

## ORIGINAL ARTICLE



# COVID-19 in Cabo Verde: an assessment of the first six months of the pandemic in the country

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### Abstract

**Background.** COVID-19, or the new coronavirus, has spread globally since its emergence in December 2019, bringing enormous global health and socioeconomic challenges. Egypt confirmed the first case of COVID-19 in Africa on February 14, 2020, while Cabo Verde confirmed the first case on March 19, 2020. Contrary to forecasts that the virus would swiftly spread throughout Africa, which would soon become the infection's epicenter, the evolution of the pandemic on the continent over the investigated time period has been slower than expected.

**Objective.** This study aims to comprehend the progression and consequences of the COVID-19 pandemic in Cabo Verde during its first six months of existence. After the first confirmed case of the new coronavirus, on March 19, 2020, the government of Cabo Verde closed its international borders. Consequently, a state of emergency was declared with stringent restrictions on the movement of persons and goods. Additionally, facilities for the isolation of sick individuals, including field hospitals, had been established. To aid the most vulnerable, public and private organisations had organized fundraising drives.

**Results.** Despite the use of mitigation techniques, the pandemic in Cabo Verde has caused severe socioeconomic harm. It is crucial to preserve and strengthen active surveillance, infection control, and risk communication methods. Social protection policies and economic incentives have the potential to boost infection control strategies.

Keywords: pandemic, COVID-19, SARS-CoV-2, pandemic, Cabo Verde, Africa.

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## INTRODUCTION

COVID-19 is a disease caused by SARS-CoV-2, a novel virus found in December 2019 after an outbreak of atypical pneumonia in Wuhan, China. On March 19, the first case was verified in Cabo Verde.<sup>1,2</sup> Cabo Verde (CV) is an archipelago comprised of ten islands located off the western coast of Africa and inhabited by 498 063 people.<sup>3</sup> Since gaining independence in 1975, the country has achieved significant socio-economic growth, partly as a result of its political stability.<sup>4</sup> The political system of the country is a democratic multiparty parliamentary republic. The democratic index of the Economist Intelligence Unit ranks Cabo Verde (CV) first among Portuguese-speaking African countries (PALOP) and thirty-first globally.<sup>5</sup>

Despite major gains in recent years, the health sector in CV still faces significant obstacles, including insufficient human and financial resources.<sup>6</sup> The novel coronavirus has put the health care system and the entire nation to the test. Six months after the first case was reported, this analysis provides an overall evaluation of the pandemic across the nation. Specifically, the objectives included (i) understanding the pandemic implications, with a focus on the health sector; (ii) assessing the evolution of the virus in CV, as compared to the African context; and (iii) understanding the strategies and response mechanisms of various sectors in regards to COVID-19.

### Summary of the initial six months of COVID-19 in Africa

Egypt reported the first case of COVID-19 in Africa on February 14, 2020. By March 2020, Algeria and Nigeria were the only other African nations with confirmed illness cases.<sup>7</sup> As of September 29<sup>th</sup>, 2020, 47 nations in Africa had reported cases. South Africa accounted for 57% of COVID-19 cases and 65% of deaths. During the same time period, CV reported 5900 cases and 59 deaths, representing 0.5% and 0.2% of the continent's total cases and deaths, respectively. Chad had the highest mortality rate (7.1%) during the analyzed period (Table 1).<sup>8</sup>

As the virus progressed, there were numerous grounds to fear that Africa might soon become the disease's epicenter. First, Africa has the highest vulnerability index to infectious diseases, with 22 of the 25 most vulnerable countries located on the continent. Second, its weakened health systems lack necessary human resources and infrastructures, such as a limited quantity of hospital equipment per capita and a lack of personal protective equipment, disinfectants, and antiseptics. Thirdly, poor sanitation and water access make it difficult to often wash hands.<sup>9–11</sup> Fourthly, Africa's high population density is connected with hazardous housing circumstances in some parts, where individuals share congested quarters, making physical separation difficult. Due to the high prevalence of infectious diseases such as HIV, tuberculosis, and malaria, as well as non-infectious disorders such as anemia and malnutrition, hypertension, and diabetes, the continent is home to regions with a significant proportion of immunocompromised populations.<sup>12</sup> Lastly, political instability and a lack of resources continue to be widespread in Africa.

Contrary to forecasts, the epidemic has developed more slowly in Africa than on other continents. On September 30, Africa contributed for 3.7% of confirmed global infections and 3.6% of mortality, or 1,217,947 cases and approximately 35,673,000 deaths, respectively.<sup>13</sup> Theories attempting to explain the anomalous emergence of COVID-19 in Africa have relied on:

- (i) the virus's probable susceptibility to environmental circumstances in Africa.<sup>14</sup> However, data suggests that environmental factors, such as climate, are not likely to inhibit virus spread.<sup>15,16</sup>

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**Supplementary information** The online version of this article ([10.4081/jphia.2022.2127](https://doi.org/10.4081/jphia.2022.2127)) contains supplementary material, which is available to authorized users.

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- (ii) prior infection with other coronavirus types confers a level of immunity against COVID-19.<sup>17</sup> This theory was challenged for stating that poverty and living conditions on the continent may have contributed to the emergence of flu epidemics caused by coronaviruses not detected elsewhere.
- (iii) the young population: the median age in Africa is less than 20 years, and fewer than 5% of the population is over 65,<sup>18</sup> which is the age group at risk for serious disease.<sup>19</sup> This concept requires caution, however, as a young population would predict a large percentage of asymptomatic individuals. This could paradoxically increase the danger of virus transmission, as asymptomatic individuals uninformed of their infectious state may act less cautiously, infecting more people.
- (iv) Limited diagnostic capacity, resulting in cases being underreported. Nonetheless, since the commencement of the pandemic, diagnostic capacity in Africa has increased significantly.<sup>20</sup> In addition, a substantial number of unreported infections would likely result in a substantial excess mortality.

However, these hypotheses eliminate any potential advantage the African continent may have in controlling the epidemic. African governments and communities have become more forceful in the face of new dangers as a result of their earlier experiences with infectious disease management. As the virus spread to other continents, Africa had more time to prepare. Utilizing the time to prepare, the African Union acted aggressively and decisively to combat the pandemic. The African Health Ministers conducted an emergency meeting on February 22, which resulted in the endorsement of the Continental Africa Joint Strategy for COVID-19.<sup>21</sup> In addition, with the assistance of the Africa Centre for Disease Control and Prevention, the PACT initiative (Partnership to Accelerate COVID-19 Testing) was established, allowing testing capacity for COVID-19 on the continent to increase from two laboratories in February to 43 laboratories in early March 2020.<sup>20</sup> Several states

are progressively implementing the following additional strategies: implementation of a state of emergency; mobility control measures; closure of borders, restriction of entry of travelers from severely affected countries, and establishment of mandatory quarantine upon arrival; closure of educational institutions; prohibition of social gatherings; emergency programs for the distribution of basic necessities; and training of technicians to combat the new viral threat.

A six-month examination is insufficient to comprehend the actual impact of the coronavirus on Africa. Despite the rapid and varied spread of the virus on the continent, progress and best practices must be recognised.

### **Overview of the first six months of SARS-CoV-2 infection in Cabo Verde**

With the advent of the global expansion of SARS-CoV-2, the introduction of the virus into CV seemed imminent. This is due to the country's strategic location as an air and sea gateway, its tourism-based economy, and the constant bilateral exchange of Cabo Verdeans with the diaspora, primarily from Europe and North America. In spite of this, the first case of the novel coronavirus in the country was not verified until March on the island of Boavista, three months after the outbreak in China. The virus eventually spread throughout the entire archipelago.

After the first case was found on the island of Boavista, an outbreak broke out. On a single day, 47 positive cases were found among hotel employees who had hosted the first COVID-19-infected guest. The government therefore mobilized and dispatched a multidisciplinary team of technical specialists to the island of Boavista. Using contact tracing, testing, and isolation of suspect patients in hotels, the authorities were able to effectively control the outbreak on the island. Infections were clustered, and there was little evidence of community transmission at the time, which permitted rapid transmission control.

The island of Santiago was the second epicenter of COVID-19 in Cabo Verde, after the first case was discovered in the capital city of Praia, in a Cabo Verdean resident returning from Europe. Despite the health officials' efforts to test and isolate contacts using an active monitoring strategy, community

transmission had already occurred, preventing them from achieving the same success in Praia as they did on the island of Boavista. Since then, the island of Santiago, and more specifically its city Praia, has been the country's epicenter of infection. Additionally, 51% of CV cases were female.<sup>2</sup> The distribution of cases on the islands through September 30, 2020 is depicted in Figure 1.<sup>2</sup> The epidemiological condition of COVID-19 in CV through September 30, 2020 is depicted in Figures 2 and 3. The pandemic trend in the Economic Community of West African States is seen in Figure 4 (ECOWAS).

Praia, the nation's capital, amassed over 80% of the cases (Figure 2). The majority of asymptomatic patients (71%) were discovered using contact tracing (Figure 3). CV ranked sixth among ECOWAS member states with the highest number of COVID-19 cases as of September 30, 2020 (Figure 4).

Despite accounting for only 0.5% of all confirmed cases in Africa, Cabo Verde had one of the highest attack rates (1109.08/100,000 persons), second only to South Africa (1192.44/100,000 inhabitants).<sup>8</sup>

Despite this and the continual increase in cases, CV has demonstrated a slow evolution of the epidemic, as evidenced by the number of cases, severe and fatal events being significantly lower than expected by a model of projected infection. This projection indicated that by May 2020, the cumulative number of COVID-19 cases in the country could have reached 45,000,<sup>22</sup> which is significantly greater than the current level. In addition, the mortality rate of COVID-19 in CV is less than 1%, compared to 2.4% in Africa and 3% globally.<sup>23</sup>

Concerning testing strategy, CV opted to test all suspected cases and contacts of infected individuals. The gold standard for diagnosing COVID-19 was real-time polymerase chain reaction (RT-PCR), while rapid antibody tests were utilized for screening. As of September 30, 2020, 60,306 rapid antibody tests had been performed, equating to a cumulative testing rate of 10,829/100,000 population. CV recorded a total of 49,874 RT-PCR tests with an average positive rate of 16.5% by the conclusion of week 30 of the epidemiological period (October 11, 2020).

### Public Health measures implemented

The Ministry of Health (MoH) swiftly assembled the National Rapid Intervention Technical Team (ETNIR) on January 30, 2020, after the World Health Organization (WHO) declared COVID-19 a Public Health Emergency of International Concern (PHEIC) on January 11, 2020. This group coordinates national responses to COVID-19 in order to identify disease prevention and control measures. Simultaneously, the Ministry of Health developed the National Contingency Plan for COVID-19, which was intended to guide control and preventative activities throughout the country.<sup>24</sup>

In light of the necessity to improve the health system during the pandemic, the government of Cabo Verde has issued Order No. 05/2020, permitting the Ministry of Health to purchase additional medical equipment.<sup>25</sup> In this first phase of the pandemic, around 76 million escudos (nearly \$800,000) were deployed for clinical goods and services, equipment, and the training of healthcare personnel. Moreover, CV has relied heavily on international partnerships to combat the pandemic, both in the form of donations of hospital and laboratory supplies and personal protective equipment (PPE) as well as loans and monetary donations. By June 2020, USD 143,993,406 had been mobilized from external resources, according to a government report.<sup>26</sup>

As the virus spread globally, the country increased surveillance at entry ports. These actions included completing clinical information questionnaires, measuring body temperature, and providing passengers with health care orientations. With the exception of cargo and repatriation flights, all foreign flights were halted on March 19, except for those carrying passengers.<sup>27</sup>

In response to the discovery of the first COVID-19 case in Boavista on March 20, contingency measures were implemented on the island, including the closure of non-essential services and the prohibition of air and sea connections to and from the island, in order to control the spread of the virus within and beyond Boavista.<sup>28</sup> In anticipation of and to mitigate the potential consequences of the virus on the country's most populous city, Praia, similar steps have been implemented.<sup>29</sup> These steps were essential

for limiting the spread of the virus and enabling more time for preparations.

With the discovery of cases on neighboring islands, the government declared a state of emergency for the entire nation on March 28. It comprised harsh measures such as a ban on all national and international travel, restrictions on movement and permanence on public highways, stay-at-home order, and a ban on events involving large groups.<sup>30</sup> These strategies were essential during the initial phase of pandemic management, allowing healthcare facilities to plan for and accommodate a possible increase in cases. Due to the continuing rise of cases, the state of emergency was further extended.

To improve openness in the management of COVID-19, the government has developed a portal controlled by the National Institute of Public Health (INSP) that offers daily updates on the number of cases.<sup>2</sup> In addition, the Ministry of Health organized news conferences to share information daily at first, and then three times per week.

A toll-free number was made available for assistance and guidance regarding coronavirus-related questions to prevent an indiscriminate influx of individuals seeking healthcare services for virus-related issues. In addition, an online directory was launched to facilitate the acquisition of goods and services, compiling access to various services without leaving one's home.<sup>31</sup> Similarly, the Cabo Verdean National Bank recommended utilizing its digital banking facilities to do transactions, so limiting trips to banks to the bare minimum. This measure was accompanied by the elimination of online money transfer fees.<sup>32</sup>

In accordance with the World Health Organization's (WHO)<sup>33</sup> new guidelines, the government implemented, effective April 25, 2020, laws governing the wearing of face masks to prevent the spread of SARS-CoV-2 within communities. In addition to physical distance, proper hand cleanliness, and respiratory etiquette, these regulations mandated the use of face masks in confined settings with several individuals. The government mandated the usage of face masks in public locations, including open areas, as of August 31, 2020. In addition, the government enhanced control and punishment procedures for non-compliance.<sup>27</sup>

Although meant to be brief, the border closure and international flight restriction enacted in March 2020 remained in effect until the second half of August, when the country gradually reopened, permitting international flights in exceptional instances. Due to the large number of Cabo Verdeans in the diaspora, multiple repatriation flights were scheduled for stranded citizens (Portugal, Brazil, Senegal, and the United States).

Despite these safeguards, the virus continued to spread, resulting in an increased demand for health services. In response, the Ministry of Health has implemented a variety of logistical steps to tackle the infection.

First, enhancing testing capabilities. Although the country lacked a COVID-19 testing infrastructure at the onset of the outbreak, conditions were rapidly established. Since March 14, tests have been conducted in the sole virology laboratory in the country, located in Santiago. Subsequently, the testing infrastructure was expanded to include three additional laboratories on the islands of São Vicente, Sal, and Fogo.

Second, the establishment of field hospitals. In light of the socioeconomic and housing situations of a significant portion of the population, where individuals frequently lack the required conditions to isolate themselves at home, the government supplied physical infrastructure to isolate all positive patients at the outbreak's onset. These locations included hotels, school dorms, and homes from the Home for All (*Casa para todos*) social housing programs. Due to the growth in the number of cases, particularly in Praia, new physical structures, including field hospitals, were organized. All positive cases remained in institutional isolation until the end of July, when home isolation was permitted if certain conditions were met.

Thirdly, the country had recruited new health care experts (nurses, laboratory technicians, psychologists, and social workers, among others). In addition, CV received 33 Cuban health professionals, including specialists in epidemiology, internal medicine, and public health nursing.

### **Socio-economic protection measures**

The Cabo Verdean population was severely impacted by the epidemic, as the majority of inhabitants work in the informal sector of the economy, in trade, agriculture, and fishing. In addition, a significant portion of Cabo Verde's crucial tourism industry was paralyzed by the pandemic. To address these issues, the government implemented a package of social protection measures that includes (i) the *Food Assistance Program* for the distribution of food and basic needs items, which has already benefited approximately 140,000 people;<sup>34</sup> and (ii) *Solidarity Income and Social Income Emergency Inclusion*, which aims to support vulnerable informal workers during a state of emergency. Simultaneously, steps to support firms, including credit lines, moratoriums, and an extension of the deadline for paying taxes, as well as measures to protect jobs, including the partial payment of salaries by the state and unemployment benefits, were enacted.

### **Community, media, and institutional actions**

#### **Public and private initiatives**

The INSP virology laboratories have been dealing with the demand for diagnostic tests throughout the national territory. The INSP also helped in the process of expanding the laboratory capacity for diagnosing COVID-19 to other islands. As a research institution, INSP conducted a study analyzing the population's behaviors, attitudes, and practices concerning COVID-19,<sup>36</sup> and the first seroepidemiological survey of COVID-19 in CV.<sup>37</sup> The INSP has been central in risk communication and community engagement through public information and awareness campaigns through various media, including radio and TV spots.

In consultation with the Ministry of Education (MoE), all educational establishments in the country were closed earlier, by March 23, 2020. Subsequently, due to the evolution of the pandemic in the country, in-person classes for the school year were suspended. The MoE promptly developed an optional curriculum to end the school year. The classes were made online on the MoE website, television

channels, and radio.<sup>38</sup> Nevertheless, to accommodate students from economically vulnerable families, elementary schools kept school canteens functioning so that underprivileged students could have a daily meal at school.

Cabo Verdeans are known for their *Morabeza* – a spirit of solidarity and warmth – which became evident during the state of emergency. Community associations have mobilized to raise funds to distribute essential goods, including masks, among the needy population. Companies in the Cabo Verdean private sector have also supported the fight against the virus by donating money, hospital materials, and PPE.

### **Food security and human rights**

To control the hoarding of goods and the undue rise in their prices, the agency for the General Inspection of Economic Activities (IGAE) promoted a campaign encouraging the denunciation of these practices to penalize offenders.

In light of international data indicating an increase in domestic violence during quarantine,<sup>39</sup> and aiming at preventing gender-based violence during home quarantine, the Cabo Verdean Institute for Gender Equality and Equity (ICIEG) launched the campaign “*Bu ka sta bó so!*” (You are not alone). This consists of a toll-free line to denunciate Gender-Based Violence (GBV), and a verbal code (“*Maskara19*”) that victims of GBV could use as a distress call while seeking services from pharmacies.<sup>40,41</sup>

Intending to safeguard the constitutional right to health, the National Commission for Human Rights and Citizenship promoted the campaign “*Citizenship in the Protection of the Human Right to Health.*” It consisted of disseminating informative material intended for specific groups (elderly, persons with disabilities, immigrants, and institutionalized persons), aiming to inform them of their rights and general aspects for their protection against the coronavirus.<sup>42</sup>

### **Media and entertainment**

Several campaigns were transmitted via radio stations, television channels, and official pages on social media to disseminate truthful information. The

hashtags #fikanacasa (Stay at home) and #stanabumon (It's in your hands) have been disseminated to facilitate community engagement and compliance with preventive measures.

Artists have created charitable fundraising movements to support the fight against COVID-19, such as the #Nasofa festival (*On the couch festival*) to support hospitals.<sup>43</sup> A group of music schools created the "Talent at home" contest – a music and dance show held online for children, teenagers, and young people. The contest aimed to keep people entertained during the lockdown creatively and constructively.<sup>44</sup>

### Challenges and future needs

The COVID-19 pandemic in Cabo Verde is taking a heavy toll on the country's economy and people's life as a result. During the first trimester of 2020, 20% of the Cabo Verdean companies suspended their activities. The most significant impact was on tourism, which is the primary driver of the archipelago's economy. Sixty-eight percent of the companies in the tourism sector declared revenue losses during the first trimester of 2020,<sup>45</sup> and 83% during the second trimester,<sup>46</sup> as a consequence of the pandemic. An estimated 11% of the working population lost their jobs in 2020.<sup>47</sup>

Despite the measures taken, the country still faces several challenges in combating the virus. First, due to the opening of both inward and outward travel, the mobility of people increases the risk of spreading variants to less-affected regions. Second, it is challenging to implement prolonged home quarantines since a large portion of the population operates in informal settings that entail leaving the house and interpersonal contacts. Third, deficient health infrastructure, with reduced per capita beds and limited human resources. Fourth, difficulty in importing and maintaining adequate stock of PPE and essential medicines. Fifth, increased risk of transmission with the return to regular classroom sessions in educational establishments. Sixth, the seasonality of other disease outbreaks, such as gastroenteritis in summer and vector-borne diseases after the rainy season, create resource allocation competition. Seventh, insufficient community engagement in complying with preventative and infection control measures.

Finally, an economic recession resulting from the loss of tourism revenues (responsible for about 20% of GDP), a decrease in emigrant's remittances, withdrawal of investors, and the negative economic effect of movement control orders.

### CONCLUSIONS

The epidemic of COVID-19 has caused considerable issues for African nations in general and Cabo Verde in particular. These nations should prioritize important actions to limit the economic and social consequences of COVID-19. Strategies should include: (i) maintenance of active case surveillance with contact tracing and isolation of cases; (ii) improvement of laboratory capacity to cope with the virus's spread, highlighting the reinforcement of investment and genomic research of SARS-CoV-2 and vaccines effective against viral subtypes on the continent; and (iii) continuous information campaigns to promote actions for COVID-19.

International cooperation and support will play a critical role in helping to maintain the current pandemic control measures and guaranteeing equal access to future vaccines or antiviral medications.

### INFORMATION

**Acknowledgments.** The authors would like to thank the Virology Laboratory of the National Institute of Public Health for providing the data on the tests conducted in the country. We would also like to thank Arlene Silveira Silva for translating the manuscript from Portuguese.

**Authors' contributions.** JSS was responsible for the conception and was in charge of overall direction and planning. MDLL and NMF supported the gathering and review of data. Arlene Silveira Silva translated the manuscript. NMF reviewed the translated article. JSS, MDLL, and NMF contributed to the drafting of the article. All authors agreed with the decision to publish it.

**Conflict of interest.** The authors declare no potential conflict of interest.

**Disclaimer.** The opinions in this report represent those of the authors and not necessarily those of their affiliated institution. Due to the nature of the data analyzed, no ethical approval was required.

**Funding.** None.

**Availability of data and materials.** All data generated or analyzed during this study are included in this published article.

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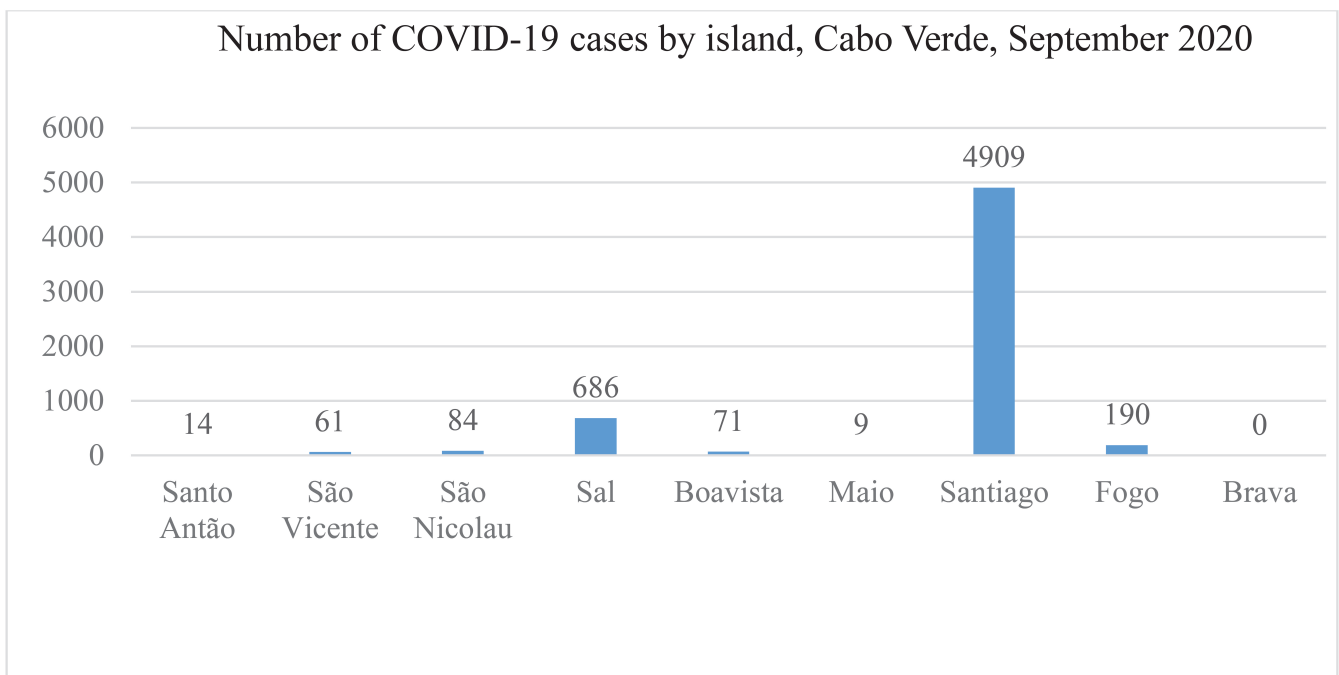
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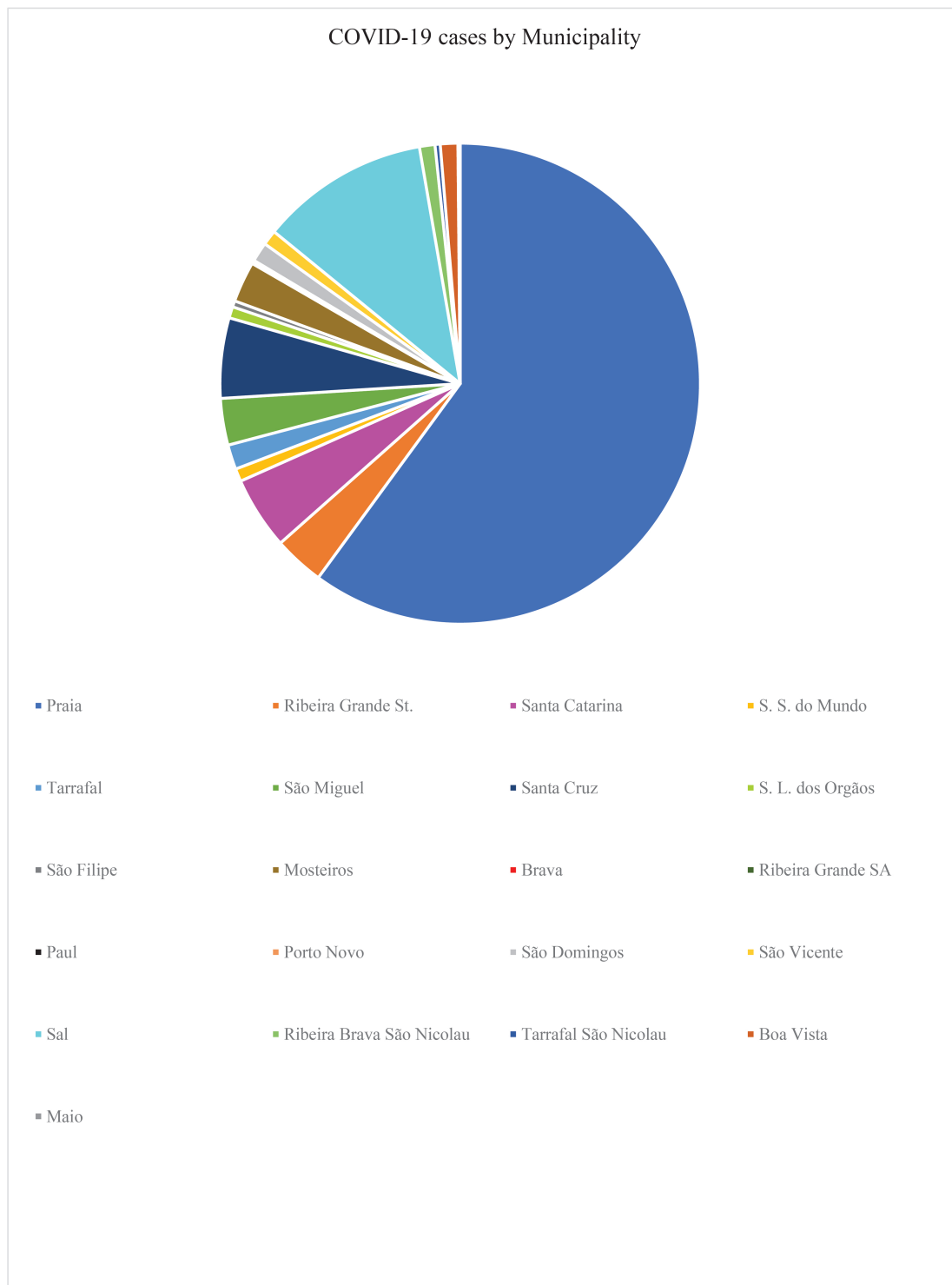
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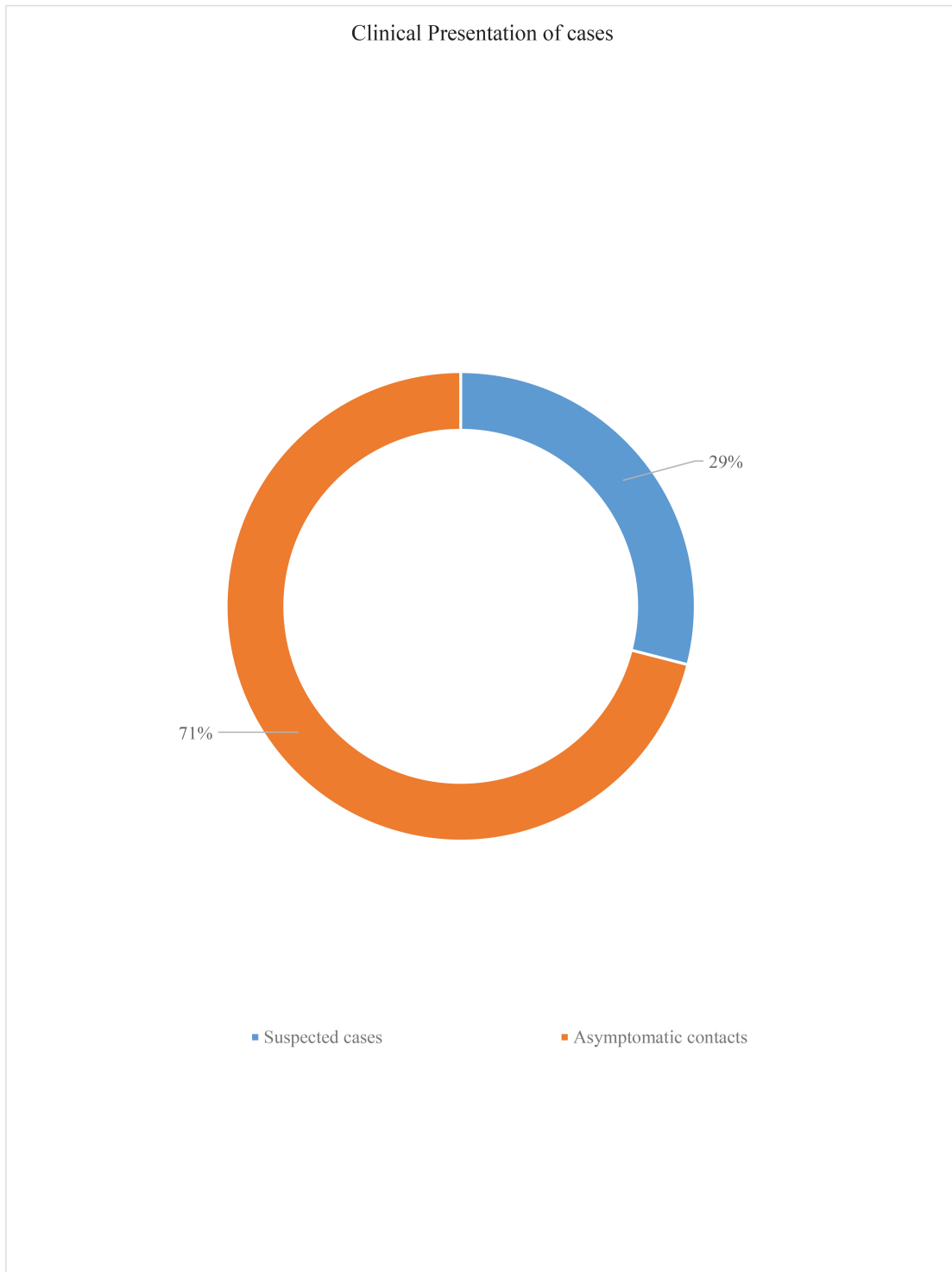
**How to cite this article:** Silveira Silva J., Fernandes N.M., Lima Mendonça M.D.L. **COVID-19 in Cabo Verde: an assessment of the first six months of the pandemic in the country** . *Journal of Public Health in Africa*. 2022;1–14. <https://doi.org/10.4081/jphia.2022.2127>



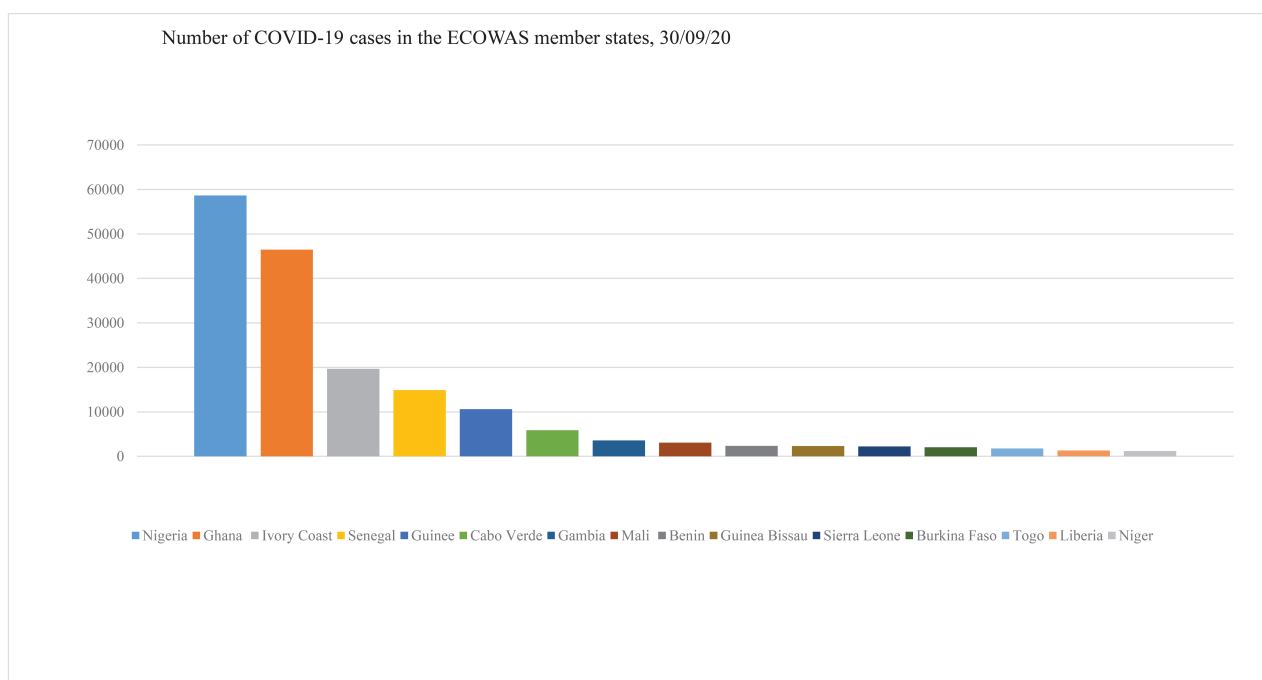
**FIGURE 1:** Number of COVID-19 cases by islands, Cabo Verde, as of 30/09/20



**FIGURE 2:** Number of COVID-19 cases by the municipality, Cabo Verde, as of 30/09/20



**FIGURE 3:** Number of COVID-19 cases according to clinical presentation, Cabo Verde, as of 30/09/20



**FIGURE 4:** Number of COVID-19 cases in the ECOWAS member states, as of 30/09/20

**TABLE 1:** Number of confirmed COVID-19 cases in the World Health Organization (WHO) African Region, February 25 to September 29, 2020. Adapted from WHO African Region COVID-19 open dashboard.

Country	Cases	Deaths	Recovered cases	Death rates (%)	Infected healthcare workers
South Africa	672 572	16 667	606 520	2.5	27 360
Ethiopia	74 584	1 191	30 952	1.6	1 506
Nigeria	58 647	1 111	49 937	1.9	2 175
Algeria	51 368	1 726	36 063	3.4	2 300
Ghana	46 482	301	45 651	0.6	2 065
Kenya	38 378	707	24 740	1.8	970
Cameroon	20 838	418	19 519	2.0	808
Ivory Coast	19 669	120	19 241	0.6	187
Madagascar	16 377	229	15 139	1.4	70
Senegal	14 919	309	12 231	2.1	349
Zambia	14 715	332	13 937	2.3	139
Namibia	11 140	121	8 937	1.1	455
Guinee	10 634	66	9 960	0.6	513
Democratic Republic of Congo	10 631	272	10 129	2.6	256
Gabon	8 752	54	7 955	0.6	57
Mozambique	8 556	59	5 205	0.7	473
Uganda	8 017	75	4 260	0.9	455
Zimbabwe	7 837	228	6 122	2.9	238
Mauritania	7 488	161	7 111	2.2	5
<b>Cabo Verde</b>	<b>5 900</b>	<b>59</b>	<b>5 228</b>	<b>1.0</b>	<b>90</b>
Malawi	5 772	179	4 245	3.1	280
Eswatini	5 462	108	4 859	2.0	284
Congo	5 089	89	3 995	1.7	166
Guinee Eq.	5 028	83	4 740	1.7	429
Angola	4 905	179	1 833	3.6	40
Rwanda	4 836	29	3 125	0.6	0
Central African Republic	4 829	62	1 914	1.3	1
Gambia	3 579	112	2 161	3.1	142
Botswana	3 172	16	710	0.5	56
Mali	3 101	131	2 443	4.2	0
South Sudan	2 704	49	1 438	1.8	128
Benin	2 357	41	1 973	1.7	139
Guinea Bissau	2 324	39	1 549	1.7	282
Sierra Leone	2 222	72	1 685	3.2	230
Burkina Faso	2 028	57	1 279	2.8	117
Togo	1 759	48	1 341	2.7	68
Lesotho	1 565	35	822	2.2	20
Liberia	1 343	82	1 221	6.1	214
Niger	1 196	69	1 107	5.8	184
Chad	1 193	85	1 007	7.1	75

*Continued on next page*

## COVID-19 IN CABO VERDE

*Table 1 continued*

Sao Tome and Principe	911	15	885	1.6	88
Tanzania	509	21	180	4.1	1
Burundi	508	1	472	0.2	35
Comoros	478	7	458	1.5	34
Mauritius	381	10	344	2.6	30
Eritrea	375	0	341	0.0	0
Seychelles	141	0	139	0.0	0
<b>Total (N =47)</b>	<b>1 175 271</b>	<b>25 825</b>	<b>985 103</b>	<b>2.2</b>	<b>43 514</b>

Number of confirmed COVID-19 cases in the World Health Organization (WHO) African Region, February 25 to September 29, 2020. Adapted from WHO African Region COVID-19 open dashboard.