Supplementary file 3 – Characteristics of reports included in the synthesis and key lessons learned/recommendations

Author (year)	Country	Type of Report	Study Design/Method	Outbreak	Key Lessons Learned/Recommendations
Camara S (2020) [43]	Guinea	Research article	Parallel mixed method	Ebola Virus Disease (EVD)	Community engagement and mobilisation are prominent in outbreak control.
Camara BS (2020) [116]	Guinea	Research article	Cross-sectional	EVD	Preserving communities' values and addressing outbreak-related psychosocial effects.
Lesho EP (2016) [109]	Guinea	Editorial commentary	Not Applicable (NA)	EVD	Engaging local providers to collaboratively plan and execute humanitarian medical assistance, with external agents remaining in the background. Banking serum of EVD patients and performing real-time sequencing.
Alessandro A (2018) [121]	Guinea	Research article	Real-time field EVD sequencing	EVD	Combining thorough epidemiological and genomic investigations, particularly in low resource settings with a limited epidemiological investigation, as the genetic characterisation can support the outbreak investigation in real-time linking cases (sequencing).
Sidibé S (2018) [101]	Guinea	Research article	Cross-sectional	EVD	Capacity building of healthcare providers for better preparedness and response to outbreaks.
Magassouba AS (2020) [110]	Guinea	Research article	Cohort study	EVD	Better preparedness of the health system to prevent service disruptions during the response to mitigate collateral effects (e.g. Tuberculosis).
Kodish SR (2018) [87]	Guinea	Research article	Qualitative study	EVD	Early community engagement to mitigate outbreak collateral effects (e.g. maternal and child nutrition).
Gsell PS (2017) [118]	Guinea	Research article	Field intervention	EVD	A ring vaccination strategy can be rapidly and safely implemented at scale in response to EVD outbreaks in rural settings.
Kolie D (2018) [111]	Guinea	Research article	Cross-sectional	EVD	Enhancing outbreak preparedness and health system resilience is required to mitigate collateral effects (e.g. Malaria in under-five children).
Fairhead J (2016) [105]	Guinea	Review	Case study	EVD	Four kinds of local accommodations broke down in responding to the EVD in Forest Guinea—accommodations with hospital practices; accommodations with mines (and extractive economies); accommodations with state authority; and accommodations with sorcerers. Therefore, there is a need to involving anthropologists in outbreak response.

Soeters HM (2016) [102]	Guinea	Research article	Descriptive	EVD	Infection prevention and control (IPC) training and capacity building for frontline healthcare workers (HCWs) proved helpful during the EVD and need to be considered in outbreak response
Delamou A (2017) [114]	Guinea	Research article	Cohort study	EVD	Maternal and child health indicators significantly declined during the EVD outbreak. There is a need for designing parallel strategies and interventions to counter service disruptions (mitigate collateral effects), particularly developing toolkits for monitoring health service disruptions and adjusting programmes accordingly.
Keita M (2017) [96]	Guinea	Research article	Case series	EVD	Strengthening social mobilisation and the training of HCWs.
Diallo B (2016) [119]	Guinea	Brief report	NA	EVD	Persistence of Ebola virus in a survivor's seminal fluid 531 days after onset of disease causing a new cluster of EVD in Guinea and Liberia; Need for outbreak response to combine field epidemiology with real-time molecular epidemiology and the availability of an up-to-date virus genome repository for the outbreak.
Moisan F (2016) [115]	Guinea	Research article	Descriptive analysis	EVD	The EVD outbreak resulted in a modest decrease in healthcare attendance in Guéckédou, requiring, nevertheless, intervention design to counter service disruptions during future outbreaks.
Leno NN (2018) [112]	Guinea	Research article	Cross-sectional	EVD	Designing strategies to mitigate outbreak collateral effects (e.g. Prevention of Mother To Child Transmission of HIV).
Bah EM (2019) [120]	Guinea	Case report	NA	EVD	ICP needs to be strengthened for obstetrical surgery in the context of EVD outbreaks.
Plucinski MM (2015) [113]	Guinea	Research article	Cross-sectional		Designing strategies to mitigate outbreak collateral effects (e.g. Malaria)
Kpanake L (2019) [126]	Guinea	Research article	Descriptive	EVD	In a case of need for volunteer recruitment for the response to future outbreaks, a multifaceted motivational approach should be adopted, emphasising motivational messages that refer to patriotic values and moral responsibility.
Baldé T (2015) [89]	Guinea	Research article	Single case study	EVD	Establishing robust coordination mechanisms for partners and within the ministry of health, departments is needed. Early community engagement is central. Developing clinical research on medicines and vaccines is needed.
Bjorneseth F (2020) [90]	Guinea (+Liberia and Sierra-Leone)	Policy brief	NA	EVD	Community engagement, crisis communication and countering rumours have proved effective.
Jaye T (2014) [103]	Guinea (+Liberia and Sierra-Leone)	Policy brief	NA	EVD	Investment priority must target health education, infrastructure and personnel.

Undurraga EA (2017) [104]	Guinea (+Liberia and Sierra-Leone)	Opinion	Modelling	EVD	Strengthening the health system by increasing health personnel, bolstering primary and critical healthcare facilities, developing the infrastructure and improving disease surveillance (IDSR).
Bhatnagar NG (2016) [97]	Guinea (+Liberia and Sierra-Leone)	Scoping review	NA	EVD	Improving preparedness by building a strong health system and enhancing community participation.
Vetter P (2016) [106]	Guinea (+Liberia and Sierra-Leone)	Review	NA	EVD	Improving outbreak preparedness through strengthening the health system; Engaging with social scientists in designing and delivering culturally-sensitive approaches to public health.
Wilkinson A (2017) [45]	Guinea (+Liberia and Sierra-Leone)	Opinion	NA	EVD	Engaging with anthropologists to understand social dynamics and design sturdy interventions.
Scott V (2016) [91]	Guinea (+Liberia and Sierra-Leone)	Debate	NA	EVD	Early community engagement for a successful response to outbreaks. Investment priority must be on health personnel; Commitment is required to address the underlying social determinants of the country's vulnerability and weak capacity for successful response to outbreaks.
Karamouzian M (2014) [92]	Guinea (+Liberia and Sierra-Leone)	Letter to the editor	NA	EVD	Community engagement and mobilisation can reduce fear and stigma; Not deploying armies, especially western armies on the ground, can lower fear in communities and prevent mistrust and violent fatal attacks on healthcare workers and volunteers.
Kekulé AS (2015) [107]	Guinea (+Liberia and Sierra-Leone)	Essay	NA	EVD	Better preparedness and sensitive epidemiological surveillance (including genetic characterisation) are required, as naturally occurring outbreaks do not happen suddenly; Deploying anthropologists is necessary; Treatment centers are the most effective form of emergency aid; In an emergency, only actions/practices will work that have worked already before (necessity to learn). Outbreak control must be fast and flexible.
Jalloh MF (2017) [93]	Guinea (and Sierra-Leone)	Research article	Cross-sectional	EVD	Community engagement is a cornerstone for a successful response to outbreaks.
Laverack G (2016) [94]	Guinea (+Liberia and Sierra-Leone)	Commentary	NA	EVD	Community engagement and social mobilisation in outbreak response are prominent.
Delamou A (2017) [98]	Guinea (+Liberia and Sierra-Leone)	Commentary	NA	EVD	Improving community participation and multisectoral collaboration are key to the health system's preparedness for future outbreaks. Learning from the EVD humanitarian assistance and rethinking the

					humanitarian–researchers' collaboration is needed. Lessons learned must inform policies and programmes.
Umar I (2016) [99]	Guinea (+Liberia and Sierra-Leone)	Review	NA	EVD	Multisectoral collaboration is required for major outbreaks such as EVD, including civil society organisations.
Gillespie AM (2016) [86]	Guinea (+Liberia and Sierra-Leone)	Research article	Case study	EVD	Community engagement and social mobilisation are central to outbreak response.
Venables E (2017) [108]	Guinea (+Liberia and Sierra-Leone)	Research article	Case study	EVD	Anthropologists played prominent roles in responding to the EVD outbreak.
Miller NP (2018) [95]	Guinea (+Liberia and Sierra-Leone)	Research article	Mixed methods	EVD	Putting community health workers and other community-level actors at the forefront.
Dhillon RS (2015) [122]	Guinea (+Liberia and Sierra-Leone)	Perspective	NA	EVD	Community engagement, risk communication, and social mobilisation are central to outbreak response
Govindaraj R (2017) [100]	Guinea (+Liberia and Sierra-Leone)	Book	NA	EVD	A national post-Ebola health system strengthening investment plan (shift from response to resilience) is needed.
Lebel R (2019) [117]	Guinea	Book	NA	EVD	Addressing survivors' emotional reactions is a core element of emergency response.
Keita S (2021) [85]	Guinea	Book	NA	EVD	Lessons: Weak preparedness to respond to a major outbreak: delay in diagnosing the EVD (weak surveillance system); Lack of the necessary infrastructure (laboratory & treatment centres), skilled human resources and financial resources; lack of early community engagement and social mobilisation; WHO guidelines that were followed showed limitations; Weak coordination of actors. Recommendations: Putting a particular focus on health system preparedness and financing; Training human resources for health; Improving infrastructure & equipment; Laboratory capacity building; Emphasising social mobilisation and communication. Establishing a sustainable structure for outbreak response with an autonomous management mandate; Improving governance.
Kolie D (2019) [44]	Guinea	Research article	Qualitative explanatory study	EVD	Emphasis on recruitment of HCWs facilitated by the changing practice of development cooperation partners about health financing, especially payment of staff salaries; the availability of remaining funds mobilised by donor countries and institutions for

					the response to EVD; the availability of trained HCWs that were contracted across all levels of the health system, especially in underserved areas during the EVD outbreak, and the change of the political perception in health issues or risks.
Pastor Institute (2017) [124]	Guinea (+Liberia and Sierra-Leone)	Webpage	NA	EVD	Enhanced vigilance and health surveillance are essential. *"Given the risk of resurgence of the disease, former epidemic foci in Guinea, Liberia and Sierra Leone could suffer new outbreaks."* Warning issued by scientists.
National Coordination Unit for the Fight against Ebola (2014) [138]	Guinea	Strategic plan for "Zero Ebola within 60 days" campaign	NA	EVD	Main issues tackled: surveillance, IPC, dignified and secure burials, case management, communication/reluctance.
Ministry of Health (2015) [127]	Guinea	Health System Recovery & Resilience plan (2015-2017)	NA	Post-EVD	Eradicating EVD (IPC, IDSR, IHR); Improving the performance of the local health system (improving service delivery and strengthening the management system); and enhancing health system governance (management, coordination, accountability, community engagement, regulation).
Keita M (2020) [123]	Guinea	Research article	Cohort	EVD	Setting up the surveillance and alert system for early detection of Ebola resurgence among survivors, modelled on the health system, from the community level to the central level.
Ndjomou J (2021) [130]	Guinea	Research article	Descriptive	Post-EVD (2014-16)	Guinea's laboratory capabilities have been built.
Linton NM (2020) [132]	Guinea	Research article	Modelling	Measles	Due to insufficient levels of herd immunity, measles transmission persists in Guinea. Further reproduction number estimation should be performed to help decision-makers and field staff understand outbreak progress and the timing and type of vaccination efforts needed to stop transmission.
Saez AM (2018) [84]	Guinea	Research article	Randomised control	Lassa Fever	The chemical treatment effectively controls local rodent populations. It can partly serve as a practical, holistic approach combining rodent trapping, use of local rodenticides, environmental hygiene, house repairs and rodent-proof storage. Engaging with local stakeholders and communities in developing these actions is key to success.
Magassouba N (2019) [133]	Guinea	Research article	Case report (next-	Lasa Fever	Early identification of viral haemorrhagic fever cases remains challenging in remote areas (e.g. health centres); There is a need for

			generation sequencing)		regular awareness training to facilitate the implementation of improved field surveillance and early detection.
Mariën J (2020) [134]	Guinea	Research article	Spatial analysis	Lassa Fever	The risk of Lassa virus spillover is heterogeneously distributed within Guinea's villages; Viral eradication in one specific village is unlikely if rodents are not controlled in neighbouring villages.
National Agency for Health Security (ANSS) (2019) [135]	Guinea	Management guide of priority zoonotic diseases	NA	Zoonotic disease	"One Health" approach; nine diseases retained: EVD, Lassa Fever, Dengue, Brucellosis, Avian Influenza, Yellow Fever, Rabies, Anthrax/charcoal, and Rift Valley Fever. Strengthening capacity of multisectoral actors in IDSR.
Delamou A (2020) [144]	Guinea (+Liberia and Sierra-Leone)	Correspondence	NA	COVID-19	For more success in responding to outbreaks, the health system needs to rethink the governance of the outbreak response by prioritising internal resource mobilisation and creating better synergy between national institutions to pool existing strengths and gain support from communities. To this end, national institutions tasked with each response pillar should be identified and provided with the required resources (e.g. local budget lines) under the coordination of the MoH or the designated institution. When doing so, the path for long-term capacity building of local actors with support from developing partners could be established.
Delamou A (2021) [145]	Guinea	Research article	Cross-sectional		The COVID-19 pandemic jeopardised efforts to achieve Millennium Development Goals for maternal and child health in urban settings in Guinea. For the country's health system to be resilient to crises such as COVID-19, there is a need for interventions to ensure the continuity of maternal and neonatal care.
Maxmen A (2020) [143]	Guinea (+Liberia and Sierra-Leone)	News in focus	NA	COVID-19	Political unrest can contribute to the rapid spread of an outbreak, jeopardising the response plan's implementation.
Millimouno TM (2021) [140]	Guinea (+Mali, Senegal and Burkina Faso)	Viewpoint	NA	COVID-19	Political unrest can contribute to the rapid spread of an outbreak, jeopardising the response plan's implementation. Learning from past experience, strengthening contact tracing and early community engagement for rapid outbreak control.
Kolie D (2021) [142]	Guinea	Commentary	NA	COVID-19	Governance mechanisms, diagnostic capabilities, and international support need to be improved.
Adote KA (2020) [141]	Guinea (+Liberia and Sierra-Leone)	Review	Case study	COVID-19	Outbreak preparedness is still suboptimal (e.g. insufficient detection and response capabilities). National public health emergency

					response plan and International Health Regulations (IHR) simulation exercises need to be improved.
Impouma B (2021) [139]	Guinea (+Liberia and Sierra-Leone)	Research article	Cross-sectional	COVID-19	The introduction of rapid readiness and response measures was probably due to the lessons learned from the EVD outbreak. Some health system weaknesses persist, and the unique nature of COVID-19 continues to challenge control efforts.
Ministry of Health (2020) [136]	Guinea	National Preparedness and Response Plan	NA	COVID-19	It includes the following components: epidemiological surveillance, laboratory, IPC, information and communication, logistics, coordination, and technical assistance (community engagement, risk communication, treatment centres, resuscitation, Go.Data, etc.)
ANSS (2020) [137]	Guinea	Community Response Strategic Plan "Stop COVID-19 within 60 days"	NA	COVID-19	It includes community engagement and social mobilisation, contact tracing, Testing, Home case management and lockdown, case referencing, Food and financial support to households, and sanitary control around lockdown areas.
Keita AK (2021) [149]	Guinea	Research article	Case report (next-generation sequencing)	EVD (2021)	In-country sequencing and capacity building enabled a timely characterization of Ebola virus strains in the 2021 outbreak. The Ebola virus can persist in survivors' body fluids for five years. Therefore, adequate healthcare measures for survivors are needed. Additionally, there is an urgent need for further research into potent antiviral agents that can eradicate the latent virus reservoir in patients with EVD and into efficient vaccines that provide long-term protection.
Ministry of Health (2021) [146]	Guinea	Response Plan to the EVD outbreak 2021	NA	EVD (2021)	16 pillars: Epidemiological surveillance; Laboratory; Medical management; Risk communication, social mobilisation and community engagement; IPC and WASH; Psycho-Social care; Information management; EVD and epidemic-prone diseases vaccination management; Survivors care; Nutrition; Protection; Prevention of sexual exploitation and abuse (PSEA); Strengthening governance/Coordination; Security; Logistics; Administration and finance.
WHO (2021) [147]	Guinea	Webpage (End of EVD 2021)	NA	EVD (2021)	Outbreak controlled within four months. Success factors were related to incorporating experience and lessons learned from the 2014-16 EVD outbreak. These include strengthened epidemiological surveillance, deployment of skilled Guinean professionals trained during the 2014-16 EVD at all response pillars,

					good coordination and synergy of partners' actions, community engagement, and ring vaccination.
ANSS (2021) [148]	Guinea	90 days Strengthened Surveillance Plan	NA	Post-EVD (2021)	Maintaining and strengthening community-based surveillance through the "One Health" platforms; Ensuring vaccination of health staff, corpse washers, traditional healers, red-cross staff, and survivors' relatives in the region of N'zérékoré; Strengthening the survivors' monitoring programme (clinical, biological and psychological monitoring, surveillance and vaccination around survivors, research).
Keita M (2022) [125]	Guinea	Research article	Case report	COVID-19, Lassa fever, EVD	The case clarifies the need to expand disease-specific surveillance to areas surrounding the outbreak's known geography. In this case, the extension of Ebola surveillance into neighbouring districts allowed to identify and diagnose a Lassa fever index case, facilitating prompt declaration of a Lassa fever epidemic and rapid implementation of control measures to limit the virus' spread in Guinea and Liberia.
ANSS (2021) [150]	Guinea	Response Plan	NA	Marburg	It includes the following components: coordination, epidemiological surveillance, IPC, case management, risk communication, social mobilisation, community engagement, laboratory, and logistics.
WHO (2021) [151]	Guinea	Final Report	NA	Marburg	Outbreak controlled within 42 days, with only one confirmed case/death. The rapid implementation of response activities, coupled with the experience of the affected prefecture in fighting against viral haemorrhagic diseases, played a central role in controlling the epidemic's spread to other regions. The source of the epidemic is still unknown, and the wife of the index case could not be found, which constitutes a significant risk for the resurgence of cases: investigations and research are ongoing.
WHO (2021) [153]	Guinea	Webpage (End of Marburg)	NA	Marburg	*"Without immediate and decisive action, highly infectious diseases like Marburg can easily get out of hand. Today we can point to the growing expertise in outbreak response in Guinea and the region that has saved lives, contained and averted a spill-over of the Marburg virus,"* said the WHO Regional Director for Africa.
WHO (2021) [152]	Guinea	Webpage (End of Marburg)	NA	Marburg	The training and vigilance of HCWs in the surveillance of epidemic-prone diseases were essential to the early detection of the case.

					"We immediately informed the prefectural health authorities so that they could take a sample." Stated the lead of the health centre of Koundou.
Aborode AT (2022) [88]	Guinea	Letter to the editor	NA	Marburg	Rapid control based on experience and knowledge from the response to the EVD outbreak (e.g. effective contact tracing, community engagement and social mobilisation); Request for support of 10 experts from WHO for outbreak investigation, rapid emergency response and improvement in disease surveillance and testing; Improvement of border disease surveillance.