BMJ Global Health

A step towards reinvigorating the COVID-19 response: an intra-action review of the WHO Regional Office for Africa Incident Management Support Team

Thierno Balde,¹ Boniface Oyugi,^{1,2} Ebenezer Obi Daniel,¹ Joseph Okeibunor ¹ Roland Kimbi Wango,³ Hillary Njenge,⁴ Pierre Ongolo Zogo,⁵ Helena O'Malley,¹ Etien Luc Koua,¹ Adama Thiam,¹ Dick Chamla,¹ Fiona Braka,¹ Abdou Salam Gueye¹

To cite: Balde T, Oyugi B, Daniel EO, *et al.* A step towards reinvigorating the COVID-19 response: an intra-action review of the WHO Regional Office for Africa Incident Management Support Team. *BMJ Glob Health* 2023;**8**:e012258. doi:10.1136/ bmjgh-2023-012258

Handling editor Seye Abimbola

Received 9 March 2023 Accepted 24 May 2023



© Author(s) (or their employer(s)) 2023. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by RM.I

For numbered affiliations see end of article.

Correspondence to Boniface Oyugi; oyugib@who.int

ABSTRACT

The WHO Regional Office for Africa (AFRO) COVID-19 Incident Management Support Team (IMST) was first established on 21 January 2020 to coordinate the response to the pandemic in line with the Emergency Response Framework and has undergone three modifications based on intra-action reviews (IAR), An IAR of the WHO AFRO COVID-19 IMST was conducted to document best practices, challenges, lessons learnt and areas for improvement from the start of 2021 to the end of the third wave in November 2021. In addition, it was designed to contribute to improving the response to COVID-19 in the Region. An IAR design as proposed by WHO, encompassing qualitative approaches to collecting critical data and information, was used. It employed mixed methods of data collection: document reviews, online surveys, focus group discussions and key informant interviews. A thematic analysis of the data focused on four thematic areas, namely operations of IMST, data and information management, human resource management and institutional framework/governance. Areas of good practice identified, included the provision of guidelines, protocols and technical expertise, resource mobilisation, logistics management, provision of regular updates, timely situation reporting, timely deployment and good coordination. Some challenges identified included a communication gap; inadequate emergency personnel; lack of scientific updates; and inadequate coordination with partners. The identified strong points/ components are the pivot for informed decisions and actions for reinvigorating the future response coordination mechanism.

INTRODUCTION

COVID-19 has spread to all countries in the African continent, leading to unprecedented challenges in all spheres—health, security, political, economic, social and technological.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ The coordination of the COVID-19 response has been demanding and has engaged the interaction of factors, such as sudden and unexpected events, great uncertainty, severe resource shortages, considerable amounts of time, pressure and urgency, large-scale impact and damage, cases and deaths, and disruption of critical coordination support infrastructure.

WHAT THIS STUDY ADDS

- ⇒ There are cross-cutting practices in the four thematic areas of focus: operations of Incident Management Support Team; data and information management; human resource management; and institutional framework/governance, which are key to enhancing coordination of the pandemic.
- ⇒ The coordination effectiveness among the three levels of WHO—country, regional office and headquarters—was imperative in ensuring informed coordination of the response and decision-making.
- ⇒ Many factors were pivotal in responding adequately to the pandemic. The impact of the early deployment of technical expertise in response to the pandemic was essential in building the capacity of the local staff to respond appropriately.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The review has provided critical lessons for establishing future pandemic coordination modalities.

The health and economic impacts of the pandemic highlighted the challenges and weaknesses facing health emergency preparedness and response (EPR) in African countries. The pandemic increased the burden on the already strained healthcare systems in



the African continent, eroding the many gains previously made in strengthening the health system. The health sector in the Region has traditionally been characterised by inadequate resources, including health personnel, equipment and funding, as well as a high burden of infectious diseases, such as Ebola, tuberculosis, HIV and malaria; the pandemic further stretched the available resources when the cases continued to rise.²

The resilience of a health system is driven by the need to ensure continuity of essential service provision.³ In the African continent, countries continued to build on resilient systems with the support of various partners. However, since the onset of the pandemic, routine health services have been severely disrupted, including immunisation and antenatal services.² ⁴⁻⁶ The COVID-19 pandemic in nearly all countries of the African Region affected three spheres of essential services: it limited the access capacity (through sociocultural, financial and physical barriers); the quality of services provided; and the demand for essential health services.³ The main challenges associated with service disruptions were primarily linked to the inability to scale up access to essential COVID-19 tools, difficulty in adapting strategies to maintain service delivery and the inability to respond to health system challenges. 4-6 Furthermore, the fear of COVID-19 may have affected health service delivery because communities and health workers shunned health facilities. Repurposing human resources and diverting financial and logistical resources to the COVID-19 response may have deprived other priority health programmes.³ Many countries took measures to contain the pandemic, such as movement restrictions and nationwide lockdowns, closure of schools and discontinuation of community health service outreaches for immunisation, family planning and other health services, which may have affected the delivery of services. While countries imposed lockdown measures to curb the spread of disease, research showed that such measures had little to no public health benefits.⁷⁸

The coordination mechanism established for emergency response is useful for maintaining and establishing a smooth information and decision-making flow and an effective working relationship between various entities involved in the emergency response. The coordination of the COVID-19 response has been demanding and has engaged the interaction of factors, such as sudden and unexpected events; great uncertainty; severe resource shortages; considerable amounts of time, pressure and urgency; large-scale impact and damage; cases and deaths; and disruption of critical coordination support infrastructure. 10 Coordination has been the most challenging aspect of this pandemic response because of the complexity of the entities involved strategically, operationally, administratively and geographically, as well as the often-changing dynamics of the emergency, which is often time-sensitive. 10

The WHO Regional Office for Africa (AFRO) COVID-19 Incident Management Support Team (IMST) was first established on 21 January 2020 to coordinate the response to the pandemic in line with the Emergency Response Framework (ERF)⁹ and has been used to manage the pandemic. An initial review of the IMST structure was carried out in March 2020, which prompted the scaling up of response operations at AFRO and WHO country offices (WCOs) following the levels of intensive response operations and contributing to setting the global evaluation of the WHO response. A second review was carried out 6 months after the first review to gauge progress and identify the gaps and the challenges faced by the response teams at regional and country levels, help to identify opportunities and recommend the way forward towards improving the response operations across the Region. The findings of the review provided lessons that have been instrumental in further asserting the IMST as part of the Incident Management System (IMS) included in the ERF. In most countries, the IMSTs established at the WCOs served as exemplars to set up a ministry of health (MoH) IMS/emergency operations centre (EOC).¹¹

In this study, we conducted an intra-action review (IAR) of the WHO AFRO COVID-19 IMST following the epidemiological evolution of the virus in Africa, the response actions, accomplishments and lessons learnt previously. The scope of this IAR was mainly to proffer learning from the response actions conducted during the Region's third wave of the COVID-19 pandemic involving the pillars of the AFRO COVID-19 IMST. The aim of the study was to document best practices, challenges, lessons learnt and areas for improvement from the start of the year through the end of the third wave. The findings and recommendations of the IAR can inform the improvement of the response of public health emergencies in the Region. The IAR sought to make proposals to modify the IMST structure, composition and modes of operation, in line with current and emerging realities related to the COVID-19 pandemic. These proposals were key to ensuring better ways of working together, linkages across pillars and programmes to efficiently support countries, including better communication of WHO's work to external audiences, but also to make proposals on the response and readiness priority actions to be conducted during the months leading up to the next COVID-19 waves in the African Region. Furthermore, it sought to make proposals for possible future strategic propositions and potential response scenarios for COVID-19 pandemic forecast. However, the latter areas have been published elsewhere and are not part of this paper. 12-14

METHODS

Study design

This IAR was designed as proposed by WHO, encompassing qualitative approaches to collect critical data and information. $^{15\,16}$



Types of documents	Examples	No
Guidelines	Technical guidance tools	51
Minutes/notes for the record	Health operations meeting Strategic meeting Oversight board meeting COVID-19 country focal point meeting Situation of concern action tracker Country operational needs tracker	15 10 5 99 17 10
MST presentations	Thematic presentations made during the IMST coordination meetings	128
Profiles	Weekly country profiles (47 WHO countries)	20
Reports	IMST coordination reviews	2
Total .		357

Study participants and sampling

Participants targeted in this IAR were COVID-19 IMST staff at WHO AFRO, the two Hubs (Kenya and Dakar) and WCOs. The aim was to gather and generate an in-depth understanding of the operations of the COVID-19 IMST by engaging participants who had rich information, rather than interviewing a representative sample of all stakeholders involved in the operations. ¹⁷ The purposive criterion was a participant's involvement in the IMST operations as an IMST member. IMST team leads were requested to nominate team members who had been involved in the IMST process from its inception to the conduct of the IAR. The participants' demographic information is not shared to maintain confidentiality and anonymity.

Data collection approaches and processes

Document reviews

For the purpose of this IAR, documents that contained potentially relevant information on the COVID-19 IMST processes, such as reports, minutes, action points, profiles, notes for the record and presentations from previous IMST meetings, the strategic and oversight board meetings from the central repository (share point) of the IMST strategic health operations centre (table 1), were identified and used. As part of a quality improvement method set in the objectives, the review team reviewed elements captured around potential strategic orientations and future organisation of the IMST.

Online survey

All COVID-19 IMST staff at the Regional Office, hubs and the WCOs (n=195) were contacted using a semistructured anonymous online survey (KoBo Toolbox) shared through email to obtain information on the functionality (achievements, enabling factors, limiting factors), quality and timeliness of support, and impact of the IMST (perceptions), best practices, challenges and future propositions of the IMST. The survey tool was shared together with the information sheet, which the participants reviewed and gave informed consent before responding. A total of 36 responses were received (across

all the IMST teams: case management (n=5), infection prevention and control (n=4), risk communication and community engagement (n=2), EOC and IMS support (n=1), epidemiology, analytics and surveillance (n=3), partnership and resource mobilisation (n=1), procurement supply and logistics (n=4), media and communication (n=3) and one each for coordination cell, hubs, information management cell, and strategic and technical partnership).

Focus group discussion

Four focus group discussion (FGD) sessions involving four pillars: vaccination (n=15), health operations and technical expertise (n=11), operations support and logistics (OSL (n=8)), and epidemiology, analytics, and surveillance (n=13), were conducted virtually through Microsoft Teams/Zoom based on an FGD guide. The FGD guide was adapted from the WHO IAR for the COVID-19 response guide. ¹⁶ Accordingly, all pillar members were invited to the group discussion, facilitated by two review team members. This approach increased participation and ownership of pillar/team members. Two note-takers (one from the review team and the other from the pillar) summarised each FGD, after which they were constellated. The FGDs lasted between 90 and 120 min.

Key informant interview

Additional information was collected from key informants identified purposively. They included senior managers and pillar leads (n=4), incident leaders and managers (n=2), and WHO representatives (12). One review team member (BO) reached out to the participants and scheduled an in-depth interview at the convenience of the participants. The interviews were conducted through Microsoft Teams/Zoom. Those who were unable to participate were requested to designate a representative participant. Further, those who could not still make it were provided with a list of questions focusing on functionality, best practices, challenges and future propositions of the IMST and submitted written feedback regarding their experience as part of the response to the

Thematic area	Areas of good practices	Challenges
Operations of IMST	 Provision of timely pillar-specific guidelines, protocols and technical expertise that were useful to guide countries and partners in managing the pandemic. Timely mobilisation of financial resources to respond to the pandemic. Fast-tracking transportation and logistical support for materials and commodities. 	 Insufficient coordination with other partners in terms of getting information for informed decisions. Lack of integrated approach by all pillars.
Data and information management	 Provision of regular updates and regular communication complemented situational analyses. Timely situation reporting of country-specific situational reports and data comparisons were useful tools for decision-making and analysis. The daily availability of information and data on COVID-19 and the 'talking points' was very useful. 	► The lack of context-specific information on COVID-19 as regards the much-needed scientific updates on modelling scenarios, vaccination and boosters
Human resource management	 Good support from country focal persons, engaged countries, ministries and partners. Timely deployment of experts. Increased media 'spokespersons' capacity building of different staff on communication of pandemic information to the public. 	 Inadequate emergency personnel. Correlative low staff performance because of workload.
Institutional framework/ governance	 Effective coordinated approach of COVID-19 IMST. Good technical leadership 	► The lack of communication of the full list and functions of staff of the IMST structure.

pandemic and the support expected and received from the IMST.

Data analysis

All audio files were transcribed verbatim by one member (BO). All transcripts and documents were uploaded to the NVivo software for proper organisation during analysis. All the transcripts were reviewed to ensure transcription accuracy, then they were compared with the audio files and cleaned when necessary. Guided by Braun and Clarke's six-step approach to analyse data thematically, ¹⁸ the authors immersed themselves in the data for familiarisation, generated related codes (thematically), identified patterns between codes and grouped similar codes together, reviewed the coherence between the themes (which produced four main themes, namely operation of the IMST, human resources, data and information and institutional framework/governance; with multiple subthemes), applied the approved themes across the data, and produced a synthesis of the findings. The findings were reviewed and approved by all the authors.

RESULTS

The themes identified pertained to the four areas of focus—operation of the IMST, human resources, data and information, and institutional framework/governance. A summary of the themes is as shown in table 2.

Operations of IMST

Areas of good practice

Guidelines, protocols and technical expertise

It was perceived that WHO AFRO provided timely pillar-specific guidelines and protocols that were useful in guiding countries and partners in managing the pandemic, and which were periodically updated as

necessary. The provision of technical support by the different pillars was acknowledged as having been timely and this was seen to have facilitated the required changes in the quality and performance of specific pillars, as inferred from the respondents' feedback below:

IPC support received from [country A] country office via AFRO was first class and well appreciated because of the quality and performance of the officer deployed in ensuring a better understanding of IPC challenges. Because of this WHO has emerged as the lead in IPC technical support among partners working with the government. – (Respondent 9, IMST member);

What has worked well is the publication of expertise documents and standards from WHO recommendation, most of them work timely [promptly]. If we had questions about selection, usually the document was there. So, all of that went well. I think WHO played its role quite well as a technical expert organization. – (IMST member, FGD 1).

Resource mobilisation

The WHO AFRO IMST was acknowledged as having supported the countries and the pillars' activities through the timely mobilisation of financial resources to respond to the pandemic. It was reported that the funds to fill critical gaps were allocated and released on time, as highlighted in the responses below:

One of the major achievements was the notion of quick funding, as ceding money for the situation of concern, and that situation of concern was to quickly respond to the country and stop the discussion back and forth' (IMST member, FGD 2)

Also, the oxygen scaling up, you know, hopefully, if it's associated with a financially managed maintenance programme, it will have an impact on better access to



oxygen. Now, with the support of the deployment of US\$ 1 billion from the Global Fund, I think that will have impact on the country.' – (Respondent 2, AFRO IMST member)

Logistics management

A fast track was identified for—transporting materials and commodities (especially personal protective equipment and laboratory reagents), including the shipment of donations at the beginning when they were hardly available, and this helped mitigate the pandemic's adverse impact on the population. For example, the efficacy of the aforementioned logistics increased the number of tests, strengthened surveillance, and improved case detection in the Member States.

Challenges of IMST operations

Insufficient coordination with other partners in terms of getting information for informed decision-making was significantly reported as a conspicuous challenge by the respondents. This was seen as a clog in the system, as it affected the operational efficacies of WHO, especially at the country level. According to one respondent,

Insufficient coordination with other partners for information sharing affected our operations, as decisions were hinged on the regular release of the various research findings to which other partners like CDC have access, while we are [sic] not (Respondent 4, IMST member).

Lack of an integrated approach

This included establishing a vertical outbreak response system within the IMST system, which incorporates a surveillance system with rapid response, case investigation, contact tracing, mortality surveillance and points of entry components. It is not sustainable in the long run. An integrated approach envisioned integrating the response strategies into existing health sector-wide development coordination system plans and programming. Respondents perceived the adoption and practice of an integrated approach by all pillars as still operating at an abysmal level. They opined that this affected the operational efficiencies in various ways. An excerpt from the responses (which was replicated in other similar responses) is captioned below:

The integrated approach remains challenged as some pillars continued to conduct business vertically, only coming in to do their component and missing out on team sharing and learning of lessons..... (IMST member, FGD 4)

Data and information management

Areas of good practices

Provision of regular updates

The WHO-AFRO IMST was commended for the provision of regular communication updates to complement the situational and communication updates provided by WHO headquarters in Geneva. This area was regarded as useful, as corroborated by the respondents:

....and providing monitoring of what has been done to that set of slides that was meant for multiple audiences, I think that had an impact, because we could move with, even if small funding... move with that, meet partners, get funding from bigger partners, and at least, you know, sort of intervene in the hotspot (Respondent 6, IMST member).

Timely situation reporting

The country-specific situational reports and data comparisons were perceived to be shared in a timely manner, and they were useful tools for decision-making and analysis. This was seen to be further enhanced by the online digital platform using the COVID-19 Dashboard, which was reportedly helpful in tracking performance. The statement from one of the respondents gave an insight into this best practice:

We received good support from the [emergency hub]. They regularly organize three level teleconference meetings for information sharing and coordination.... They regularly share relevant information and useful tools for surveillance and laboratory testing. (Respondent 14, IMST member).

Organisational information dissemination

As inferred from both FGD and key informant interview respondents' feedback, the daily availability of information and data on COVID-19 and the 'talking points' were very useful and prepared relevant staff for interviews, participation in panels or meetings where WHO had to give updates.

Challenges of data and information management Lack of scientific updates

It was noted that information on COVID-19 was not shared, with specific regard to the much-needed scientific updates on modelling scenarios, vaccination and boosters, which made them rely on information from other sources, thus prompting WCOs to acquire data from other sources, including communication with partners, with limited guidance from AFRO:

No scientific updates shared by AFRO on COVID-19 (modelling, vaccination, boosters), which made WCO directly acquire data and communicate with partners without clear guidance from AFRO. Some updates were just delivered information sharing, not seriously considering what points are missing at WCO (Respondent 7, IMST member).

Human resource management

Areas of good practices

Good support from country focal persons

The prompt action taken by the WHO AFRO IMST at the onset of the pandemic and through the different waves by designating specific country focal persons (CFPs) to Member States, was well applauded by the study respondents and seen as an action in the right direction. The consistent engagement of CFPs with WCOs through three-level teleconferences, and directly with counterparts, was seen to be efficient in coordinating the flow



of information and the response strategies/support. One of the positive effects of this action was expressed in the respondent's feedback below:

The coordination meetings on Mondays and Fridays as coordinated by the CFPs were focused and brief and relevant information was shared that ensured all IMs and WCOs were on the same page (Respondent 15, IMST member).

Timely deployment of experts

The early deployment of experts was singularly appreciated by the respondents. It was a timely shock absorber, especially in mitigating the adverse impact of the pandemic, with direct and ripple effects on diverse areas. Below is a specific statement made in this regard by a respondent:

The presence of case management consultants was especially positive as it responded directly to one of the felt challenges during the first wave—the high case fatality—and contributed to its reduction. It led to improved case detection, diagnostics and early management of confirmed cases with reduced deaths. (Respondent 8, IMST member)

Spokespersons' capacity building

The media/information component is reported to have been revamped with the training of more spokespersons, resulting in improved capacity and performance. This reportedly led to the assignment of separate mandates to different spokespersons at country level. It was noted that this development contributed significantly to timely delivery of messages to the public, thereby curbing infodemics.

Challenges of human resource management Inadequate emergency personnel

It was observed that the scale of the COVID-19 pandemic and the lightning speed of unexpected events potentiated an acute shortage of needed emergency staff. For example, some respondents shared the following opinions:

There was a shortage of good and qualified personnel because of the emergency element of COVID-19, compounded by the demand by donors for expansion of staff at short notice (20% increase of staff in a week) which was unsustainable. (IMST member, FGD 4)

This high demand is especially felt given the prevailing context of inadequate WCO staff numbers—WCO MW has only two full-time effort EPR staff, with the other IMT members being repurposed technical staff who have to balance prioritizing COVID-19 response activities and continuity of their own primary core accountabilities in the context of the pandemic. (Respondent 8, IMST member).

Correlative low staff performance

There was a perceived inverse relationship between the required speed at which some activities were to be done and the efficacy of some staff on their contributive role to achieve the desired result, which was precipitated by the urgency of the required actions. This was seen to have slowed down some important aspects of the response activities, with the resultant work overload.

Institutional framework/governance

Areas of good practices

Laudable coordination

The coordination approach of the COVID-19 IMST was seen to be effective, despite the huge work pressure at all levels of WHO, especially during the pandemic:

All the clusters got together, and pillars were defined. And each pillar body was leading with all the technical advisors working with them in terms of supporting the countries. (IMST Member, FGD 1)

There was increased and better engagement with the IMST pillar leads with experts in the WCO IMT, particularly epidemiology and surveillance, vaccination, case management, IPC and RCCE (Respondent 11, IMST member).

This coordinated approach was perceived to have facilitated sound collaboration among IMST team members, thereby aiding the countries in the implementation of required pandemic responses.

Effective technical leadership

There was perceived satisfaction with the leadership provided by the WCO teams, which offered technical support to the MoH and other partners. This reportedly enhanced the organisation's credibility:

...there was increased engagement between the IM and Deputy IM of the IMST and the WCO IMs. WCO took the technical lead and the people (from WCO and MoH) came together to work towards the same goal on various issues. The system got mature enough at some point to be able to solve the problem by itself without external intervention. (Respondent 13, IMST member).

Challenge of institutional framework/governance Communication gap on IMST team members' profile

According to respondents, the most common and recurring challenge in this regard is lack of communication of the full list and function of staff working in the IMST structure. One of the respondents offered the following feedback:

I have been approached by different people in AFRO mostly with requests for information on COVID-19 response, without fully understanding who these people are and what their role is in the AFRO COVID-19 IMST structure. (Respondent 2, AFRO IMST member).

DISCUSSION

This study provides insights into good practices, challenges and potential recommendations for reinvigorating the COVID-19 IMST for better performance. There are four areas of focus—operations of the IMST, human resources, data and information, and institutional framework/governance.



On the operations of the IMST, the pillar-specific guidelines and the provision of technical expertise helped the countries to respond promptly with resultant improvement in the pillar's efficacy. Besides, resource mobilisation and logistics management were highly rated in the pandemic response management. The findings augment the WHO global analysis of the COVID-19 IAR report, highlighting the view by Member States that these factors were key in responding appropriately to the pandemic.²⁰ Interestingly, the WHO Eastern Mediterranean Region reported a similar experience on the impact of the early deployment of technical expertise in response to the pandemic, which was essential in building local staff capacity to respond as appropriate.²¹ The identified challenge of weak partner coordination and unintegrated approach adversely impacted the operation of the IMST, akin to what has been reported elsewhere, especially at various times of the pandemic. 22-25

The regular updates to Member States from the IMST, situation reports complemented with data collection and sound information dissemination were identified as key strengths. Overall, they enhanced strategic decisionmaking across the countries. Researchers have emphasised the importance of sharing reliable and data-driven information during the COVID-19 pandemic and its implication.²⁶ The importance of using the appropriately developed tool for data collection and visualisation in emergencies across countries, including lessons learnt before and during the COVID-19 pandemic, has been highlighted as being essential. 27-29 The important role of scientific investigation, including using public health intelligence strongly supported by regular updates, is undisputed, 30 31 although a challenging area to be remedied by the IMST.

Timely allocation of CFPs and deployment of staff, including strengthening their capacity, were pivotal to achieving COVID-19 response objectives across countries. Akin to our findings, the positive influence of a well-capacitated health workforce and experts on the pandemic response has proved to be essential. ³² ³³ However, the inadequacy and plummeting performance of health workers due to burn-out and the mental health impact of working during the pandemic are key elements that need urgent consideration. Previous work has shown the importance of enhancing staff well-being without prevent burn-out. ³⁴ Critically, the strategic management of human resources is indispensable, as it determines the efficacies of other resources mobilised towards emergency responses. ³⁵ ³⁶

The coordination effectiveness among the three levels of WHO: country, regional office and headquarters was imperative in ensuring informed decision-making in diverse ways, which is consistent with findings reported in multiple countries where IAR was previously conducted. Significantly, the importance and impact of effective coordination among top leadership levels in this context has been shown before, ³⁷ 38 including enhancing the cultural work ethics of the organisation. The lack of

Box 1 Recommendations

- Harmonising and improving monitoring and evaluation systems, such as using key performance indicators (KPIs), would guide activity implementation and tie indicators to the overall work. Harmonisation would further help improve the analysis of data/information to be shared with Member States, as it will speed up the delivery of needed support.
- Supporting countries to scale up operational/implementation research and data-sharing mechanisms. Documentation of the effects and impact on the pandemic response with a focus on the health system, economy and livelihood, including streamlining the publications process, should be enhanced to align the response.
- Strengthening workforce technical capacity in-country by introducing effective two-way communications/collaborations to manage the pandemic and other public health emergencies. This should include redefining the minimum qualification of staff and staffing capacity at all levels, which would be essential in preventing burnouts and enhancing efficiency.
- Redefining the structure, composition and modes of operation in line with current and emerging realities related to the COVID-19 pandemic to ensure better ways of working together.

knowledge of the full background of the IMST team was identified as a gap, and it impacted the responsive relationship between levels of governance. A good employee relationship catalysed by adequate knowledge of identities has been shown to be beneficial in organisations, while recommendations toward its improvement have been suggested. ⁴¹

To enhance the response capacity of the IMST for the current pandemic and even for future ones, box 1 shows suggested recommendations that arose from the critical reflection/and synthesis of all the data:

CONCLUSION

With the various COVID-19 waves and responses observed across Member States in the WHO African Region, feedback from stakeholders on the performance of the WHO-AFRO IMST has informed guidance on strategic directions offered to the coordination of the response. The actions have been instrumental in mitigating the adverse impact of the pandemic and crucial in repositioning the IMST for improved delivery. The feedback from the four thematic areas as highlighted in this study will form the basis on which informed decisions and actions will be taken to move the system to a higher pedestal of performance. It is hoped that future reporting in this context will be improved thanks to a more vibrant WHO-AFRO IMST.

However, the study was not without limitations. It was not reasonably possible to document best practices in line with the WHO AFRO framework for documenting the best health practices. In addition, this review was done from an insider perspective (from those who worked in the system), which may have skewed the appraisal of some positions; thus, an external review would benefit from additional divergent views. Further, this review



does not capture/assess in detail the scale of capacity building undertaken at the country level (country offices and national governments) to sustain the response to public health emergencies, in general, and the changing dynamics of the pandemic, in particular; neither does it make proposals for future strategic propositions and potential scenarios for the IMST about the COVID-19 pandemic forecast. These would benefit from future research.

Author affiliations

¹Emergency Preparedness and Response, WHO Regional Office for Africa, Brazzaville, Republic of Congo

²Centre for Health Services Studies, University of Kent, Canterbury, UK
³Dakar Hub - Emergency Preparedness and Response, WHO Regional Office for Africa, Dakar, Senegal

⁴Nairobi Hub - Emergency Preparedness and Response, WHO Regional Office for Africa, Nairobi, Kenya

⁵Centre for Development of Best Practices in Health, Yaoundé Central Hospital & University of Yaoundé 1, Yaoundé, Cameroon

Twitter Roland Kimbi Wango @Rokiwa2, Helena O'Malley @kinzyomalley and Etien Luc Koua @Etienluckoua

Acknowledgements The authors acknowledge the team members of WHO AFRO COVID-19 IMST pillars and subpillars, hub leads, COVID-19 IMS, WHO representatives in countries, and Emergency Preparedness and Response Cluster members that enriched the document with relevant information on the COVID-19 response in Africa.

Contributors TB, BO, JO, RKW and HN conceptualised the study and designed the study guides. TB, BO, RKW and HN collected the data, while BO and POZ analysed the data. EOD and BO drafted the initial manuscript, which was subsequently revised for important intellectual content by all authors. All authors read and approved the final manuscript.

Funding There was no specific grant/ funding received for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval Approval to conduct the study was obtained from the WHO AFRO publication review committee. Participants gave their consent to the study and their anonymity, privacy and confidentiality were ensured by assigning a unique identifier, using numbers and letters, for every respondent (in the interviews and FGDs).

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available on resonable request made to the corresponding author.

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

Joseph Okeibunor http://orcid.org/0000-0002-6696-8503

REFERENCES

- 1 Mustafa S, Zhang Y, Zibwowa Z, et al. COVID-19 preparedness and response plans from 106 countries: a review from a health systems resilience perspective. Health Policy Plan 2022;37:255–68.
- 2 Lal A, Erondu NA, Heymann DL, et al. Fragmented health systems in COVID-19: Rectifying the misalignment between global health security and universal health coverage. The Lancet 2021;397:61–7.
- 3 Bwire G, Ario AR, Eyu P, et al. The COVID-19 pandemic in the African continent. BMC Med 2022;20:167:167.::
- 4 World Health Organization. Third round of the global pulse survey on continuity of essential health services during the COVID-19

- pandemic: Geneva, 2022. Available: https://www.who.int/publications/i/item/WHO-2019-nCoV-EHS_continuity-survey-2022.1
- 5 World Health Organization. Second round of the national pulse survey on continuity of essential health services during the COVID-19 pandemic: January-March 2021: interim report. Geneva, 2021. Available: https://apps.who.int/iris/bitstream/handle/10665/340937/ WHO-2019-nCoV-EHS-continuity-survey-2021.1-eng.pdf
- 6 World Health Organization. Fourth round of the global pulse survey on continuity of essential health services during the COVID-19 pandemic: November 2022–January 2023: interim report, 1 may 2023
 - ; 2022. Available: https://apps.who.int/iris/bitstream/handle/10665/367352/WHO-2019-nCoV-EHS-continuity-survey-2023.1-eng.pdf? sequence=1 [Accessed 9 May 2023].
- 7 Yanovskiy M, Socol Y. Are Lockdowns effective in managing Pandemics Int J Environ Res Public Health 2022;19:9295.
- 8 Herby J, Jonung L, Hanke S. A literature review and meta-analysis of the effects of lockdowns on COVID-19 mortality-II. 2022.
- 9 World Health Organization. Emergency response framework (ERF). Geneva, Available: https://apps.who.int/iris/bitstream/handle/10665/ 258604/9789241512299-eng.pdf
- 10 Soujaa I, Nukpezah JA, Benavides AD. Coordination effectiveness during public health emergencies: an institutional collective action framework. *Administration & Society* 2021;53:1014–45.
- 11 Ngoy N, Oyugi B, Ouma PO, et al. Coordination mechanisms for COVID-19 in the WHO regional office for Africa. BMC Health Serv Res 2022;22:711.
- 12 World Health Organization. The future of WHO COVID-19 response operation in Africa in 2022. Brazzaville: World Health Organization Regional Office for Africa, 2022.
- 13 Balde T, Oyugi B, Karamagi H, et al. Framing the future of the COVID-19 response operations in 2022 in the WHO African region. Glob Health Action 2022;15:2130528.
- 14 Balde T, Oyugi B, Byakika-Tusiime J, et al. Transitioning the COVID-19 response in the WHO African region: a proposed framework for Rethinking and rebuilding health systems. BMJ Glob Health 2022;7:e010242.
- 15 World Health Organization. Guidance for conducting a country COVID-19 intra-action review (IAR). 2020. Available: https://www. who.int/publications/i/item/WHO-2019-nCoV-Country_IAR-2020.1
- 16 World Health Organization. Guidance for conducting a country COVID-19 intra-action review (IAR): addendum 1. 2021.
- 17 Sandelowski M. Sample size in qualitative research. Res Nurs Health 1995;18:179–83.
- 18 Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology* 2006;3:77–101.
- 19 Olu OO, Waya JLL, Bankss S, et al. Integrated approaches to COVID-19 emergency response in fragile, conflict-affected and vulnerable settings: a public health policy brief. J Public Health Pol 2023;44:122–37.
- 20 World Health Organization. A global analysis of COVID-19 intraaction reviews: reflecting on, adjusting and improving country emergency preparedness and response during a pandemic. Geneva, 2022. Available: https://apps.who.int/iris/bitstream/handle/10665/ 365488/9789240066007-eng.pdf?sequence=1&isAllowed=y
- 21 World Health Organization. COVID-19 pandemic response in the Eastern Mediterranean Region: 2020 progress report of the Incident Management Support Team. 2021.
- 22 Khorram-Manesh A, Mortelmans LJ, Robinson Y, et al. Civilian-military collaboration before and during COVID-19 pandemic—A systematic review and a pilot survey among practitioners. Sustainability 2022;14:624.
- 23 Tangcharoensathien V, Calleja N, Nguyen T, et al. Framework for managing the COVID-19 Infodemic: methods and results of an Online, Crowdsourced WHO technical consultation. J Med Internet Res 2020;22:e19659.
- 24 Haldane V, De Foo C, Abdalla SM, et al. Health systems resilience in managing the COVID-19 pandemic: lessons from 28 countries. Nat Med 2021:27:964–80.
- 25 Kim K, Cho KT. A review of global collaboration on COVID-19 research during the pandemic in 2020. Sustainability 2021;13:7618.
- 26 Mheidly N, Fares J. Leveraging media and health communication strategies to overcome the COVID-19 Infodemic. J Public Health Policy 2020:41:410–20.
- 27 Ahmed K, Bukhari MA, Mlanda T, et al. Novel approach to support rapid data collection, management, and visualization during the COVID-19 outbreak response in the world health organization Africa region: development of a data summarization and visualization tool. JMIR Public Health Surveill 2020;6:e20355.
- 28 Ahmed K, Bukhari MAS, Altaf MD, et al. Development and implementation of electronic disease early warning systems for



- optimal disease surveillance and response during humanitarian crisis and Ebola outbreak in Yemen, Somalia. *Online J Public Health Inform* 2019;11:e11.
- 29 Ahmed K, Dauod Altaf M, Dureab F. Electronic infectious disease surveillance system during humanitarian crises in Yemen. Online J Public Health Inform 2014;6.
- 30 Togami E, Griffith B, Mahran M, et al. The world health organization's public health intelligence activities during the COVID-19 pandemic response. Euro Surveill 2022;27.
- 31 World Health. Global overview data as of 8 January 2023. 2023. Available: https://www.who.int/publications/m/item/weekly-epidemiological-update-on-COVID-19---11-january-2023 [Accessed 27 Feb 2023].
- 32 Zapata T, Buchan J, Azzopardi-Muscat N. The health workforce: central to an effective response to the COVID-19 pandemic in the European region. *Int J Health Plann Manage* 2021;36:9–13.
- 33 Williams GA, Maier CB, Scarpetti G, et al. What strategies are countries using to expand health workforce surge capacity during the COVID-19 pandemic? *Eurohealth* (Lond) 2020;26:51–7.
- 34 Sultana A, Sharma R, Hossain MM, et al. Burnout among Healthcare providers during COVID-19: challenges and evidence-based interventions. *Indian J Med Ethics* 2020;V:1–6.

- 35 Badahdah A, Khamis F, Al Mahyijari N, et al. The mental health of health care workers in Oman during the COVID-19 pandemic. Int J Soc Psychiatry 2021;67:90–5.
- 36 Collings DG, Nyberg AJ, Wright PM, et al. Leading through paradox in a COVID-19 world: human resources comes of age. Hum Resour Manag J 2021;31:819–33.
- 37 Suprapti S, Asbari M, Cahyono Y, et al. Leadership style, organizational culture and innovative behavior on public health center performance during pandemic COVID-19. Journal of Industrial Engineering & Management Research 2020;1:76–88.
- 38 Kuznetsova L. The world community expects the world health organization to play a stronger leadership and coordination role in Pandemics control. Front Public Health 2020;8:470.
- 39 Phillips G, Kendino M, Brolan CE, et al. Lessons from the frontline: leadership and Governance experiences in the COVID-19 pandemic response across the Pacific region. The Lancet Regional Health -Western Pacific 2022;25:100518.
- 40 Triantafillidou E, Koutroukis T. Navigating between the Clashing Rocks: Employee relations in the era of Covid-19. 2021.
- 41 Bulińska-Śtangrecka H, Bagieńska A. The role of employee relations in shaping job satisfaction as an element promoting positive mental health at work in the era of COVID-19. Int J Environ Res Public Health 2021;18:1903.