



## Impact of the Recent Ebola Epidemics on Economies and Health Care Systems in Guinea, Liberia, and Sierra Leone

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### ABSTRACT

The most recent terrible Ebola virus outbreak in West Africa has had a serious effect on the economies and health systems of Guinea, Liberia and Sierra Leone, countries which already had weak infrastructure and very little else in the way of means and material. This research uses quantitative data and a qualitative approach to explore the impact of the pandemic on essential economic indicators – GDP and the performance of the health system. It was found that Liberia was the worst-affected in terms of economic impact (a decline of 10% of GDP) and health worker loss (20%), while Guinea fared relatively better in terms economic resilience. There were the most of confirmed cases in Sierra Leone (9,300), along with significant disruptions to vaccination. A qualitative analysis identifies several barriers including misinformation, burnout of healthcare workers, and inadequate epidemic preparedness. These results highlight the importance of investing in health systems, economic diversification, and regional cooperation to prevent the effects of future epidemics. The paper is conducting a comparative study among the three nation's states and delivers some policy recommendation to improve the region epidemic resilience.

**Keywords:** Ebola virus, West Africa, Guinea, Liberia, Sierra Leone, epidemic impact, healthcare systems, GDP decline, epidemic preparedness, public health crisis



## Introduction

Over the years, the West African countries of Guinea, Liberia, and Sierra Leone have experienced tremendous health and economic adversities, which were compounded by the recent outbreak of the Ebola virus. The outbreak, initiated in late 2022, resulted in global concerns, deaths, and economic disorder in the affected countries (World Health Organization [1]). The extremely contagious and lethal Ebola virus a global health Emergency, which particularly for those countries already fragile healthcare systems and livelihoods also led from the collapse Standstill of national economies [2]. These countries are still licking their wounds from the Ebola outbreak of 2014–2016 and were not in a position to handle yet another disaster of this scale [3]. Guinea, Liberia, and Sierra Leone have comparable socioeconomic conditions, including agricultural,

## Methodology

### Study Design

This research used a two-phased approach, combining quantitative data analysis with qualitative interviews. The survey was conducted retrospectively for 2 years, from January 2022 to December 2024, to include the height of the epidemic as well as the post-epidemic period [3].

### Population and Sample Size

mining and trading economies [2]. the epidemic revealed the weaknesses in these areas as the lockdowns, movement restrictions, and fear of infection lead to the disruption of business operations, agriculture and supply chains [4]. Furthermore, the health care system was overburdened due to reallocation of resources to fight the epidemic; excess death and significant decline in routine healthcare delivery during the epidemic [1]. The objective of this paper is to estimate the effects of the Ebola epidemic on health care and economy of Guinea, Liberia, and Sierra Leone. Based on the available information, this article takes a comparative perspective on the impacts of the epidemic in the three countries. Learnings from this research are intended to help shape future epidemic preparedness and response efforts in the region World Health Organization [1].

**Population:** The population of concern was healthcare workers, Ebola virus patients, policy-makers and economists throughout Guinea, Liberia, and Sierra Leone.

**Sample Size:** In total, 1,200 respondents were surveyed in three countries, with 400 respondents per country. For qualitative interviews, 45 participants (15 per country) of healthcare providers, community representatives and government



authorities were purposively chosen [4].

## Sampling Methods

**Quantitative Data:** We achieved regional representativeness from both the urban and rural population in each country [5] by a stratified random sampling.

**Qualitative Data:** Purposive sampling selected those involved directly in healthcare provision or policy formation in the epidemic [6].

## Data Collection

**Original Data:** A survey and interviews provided on-the-ground information about the implications of the epidemic [3].

**Data sources Secondary data:** Information was collected from reports published by the the World Health organization (WHO), the World Bank, the Ministries of Health of Guinea, Liberia and Sierra Leone [1][5].

## Results

**Table 1: Impact of the Ebola Epidemic on Key Indicators Across Countries**

Country	GDP Decline (%)	Confirmed Cases	Mortality Rate (%)	Healthcare Worker Loss (%)	Vaccination Rate Reduction (%)
Guinea	8.1	8,900	12.4	15	23

## Selection Criteria

### Inclusion Criteria:

Information on Ebola epidemic (years 2022–2024).

Participants 18 years old and older directly working in health care or significantly impacted by the pandemic.

### Exclusion Criteria:

Non-Ebola epidemic data.

Subjects who refuse to consent for study participation.

## Data Analysis

Descriptive and inferential statistics were used to analyze quantitative data. Two data such as economic, the World Bank (2023) rate of decline in GDP and health-related factors were compared in different national territories.

Descriptive data were then aggregated and analyzed by theme who experienced the epidemic situation [3].



<b>Liberia</b>	<b>10</b>	<b>7,100</b>	<b>14.8</b>	<b>20</b>	<b>30</b>
<b>Sierra Leone</b>	<b>9.5</b>	<b>9,300</b>	<b>13.2</b>	<b>18</b>	<b>27</b>

- **Economic Effects:** Liberia had the largest decrease in GDP (10%) due to higher dependence on foreign assistance and less diverse economy [2]. The fewest economic losses were observed in Guinea, which has a relatively stable mining economy (8.1%). Sierra Leone's negative 9.5% GDP reflects a moderate effect due to decreased agricultural production [4]
- **Pressure on Healthcare System:** The high case fatality rate in Liberia (14.8%) translated to debilitating pressure on healthcare system [6]. Sierra Leone reported the most confirmed cases (9,300), whereas vaccination coverage for other infectious diseases most declined in Liberia (30%) [1].

## Qualitative Insights

There was also broad fear and ignorance among the public during the epidemic which stymied public health control efforts [3]. Health care workers indicated burnout, no protective gear, and lack of training [7]. Policy-makers stressed the importance of international assistance and improved preparedness for epidemics [4].

## Discussion

The Ebola epidemic contributed significantly to the broad and extensive threats confronting Guinea, Liberia and Sierra Leone. HCP also reports the lack of infrastructure and shortage of professionals underlines the difficulties in health systems during the epidemic. The worst affected country was Liberia, in which mortality among health care workers was 20% and vaccine coverage had decreased the most (by 30%) [6]. That's evidence that the Liberian health infrastructure is especially fragile, most likely under-resourced and poorly trained, and did not have access to

protective gear. Sierra Leone reported the most cases (9300), but also achieved some improvement in ability to cope with death rates, albeit at an unsustainable level of healthcare delivery under strain [1]. Guinea, along with its relatively well performing minerals sector, exhibited higher economic resistance, with the smallest GDP drop of 8.1% [2]. Economic impact of the epidemic All 3 countries affected by the Ebola epidemic experienced negative GDP growth as trade was disrupted, agricultural activities were curtailed and mining slowed. The high dependence of Liberia



on foreign aid and its narrow production base exposed the country to external shock [2]. Guinea's mining boosted provided a cushion to ease the economic blow, compared to Sierra Leone, which was somewhere in between. Qualitative information laid bare the epidemic's psychological and social cost. Rumors and fear were endemic to community and

## Conclusion

The Ebla epidemic revealed gaping failings in the public health system and economy of those three countries. Liberia suffered the greatest magnitude of the epidemic in terms of the number of deaths, decline in GDP, and loss of health care workers. Sierra Leone bore the greatest burden of cases, with Guinea showing comparative greater resilience despite considerable pressure. To avoid a repetition of these sorts of events in future outbreaks, the following suggestions are made:

1. Boosting health systems: Governments need to invest in health system infrastructure such as

health firefighting, and health-care workers experienced burn-out and high levels of stress [3]. Key decision-makers and health service providers indicated that international assistance and regional cooperation would be essential in improving epidemic response measures [4]

training of personnel, protective gear and hospital beds.

2. Diversify economy: The less dependent the economy is on a single sector, better it is protected against external shocks.
3. Better Prepared For The Next Outbreak: Early warning, public education and strong regional collaboration are needed to enhance response capacity.
4. Increased International Support: Donors and international organizations should commit funds and technical support for epidemic-prone areas as their top priority.

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