BMJ Global Health

Towards a multi-lateral framework for cross-border surveillance and information sharing between Nigeria and neighbouring countries

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ABSTRACT

Nigeria sits at the crossroads of West and Central Africa; two increasingly critical regions for global health security. To strengthen cross-border collaboration for health security between its neighbors from West and Central Africa, the Federal Ministry of Health, Nigeria through the public health authority at the Points of Entry—Port Health Services, led the design of a multi-lateral framework for cross-border collaboration between Nigeria, the Republic of Benin, the Republic of Chad, the Republic of Cameroon and the Republic of Niger. This framework provides a platform for agreeing on bilateral national and district-level infectious disease surveillance information sharing as well as laying the groundwork for expanded collaboration in incident reporting, joint investigation and response across borders.

SUMMARY BOX

⇒ Nigeria sits in a geopolitically pivotal health security space in Africa sharing contiguous borders with West and Central African countries - Republic of Benin and the Republic of Niger, Republic of Cameroon, and the Republic of Chad.

⇒ To strengthen infectious disease cross-border surveillance and response, Nigeria set out to effort to build 5-country multi-lateral consensus, sign bilateral instruments, define a road map, and build capacity for preparedness and response with its neighbors, using a multi-lateral.

⇒ Sustaining such cross-border collaboration for preparedness and response requires local agency, ownership, and funding.

⇒ This multi-lateral framework can be leveraged to mitigate other health security risks in the region.

INTRODUCTION

West and Central Africa has increasingly become a focal point for Global Health Security in recent times. In the last decade, there has been an increase in the number of infectious disease outbreaks of international concern, a not insignificant amount of them originating in West and Central Africa. Starting with the West African Ebola virus disease outbreak of 2014, countries in this region are responding to an increasing incidence of infectious disease outbreaks with the potential to spill across borders. This trend is against the backdrop of the increasing interaction between man and wildlife as deforestation brings disease reservoirs closer to the living space,[1] increasing insecurity due to armed conflict resulting in forced migration across state borders and the resultant wide-ranging displacement of persons.[2]

Nigeria sits at the intersection of West and Central Africa sharing borders to the east with the Republic of Cameroon and the Chad Republic (both Central African Countries) and to the north and west with the Republic of Niger and the Republic of Benin (both West African), as shown in figure 1.[1] Nigeria also sits at the ends of two significant trade and traffic routes. The Trans-Saharan route, a route now important for the historically problematic migration surge to Europe and the catastrophic displacement of persons from the deteriorating security situation in the Sahel. The second key route is the Abidjan-Lagos Corridor Organisation (ALCO), the major regional artery for the movement of goods and people across West Africa. Spanning multiple countries, this route bears the potential to foster the largest contiguous multi-state collaboration in Africa.[3] The ALCO processes one of the largest informal movements of persons and goods in Africa. It also feeds into the Mano-River countries—a

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Figure 1 Map of Nigeria showing the border with Benin, Chad, Niger and Cameroon.[1]

region at the epicentre of the 2014 Ebola virus disease outbreak. These risk dynamics underscore the crucial need for countries in both regions to have a structured way of sharing surveillance information at the national and subnational levels to strengthen preparedness for future outbreaks.

Following the COVID-19 pandemic in early 2020, countries across West and Central Africa responded to the pandemic with measures beginning, as is often the case with countries in the Global South, at Points of Entry. Measures deployed at airports, seaports and ground crossings differed significantly but can be argued to have had a significant impact on the eventual outcome of the response. It is against this backdrop that key stakeholders

in the health security ecosystem in Nigeria set out to build a framework for surveillance and information sharing with its neighbours across West and Central Africa. The scope of this collaboration for the short-term was identified as 'surveillance and infectious disease information sharing at national and subnational levels across borders'.

FROM ABIDJAN-LAGOS CORRIDOR ORGANISATION TO WEST AFRICAN HEALTH ORGANISATION

Previous documented attempts at setting up bilateral and multilateral health security frameworks have noted the difficulty of convincing increasingly sceptical governments of the effectiveness of such initiatives.[4] Governments rarely share the same health security priorities, however broadly these frameworks define them; governments hesitate to share data that may inform adverse trade and travel policies; and supranational systems rarely balance language broad or precise enough to incorporate the different legal systems and biases in participating countries.[5] These challenges constrained previous attempts to set up a multi-lateral information sharing framework in West Africa—like the attempts to set up a multi-country framework for the sharing of infectious disease outbreak information following the Ebola outbreak of 2018.[6] Specifically, the ALCO set out to design and deploy a framework for cross-border surveillance information sharing. The framework sought to cover five countries (Nigeria, Benin, Togo, Ghana and Côte d'Ivoire), highlighting their importance in the region, and the volume of travelers shared through the corridor. After several multi-country workshops, the draft memoranda of understanding and protocols for
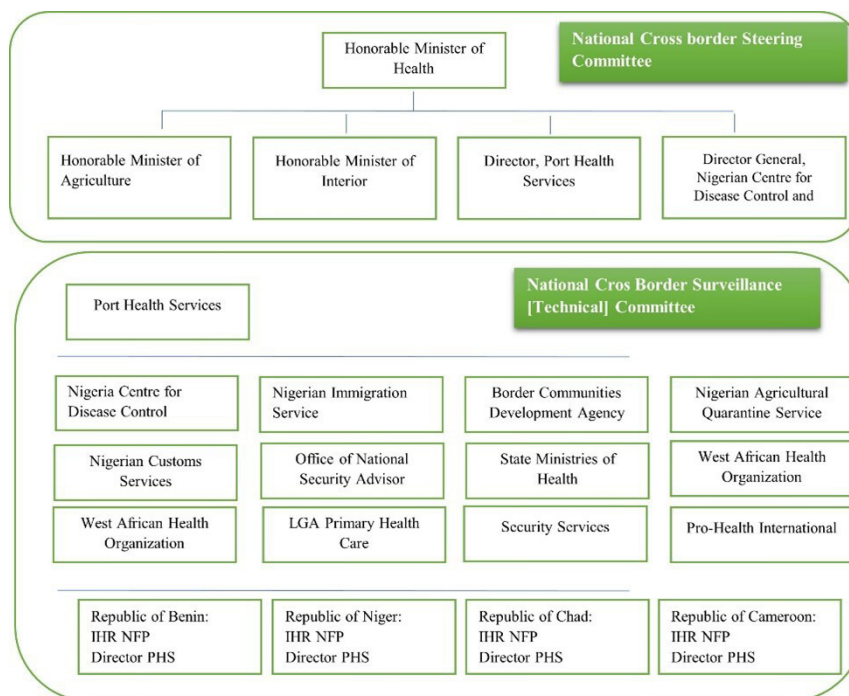
Figure 2 Non-functional, non-hierarchical overview of the multilateral coordination mechanism.[3] IHR-NFP, International Health Regulations National Focal Point; PHS, Port Health Services; LGA, Local Government Area.

information sharing at the national and district level was agreed in principle by the technical officers (epidemiologists, IHR focal persons) of the five countries. However, a few countries withheld ministerial approvals. In 2019, the West African Health Organisation (WAHO) adopted the instrument and its ancillary protocols. The information-sharing protocol was adapted to include all 14 member countries of the Economic Community West African States (ECOWAS) and presented at a Ministerial Meeting of the West African Health Assembly. This instrument was important in fulfilling some of the regional health security push for the West African bloc of Nations. In furtherance of this, in 2021, the WAHO and the ECOWAS Regional Centre for Disease Control drafted, reviewed and tested a set of standard operation protocols for information sharing between member states.[2 7]

However, to achieve full inclusion and satisfy key legal and foreign policy positions, the West African regional solution, although well thought-out, seemed suboptimal for Nigeria. Nigeria sought a framework that also includes its neighbours from Central Africa: Chad and Cameroon who are not party to ECOWAS. Both countries will not be a party to any framework instituted through the ECOWAS platform.

A bespoke instrument that establishes a common epidemiological approach to surveillance information sharing for all of Nigeria's borders and effectively addresses both the geopolitical and epidemiological peculiarity of Nigeria was needed. The solution currently being explored at the WAHO through the ECOWAS Regional Centre for Surveillance and Disease Control (RCSDC) provided the foundation, in principle, for the instrument that was eventually collaboratively designed.

THE NIGERIAN-ANCHORED MULTI-LATERAL, MULTI-REGIONAL SOLUTION

Inception: in the shadow of a pandemic

In February 2020, while the world was stirred by the news of an outbreak in China, Port Health Services Nigeria held an inception meeting to discuss cross-border surveillance with stakeholders. This was conceptualised as a first step towards crafting a coherent strategy for cross-border engagement with Nigeria's neighbors. The objectives of this first engagement included outlining key responsibilities and responsibility-holders within the cross-border surveillance and information-sharing task system and agreeing on a short to medium-term plan for systematically strengthening cross-border surveillance information sharing at the national and district levels.

A key decision from the meeting was the need to set up a National Cross-Border Surveillance Committee (as shown in figure 2).[3] The following principles guided the set-up and function of this committee:

► A one-health approach recognising the zoonotic root of infectious disease outbreaks and spillovers.
► A multi-sectoral approach that aims at context and expertise exchange.

A three-tiered management and implementation approach was taken, with;

► A Steering Committee that handles bilateral agreements and consists of Ministers, the Director of Public Health, the Director of Port Health Services and IHR-NFPs—Nigeria, and equivalent counterpart stakeholders from Nigeria's four proximal neighbours.
► A National Technical Committee that is designed to oversee strategies, and activities as well as provide support on implementation.
► And a coordinating unit that functions as a secretariat which is domiciled at Port Health Services headquarters and is responsible for the planning and facilitation of meetings, and other administrative functions to ensure the hitch-free running of the committee. (A diagram showing the structure and inter-relation of the key coordination mechanisms is shown in figure 2.)

At the land borders, a core committee that comprises key agencies across the national lines are responsible for conducting cross-border meetings and operating a 'Cross Border Forum'. This group helps translate strategy to implementation supported by implementing partners such as Pro-Health International.

Designing a multi-lateral framework for surveillance and information sharing

The central concept for the framework was simple—a broad multi-lateral platform that provides actionable national and subnational approaches to surveillance information sharing and response. The framework provides broad supra-national guidance for collaboration but allows for specific bilateral agreements that define specific terms of collaboration. A great example of this type of supra-national guidance is the International Civil Aviation Organisation's Public Health Corridor concept.[6] A product of the Take-off Guidance Document, a push to re-start aviation safety in the wake of the early global lockdowns due to COVID-19, the Public Health Corridor concept is a framework that allows 'two or more States to agree to mutually recognise the implemented public health mitigation measures on one or more [flight] routes between their States'. This means countries with a 'Corridor' between them can get ahead of outbreaks and maintain flight arrangements knowing they share proximate risk assessment of the situation and mitigation measures.[8]

Working through a coordinating unit within the National Technical Committee, key officers from Port Health Services began stakeholder engagements with key national stakeholders in the Point of Entry sector—prioritising stakeholders that operate at ground crossings/land borders (such as the Nigerian Immigration Service, the Nigerian Customs Service, the Nigerian Agricultural Quarantine Service and the Nigeria Border Communities Development Agency). These consultations allowed for an understanding of what these stakeholders consider their roles and the constraints to the execution of their

mandates in response to infectious disease outbreaks. A key output of these consultations was the terms of reference (TOR) for the members of the National Cross-Border Technical Committee. The TOR, as well as articles of a multilateral/bilateral memorandum of understanding between countries, was designed through an iterative co-creation process requiring regular consultation sessions.

The key goal in the short term was to hold a meeting of the National Cross-Border (Technical) Committee with key national public health officers from Nigeria's contiguous neighbours in attendance for further review. The officers invited from the neighbouring countries were the International Health Regulations National Focal Point (IHR-NFP) responsible person and the head of the Port Health Authority (where such exists). At this meeting, there was a facilitated multi-sectoral, multi-lateral review of the draft instruments of collaboration as well as ancillary protocols for information sharing and response. A key outcome was a five-country consensus on the necessity and broad outline of a framework for multi-lateral collaboration on infectious disease surveillance and response.

A VISION FOR REGIONAL HEALTH SECURITY COLLABORATION
A road map for the immediate term
At the national level, this mechanism will continue to be used to drive outbreak information sharing and maintain broad memoranda of collaboration on information sharing and other ancillary activities between the four other countries. These will include holding regular multi-lateral engagements, establishing a bilateral agreement on information sharing and response, developing a mid-term (2–5 years) strategic work plan for Nigeria and the 'Plus4' group of countries, and conducting targeted advocacy for funding to commence bilateral meetings between Nigeria and the four neighbouring countries monitoring progress and responding to district-level events. At the subnational level, the approach is to expand the number of ground crossings where structured PoE-level cross-border surveillance forums are established and institutionalised to implement cross-border activities.

We see a few key principles/considerations that may guide the sustainable and effective achievement of the vision above.

Local agency, ownership and funding
Stakeholders at both national and subnational (state, local government, etc) levels must drive the implementation of key activities around maintaining these coordination mechanisms. Three concepts are important here—agency, ownership and local funding. Not only is it necessary that public health officials at subnational and national levels own and drive critical intervention (ownership), but they must also believe their action can bring about the desired outcome and is fully backed by the requisite state authority. Agency and ownership are

impossible without dedicated local funding through the statutory budgeting processes. As long as funding for key intervention rests with development partners, agency will be diluted, and ownership will be suboptimal. One of the approaches to ensuring dedicated funding through traditional government funding cycles is sustained advocacy to secure and maintain political will.[9]

Purchase and maintain political will
It will be near-impossible to achieve bridging of bilateral gaps without securing political will across national and subnational levels as well as between countries. Public health leaders will need to continually work at purchasing and maintaining the necessary political will to push through critical policy positions.[9]

Leverage the platform provided by regional public health institutes
In the last decade, key regional institutes of health have been set-up to drive health security objectives in Africa. The Africa Centre for Disease Control (CDC) and the ECOWAS RCSDC are two key organisations in that mould. In Central Africa, the Organisation for the Coordination of the Fight Against Endemic Diseases in Central Africa performs a similar regional coordination role. Countries must lean on the ability of these institutes to drive multilateral and bilateral conversations, design, and pursue strategic advocacy and mobilise resources.[10]

Alignment with the Africa Centre for Disease Control 'New Public Health Order' philosophy
The African CDC's New Public Health Order calls for increased local agency and a more active role for regional coordinating public health institutes. The principles and considerations outlined above will ensure drive to strengthen cross-border surveillance meets both key philosophical positions.[11]

A ROAD MAP FOR THE MEDIUM AND LONG-TERM
What potential does this mechanism hold for similar interventions for health security in the region? Here are a few exploratory ideas.

Digitisation of district-level cross border information sharing
A key strategy for achieving the objective of national-level monitoring of the surveillance information sharing at the subnational level is the digitising of the process. This will ensure that there is a birds-eye, real-time bilaterally shared view of outbreak information being shared across borders. The extension of this digitisation to other countries in the region will go a long way to making information sharing more seamless. An example of a digital event-based information-sharing platform with the potential of regional adoption across West and Central Africa is 'The Surveillance Outbreak Response Management and Analysis System (SORMAS)' already in use in multiple West African countries.[12]

Joint capacity building initiatives, advocacy and experience sharing

Joint capacity building (including joint simulation exercises) will help surface gaps in capacity, encourage experience sharing and break down language, cultural and context silos. A deliberate attempt to set up an experience-sharing visit may also help in bridging context and expertise gaps between member states. Also, the holding of joint after-action reviews in the aftermath of outbreaks will offer an opportunity to share experiences.

Operationalisation of a district-level joint investigation and response framework

A point that emerged from discussions at the multilateral workshop to discuss surveillance and information sharing was the need to establish a similar framework for sharing resources and expertise in joint investigations and response during an outbreak. Such a framework will ensure that border communities can rely on the expertise and resources of neighboring communities. Sample collection and testing across borders, isolation and/or quarantine of ill and suspected persons, etc are public health interventions for which cross-border action will remain highly sensitive. Establishing a bilateral agreement for how to quickly proceed during fast-moving outbreak situations will ensure public health officers at the district level can get ahead of diseases crossing borders and contain highly volatile situations.

Novel use-cases for multi-lateral coordination mechanisms

A few novel use cases to which this approach may be extended exist. An important and urgent example is the establishment of a regional common picture for biosecurity with countries with which Nigeria shares contiguous borders. To do this, there will be a need to expand the scope for incident reporting to include key Biosecurity priorities (across the chemical, biological and radio-nuclear spectrum) and optimise the current coordination mechanism to include specific objectives like linking civilian (public health institutes, laboratory networks, etc) to military and intelligence agencies.

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Contributors OOA and VL conceived of the idea. OOA wrote the manuscript. All authors critically reviewed and contributed to the article.

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