PRINCIPLES FOR PROMOTING RESILIENT HEALTH SYSTEMS IN THE CONTEXT OF COVID-19 RESPONSE:

LEARNING FROM LIBERIA

Overview

The preparedness phase of the COVID-19 pandemic was particularly important within Liberia and a key learning from the Ebola Virus Disease (EVD) epidemic. There was consensus amongst health systems actors that waiting for COVID-19 to enter Liberia before responding would be too late. Existing emergency response systems established during the EVD epidemic, such as the National Public Health Institute (NPHIL) and the Ministry of Health acted: health check controls and quarantining were established at border points as early as January 2020; health facility workers were trained in COVID-19 identification, triage and infection prevention and control (IPC) before the first COVID-19 case reached Liberia; non-essential staff were asked to work from home where possible; staff were rotated in MoH buildings to avoid congestion; use of face masks was encouraged; and the introduction of a country-wide curfew. **Ultimately, community and institutional memory from experiences with EVD, facilitated the rapid and early mobilisation of enhanced hygiene practices, restriction on physical contact and sustained use of personal protective equipment (PPE), which supported preparedness of Liberia's health system to the COVID-19 pandemic.**

The Foreign, Commonwealth and Development Office (FCDO), in collaboration with National Institute for Health Research (NIHR) recently identified eight key principles for promoting resilient health systems in the context of COVID-19 response[1]. Between June 2020 and July 2020, we conducted interviews with 24 national and county level decision-makers who were purposively selected because of their involvement with COVID-19 planning and/or routine service delivery, and/or played key roles in the EVD epidemic response and who are involved with COVID-19 response planning. The purpose was to document learning, and produce a rapid set of recommendations that could support ongoing and subsequent responses to disease outbreak within the Liberian health system. Data was analysed thematically alongside key principles of a resilient health systems as presented within this brief.

> *"One of the things we did not do well during the EVD period was that our facilities were not prepared so we were caught unawares…so because we learned that critical lesson from EVD period we were able to prepare and going forward we are going to prepare; because our preparedness phase is the most important phase in any outbreak response. If you don't prepare well and you are caught unaware you will have a lot of issues, so we didn't wait for COVID to enter Liberia before we prepositioned basic PPE and those are all part of the preparedness phase."*
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[1] Department for International Development [DFID]. Principles of Health Systems Resilience in the Context of Covid-19 Response [Internet]. 2020. Available from: https://assets.publishing.service.gov.uk/media/5ea2b33de90e070498c5538c/Principles_of_Health_Systems_Resilience_in_the_Context_of_COVID_Research_Brief_April_2020.pdf

Principle One: Develop flexible pathways for medical supplies

- *Resilient health systems secure continuity of provision through the capacity to source supplies flexibly.*
- There has been disturbance to the supply chain as a consequence of a shift towards COVID-19 related procurement and a closure of ports and airports due to COVID-19 restrictions. This has had implications for maintenance of the routine supply chain.
- COVID-19 supply chain related challenges include: a funding gap (with limited donor funding forthcoming), the need for ongoing re-supply of PPE; and global shortages of required items as global demand for COVID-19 related items rocketed and prices inflated e.g. ventilators.
- A series of improvements to the supply chain were adopted, in keeping with the recommendations for this principle. The Supply Chain Management Unit of the MoH produced an emergency supply chain plan in addition to the existing supply chain management plan. It also developed an excel spreadsheet was developed to incorporate a new supply list for COVID-19 related items.

Recommendations: Strengthen the health system product management system and supply chain to monitor and build buffer stock for PPE, drugs, tools, equipment and spare parts to avoid stock out, with establishment of regional or local supply pooling arrangements.

> *"...the economic challenge is there because supplies are not forthcoming as before, so there is need to support the health sector because most of those supplies are disposable, like the PPE, when you used it you have to discard it so you will always need replacement, you will always need new suit to wear. If you are not getting the funding that will enable you to get the suit or the donor partners are not supplying, and during COVID-19 pandemic where airports are closed, seaports are closed it is a bit challenging compared to the previous virus. At that time the airport was opened, supply was moving, ships were moving, so I mean it is more challenging; the economic aspect of it and the routine services, it all boils down to the economic challenge."*
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Principle Two A: Prioritise a list of essential health services

- *Resilience of the health system will depend on the capacity of healthcare managers to re-allocate existing resources to the essential and most needed services, using transparent and clear criteria.*
- Country autonomy was seen as critical to managing the COVID-19 response. A minority of informants felt that although international policies and procedures can be useful, without contextual modification they become meaningless and unsupportive of national government response measures.
- During the EVD epidemic clear outbreak response and decision-making structures/platforms were established from the national to county to facility level. These structures are influenced by international and national guidelines and partners, and co-ordinated through NPHIL. These structures were able to mobilise quickly in response to the COVID-19 pandemic and are a lasting legacy of learning from previous crisis in Liberia, see figure 1 below.

Recommendation: Ministry of Health should contextualize international guidance to the local context regarding the continued delivery of routine health services, adjusting priorities as needs evolve over time.

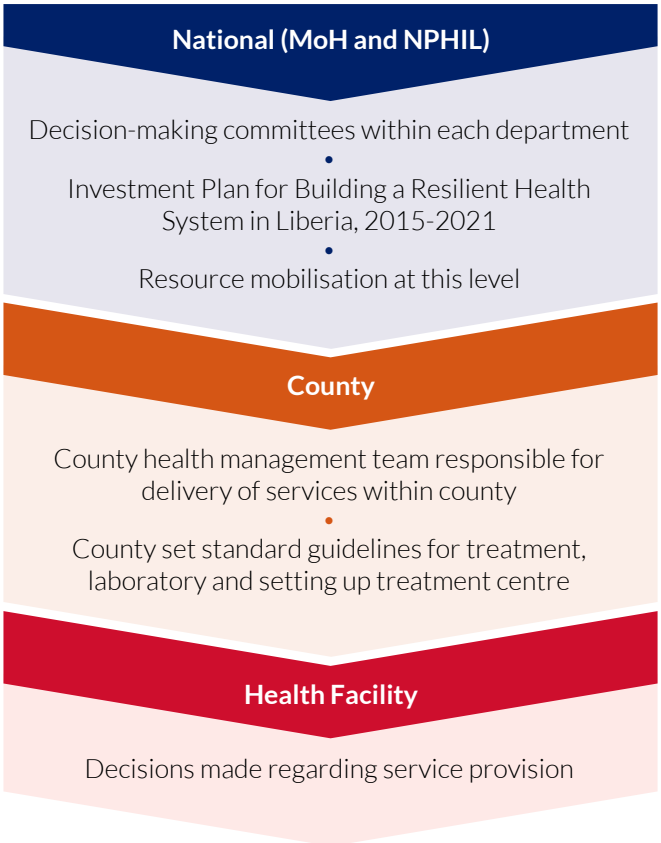

Figure 1. Decision making structures for planning COVID-19 response within Liberia.

> *"Firstly, we have to re-strategise how we engage the routine services compared with before in the midst of the COVID… The entire building blocks have to be re-strategised and we need to re-position ourselves in contextualising what we need to do in the midst of the outbreak, because if you have a system and one organ is good and the other is not good the system is still having a problem."*
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Principle Two B: Ensure continued provision of quality routine services

- We have expanded principle two into part A and B, to emphasise the need to ensure continued provision of quality routine services – a key learning from Liberia's experience with EVD which now forms a priority area within the COVID-19 response. Recent experiences have revealed that maintaining quality of service delivery can be challenging, particularly as a result of physical distancing and resource diversion. We feel this needs critical attention and propose this should be added as principle 2a.
- The quality of services was felt to have declined during the COVID-19 pandemic. This is due to five main reasons: 1) Reduced opportunity for supervision; 2) Diversion of funds for routine activities to COVID-19 response, with health workers over-stretched through taking on additional COVID-19 tasks; 3) Re-purposing of the National Reference Laboratory (NRL) to provide COVID testing which has meant that health workers have been unable to confirm their suspected diagnosis before starting treatment for a number of diseases (including NTDs); 4) Limitations in the supply chain; and 5) a reduction in community outreach activities.
- The reduction in community outreach is particularly significant as this has reduced connectivity between communities and health systems negatively impacting immunisation and maternal health indicators, due to weakening of referral structures and ability to conduct immunisation campaigns (see figures 2 and 3).
- Strategic adaptations to safely enable the continued delivery of routine health services throughout the pandemic have occurred. These include: changes to the delivery of HIV services, with the introduction of a self-testing pilot, community delivery of ART and fast track service provision, which eliminates the need to see a clinician; increased duration of dispensed prescriptions, for example patients with HIV who receive ART are now receiving a six-month supply of their medications; house to house MDA for schistosomiasis, rather than congregation of a community at a common location (typically a local school); and adaptation of defaulter tracking to contact pregnant women to attend for ANC follow up.

Recommendation: We recommend that the continuation of routine services be further emphasised within the principles. Within Liberia, there is need to focus on maintaining quality of routine services, alongside the introduction of COVID-19 services.

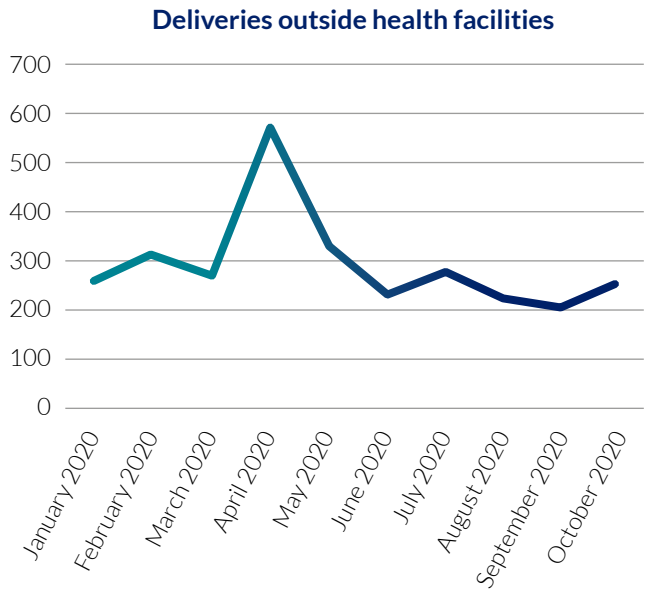

Figure 2. Line graph showing deliveries carried out outside health facility January – October 2020 (Liberia DHIS2 data)

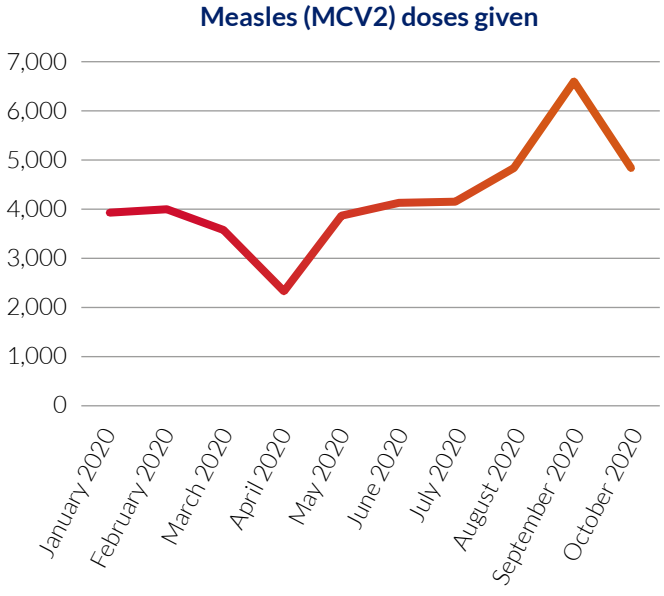

Figure 3. Line graph showing measles (MCV2) doses given January - October 2020 (Liberia DHIS2 Data)

Principle Three: Build trust with local communities

- *Trust between communities and the health system is crucial, shaping health behaviour and outcomes.*
- A key learning from Liberia's experience with EVD has been the critical need to maintain community involvement and trust during crisis for continuation of routine services: keeping facilities open wherever and whenever possible supports this. Other strategies found to be successful during the EVD period are: working with community governance structures to address the risk of COVID-19 in the community; involving local authorities within the COVID-19 response; working with recovered persons to give testimonies or success stories at health facilities or during trainings; engaging with media (both print and electronic) to aid in eliminating fear about using health services; contact tracing; and scaling up community-based risk management strategies.
- In the immediate pandemic phase, utilisation of services has still been impacted by the COVID-19 pandemic, with routine indicators, for example for immunisation, skilled delivery and chronic disease declining, due to a loss of trust by the community in the health system, and fear of contracting COVID-19 when seeking care. Furthermore, re-purposing and delayed training of CHWs in COVID-19 awareness, impacted their confidence to carry out community outreach for routine health services.
- Following adoption of the activities described above with training of CHWs, some respondents felt that community confidence in health care seeking was coming back and that utilisation rates were starting to return to usual levels (see figures 2 and 3).
- There was strong overlap between those most impacted by the COVID19 pandemic and those considered most vulnerable, for example, women of reproductive age, children under five years, those who are relatively poor, people with NTDs and/or with disabilities, people living in remote locations, key population groups, e.g. men who have sex with men, female sex workers, transgender groups, indicating that COVID-19 has reinforced the existing barriers to equitable health care which already exist within Liberia.

Recommendation: Earlier training of CHWs to allow safe sharing of key COVID-19 messages through trusted local actors, may have helped to alleviate fear surrounding seeking care at the health facility.

> *"We have more community deliveries; we have people not taking their children for immunisations, even people with chronic illness, the people that have hypertension and diabetes, they don't want to go to the hospitals. When you ask them why they don't want to go to the hospital they say, 'the hospital as soon as you go there they will tell you, you got COVID-19'. So even though the health workers are prepared and waiting for them (the patients), but the patient load is low because they have no confidence in our health care delivery system."*
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Principle Four: Foster good communication at all system levels

- *Crises can create confusion and it is important to strengthen communication structures and guidance between health systems levels, with strong supervision and linkages between hospitals, health centres and CHWs.*
- One innovation throughout the COVID-19 pandemic has been the widespread adoption of virtual meetings, webinars, use of social media platforms as a form of new innovative learning that serves to link national and county level staffs to ensure the continuation of services. Use of social media platforms have also been utilised to conduct remote supervision where possible, although ensuring adequate data scratch card provision has had some challenges.
- Infection Prevention and Control (IPC) case management guidelines have been developed, validated, and disseminated due to COVID-19 to serve as system strengthening tools, with IPC mentors deployed within some health facilities. However, there are gaps in adherence to IPC standards felt to be due to poor quality of care, especially in private health facilities.

Recommendation: Communication, including supervision, should ensure the participation and involvement of private as well as public health facilities. Remote supervision and communication techniques should be explored for integration within the health system.

> *"One of the things is to be able to adapt to working with social media technology and all of that, because that's the first thing if you have to communicate with people in this manner you need to understand zooming, skyping, how to take notes."*
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Principle Five: Support, recognise and encourage staff

- *As much as possible, peer support, teamwork and supportive supervision through remote channels should be fostered, alongside securing continuity of payment of staff.*
- Human resources for health have been over-stretched with health workers taking on additional COVID-19 responsibilities, for example existing staff have been deployed to provide COVID-19 specific services, meanwhile the existing staff have had to stretch and absorb remaining routine services. This has had implications for the quality of routine health service delivery.
- Training for health workers within health facilities in how to identify and isolate COVID-19 cases was carried out prior to arrival of the first COVID-19 case within Liberia and at varying levels of the health system. However, training of CHWs was delayed, which led to loss in confidence of CHWs to carry out their usual activities.
- As a result of restrictions in travel, there have been reductions in face-to-face supervision, with fears that quality of service provision may have declined as a result. Social media platforms, such as WhatsApp, have been used for remote supervision, as an alternative to face-to-face methods. These platforms have helped local staffs to share real-time problems and as well as permitted supervisors host meetings at low costs.
- Health workers have not received risk benefit payments (provided during EVD response) and staff attrition due to lack of incentive was described.

Recommendation: There needs to be greater clarity and transparency about whether health workers will / or will not receive risk benefit payments. Avenues for remote supervision should be rolled out across health system levels, with adequate provision of needed resources, e.g. scratch cards, rather than on an ad hoc basis.

> *"Prior to the COVID during the preparatory stage our nurses were trained with the skills of managing COVID-19, in fact coming from the detection, the prevention aspect what should be done in the IPC, what are the things you need to do coming to treatment… so these trainings were provided."*
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Principle Six: Facilitate rapid resource flow to front line providers and greater flexibility in its use

- *Local managers need to be empowered and have some flexible resources to allow adaptation and innovation. Finding the balance between flexibility and accountability is essential.*
- The need for greater ownership by Government of Liberia and reduced reliance on other countries for resources (or technical capacity) was highlighted. Sections of the health system that are particularly donor reliant such as the supply chain have been observed to struggle, due to a reduction in partner support throughout the COVID-19 pandemic (particularly in comparison to support available during the EVD response). This raises questions about whether efforts made towards health systems strengthening during periods of stability have been sufficient to sustain the functioning of the health system throughout this crisis period.
- Re-allocation of funds for routine service delivery to COVID-19 response and delayed assignment of funds for routine services has impacted the ability to maintain quality routine services.
- Key areas of the COVID-19 response remain with limited funding. A prioritisation of mental health services has been observed as compared to the EVD response, largely as a result of engaged implementation partners, however, more resources are still needed to support this crucial pillar of the pandemic response.

Recommendation: There is need for greater country ownership, including independence from donor funding, to ensure timely and country-appropriate actions.

> *"The first thing is, we need ownership by government, ownership is not depending on other countries to provide us the resources, to provide the technical capacity. So that is the best recommendation I would say. The ownership has to be there, resources have to be available and the infrastructure has to be available in terms of being resilient."*
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Principle Seven: Ensure agile tracking of health information

- *Health information systems may need to adapt, innovation in how data is gathered and shared is important. Existing surveillance systems should be used and feedback mechanisms established.*
- Since the COVID-19 pandemic the submission of data was felt to have declined, particularly for community level data. In addition, validation of data has reduced as a result of the reduction in supervisory visits.

Recommendation: Include COVID-19 in the regular disease surveillance and invest in awareness, research, documentation, policy development and response planning with clear roles.

> *"Another recommendation is that we could include COVID-19 to our regular disease surveillance. Like we have the measles, the Lassa, and thing. I think we should include COVID because COVID maybe all around. Like we included Ebola, there should be a document on COVID-19 that will form part of our regular surveillance."*
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Principle Eight: Cultivate effective partnerships and networks

- *Resilient organisations create, reinforce and draw on networks for complementary actions, e.g. development partners, local leaders, the private and not for profit sector, informal providers and religious leaders.*
- Within our study this did not emerge as a key finding, while local leaders have been engaged with, there appears to be a need for further engagement with private health facilities to ensure adequate IPC measures are in place.
- Interestingly, COVID-19 has led to a reduction in the number of NGOs or other partners within Liberia, with donor funding not forthcoming during the COVID-19 pandemic, as each country has prioritised funds and action within their own country's response. Instead we found that the experience with COVID-19 has emphasised the need for greater country ownership, with the need for national funds and technical capacity within country to allow for a timely response.

Recommendation: Intersectoral collaboration which engages with social welfare and education providers should be prioritised to identify and manage risks for vulnerable populations.

> *"We probably need to strategize on those and contextualize in the communities to health facilities and country contexts, so we don't have to exactly do what the Europeans are doing, we always want to compare ourselves with them, because these are two different societies. So we should contextualize our own strategy instead of just copying from other countries."*
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Principle Nine: Create structures and mechanisms for advance preparedness

In addition to the eight existing principles, we identified the need for one further principle, application of this principle within Liberia has been highlighted in the overview to this section. In light of Liberia's experiences with previous shocks to the health system there was early recognition of the need for preparedness and of the need for continuation of routine service delivery, building on strengths gained through experiences with EVD.

Conclusion

Liberia has mobilised to ensure an early COVID-19 response, with actions towards almost all the eight key principles identified in DFID's 'Principles of Health Systems Resilience in the Context of COVID-19 Response'. Despite this early response, a number of gaps, particularly relating to quality of services and patient trust in the health system have emerged. In response, we have identified eight key recommendations for action to strengthen COVID-19 response within this brief.

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REDRESS
Reducing the burden of Severe Stigmatising Skin Diseases

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COUNTDOWN
Calling time on Neglected Tropical Diseases