

Global Health Benefits from Investments in Robust Surveillance Systems

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Introduction

- Surveillance is the cornerstone for prevention and control of emerging public health threats (1)
- 2005 International Health Regulations (IHR) obligated all national governments to meet core surveillance requirements
- By June 2012, only 40 of the 194 jurisdictions (20%) had complied with IHR
- Despite the potential to galvanize support for global health investments in surveillance, outbreaks that have spread to multiple countries, such as the current Ebola virus disease (EVD) epidemic, are inadequately described (see image)

Methods

Data Source

- Collected web based data available on UN affiliated institutions for 2000-2014 (2,3)
 - EVD epidemic and income data in US\$

Analysis

- EVD epidemic analysis focused on countries and regions, human illnesses, deaths, and whether the outbreak was declared a public health emergency of international concern (PHEIC) by the World Health Organization (WHO)

Income Analysis

- Gross domestic product (GDP) for all countries involved
- Contributions from donor countries
- GDP loss in affected countries
- Assessed the affordability of robust surveillance for each country involved in EVD outbreak by comparing national GDP in US\$

Results

- Nine countries in 4 regions reported EVD outbreaks during the study period (Figure 1)
- As of October 17, 2014:
 - 10,260 EVD infections
 - 5,046 deaths
 - 87.5% of cases occurred in 2014
 - 9.8% of the cases occurred in Uganda during 2001-2012 (Figure 2)

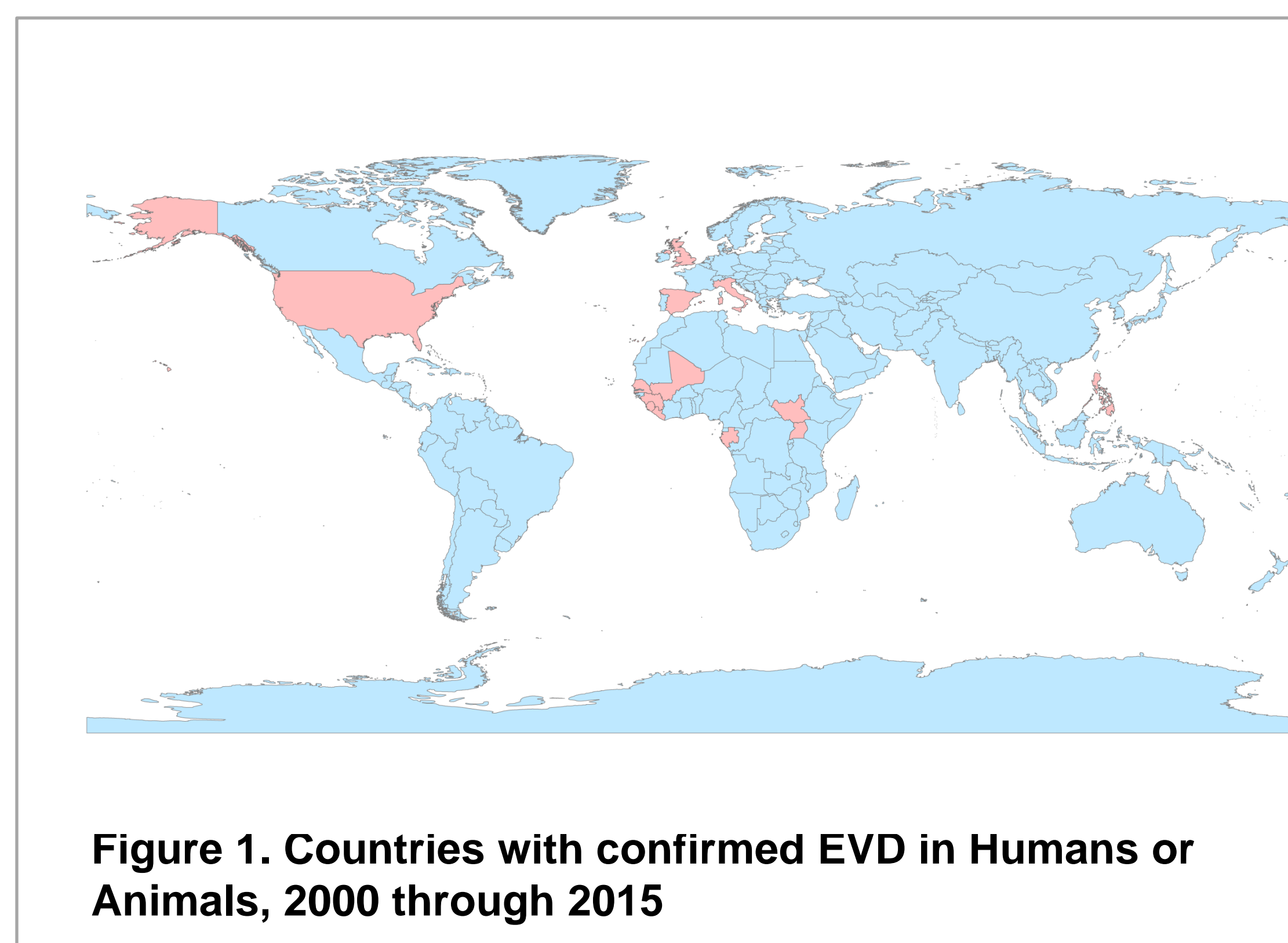


Figure 1. Countries with confirmed EVD in Humans or Animals, 2000 through 2015

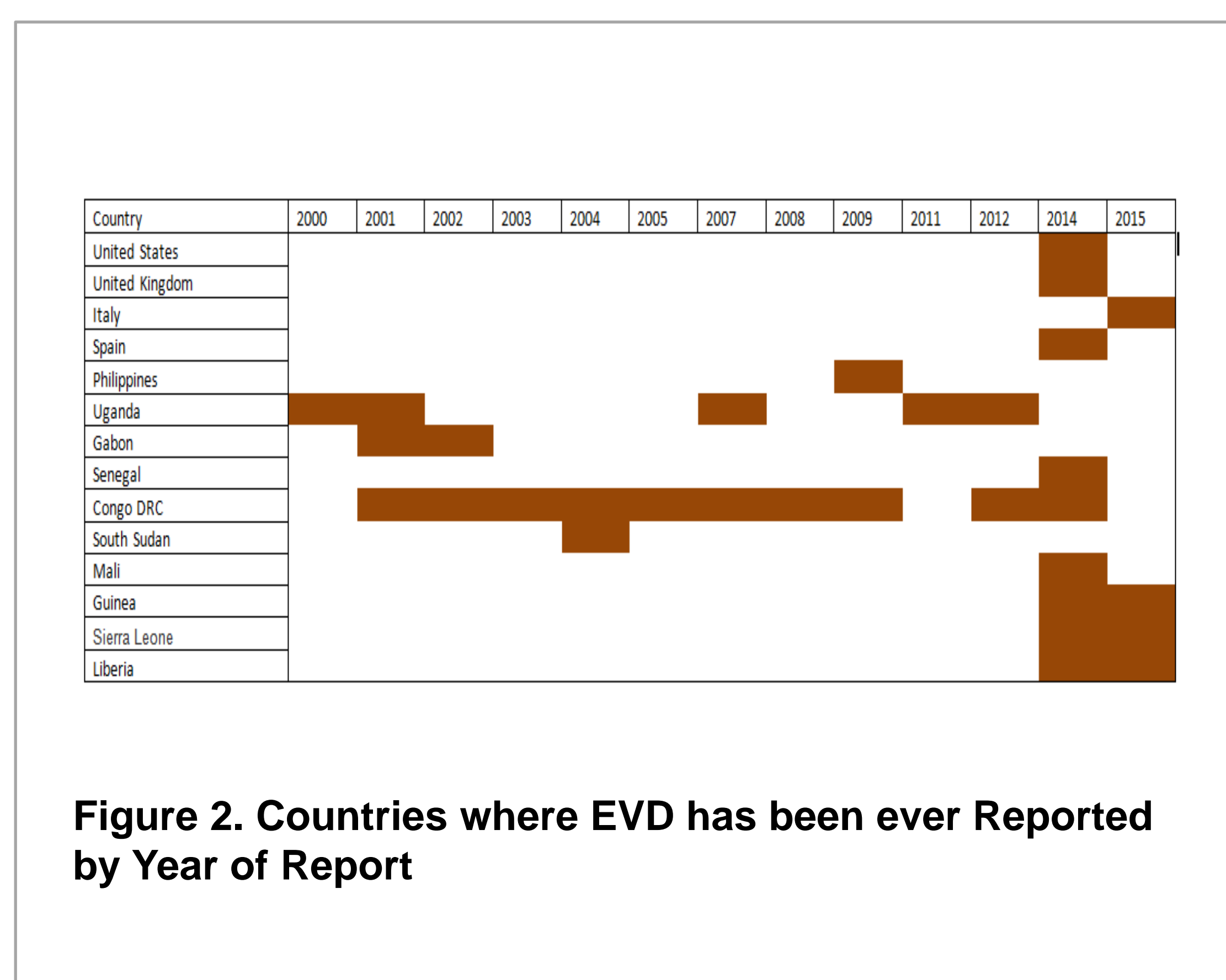


Figure 2. Countries where EVD has been ever Reported by Year of Report



An image showing Ebola team efforts in Guinea - Courtesy of World Health Organization

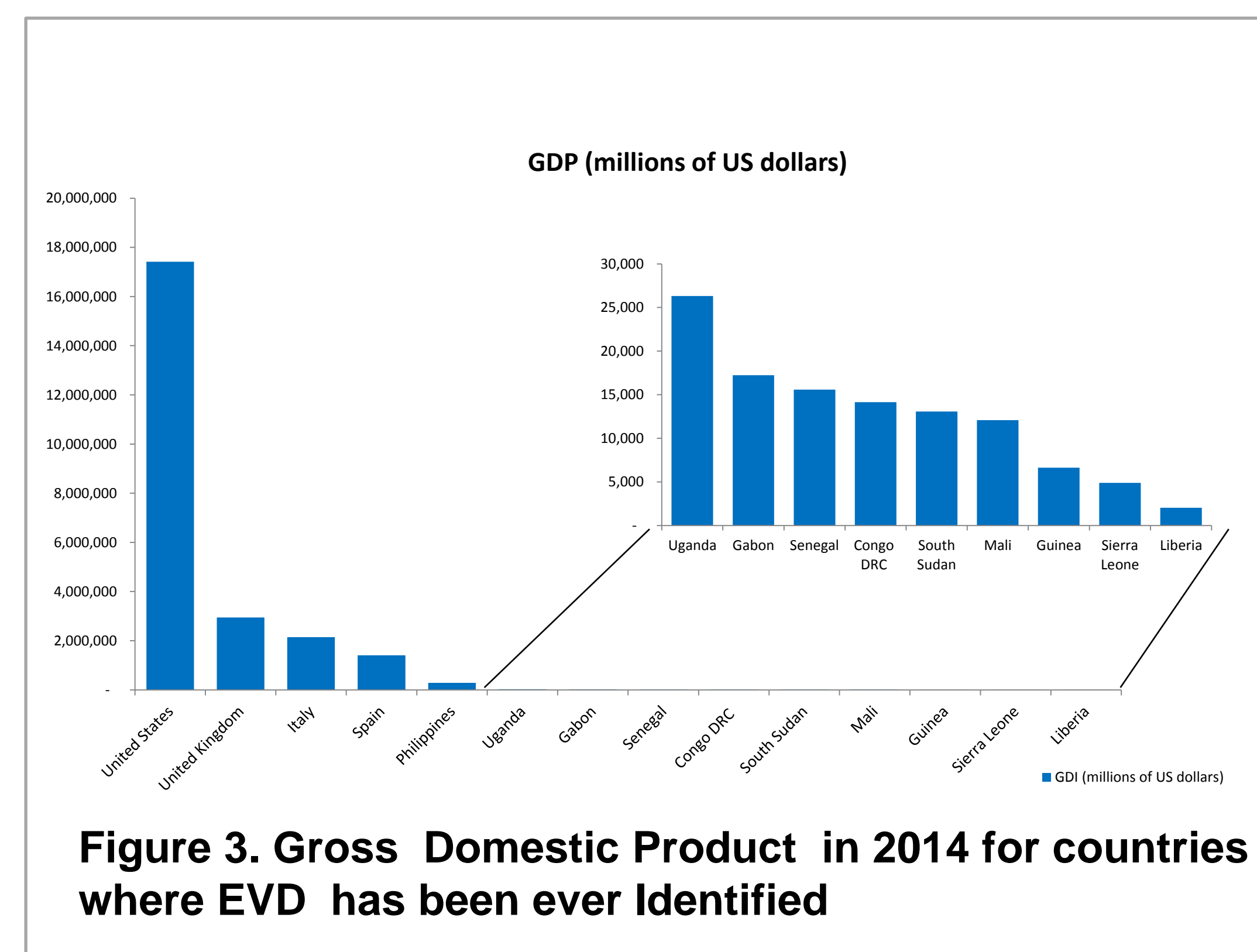
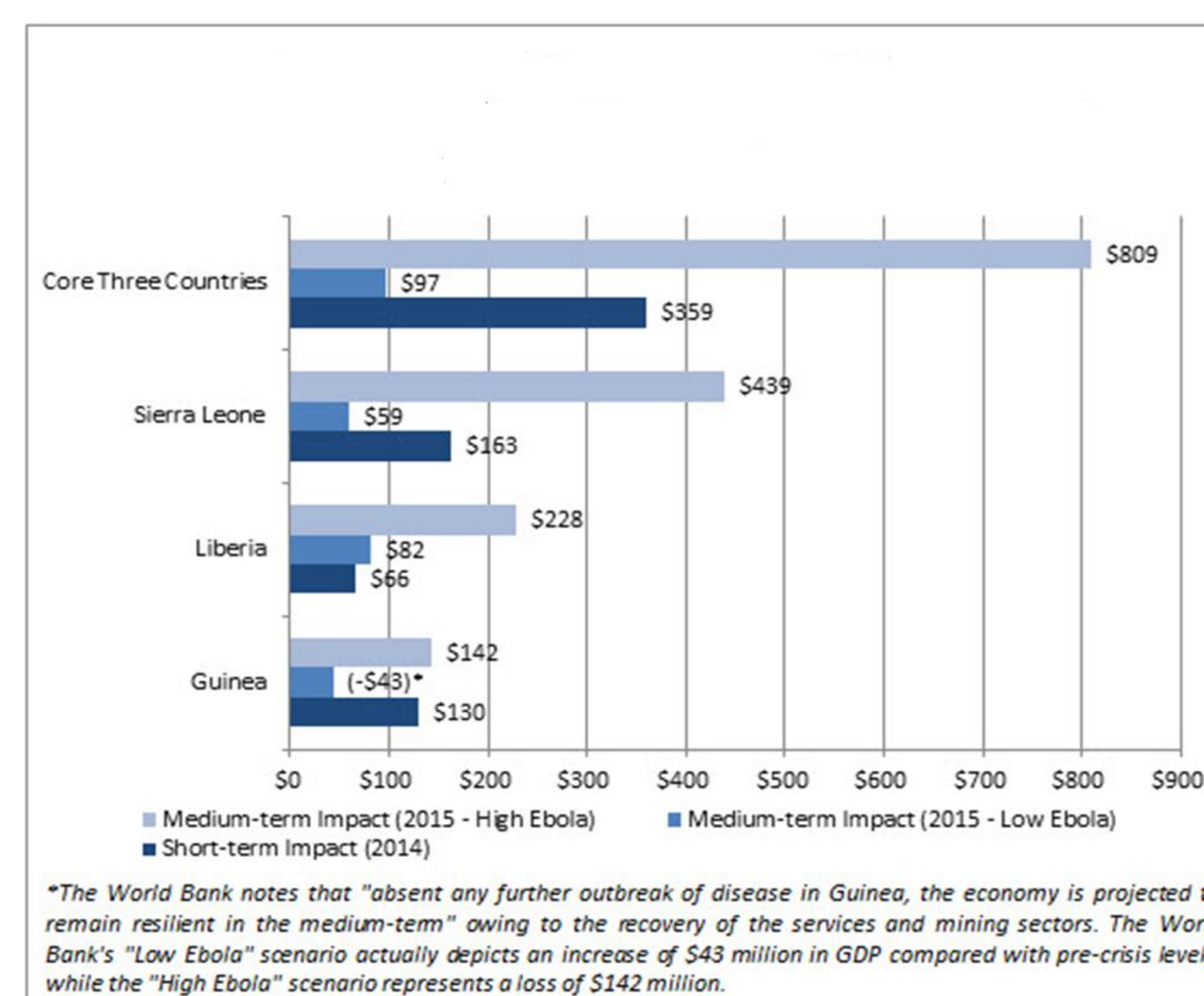


Figure 3. Gross Domestic Product in 2014 for countries where EVD has been ever Identified



*The World Bank notes that "absent any further outbreak of disease in Guinea, the economy is projected to remain resilient in the medium-term" owing to the recovery of the services and mining sectors. The World Bank's "Low Ebola" scenario actually depicts an increase of \$43 million in GDP compared with pre-crisis levels, while the "High Ebola" scenario represents a loss of \$142 million.

Source: World Bank

Figure 4. Estimates of GDP lost due to the Ebola Outbreak in the Short Term (2014) and the Medium Term (2015), in \$ U.S. Millions

Results (cont.)

- Prior to 2014, EVD outbreaks occurred in 4 countries in 2 regions, Africa and Asia.
- The 2014 outbreak (a PHEIC) has spread to Spain in Europe and to the United States in North America, involving 2 additional regions.
- EVD outbreaks prior to 2014
 - 7 countries - total GDI of \$414.1 billion
- EVD outbreaks in 2014
 - 2 countries (Spain and US) – total GDI of over \$18.36 trillion (Figure 3).
- As of July 7, 2015, the World Bank has mobilized US\$1.62 billion in financing for EVD response and recovery efforts to support countries hardest hit by EVD (Figure 3)
- The World Bank estimates that the 3 countries highly impacted with EVD will lose at least US\$ 2.2 billion in forgone economic growth in 2015 as a result of the epidemic (Figure 4)

Conclusions

- The current EVD outbreak underscores the urgent need for collaborative efforts to ensure reliable surveillance systems in all countries.
- Previous outbreaks had occurred in countries with limited resources
- A fraction of national incomes invested in surveillance systems would meet IHR requirements and strengthen efforts to detect and quickly prevent the spread of pathogens such as Ebola.

References

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