

Ghana's COVID-19 response: the Black Star can do even better

Nana Kofi Quakyi,¹ Nana Ama Agyemang Asante,² Yvonne Ayerki Nartey,^{3,4} Yaw Bediako,⁵ Nadia Adjoa Sam-Agudu ^{6,7,8}

To cite: Quakyi NK, Agyemang Asante NA, Nartey YA, *et al.* Ghana's COVID-19 response: the Black Star can do even better. *BMJ Global Health* 2021;**6**:e005569. doi:10.1136/bmjgh-2021-005569

Received 2 March 2021
Accepted 3 March 2021

INTRODUCTION

In the early phase of the COVID-19 pandemic, Ghana's response was hailed as one of the best in Africa. The country's 'whole-of-government' approach was structured around five objectives: to curtail the importation of cases; identify and contain them; care for the sick; cushion the impact of COVID-19 on Ghana's economic and social life; and boost domestic production as a means of deepening self-reliance.¹

The government's perspective on the COVID-19 response was captured by the president in March 2020: 'We know how to bring the economy back to life. What we do not know is how to bring people back to life.'² However, nearly a year on, Ghana is contending with gaps between rhetoric and reality.

In Accra, the capital city, the B.1.1.7 variant first identified in the UK now constitutes up to 88% of all infections,³ and it is driving an ongoing surge in hospitalisations and deaths. These realities merit a review of Ghana's COVID-19 response so far, and a broader thinking about practical measures to contain and reverse the surge.

CURRENT RESPONSE AND RECOMMENDATIONS FOR STRENGTHENING IMPACT

Public health policies and implementation

The nine public and six private facilities conducting COVID-19 PCR testing in Ghana have averaged approximately 2500 daily tests since January 2021.⁴ That is a rate of ~7 tests/100 000 people per day, a marked increase from September to December 2020 rate of 3/100 000 people per day.⁴ The low testing rates in late 2020 followed a Ghana Health Service (GHS) decision to focus testing and tracing on symptomatic cases seeking care at hospitals, but at the expense of community surveillance.⁵ Contact tracing

Summary box

- ▶ Early in the COVID-19 pandemic, Ghana's response was hailed as one of the best among African countries; in particular its innovative testing approach and science-driven political leadership.
- ▶ However, a concerning upward trend of new cases, severe presentations and deaths has been observed since late 2020, which persists.
- ▶ Community-level transmission appears to have significantly spiked, concurrent with lapses in contact tracing and community-level testing.
- ▶ Risk communication and risk perception are inadequate, fuelling misinformation and poor compliance with infection and prevention control measures.
- ▶ There is an urgent need for detailed, age-disaggregated reports on new and severe cases and deaths from both public and private health sectors and from communities.
- ▶ We make recommendations for a comprehensive, data-driven response to sustain Ghana's COVID-19 containment measures, and practical guidance for health facilities, schools and workplaces.

consequently scaled down to near dormancy in parts of Ghana.

The rebound in COVID-19 testing in January 2021 was largely due to increased care-seeking for COVID-19-like symptoms at hospitals, greater demand for testing at private laboratories—driven in part by travel requirements—and the reactivation of contact tracing in some cities. However, Ghana still needs to further expand testing. An August 2020 seroprevalence study conducted in Accra and satellite communities estimated that one in five residents in that catchment area (about 1 million people) may have previously been infected with SARS-CoV-2.⁶ At the time of that report, Ghana's cumulative national case count was still under 50 000; unfortunately the current testing rate is essentially unchanged.⁴

The fast tracking of COVID-19 antigen test approvals by Ghana's Food and Drugs Authority will expand testing capacity beyond



© Author(s) (or their employer(s)) 2021. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

For numbered affiliations see end of article.

Correspondence to

Dr Nadia Adjoa Sam-Agudu; nsam-agudu@ihv.umaryland.edu

PCR testing. The Africa Centers for Disease Control and Prevention has recently published guidance on the use of antigen tests in COVID-19 screening and clinical diagnosis,⁷ which can be adapted to Ghana's local context. A central, patient-level, age-disaggregated register that collates case and mortality data from both private and public laboratories, inpatient facilities and communities would provide robust information to guide the response at multiple levels. **Table 1** provides recommendations for public health policy in key domains.

The clinical/health facility response

The first COVID-19 cases in Ghana were recorded on 12 March 2020. A day before, the president announced \$100 million funding from the Ministry of Finance to enhance COVID-19 preparedness and response, namely infrastructure, materials and equipment, and public education.² In subsequent addresses, the president stressed the importance of protecting healthcare workers, and announced the procurement of personal protective equipment (PPE) and hand sanitisers for health personnel.² The president also announced engaging local manufacturing companies to boost domestic PPE production, and providing enhanced insurance packages and allowances for healthcare workers.²

However, subsequently, healthcare facilities and workers have experienced inconsistent and inadequate PPE supply.⁸ Furthermore, many frontline healthcare workers have not been paid allowances, and some have threatened strike action.⁹ The implications are enormous, since a lack of a skilled workforce to manage this health crisis will further cripple the already overburdened health system. A new daily record for hospitalised patients in severe or critical condition was set on 29 January 2021, and since then, these patients have accounted for 31% of Ghana's 599 cumulative fatalities.⁴

In clinical practice, there are challenges with respect to the turnaround time for COVID-19 sample collection, analysis and reporting. Although the number of public testing facilities offering free testing has increased from two to nine nationally,⁴ there are still bottlenecks. Frequent shortages of testing reagents, high testing load, and resulting backlogs significantly delay result release and complicate clinical decision-making. The delays also pose an additional threat to community transmission control; regardless of symptoms, some individuals may not isolate until they obtain a positive test result.¹⁰

Besides healthcare worker protection and compensation issues, the health system has critical limitations in bed space, especially for intensive care. A recent study surveyed 25 health facilities across Ghana, including all 23 public regional and teaching hospitals.¹¹ Only 10 (43%) of the 23 public facilities had intensive care units (ICUs), providing 16 total functional ICUs when combined with two private facilities. With a total of 15 beds (surge capacity 36 beds), only 3 (18.7%) of the 16 ICUs were paediatric units; adult ICU bed capacity was

71 with a surge capacity of 113.¹¹ **Table 1** presents recommendations for the clinical/health facility response.

Children and schools

After initial lockdowns, the president announced that schools would reopen on 18 January 2021. He reassured the public that campuses were undergoing disinfection and that measures were in place for infection control.² However, there is a paucity of robust information on COVID-19 and on SARS-CoV-2 transmission dynamics in children, and periodic disinfections are woefully insufficient for preventing SARS-CoV-2 transmission. The Ghana Education Service (GES) has published a COVID-19 infection control policy for both day and boarding schools, which states that the government will provide schools with handwashing/hand-sanitising materials and reusable face masks.¹² School leadership is to use its discretion to address class size issues pertinent to their school/district. Schools have been mapped to health facilities that will provide further guidance on specific COVID-19 response protocols, presumably including thresholds for school closure in the event of clustered cases.¹² Procedures to ensure compliance with the GES COVID-19 guidelines are currently unclear, and there are already reports of clusters of students testing positive from on-campus transmission.¹³

As long as schools remain open, there should be routine surveillance of students, regardless of symptomatology, in addition to prompt case-cluster investigations to protect students and guide ongoing policy (**table 1**). Unfortunately, COVID-19 national-level data released by the GHS Disease Surveillance Department are not age disaggregated, thus marginalising children and missing opportunities to sensitise stakeholders and the general public on the pandemic's impact on children.⁴

Workplace protections

Concerns regarding COVID-19 exposure in workplaces have caused the president to implore employers to adopt shift systems or to allow employees to work remotely.² While public health officials often proffer advice for workplace safety at COVID-19 briefings, the GHS is yet to provide comprehensive guidance to support situational decision-making. Low-risk perception and fear of stigmatisation may be contributing to hesitancy to disclose COVID-19 status to employers and is influencing their handling of disclosures to other employees. This may result in failure of infected workers to isolate, either by non-disclosure or under duress from an employer.

A recent debacle in parliament—Ghana's most famous workplace—highlights the impact that lack of clarity has had on infection control. An effort to screen members of parliament (MPs) and their staff for COVID-19 was met by hesitancy around disclosure. As many as 60 MPs initially refused to get tested, and several tested positive refused to isolate and continued to attend sittings.¹⁴ Only after 2 weeks of disregard for infection control did parliament shut down for 21 days, in the wake of 17 infections

Table 1 Key recommendations for strengthening Ghana's COVID-19 response

Response domain	Issues of concern	Key recommendations
1 Public health policies and implementation	<ul style="list-style-type: none"> ▶ Low testing rates, particularly, low community case finding and surveillance ▶ Scarce epidemiological data on children ▶ Limited availability of robust, nationwide, patient-level data ▶ Healthcare workers' risk, personal health and compensation 	<ul style="list-style-type: none"> ▶ GHS to establish routine community surveillance for age groups, including (school) children ▶ Maintain central patient registry for case reporting from public and private facilities ▶ Use rapid antigen tests to screen for active cases, and antibody tests to assess for past infections in the community ▶ PPE, salaries and benefits for healthcare workers should not be compromised; GoG to support responsible agencies while holding them accountable for lapses ▶ Healthcare workers to receive subsidised or free care and treatment for COVID-19
2 Vaccine distribution and uptake	<ul style="list-style-type: none"> ▶ Attaining adequate herd immunity to protect the general population ▶ Misinformation on vaccines, including from prominent citizens ▶ High vaccine hesitancy and low vaccine acceptance 	<ul style="list-style-type: none"> ▶ Surveillance and hospital data on COVID-19 community hot spots and subpopulations at high risk of severe disease and death should be prioritised ▶ Data on vaccine hesitancy in hot spots and among high-risk populations should be urgently collected and used to drive risk communication, vaccine advocacy ▶ Misinformation and irresponsible statements by prominent individuals should be swiftly debunked on multiple platforms
3 Clinical/health facility	<ul style="list-style-type: none"> ▶ High TAT for COVID-19 test results ▶ High COVID-19 patient caseload ▶ Limited hospital bed space 	<ul style="list-style-type: none"> ▶ Ramp up public lab capacity to handle testing workload, and reduce delays. For example, revenue from mandatory airport testing can be used to support public labs ▶ Institute a minimum TAT for COVID-19 tests as a quality measure for labs ▶ Engage and compensate willing retired healthcare workers to ease patient caseload during second or subsequent waves ▶ Construct more COVID-19-specific facilities (faster to complete); complete construction of district hospitals promised by GoG in 2020
4 Children and schools	<ul style="list-style-type: none"> ▶ Basic IPC guidance for schools available, but inadequately disseminated/implemented ▶ Detecting outbreaks, and guidance for closing/reopening schools in case of outbreaks not available ▶ Children and teachers in resource-limited schools left relatively unprotected and exposed, as schools are open 	<ul style="list-style-type: none"> ▶ GES to intensify dissemination of COVID-19 guidance ▶ Updated guidance and follow-up for compliance to reinforce infection control ▶ GHS to provide consistently age-disaggregated data that include information on paediatric COVID-19 cases and deaths ▶ Community surveillance data to inform whether/how schools can stay open, and thresholds for closing and reopening ▶ Prioritise teachers for vaccination
5 Workplace protections	<ul style="list-style-type: none"> ▶ Lack of practical IPC guidance for the workplace ▶ Stigma and fear of loss of income driving poor compliance with IPC ▶ Poor examples set by political leaders in the workplace 	<ul style="list-style-type: none"> ▶ GoG to provide adaptable guidance for workplace protection ▶ Workplaces to provide options for telework/work from home where feasible ▶ GoG to ensure that officials and institutions are in compliance with IPC measures; rule flouters should be reprimanded

Continued

Table 1 Continued

	Response domain	Issues of concern	Key recommendations
6	Media and public communication	<ul style="list-style-type: none"> ▶ Low public trust in political and health officials and agencies ▶ Science journalism is often suboptimal; media has contributed to misinformation ▶ COVID-19 risk and vaccine communication is poor 	<ul style="list-style-type: none"> ▶ Engage, inform and update the public on strategies taken and progress on their implementation ▶ Radio, TV, online and community fora with experts to conduct question and answer sessions with the public ▶ Ministry of Information to co-develop and lead strategic communication blitz in partnership with private agencies and individual champions who have public trust

GES, Ghana Education Service; GHS, Ghana Health Service; GoG, Government of Ghana; IPC, Infection Prevention Control; PPE, personal protective equipment; TAT, turnaround time.

among the 275 MPs, and 151 among the 500 staff tested as of 10 February 2021.¹⁴ The indecisive handling of this workplace outbreak mimics challenges others are having in managing and containing employee infections. A comprehensive guide and a workplace preparedness checklist would be a helpful resource to replace discretionary management with best practices (table 1).

Vaccines

Ghana aims to vaccinate 20 million of its ~32 million residents by the end of October 2021, and will source the required doses through multilateral agreements and bilateral deals. Ghana was the first country to receive a vaccine shipment from the COVAX facility; some 600 000 Oxford-AstraZeneca vaccine doses were delivered on 24 February 2021. From 1 March, doses are being administered to a priority group comprised of frontline health-care workers and security personnel, persons over 60 years old, those with comorbidities and some government officials. This is one of four population segments that will be vaccinated in priority order. It is unclear when people in the other three segments will receive their first shots. For now, pregnant women and children under 16 years are excluded, due to limited data from vaccine trials.²

Widespread COVID-19 vaccine hesitancy must be addressed urgently, and messaging to that effect should be informed by continuous data collection on public knowledge and attitudes. Health officials still need to confront the role of social and digital media in the ongoing infodemic and must be proactive in monitoring and countering digital misinformation. As part of addressing this hesitancy, the president, vice president and their spouses committed to taking their shots in public to allay concerns about vaccine safety.²

Media and public communications

The Ghanaian media has played a significant role in keeping the general public informed about the pandemic, the government's management plans and preventive measures. Besides providing up-to-date information from official sources, some media outlets run education

programmes and support community engagement and implementation of containment measures.¹⁵

However, the media has not consistently provided science-driven coverage of the pandemic in Ghana. Government announcements on COVID-19 response measures and data have been presented with little critical examination or in-depth investigation on whether implementation is matching rhetoric. Independent health professionals may not be given much of a platform, which means critical questions about preventive measures, PPE, testing, and tracing have gone unasked or unaddressed.¹⁶

During the first wave of the pandemic, 'glossy' media coverage helped create the perception that the government was on top of the crisis, giving the general population a false sense of security, and fueled laxity and non-compliance with infection control measures. There has however been a shift in coverage since the onset of the second wave around November 2020. Media outlets have since engaged health experts, investigated claims of shortages of PPE and hospital beds, and interviewed everyday Ghanaians about safety measure concerns.^{8,9}

To slow and sustainably reverse the trend of COVID-19 in Ghana, media outlets must go beyond simply reporting data released from public health authorities. Science journalism in Ghana needs more expertise and elevation,¹⁷ and especially for this pandemic should include robust evidence-backed reporting, fact-checking government data, countering community-wide misinformation, and providing platforms to concerned citizens and experts to ask and address critical questions, and to discuss what the government is doing in terms of implementation of public health response plans.

CONCLUSIONS

Ghana's COVID-19 response is constrained by limited resources and inadequate global cooperation to fight the pandemic, which are partly responsible for challenges in policy implementation. However, the gulf between planning and practice has been widened by an often reactionary stance from policymakers, limited

data collection, inconsistent health system supplies, bad public example and an information vacuum created by poor risk communication. These must be addressed, with leverage on implementation science approaches, for Ghana to contain the ongoing surge and take full advantage of the potential for vaccines to help turn the tide. Africa's Black Star can do even better, and it must.

Author affiliations

¹Department of Health Policy and Management, School of Global Public Health, New York University, New York, New York, USA

²Media Content Development, Réseau Afrique Digital, Accra, Greater Accra Region, Ghana

³Department of Internal Medicine and Therapeutics, School of Medical Sciences, University of Cape Coast, Cape Coast, Central Region, Ghana

⁴Department of Medicine, Cape Coast Teaching Hospital, Cape Coast, Central Region, Ghana

⁵West African Centre for Cell Biology of Infectious Pathogens, University of Ghana, Legon, Greater Accra Region, Ghana

⁶Institute of Human Virology and Department of Pediatrics, University of Maryland School of Medicine, Baltimore, Maryland, USA

⁷Department of Paediatrics and Child Health, School of Medical Sciences, University of Cape Coast, Cape Coast, Central Region, Ghana

⁸International Research Center of Excellence, Institute of Human Virology Nigeria, Abuja, Nigeria

Twitter Nana Kofi Quakyi @nkquakyi, Nana Ama Agyemang Asante @JustNanaAma, Yaw Bediako @YawBediako_ and Nadia Adjoa Sam-Agudu @NASAdoc

Acknowledgements The authors are grateful to all health, media, policymaking and civil society personnel, and to everyday individuals in Ghana who are working in response to the COVID-19 pandemic.

Contributors NKQ and NAS-A conceptualised the article and drafted the commentary, with significant input from NAAA, YAN and YB. All coauthors provided substantial contributions in terms of critical revision of the draft, and reviewed as well as approved the final version submitted for publication.

Funding YAN and NAS-A were supported for this work by an award to the Central and West Africa Implementation Science Alliance (CAWISA) from the USA's Fogarty International Center.

Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; internally peer reviewed.

Data availability statement There are no data in this work.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iD

Nadia Adjoa Sam-Agudu <http://orcid.org/0000-0001-5052-7730>

REFERENCES

- Ofori-Atta K. *Statement to Parliament on economic impact of the COVID-19 pandemic on the economy of Ghana*. Accra: Ministry of Finance, 2020.
- The Presidency (Republic of Ghana). *Speeches*, 2020. Available: <https://presidency.gov.gh/index.php/briefing-room/speeches> [Accessed 28 Feb 2021].
- Darko KA. More contagious UK strain dominating Ghana's current Covid-19 transmission – WACCBIIP. Joy Online News, 2021. Available: <https://www.myjoyonline.com/more-contagious-uk-strain-dominating-ghanas-current-covid-19-transmission-waccbip/> [Accessed 15 Feb 2021].
- Ghana Health Service. *Ghana's Outbreak Response Management Updates: Ghana Health Service*, 2021. Available: <https://ghanahealthservice.org/covid19/archive.php> [Accessed 3 Feb 2021].
- Arku J. COVID-19: Symptomatic persons to be prioritised for testing as GHS clears backlog of 23,000 samples. Graphic Online, 2020. Available: <https://www.graphic.com.gh/news/general-news/covid-19-symptomatic-persons-to-be-prioritised-for-testing-as-ghs-clears-backlog-of-23-000-samples.html> [Accessed 3 Feb 2021].
- West African Centre for Cell Biology of Infectious Pathogens. *1 million people already exposed to COVID-19 in Accra, scientists estimate*. Accra: West African Centre for Cell Biology of Infectious Pathogens, 2020.
- Africa Centres for Disease Control and Prevention. *Interim guidance on the use of rapid antigen tests for COVID-19 response*. Addis Ababa: Africa Centres for Disease Control and Prevention, 2020.
- Welle D. Healthcare workers in Ghana lack equipment in pandemic, 2020. Available: <https://www.dw.com/en/healthcare-workers-in-ghana-lack-equipment-in-pandemic/av-54901513> [Accessed 3 February 2021].
- Tawiah O. KATH's COVID-19 Management Team Threatens to Strike over Unpaid Allowances. Joy Online News, 2021. Available: <https://www.myjoyonline.com/kaths-covid-19-management-team-threatens-to-strike-over-unpaid-allowances/> [Accessed 3 Feb 2021].
- Sawer L. Stay home while awaiting COVID-19 test results, Dr Kenu. Ghana News Agency, 2021. Available: <https://www.gna.org.gh/1.19780481> [Accessed 7 Feb 2021].
- Siaw-Frimpong M, Touray S, Sefa N. Capacity of intensive care units in Ghana. *J Crit Care* 2021;61:76–81.
- Ghana Education Service. *Guidelines for school reopening during COVID-19*. Accra: Ghana Education Service, 2021.
- Ansah M. Akosombo international school adopts shift system to stop spread of COVID-19. Citi Newsroom, 2021. Available: <https://citinewsroom.com/2021/02/akosombo-international-school-adopts-shift-system-to-stop-spread-of-covid-19/> [Accessed 12 Feb 2021].
- Kokutse F. Ghana suspends Parliament amid a surge in COVID-19 cases. associated press, 2021. Available: <https://apnews.com/article/ghana-health-coronavirus-pandemic-africa-west-africa-34f5f94ce8379acbcec302a414477dee> [Accessed 12 Feb 2021].
- Karnaku NN. Koforidua technical university lauds Citi TV, Zoomlion for fumigation exercise. Citi Newsroom 2020, 2020. Available: <https://citinewsroom.com/2020/04/koforidua-technical-university-lauds-citi-tv-zoomlion-for-fumigation-exercise/> [Accessed 7 Feb 2021].
- Knott S. Ghana's Decision to Lift Partial COVID-19 Lockdown Criticized by Some. Voice of America, 2020. Available: <https://www.voanews.com/africa/ghanas-decision-lift-partial-covid-19-lockdown-criticized-some> [Accessed 6 Feb 2021].
- Appiah B, Gastel B, Burdine JN, et al. Science reporting in Accra, Ghana: sources, barriers and motivational factors. *Public Underst Sci* 2015;24:23–37.