} This Francophone/Anglophone split (80%/20% of the territory respectively) resulted in distinct linguistic, institutional and cultural legacies between the different regions, with significant implications for modern-day Cameroon. As 'trusteeships', the people of Cameroon were entitled to political and civil rights, but were treated as any other colonised territory, which inflamed freedom sentiments.¹¹⁹ Both German and French colonisers utilised traditional governance systems and chiefs to administer and exploit the population, using forced and unpaid labour for public works and cash cropping, and used corporal punishment against them.¹³³ The French also groomed a class of Cameroonian proteges who assimilated French law, language and customs, and treated them as local elites. The rise of a highly organised nationalist movement in Douala and the Bamileke region in the 1950s was violently repressed including through extrajudicial killings, and terrorising civilians in areas where nationalists operated.¹¹⁹

Independence and the birth of two Cameroons

French Cameroun became 'independent' in 1960, although remained strongly under the influence and control of the French including through the installation of President Ahmadou Ahidjo, a Cameroonian who worked in the colonial administration. Ahidjo, in

collaboration with the French military, waged violent war against nationalists who continued campaigning against the pro-French government through the 1960s, resulting in tens of thousands of civilian deaths. The violence was outwardly portrayed by the French as 'tribal' or 'civil' war, and the true nature and extent of French involvement has long been actively repressed, until recently.¹¹⁹

Meanwhile, the Anglophones of the British controlled territory voted to join the Francophone Republic of Cameroon in 1961, not having been given the option of independence. Promises of autonomy within the Republic dissolved over the years, resulting in Anglophone resentment of the Francophone central state, manifest today in the ongoing crisis.¹¹⁶

Power and decision-making after independence

Despite nationalist movements and Anglophone/Francophone tensions, Cameroon is considered the most stable autocracy in sub-Saharan Africa.¹¹³ Although designated a multi-party democracy under liberal reforms in the early 1990s, in practice, it has been dominated since 1982 by the Cameroon People's Democratic Party (CPDM) and its leader Paul Biya, who has suppressed opposition throughout his rule including through 'divide and conquer' strategies, and elite-level ethnic balancing in party and state positions.^{113,134} Civil society has mainly been politically oriented and aligned, with either the CPDM, or criticising it, in which case it has been suppressed. Biya's advanced age, political turmoil surrounding recent elections and the on-going Anglophone crisis pose challenges to the political status quo in the immediate term.¹³⁵ Epidemic responders should carefully monitor the evolving political scenario to stay abreast of potential shifts in who different populations may trust, and the implications of this for partnerships in epidemic response. Explicitly politically aligned responses should be avoided.

Politics, ethnicity and identity

The maintenance of the CPDM of ethno-regional political balance through networks of elites to sustain power in Cameroon's context of extreme ethnic diversity has curbed tendencies towards extreme favouritism.¹¹³ Furthermore, the high ethnic diversity in the country has not lent itself to the emergence of clearly ethnically aligned political oppositions. Rather, Cameroon's opposition parties are associated with broader identity groups. For instance, the Anglophones with the Social Democratic Front (SDF), the Bamoun Kingdom with the Cameroon Democratic Union (UDC) and the Muslim 'grand north' with the National Union for Democracy and Progress (UNDP), all of which span across ethnic divides.¹¹³ These associations reflect historic issues including the marginalisation of Anglophones and the Grassfields Francophone Bamileke by the central Francophone state, and the side-lining of northern constituencies following a

coup attempt in 1984.¹¹³ That said, there are fears that ethnic tensions are rising in the wake of the disputed 2018 presidential election, with ethnic slurs and violence being exchanged between the Beti and Bulu ethnic groups of which Biya is a member, and the Bamileke ethnic group of opposition leader Maurice Kamto of the Cameroon Renaissance Movement (MRC) party.¹³⁶ Such tensions can result in ethnic groups being blamed for a disease outbreak, requiring responders to address any such stigma and misinformation.

SOCIAL GROUPS, STRUCTURES AND ORGANISATION

Ethnicity, social organisation, language and religion

Ethnicity. There are over 240 ethnic groups in Cameroon. This incredible diversity is thought by some to be a safeguard against intercommunal violence, as Cameroon's ethnic groups have managed to co-exist mostly peacefully. This diversity has been categorised in several ways, including broken down by the following regional / identity categories:

1. Cameroon or western highlanders (38%) includes the Bamileke, Bamoun and Tikar groups
2. Southern tropical forest people (18%) including the Beti, Maka, Njem and the Baka
3. Predominantly Islamic people (14%) of northern desert and central highlands including the Fulani
4. Coastal tropical forest people (12%) including the Bassa, Douala and others
5. Kirdi people (18%) who reside in northern desert and central highlands, some of whom are recently Islamic

Alternatively, Cameroon's ethnic groups have been broken down in the following way:¹⁴

- Bamileke-Bamun 24.3%
- Beti/Bassa, Mbam 21.6%
- Biu-Mandara 14.6%
- Arab-Choa/Hausa/Kanuri 11%
- Adamawa-Ubangi, 9.8%
- Grassfields 7.7%
- Kako, Meka 3.3%
- Cotier/Ngoe/Oroko 2.7%
- Southwestern Bantu 0.7%
- foreign/other ethnic group 4.5%

The Baka and Bororo are unique among ethnic groups in Cameroon in that they both live mobile lifestyles and have traditionally been on the margins of society and of the central state. As outlined in the main text, the Baka are semi-nomadic indigenous forest-dwelling people who live in the southeast. Social services such as health and education do not align with their customs, and thus, they are often excluded from these institutions, as well as from any form of political decision making. They have been dispossessed of their ancestral forest lands, to which they sometimes attribute illness. They specialise in meat trade and traditional herbal medicine for which they are renowned.^{35,37,75}

The Bororo herders can be found across many parts of Cameroon. Like the Baka, their mobile lifestyle and lesser ability to speak English or French can make it difficult for them to access health services, and to engage with an epidemic response. Increasingly frequent conflicts between herders and poor farmers due to climate change and land scarcity - sometimes inflamed by local elites seeking to exploit such conflicts - can fuel mistrust between these groups,^{76,77} and potentially lead to blaming in an epidemic scenario. The military is also accused of recently engaging armed Fulani militias to conduct military exercises in the Anglophone region, threatening to open a new ethnic dimension to the on-going conflict between Anglophone separatists and the Francophone dominated state.⁷⁸ Epidemic responses must mitigate and not inflame these tensions, which could further worsen an outbreak, and should provide mobile services to support these communities.

Social organisation. As in other African contexts, anthropologists have noted the importance of kinship in Cameroonian society, linked with a notion of social wealth (as opposed to material wealth in Western traditions). With kinship comes obligation and opportunity, including in relation to accommodation, work or other resources. The notion of 'kin' may also be flexible, whereby the kinship claims can be made strategically.¹³⁷

Language. As outlined in the main text, the main linguistic divide is between the English speakers of the Northwest and Southwest regions, and the French speaking majority in the rest of the country. However, people may also speak or even prefer other local languages or dialects in daily life. These include Cam-franglais, Pidgin English, and Cameroonian Pidgin English. Other important languages include Ewondo, Bassa, Douala, Womala, Ffulde and Maka.¹⁰⁹

Religion. According to the Office of International Religious Freedom, 69.2% of Cameroonians are Christian. Of these, 55.5% are Roman Catholic, 38% are Protestant, and the rest are other Christian denominations. People in the Anglophone regions are mostly Protestant, while those in the five southern Francophone regions are mostly Catholic.

About 21% of the population are Muslim (including Fulani groups), and mostly reside in northern regions, although some among the Bamun in West, are also Muslim.¹³⁸ Attacks by Boko Haram in the north has led to stigmatisation of Muslim groups.¹³⁹

Another 5.6% of the population have been classified as animist, 1% other religions, and 3.2% with no religion.¹³⁸ Aspects of animism and ancestor worship are often present in Christian, Muslim and other religions in Cameroon, or practiced alongside them. Politics and religion have collided in the recent past with government targeting Pentecostal and Presbyterian religious leaders and churches for speaking about human rights or accusing them of engaging in criminal activity.¹⁴⁰

Religious leaders are key actors whom the population trusts, and who thus should be included in epidemic preparedness and response activities.

Emic understandings of health and illness

As mentioned in the main text, many Cameroonians may at times understand illness to have been caused by witchcraft, social ruptures or transmitted in other ways. Even aetiologies that are not supernatural, may not correspond completely with biomedical perspectives. Terminology and descriptions of illness may also not align and can cause confusion between citizens and health care providers. Epidemic responders should be aware that such alternative framings of disease may be circulating in communities, and that this can impact the ways in which local people are likely (or not likely) to seek care, modify their behaviour, or engage with or trust response actors. Given the incredible diversity of ethnic groups in the country, it is impossible to notate all potentially relevant illness categories and understandings, however a few examples from the Fang and Ewondo ethnic groups are detailed below.

The Fang are an ethnic group found in southwest Cameroon. Researchers found that illness and death among the Fang are often seen as having been brought on by jealousy, ancestors, negative social relationships or witchcraft.⁵⁰ Even if an illness has the same symptoms of a biomedical condition, it may not be able to be treated with biomedicine if caused by one of latter. Some Fang illness categories include:

- *Eluma*: characterised by aggressiveness, headaches, and acute pain.
- *Kong*: manifests in lethargy, disorientation. This was sometimes diagnosed in Western medicine as advanced AIDS, late-stage syphilis, or dementia⁵⁰
- *Mibili*: hallucinations, nightmares, and the appearance of funeral rites in one's thoughts.

- *Mikug*: changes in the movement of limbs, freezing, sense of disconnection.
- *Nsamadalu*: weight loss, isolation, difficulty speaking. This can be repeated in subsequent generations of the family.

Among the Ewondo of central Cameroon, disorders may be referred to by the specific organ they are thought to affect, with the name of the organ preceded by the Ewondo word for illness, 'okoân' combined. For example, 'okoânésseuk' means liver disease and refers to the biomedical disease hepatitis. Illnesses may also be designated by their presumed cause or origin. 'Simple diseases' are those which are known and can be treated by biomedicine while 'serious diseases', possibly caused by witchcraft and which thus exceed biomedical competence, require the expertise of traditional healers. These illnesses may be referred to as 'evu'. The Ewondo also distinguish distinct types of malaria including 'ebem koe' which is the form of malaria that most often affects children up to age 10.⁵¹

Youth, education, and literacy

For several years now, tens of thousands of children in the Far North, Northwest and Southwest have not been able to attend school due to ongoing conflicts,⁶¹ which have even entailed targeted attacks on schools by separatist groups in the Anglophone region.¹⁴¹ Reaching children outside of school is thus a major challenge for epidemic response, and thus must rely more on engaging them through their parents, and through other social networks and institutions such as religious communities.

School is otherwise a good channel through which to engage school-age youth in Cameroon. Among children who are in school, boys tend to be privileged. This is especially the case in secondary school as 65% of boys are enrolled, and only 53% of girls - who are also expected to perform unpaid chores and care work at home - are enrolled.⁶¹ Other avenues to reach older youth include voluntary associations and youth groups.¹⁴²

Literacy levels in Cameroon are highest among the 15-24 age group at over 80%. Among Cameroonians aged 65 and older, this drops to about 60% for men and 25% for women.¹⁴³ These relatively high rates of illiteracy, especially among older women make it critical that communication activities include strategies to be inclusive of these more vulnerable groups.

Gender

Women in Cameroon face an uphill battle when it comes to gender equality. The country ranked 141st out of 189 countries on the UNDP Gender Equality Index in 2017. While 39% of Cameroonians overall live under the poverty line, nearly 52% of women do.⁶¹ Only 1.6% of

women own a land title, and yet women make up nearly 72% of the informal agricultural workforce mainly growing subsistence crops, while men are more involved in the cultivation of cash crops.⁷⁷ Women's marginal position is in part due to social norms about their roles and responsibilities. They are expected to prepare meals, fetch and store water, maintain household hygiene, and care for children and other dependent people in the family and community – an activity which could put them at higher risk of infectious disease. They spend 8.2 more hours per week than men on unpaid household tasks, which ultimately limits their political and economic participation.⁶¹ They may also be excluded from some activities while menstruating.

Additionally, across all ethnic groups (with the exception of the Baka), men control all of a family's or kin group's strategic assets including land, livestock, money, children's education and access to health care, and have full decision-making power. Customary exogamous marriage practices in which women marry into and become part of their husband's kinship group, preclude them from ownership or power over these important assets as they are considered non-permanent members of the kin group, and may even themselves be considered property of it.⁷⁷

Although women experience high rates of domestic violence, as well as sexual violence as a tool of war and terror in conflict affected areas, men are more likely to face arbitrary beatings, arrest, forced recruitment and extrajudicial execution, injury or death directly related to conflict.¹⁴⁴ Thus, women have taken on additional income generating responsibilities in some places, such as the Northwest. This reversal of role has left some men feeling emasculated and led to increased household violence against women.⁶¹

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