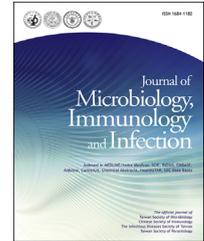




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Case report

Coronavirus-19 disease (COVID-19): A case series of early suspected cases reported and the implications towards the response to the pandemic in Zimbabwe



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Received 17 March 2020; received in revised form 2 April 2020; accepted 2 April 2020

Available online 13 April 2020

KEYWORDS

Coronavirus;
COVID-19;
Africa;
Zimbabwe;
Emergency
preparedness and
response

Abstract Zimbabwe is among the countries that have been identified to be at risk of the COVID-19 pandemic. As of the 15th of March 2020, there was no confirmed case of the virus. Official reports of suspected cases were used to appraise the general screening, case management, and the emergency preparedness and response of the country towards the COVID-19 pandemic. In terms of the surveillance and capacity to screen at the ports of entry, the country seems to be faring well. The country might not be screening optimally, considering the number of COVID-19 tests conducted to date and the suspected cases who missed testing. Three of the suspected cases faced mental, social, and psychological consequences due to them being suspected cases of COVID-19. There is a need to enhance the screening process and infrastructure at all the ports of entry. More COVID-19 diagnostic tests should be procured to increase the testing capacity. Training and awareness on mental, social, and psychological consequences of COVID-19 should be offered to the health care workers and the general public. More financial resources should be sourced to enable the country control the pandemic.

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Introduction

African countries are at risk of getting the new coronavirus disease (COVID-19), mainly due to their close link with China.¹ Despite the associated high risk, the number of reported cases has been rising slower than anticipated considering their weak health and emergency preparedness and response systems.² Several conspiracy theories have been proposed to explain the fewer cases, but they are yet to be proved.³ The Africa continent has not been complacent but has started to put in place strategies to curb the pandemic.^{4,5} According to the World Health Organisation (WHO) report on COVID-19 on the 15th of March 2020, 365 cases were confirmed in 25 African countries and the mortality rate stood at around 2%.⁶ Zimbabwe is among the countries that have been identified to be at risk of COVID-19.¹ As of the 15th of March 2020, 9700 travellers had entered the country through all the ports of entry. Of all the travellers, only 14 COVID-19 diagnostic tests have been performed, and none has tested positive. Some of the suspected cases have attracted national-level attention in various media forums, especially social media. The COVID-19 pandemic has been associated with a lot of misinformation.⁷ The authorities are now issuing regular official statements to update and allay fears of the public. The eight suspected cases presented here are based on official reports made to the public by the authorities. The information was obtained from the update reports shared with the public.^{8–15} The aim was to appraise the general screening, case management, and the emergency preparedness and response of the country towards the COVID-19 pandemic.

Cases

The eight suspected cases were reported between the 19th of February 2020 and the 13th of March 2020 (Table 1). Six of the cases were females. Of the eight cases, five presented with respiratory diseases symptoms, two were asymptomatic, and one was pronounced dead on arrival. Half of the cases (four) had a travel history to China. Of the eight cases, only one met the WHO criteria of a suspected case, but four had a laboratory test for COVID-19 diagnosis performed. However, all the four tests were negative. Three of the cases (first, third and fifth) experienced mental, social, and psychological consequences. The first case was referred to a psychiatrist for suspected psychological trauma. The third case initially absconded COVID-19 testing only to return after a police report. The fifth case was reported by the staff from a hotel where he was staying despite him being asymptomatic. The detailed narrative of each of the eight cases are in the [Supplementary File 1](#).

Discussion

These reported suspected cases show that indeed there is a high risk of the COVID-19 pandemic coming to Zimbabwe through an imported case, especially from either China or South Africa. The movement of travellers between Zimbabwe and high-risk countries is evident from the few

suspected cases presented. The way the suspected cases were handled raises important issues regarding the general screening, case management, and the emergency preparedness and response of the country towards the COVID-19 pandemic. In terms of the surveillance and capacity to screen at ports of entry, the country seems to be faring well, mainly at the Robert Mugabe International Airport. However, the country might not be screening optimally, considering the number of COVID-19 tests conducted to date and the suspected cases who were not screened despite having reported to a health facility or high-risk travel history. Three of the suspected cases faced mental, social, and psychological consequences due to them being suspected cases of COVID-19.

The screening at the Zimbabwe ports of entry has been strengthened. This is reflected in the number of the suspected cases detected so far. Initially, travellers coming from the affected countries were to produce medical clearance certificates,¹⁶ but this was later abandoned when the WHO provided guidance.¹⁷ Upon arrival at the ports of entry, all travellers are checked for temperature by use of the thermo-scanners. Those with temperatures above normal are isolated for further assessment. However, there have been questions on whether a fever is enough to detect suspected cases with COVID-19. Fever is often the initial symptom to be noticed but it disappears within the first few days while the patient is still infectious. Reports have been made of travellers taking antipyretics to circumvent the thermo-scanners.¹⁸ As for travellers coming from COVID-19 affected countries, if they are asymptomatic more information is collected from them; details of their movement and where they will be going, physical address, and mobile numbers of the person visited. This information is dispatched to the local health authorities where the visitor will be going for them to follow-up the traveller for 21-days. As part of the follow-up, the local health authorities will be submitting regular feedback to the national level in a prescribed format. However, the well-structured screening process seems to be only available at Robert Mugabe International Airport. Reports have been made on substandard screening points at the border ports of entry.¹⁹ Though authorities have conducted assessment visits, these border ports of entry still have human resources and equipment challenges.

The country might not be testing enough considering the number of the travellers received visa vee the number of COVID-19 tests conducted to date. There are suspected cases who were not tested despite them having high-risk travel history and reported to a health facility. The country managed to perform a paltry of 14 COVID-19 diagnostic tests since the beginning of the outbreak. Anecdotal reports from observers have highlighted that some immigration officials were not checking the travel origination point. Some of them only focused on the plane's prior departure airport, thereby allowing many travellers to enter with incomplete travel history.²⁰ A few of the suspected cases were also not screened after failing to meet the WHO suspected case criteria. This failure to screen might have been due to the limited resources. However, if resource permits, WHO recommends testing broadly (test, test and test), including patients who do not strictly meet the suspected case definition.²¹ Experiences from the countries affected early on have shown that the number of cases identified is

Table 1 Eight (8) COVID-19 suspect cases reported in Zimbabwe between the 19th of February 2020 and the 13th of March 2020.

Case	Date reported	Age Sex	History and symptoms	Travel history	WHO suspect criteria met	COVID-19 test done and result	Comments
1	19/02/20	27 Female	Asymptomatic (no cough, apyrexial, no shortness of distress or signs of respiratory distress)	Prior travel to Wuhan before leaving China but arrived in Zimbabwe from Guangzhong, China.	Yes	Yes Negative (including a confirmation sample sent to South Africa)	Later reported on the 26 th of February at the local central hospital to consult a Psychiatrist
2	08/03/20	Female	Referred on the 6 th of March 2020. Confirmed dead on arrival.	Returned from China on the 24 th of January 2020.		Yes Negative	
3	09/03/20	26 Male	Two-day history of cough (mainly at night), fever and sneezing.	Arrived from Thailand on the 14 th of February 2020.	No	Yes Negative	Initially absconded testing and later came back after a police report
4	10/03/20	Female	Presented with cough chest pain and difficulty in breathing. Was attended at Victoria Falls Hospital	Arrived from the United Kingdom.	No	No	Treated as pneumonia and was seen to be recovering on antibiotics
5	10/03/20	Male	No symptoms and apyrexial. Reported by the staff of a local hotel where he was staying.	Left Guangzhou on the 10 th of February en route to Zimbabwe via South Africa. Arrived in Zimbabwe on the 10 th of March 2020.	No	No	Possibility of stigma by the local hotel staff
6	12/03/20	Female	Reported with flu-like symptoms and had contact with someone with similar symptoms.	Left the United Arab Emirates on the 4 th of March 2020 en route to Zimbabwe via South Africa and arrived in Zimbabwe on the 12 th of March 2020.	No	No	
7	13/03/20	39 Female	Self-presented with history of chest pain and fever, suspecting she might have contracted coronavirus.	No travel history.	No	No	
8	13/03/20	25 Female	Sore throat, runny nose, headache, general body malaise, and a dry cough.	Arrived from China on the 5 th of February via South Africa. Travelled to South Africa again on the 27 th of February and came back on the 28 th of February 2020.	No	Yes Negative	

related to the testing, i.e., more testing more cases identified. Testing widely will also enable the country to better assess the extent of circulation of the virus. To date, most of the confirmed cases in Africa are imported. Whether community transmission has started and the extent is not known, hence the limitation of the continued use of travel history. Evidence has now shown cases without travel history to high-risk countries being detected in some of the developing countries.²²

There are possible explanations of why the country might not be testing as many suspected cases as possible. The main possible reason should be the unavailability of the COVID-19 diagnostic tests. The actual number of COVID-19 tests available in the country is not open to the public. However, reports of donations from development partners without specifying the exact amounts have been made.¹² The other reasons might be due to the weak screening procedures at the ports of entry; poor adherence, incorrect interpretation or use of the WHO screening criteria and the complexity of performing the COVID-19 diagnostic test. Currently, there are no studies that have been conducted to validate the WHO screening criteria. The use of the word "test" might be misleading considering the several complex steps (many of them manual) involved in performing the COVID-19 diagnostic test. COVID-19 testing to date involves reverse transcription polymerase chain reaction (RT-PCR) technology.²³ The process has to be done by a qualified laboratory scientist or technician, and at each step, quality control protocols are followed to ensure an accurate and precise result. Like any other developing country, Zimbabwe is not spared from the shortage of diagnostic equipment and the required skilled personnel. Currently, the country has only one laboratory at central level providing testing to the whole population.

The authorities invested significantly in capacitating the diagnostic laboratories and the isolation centres in preparation of the COVID-19 pandemic. The National Microbiology Reference Laboratory (NMRL), capacity to test for COVID-19 and sub-national laboratories ability in efficient specimen collection, handling, and processing were assessed and the areas which required urgent attention identified. A system to send specimens to South Africa for confirmation was established. One of the suspected cases had a sample successfully sent to South Africa for verification. The country established three major isolation centres in Harare at Wilkins Infectious Diseases Hospital (WIDH), Bulawayo at Thorngroove Hospital and the tourist town of Victoria Falls at Victoria Falls Hospital. In terms of the necessary equipment and infrastructure, the most developed and supported is the one at WIDH. All the isolation centres have challenges of intensive and critical care unit beds in case of severe complications. None of the centres has a functioning ventilator. Infection control has been a challenge at these isolation centres due to shortages of personal protective equipment (PPE).²⁴ Reports of them initially relying on space suits, gloves, gumboots and N95 respirators acquired when the country was preparing for the ebola outbreak in 2014 were made but these quickly ran out. Development partners have also donated some, but shortages continue to be experienced.²⁴ Although there is a lack of PPE, infection prevention and control protocols have been developed across the cascade of COVID-19 care

in line with WHO guidance.^{25,26} On top of the isolation centres, COVID-19 Rapid Response Teams have been set up at all levels throughout the country. Each of the ten provinces has a COVID-19 Rapid Response Team responsible for first-line follow-up and tracking of suspected cases and organising the necessary referral to the isolation centres. These teams have been very responsive, as reflected by how they responded to the reported suspected cases.

Capacity building has been conducted among health care workers at all levels in the different regions of the country in the case management of COVID-19. The skills were further enhanced with the experience gained from handling and managing the suspected cases. However, three of the suspected cases who experienced mental illness and stigma (which might have led to the other patient absconding testing and the other being reported by the hotel despite being asymptomatic) indicate that these social, psychological, and mental consequences of COVID-19 should be considered as part of the case management for health care workers and awareness to the general public. Research conducted in China has shown the psychological impact associated with the diagnosis of COVID-19, notably resulting from the isolation and quarantine.²⁷ Several incidents of Chinese nationals being stigmatised and discriminated in other countries just because the virus originated in China have been reported.²⁸

The suspected case who developed mental illness reported to a public health facility while she was still under the 21-day follow-up period, thereby posing the risk of infection to the other patients and health care workers. Available evidence has shown that patients with an initial negative result can later test positive.²⁹ This mistake brings into doubt whether the authorities are earnestly following-up all patients under self-quarantine at home. If the home visits were being performed, the mental issues would have been identified early, and the patient referred to a psychiatrist more safely. The mistake that one of the suspected cases absconded the isolation facilities before testing should not be taken lightly. Such suspected cases have the danger of initiating community spread of the virus.

Like what most African countries have done, the President has declared the COVID-19 pandemic a national disaster. A COVID-19 National Preparedness and Response Plan was also launched. Major events planned at the national level (Zimbabwe International Trade Fair and the independence celebrations) were cancelled. Schools and tertiary institutions will be closing early. Social distancing continued to be promoted while gatherings of more than 100 people were banned.^{30,31} The local authority in Harare with support from the development partners placed several mobile hand washing points within the city. The city also started city-wide spraying of bus terminus, restaurants, pavements and other public places. The available evidence regarding the spraying of cities to destroy the coronavirus is conflicting. There might be no benefit in high-temperature countries like Zimbabwe.^{32,33} There has been a debate on whether the country should start implementing some of these infection and prevention control measures without a case yet reported. Experiences from countries affected early on i.e. China and Italy, have shown that it is better to be overprepared than not to prepare at all.^{34,35} The WHO has created four

transmission scenarios (no cases included) and countries are encouraged to prepare according to their context.³⁶

The study was based on the official reports from the authorities. Reviewing of the suspected cases medical records, interviewing of the suspected cases and the key informants, and the assessment of the isolation centres and the ports of entry could have assisted in triangulation and enriching the data. However, these were not performed due to feasibility challenges and the social distancing requirement. Despite these limitations, the information provided by the authorities was adequate to allow a rapid appraisal of the country's emergency preparedness and response towards the pandemic. The experience gained from handling and managing these suspected cases should be used by the authorities and other stakeholders to strengthen the screening, case management, and the emergency preparedness and response of the country towards the COVID-19 pandemic. There is a need to enhance the screening process and infrastructure at all the ports of entry. Travellers should be screened based on their point of origin as opposed to the departure airport of the aeroplane. Ports of entry, especially at the borders, should be equipped with the necessary standard screening equipment and human resources. Follow-up of patients on self-quarantine should be strengthened so that complications or disease onset are picked on time. Systems to track and trace the contacts should be in place to enable robust follow-up across all possible points of transmission along the chain.^{37,38} To increase the testing capacity, efforts should be made to increase the number of laboratories with the capacity to test for COVID-19 together with the necessary human resource support. This should be accompanied by procuring more diagnostic test kits and strengthening of the gaps identified in the sample transportation system.

Training of the health care workers on mental, social, and psychological consequences of COVID-19 should be urgently implemented. Efforts should be made to assess these consequences early on and support offered promptly since COVID-19 diagnosis can be traumatising. Awareness should be given to the public and service providers against stigma and discrimination of nationals from the most affected countries. The security at the isolation centres should be improved to prevent cases from escaping which might lead to community transmission. Refurbishment and equipping intensive care units at the isolation centres and the surrounding hospitals should be prioritised especially with the ventilators. Respiratory distress is a common complication of COVID-19 mainly among the elderly and those with comorbidities. Procurement of PPE for health care workers should be urgently prioritised. Awareness through the various media platforms on the importance of the general hygiene practices (hand washing and avoiding touching of the face) should continue. The authorities in the long run, depending on how the pandemic will evolve, should consider a lockdown, restrict travel or close borders to high-risk countries. A lot is still unknown across the COVID-19 cascade of care (prevention, screening, diagnosis, treatment, and prognosis). More research is needed to offer evidence-based solutions.³⁹ Most urgently is the support towards the development of a COVID-19 point of care (POC) diagnostic test.⁴⁰

In conclusion, the Zimbabwean authorities and the supporting partners should be decisive and move with speed in addressing the highlighted challenges and gaps. In the neighbouring country, South Africa, more than a dozen cases have been reported, and it is a matter of time before cases start to surface in Zimbabwe. For the challenges and gaps to be addressed, there is a need for financial resources. To date, the United Kingdom Government's Department for International Development, World Health Organisation, Ecobank, Mimoso Mine, Global Fund, Chinese Government, the Government of Zimbabwe, and a few development partners have pledged resources towards the pandemic. More partners and stakeholders should come on board if the country is to wedge the war against the COVID-19 pandemic.

Data statement

The COVID-19 updates reports used to summarise the suspected cases are available to the public and can be accessed from Zimbabwe, Ministry of Health and Child Care (MoHCC).

Declaration of Competing Interest

The author has no competing interests.

Acknowledgements

There was no funding received to conduct the study. The author would like to appreciate the Ministry of Health and Child Care (MoHCC), Harare City Department of Health and COVID-19 Rapid Response Teams in various parts of the country who have been in the forefront in responding to the pandemic and providing the necessary information and updates to the country. Finally, the author is grateful to suspected cases whose information was used for the appraisal.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jmii.2020.04.002>.