

Is the World prepared for epidemics like Ebola?

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Abstract

Recent outbreak of Ebola has not only killed thousands of people but has utterly affected the way people live while damaging healthcare systems and demolishing the economies of the West African countries. While Sierra Leone, Guinea and Liberia struggle to fight with Ebola, many countries have closed their borders, imposed travel bans and enforced necessary quarantines for health workers returning from Africa, to contain and stop the virus from spreading to other regions. As the world slowly wakes up to the catastrophic situation havoiced by Ebola virus, thousands of people are getting infected each day, posing a threat to the whole world. Discrete actions and policies of the world leaders such as travel bans reveals there is more focus on keeping themselves safe rather than eliminating the disease itself. The report studies how the virus outbreak in any region is an equal threat to the whole world. Frightful manner of governments as well as alarmed behavior of health and science experts even in this advanced era reveals how little the developed world is prepared for epidemics like Ebola. Exploring the background and current scenario of Ebola crisis, the report focuses on future scenario, the threat posed by Ebola and recommends how to be better prepared in case of future disasters.

Keywords: Ebola Virus Africa Epidemic WHO

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List of Abbreviations

CDC:	Centers for Disease Control and Prevention
DRC:	Democratic Republic of Congo
FTS:	Financial Tracking Service
GSK:	GlaxoSmithKline
J&J:	Johnson & Johnson
MSF:	Médecins Sans Frontières (Doctors without Borders)
NIH:	National Institutes of Health
RCT:	Randomized Controlled Trials
UN:	United Nations
WHO:	World Health Organization

Introduction

Africa – the name brings to mind a dark continent, exotic forests, the place where poverty dwells, where wars and disease happen. This is why no one bothered about Ebola until it worsened as much to threaten the developed Western and European regions.

The current outbreak of Ebola began in Guinea December 2013 and has claimed more than 5000 lives leaving many thousands more infected. Three countries with shared borders – Sierra Leone, Guinea and Liberia – bear all the burden and havoc caused by Ebola. These countries are also the same that are already struggling with poverty, the aftereffects of past civil wars, and other massive development challenges which make the situation ever more grave and calls for combined, equal efforts from international community.

However the global response has been abysmal and has revealed inadequacies to meet the crisis and emergency situation such as Ebola even in this advanced scientific and technological era. Instead of preparation and quick action to contain and combat the disease the developed world appears frightened as they closed borders, imposed travel bans and enforced mandatory quarantines for health workers returning from African region. Yet there is still a growing fear that the public health crisis in Guinea, Sierra Leone, and Liberia is rapidly transforming into a full-blown catastrophe.

Exploration and effective action is what the world needs right now. What people need to understand about Ebola is its Multiplication process which is nonlinear, so the number of people catching it doubles every 20 days, explains, Nassim Taleb, an author. The problem, according to Taleb, is that if there is no urgent action in Liberia, Sierra Leone, and Guinea — then there will be consequences everywhere. “The closer you are to the source, the more effective you are at slowing it down ... it is much more rational to prevent it now than later.”¹

¹ Nassim Taleb, “Here's What People Don't Understand About Ebola”, Business Insider, (October 17, 2014). Accessed at:

1.1 Background – History

Ebola, formerly known as Ebola hemorrhagic fever, is a rare but disastrous disease that can affect humans and nonhuman primates (monkeys) by infection with one of the Ebola virus strains. The actual source of Ebola virus remains unidentified to this day. However scientists believe that the virus is animal-borne and fruit bats are the likely source of the deadly virus.²

The reason why Ebola is considered very rare is because it only accounts for a tiny part when compared to the chief causes of death in Africa, such as AIDS, diarrhea.

Named after the Ebola River in Zaire, Ebola first emerged in 1976 in Sudan and Zaire (now the Democratic Republic of the Congo). The first outbreak in Sudan infected over 284 people. The outbreaks have erupted occasionally in African countries since then. Health experts have identified around 20 Ebola epidemics since 1976 which transpired in various areas of Africa that included 2,357 cases and 1,548 deaths, according to the Centers for Disease Control and Prevention (CDC).³

What makes the 2014 outbreak so shocking is that it has killed nearly 5,000 people till now which is more than triple the total of all earlier outbreaks combined.

1.2 Is Ebola jerking us back to the 19th century?

“Fever, Collapse, Death.” This is how two surgeons, Ishrat Syed and Kalpana Swaminatha, explain Ebola like epidemic that broke out in Mumbai in September 1896. In the article titled ‘19th-century Mumbai plague may offer clues in dealing with Ebola’ the surgeons highlight that more than 2.9 million had died of the plague in Bombay (now Mumbai, India). Associating the Bombay plague with current Ebola virus, surgeons add that unfortunately then, as now, quarantine was the only automatic response - a shocked

<http://www.businessinsider.com/nassim-taleb-heres-what-people-dont-understand-about-ebola-2014-10#ixzz3HwyoQjRs>

² Ebola (Ebola Virus Disease), Centers for Disease Control and Prevention, October 3, 2014. Accessed at: <http://www.cdc.gov/vhf/ebola/about.html>

³ Ibid

reaction to panic.

Isolation, segregation, quarantine were some of the forms of segregation practiced in 1896s Bombay where houses were also searched to take suspected cases to hospitals, while their belongings were burnt. Shoot on sight orders were also part of quarantine.

Surgeons believe the assault of Ebola in Africa is the same as the assault of Bombay plague. Recollecting old records, and suggest doctors need “supportive treatment”, and take every step to avert the body’s major organs from failing □ and it’s what doctors in Liberia are now doing, struggling to keep the patients hydrated, just as Dr. N. H, Choksy did in Mumbai epidemic, to prevent circulatory failure, and fatal effects of shock on heart, liver, kidney, brain.⁴

1.3 Countries with Cases of Ebola

The outbreak has affected mainly four countries: Guinea, Liberia, Nigeria, and Sierra Leone. But as the news reports of infection in Mali, Spain and the United States send waves of panic and rest of the world struggles to combat Ebola, World Health Organization has declared Senegal and Nigeria Free from Ebola on 20 Oct. 2014.⁵

1.4 Ebola Outbreaks 1976 - 2014

Summary of Ebola outbreaks that have occurred since 1976:

2014 – Ongoing Ebola outbreak across multiple countries in West Africa is the largest in history with number of patients is constantly evolving due to the ongoing investigation.

2012-2013 – Uganda reported 7 cumulative cases of Ebola virus infection, including 4 deaths. Democratic Republic of Congo (DRC) had 36 reported cases with 13 deaths.

2011 – A patient with suspected Ebola Hemorrhagic fever died in May 2011 in Uganda.

2009 – DRC outbreak caused 15 deaths and confirmed of 32 cases.

2007 – Uganda Ministry of Health reported 149 suspected cases and 37 deaths. DCR

⁴ Kalpish Ratna, "19th-century Mumbai plague may offer clues in dealing with Ebola", Oct 21, 2014.

Accessed at:

<http://scroll.in/article/684149/19th-century-Mumbai-plague-may-offer-clues-in-dealing-with-Ebola>

⁵ Outbreaks Chronology: Ebola Virus Disease, Centers for Disease Control and Prevention, Oct 22, 2014.

Accessed at: <http://www.cdc.gov/vhf/ebola/outbreaks/history/chronology.html>

health officials notified of 249 suspected 249 with 183 deaths.

2004 – Outbreak occurred in South Sudan which reported 17 cases with 7 deaths.

2003 – The Republic of the Congo reported 178 cases and 157 deaths.

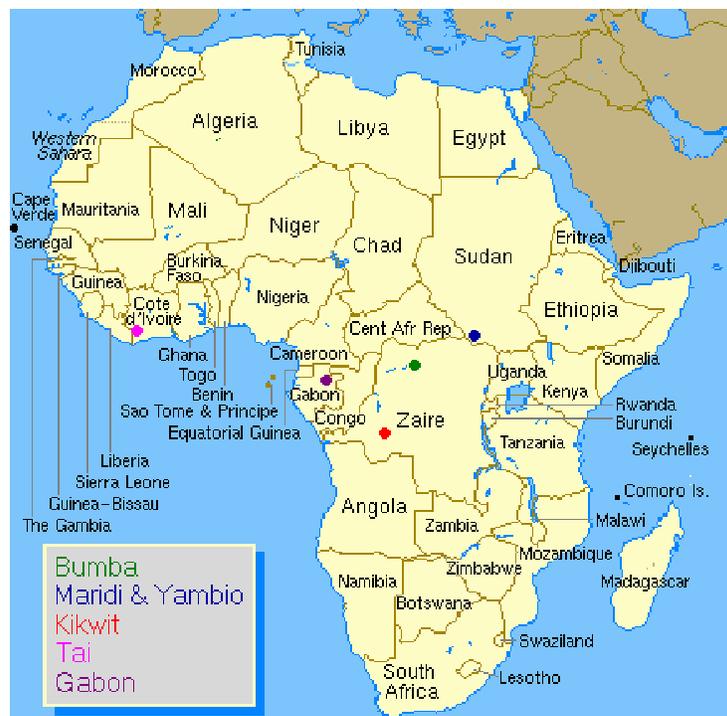
2002 – Gabon and the Republic of the Congo outbreak that occurred on border of Gabon and DRC affected 122 people and led to 96 deaths.

2000-2001- Uganda reported of 425 cases out of which 224 died.

1994 – Gabon reported 52 cases with 31 reported number of Deaths.

1976 – South Sudan reported 284 cases and 151 deaths.

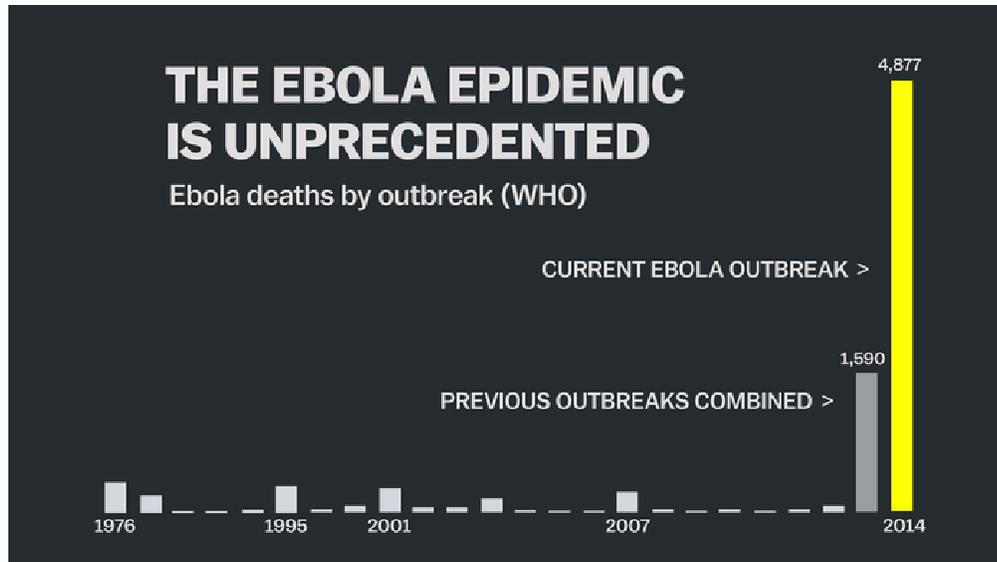
1976 – Zaire (DRC) is where the disease was first recognized. It spread by personal contact and by use of contaminated syringes in hospitals/clinics reported 318 cases out of which 280 people died.



2. Current Outbreak of Ebola

The number of cases in the Ebola outbreak has surpassed 10,000, with 4,922 deaths, according to the latest reports by the World Health Organization (WHO). Three African countries - Sierra Leone, Guinea and Liberia – account for all except 10 fatalities, with only 27 cases occurring outside the West African epicenter. Development and health experts believe that impractical and sluggish attitude of the global community is the reason that Ebola claimed eight deaths in Nigeria and one in the United States. “The international community badly misjudged the impact of the Ebola epidemic in its first few months and is compounding that error by failing to act quickly enough now” stated Nick Thompson of African Governance Initiative.

Rapid and effective action is what helped Nigeria and Senegal get rid of disease as WHO has declared both countries free of the disease.⁶



⁶ Tracy McVeigh and Edward Helmore, "Global Ebola cases pass 10,000 as Mali becomes latest nation to record a death", The Guardian - The Observer, October 25, 2014. Accessed at: <http://www.theguardian.com/world/2014/oct/25/ebola-cases-10000-mali-death>

2.1 WHO warning on dawdling response by World leaders

The World Health Organization (WHO) has declared the largest-recorded Ebola epidemic an “international public health emergency,” and demanded immediate and massive mobilization of resources from all countries. Medical teams in infected areas are facing serious issues and require urgent response in the form of health care, infection control, contact tracing, training of medical staff, epidemiological surveillance, alert systems, community awareness and mobilization. Yet the international support seems extremely insufficient. The warning by WHO that there could be 10,000 new Ebola cases a week by December if the world doesn't get more deeply concerned right away – is the sound of Ebola alarm bells ringing loud and clear.

2.2 Stories of Survivors

In Guinea, where the current Ebola epidemic first broke out, there are few who have not lost a friend or loved one. The stories of each survivor could be considered heartbreaking in some other era or time, but not in 2014, not in Guinea, where the recent Ebola outbreak has infected more than 7,000 and killing more than 3,000.

A 12-year-old Rosaline Konanio was one of the early survivors of the deadly disease in Guinea. Recounting her story, Konanio tells that she caught the disease from her grandmother, who got infected after visit to a funeral. Soon the symptoms of Ebola began to appear. "I vomited. I had diarrhea. I had a fever, and my body was in pain" says Konanio who was taken to the hospital, where she received the treatment from local medical staff. Konanio's grandmother and others in her family were not so fortunate to receive the treatment as they all died of Ebola within few days.

Thérèse Moundekeno's first encounter with Ebola was too painful. Her mother was one of the first confirmed cases of Ebola. "They told me the same virus that killed your mother can kill you," she recalls the medical staff saying as they refused her request to see her mother's body. She was devastated to see her mother's cadaver wrapped in a body bag rather than traditional fabrics. None of the onlookers were ready to perform burial services out of fear which added to Moundekeno's sufferings. The driver and two nurses

took pity on her and helped her bury.

Many survivors like Rosaline and Moundekeno or those who have had immediate experience with Ebola are now working with survivors and patients to defeat a harsh and faceless enemy by inspiring the message of hope, precaution and treatment.

2.3 Ebola's Impact on the West African Economy

Of the 16 countries in West Africa only three – Guinea, Liberia and Sierra Leone – are affected by the Ebola virus but the economic impact would be faced by the entire African region.⁷

Ebola-stricken countries are already struggling with issues such as poverty and food insecurity and the virus will only make matters worse by putting more burdens on feeble economies and inexistent health-care systems.⁸

The economic impact of Ebola is so huge that the World Bank has warned that Ebola could cost West Africa as much as \$33 billion over the next two years if it spreads unimpeded. The Liberian economy has declined by US\$113m as a result of the crisis; Sierra Leone by US\$95m; and Guinea by US\$120m. And the worst-hit nations of Guinea, Sierra-Leone and Liberia would go on to experience economic impact for many more years to come, estimates World Bank.

Border closures by countries like Senegal, Côte d'Ivoire and Ghana, as well as travel bans by airlines, could have a considerable adverse effect on trade in the region. The fear of Ebola has caused mass movement of foreigners working in several West African countries back to their home countries which is likely to affect the trade, tourism and agriculture industries.

Even the countries with no reported cases of Ebola have seen departure of foreign personnel in global companies. The situation is much worse in affected countries. In Liberia, for instance, a World Bank contract for the building of a road between Guinea

⁷ Enase Okonedo, "Ebola's impact on the West African economy", *The Conversation*, October 24, 2014. Accessed at: <http://theconversation.com/ebolas-impact-on-the-west-african-economy-33327>

⁸ Press Release, "Ebola: New World Bank Group Study Forecasts Billions in Economic Loss if Epidemic Lasts Longer, Spreads in West Africa", *The World Bank*, October 8, 2014. Accessed at: <http://www.worldbank.org/en/news/press-release/2014/10/08/ebola-new-world-bank-group-study-forecasts-billions-in-economic-loss-if-epidemic-lasts-longer-spreads-in-west-africa>

and Liberia to facilitate trade has been suspended as China Henan International Cooperation Group has pulled out all its workers due to Ebola threat.

Tourism: Ebola is being termed as the most destructive event ever in African Tourism history. “One Bioterrorist almost crippled the Nigerian tourism landscape. It almost wiped out the hospitality sector in Nigeria, Liberia Sierra Leone and Guinea. Nothing has ever hit the industry this hard!” says Ikechi Uko, publisher of African Travel Quarterly, explaining effect on the tourism industry in Africa.⁹

Travel bans: Travel shares of airlines, hotels and cruise ship companies globally have dropped over the last month.¹⁰ Airlines, hotels and travel companies are expected to suffer declines in revenues. The World Travel and Tourism Council recently stated that early indications suggest a decline of 30% in bookings to the region. Nigeria has suffered immensely with huge loss of business, massive cancellations and withdrawals by hotels, airlines, events companies. Ikechi Uko describes it as “a warlike situation.”¹¹ Gambia, which derives 16% of its GDP from tourism, is perhaps the worst affected in the region and anticipates 50-60% decline in numbers, according to the tourism minister of Gambia, Benjamin Thomas.

Agriculture: One major sector bearing the brunt of Ebola disease is of agriculture as farmers tend to stay away from farmlands and market places in Guinea, Sierra-Leone and Liberia. There are also concerns regarding the impact on agriculture production, especially that cocoa production could be jeopardized if the virus continues its spread as West Africa produces 70% of the world’s global cocoa supply. While Ghana and Ivory Coast, where the Ebola has not been detected yet, produce 60% of the world's cocoa.

⁹ Ikechi Uko, "Ebola the Most Destructive Event in African Tourism History", This Day Live, October 19, 2014. Accessed at:

<http://www.thisdaylive.com/articles/ebola-the-most-destructive-event-in-african-tourism-history/191627>

¹⁰ Hugo Martin, "With Ebola scare, travel industry hits rough patch", Los Angeles Times, October 17, 2014. Accessed at: <http://www.latimes.com/business/la-fi-cruise-ebola-20141018-story.html>

¹¹ Roger Blitz and Peggy Hollinger, "Travel groups resigned to Ebola impact on investor confidence", The Financial Times, October 8, 2014. Accessed at:

<http://www.ft.com/cms/s/0/39bcb450-4f02-11e4-9c88-00144feab7de.html#axzz3GfaRDIjJ>

3. Ebola Precautions

3.1 Safety measures against Ebola

Current Ebola epidemic is the largest in recorded history, exceeding all other Ebola outbreaks combined. The Centers for Disease Control and Prevention (CDC) in Atlanta (US state) fears that hundreds of thousands could die from the disease before it is brought under control. Experts believe that the unprecedented demands synchronized efforts by global community and that each country, with its own sets of sociopolitical peculiarities, should devise specific programs to contain and tackle the disease.

3.2 Race to find Cure - Vaccines doses expected by mid-2015

As the virus turns tougher and fatal than ever, the race to find the cure has also accelerated. The WHO has assured that several hundred thousand doses will be produced in the first half 2015. Trials of vaccines to regulate safety and dose level are underway in the U.S., U.K., Mali, and are beginning in Gabon, Germany, Kenya and Switzerland.¹²

Vaccine trials are expected to initiate in West Africa in December, a month before planned. The first vaccinations of health workers, burial teams, and other vulnerable ones, would soon be followed in Liberia and Sierra Leone.



¹² “WHO convenes industry leaders and key partners to discuss trials and production of Ebola vaccine”, World Health Organization Media centre, Oct 24, 2014. Accessed at: <http://www.who.int/mediacentre/news/releases/2014/ebola-vaccines-production/en/>

3.3 Pharmaceutical Companies working on Ebola Vaccine

The initial two vaccines to go into trials will be made by Britain's GlaxoSmithKline (GSK) and US firm Johnson & Johnson (J&J), but five more will be tested later. The companies have decided to collaborate to produce millions of doses that would be available in 2015, and thousands to be ready by mid-2015. Separately, the WHO expects to make a serum vaccine using antibodies from the blood of Ebola survivors.

The potential deal value for J&J vaccine, in partnership with the U.S. National Institutes of Health (NIH) and technological assistance from Denmark's Bavarian Nordic, could exceed \$187 million.¹³ The Chinese Academy of Military Medical Sciences has offered several thousand doses of a new Ebola cure drug, JK-05, for emergency use by Chinese aid workers in Africa.

Meanwhile a tropical disease specialist from Oxford, Peter Horby, is also testing some hopeful drug candidates such as ZMapp which is the drug used to fruitfully treat two American campaigners and a British nurse at clinics in Liberia operated by Médecins Sans Frontières (MSF).¹⁴

TRAVEL TO AND FROM EBOLA-AFFECTED COUNTRIES IS LOW-RISK HERE IS WHAT YOU NEED TO KNOW



¹³ Ben Hirschler, "Drugmakers to join forces to make millions of Ebola vaccine doses", Reuters, October 22, 2014. Accessed at:

<http://www.reuters.com/article/2014/10/22/health-ebola-johnson-johnson-idINKCN0IB0N620141022>

¹⁴ Mark Honigsbaum, "Ebola: the race to find a vaccine", The Observer, October 26, 2014. Accessed at:

<http://www.theguardian.com/world/2014/oct/26/ebola-vaccine-race-is-on>

4. Opinions and Apprehensions

Along with the rising Ebola cases and efforts for vaccines, some apprehensions and fears have also appeared that form a cloud of mystery around the Ebola virus.

One serious concern is regarding the ownership of "invention" of Ebola by U.S. Government which evokes an apparent question: Why would the U.S. government claim to have "invented" Ebola and then demand private monopoly over its possession?

It is worth mentioning that a patent called "EboBun" (patent No. CA2741523A1) was awarded in 2010, a part of which states that U.S. government claims "ownership" over all Ebola viruses that have even 70% resemblance with the Ebola it "invented".¹⁵

The patent, according to some experts, explains the reason behind transporting Ebola victims to the United States and placed under the medical supervision of the CDC as these patients are believed to possess valued assets in the form of Ebola variations. Indeed medical experts at Emory University and the CDC are making every effort to save the lives of Ebola victims. However some believe that simultaneously they might also be working to isolating, identifying and patenting infectious disease agents, to engender a global panic, later bring a vaccine so that scared governments would hastily spend billions of dollars' worth to buy vaccines they don't need, according to the article.¹⁶

Whiteout Press suspects the three organizations of US, that owns Ebola patent, namely CDC, Monsanto (US agri-pharma company), and the Department of Defense are expected to make billions off the global epidemic. America's Monsanto and Canada's Tekmira Pharmaceuticals, under a \$140 million contract with US military, are working in partnership to create Ebola vaccine. Monsanto is known to be despised over its genetically modified food products.¹⁷

¹⁵ EboBun, "Human ebola virus species and compositions and methods thereof", CA 2741523 A1, Apr 29, 2010. Accessed at: <http://www.google.com/patents/CA2741523A1?cl=en>

¹⁶ Mike Adams, "Why does the CDC own a patent on Ebola invention?", Natural News, August 03, 2014. Accessed at: http://www.naturalnews.com/046290_Ebola_patent_vaccines_profit_motive.html

¹⁷ Mark Wachtler, "CDC Ebola Patent could earn Billions from a Pandemic", Whiteout Press, August 4, 2014. Accessed at: <http://www.whiteoutpress.com/articles/2014/q3/cdc-ebola-patent-could-earn-billions-pandemic/>

4.1 Debate on Trial Design for Ebola Treatments

Senior health professionals and medical ethicists from Africa, Europe, and the US argue that although randomized controlled trials (RCTs) provide robust evidence in most conditions, but due to the fatal nature of the Ebola disease, RCTs and use of placebos (dummy pill) would be discriminatory and unethical. Alternative trial designs must be considered, according to experts, because of high mortality, lack of effective treatment options for Ebola and the scarcity of standard health care systems in the affected regions.¹⁸

According to reports, the first vaccine trials in Liberia would involve about 9,000 people and would be arranged with the support of the National Institutes of Health and Liberia's Health Ministry.¹⁹ The trial would be tested against placebo (a dummy treatment) which means some health workers would get the Ebola shot, whereas others would be given a vaccine that is defensive against some other disease, such as measles. People would be selected randomly and blinded so that neither volunteers nor doctors are aware of those vaccinated till the trial ends.

Though the notion of testing against placebo has always been controversial, but it has the benefit of offering a certain result more quickly, said WHO assistant director general Dr Marie Paule Kieny. To help scientists work out the correct dose of vaccine needed, and ensure there are no serious side-effects, the safety trials are currently going on in the UK, US and Mali and soon starting in Switzerland, Germany, Gabon and Kenya. "We are ensuring that safety remains a top priority with production speed and capacity a close second," said Kieny while reminding that "Vaccines are not the magic bullet, but when ready, they may be a good part of the effort to turn the tide of the epidemic."²⁰

¹⁸ The Lancet, "Insisting only on randomized controlled trials for Ebola treatments unethical, impractical, say leading health experts", Science Daily, October 10, 2014. Accessed at: <http://www.sciencedaily.com/releases/2014/10/141010134326.htm>

¹⁹ Andrew Pollack, "Vaccine Trials for Ebola Are Planned in West Africa", The New York Times, October 23, 2014. Accessed at: <http://www.nytimes.com/2014/10/24/us/vaccine-trials-for-ebola-are-planned-in-west-africa.html>

²⁰ Sarah Boseley, "WHO: several hundred thousand Ebola vaccine doses expected by mid-2015", The Guardian, October 24, 2014. Accessed at:

4.2 Mandatory Ebola quarantine raises questions

Quarantine policies of New York and New Jersey have been utterly criticized as being harsh. Meanwhile some state health authorities in Australia are reportedly planning impose mandatory detention on returning health-care workers if they refuse voluntary quarantine, according to The Australian report.²¹

Political intervention in public health is not generally considered supportive but in case of Ebola, government policies are being highly criticized by public as well as health experts. The United Nations (UN) Secretary-General has disapproved obligatory quarantine that needlessly penalizes doctors and nurses who have keenly put themselves at risk to save others. A former patient who received the quarantine called it forcible and a 'police state approach.' Such misguided measures are not only pointless but also take up more media space which should have been given to actual issues such as the grim situation in West Africa.²²

4.3 Healthcare workers vulnerable as well as frightened

New rules by governments and mandatory quarantines for healthcare workers coming back from Africa are seen as severe and inessential especially for those who are already vulnerable as they work on the frontline to help diseased people. Obligatory 21-day quarantines, now active in New York, Illinois and New Jersey are considered "a little bit draconian" that could discourage people from helping to fight the disease, said Dr. Anthony Fauci, the top Ebola expert at the National Institutes of Health.²³

<http://www.theguardian.com/world/2014/oct/24/who-ebola-vaccine-doses-2015>

²¹ "Mandatory detention considered for arriving Ebola suspects", The Australian News, October 28, 2014. Accessed at:

<http://www.theaustralian.com.au/in-depth/ebola-crisis/mandatory-detention-considered-for-arriving-ebola-suspects/story-fnpqlos3-1227104066666>

²² Grant Hill-Cawthorne and Adam Kamradt-Scott, "Mandatory Ebola quarantine is about politics, not public health", The Conversation, October 29, 2014. Accessed at:

<http://theconversation.com/mandatory-ebola-quarantine-is-about-politics-not-public-health-33531>

²³ Richard A. Serrano, "Quarantining health workers could worsen Ebola epidemic, officials say", Los Angeles Times, October 26, 2014. Accessed at:

<http://www.latimes.com/nation/la-na-ebola-quarantine-20141026-story.html>

The nurse who was the first person subjected to 21-day quarantine called her treatment in New Jersey as “inhumane.” Nurse Kaci Hickox, who was working in Sierra Leone with Ebola patients, described how she was confined in isolation for seven hours and given only a granola bar to eat. Expressing her fears she said, “I am scared (for healthcare workers), like me, they will arrive and see a frenzy of disorganization, fear and, most frightening, quarantine.”²⁴ Her worries are shared by many health workers who might feel daunted to help Ebola victims due to strict policies.

²⁴ Anemona Hartocollis and Emma G. Fitzsimmons, "Nurse under quarantine in N.J. criticizes Ebola quarantine order", New York Times, October 26, 2014. Accessed at: <http://www.bostonglobe.com/news/nation/2014/10/25/nurse-negative-for-ebola-says-effort-mess/9NAovbDITg7Lun7pzorDIJ/story.html>

5. Ebola and Global Reaction

The infectious nature of the killer disease has metamorphosed to an extent that it is now affecting the culture, economy and politics of the region after worsening the health conditions. “It (Ebola) has grave humanitarian, economic and social consequences that could spread far beyond the affected countries. Every day we delay, the cost and the suffering will grow exponentially” declared UN Secretary-General Ban Ki-moon.

5.1 Politics of Ebola

The politics of Ebola has proved to be alarmingly infectious and threaten to weaken the country's response. The priorities and policies of the government officials even in times of Ebola appears to be appalling as many Guineans believe that Ebola provides an apt excuse for sitting President Alpha Condé to postpone presidential polls in 2015. While some people believe that the crisis is part of a broader conspiracy by former colonial ruler France and influential mining companies to keep the African economies and people too weak to stand up for their rights.

There have also been reports of attacks on foreign medical staff and government officials as some annoyed and distressed accuse aid workers of bringing Ebola to Guinea. An MSF Ebola center in the Forestière town of Macenta was attacked by an angry mob in April 2014 which led to the temporary shutdown of the facility. Recently on Sept. 16, a mob armed with machetes and stones bushwhacked a delegation of health officials, government officers and journalists working on Ebola near N'zérékoré, Guinea's second-largest city. Some reports suggest that eight bodies of delegation members were found in a septic tank afterwards. Few survivors verified some details of the incident, but most were not willing to speak on the record due to the sensitivity of the incident.²⁵

5.2 UN's appeal and Response of International Community

United Nations has made an appeal of \$1 billion to fight the deadly virus warning that no country would be safe until the virus is entirely contained and treated. The world response should be sustained “until every last case is contained and treated,” said the UN

²⁵ Peter Tinti, "The Toxic Politics of Ebola", Foreign Policy, October 6, 2014. Accessed at: http://www.foreignpolicy.com/articles/2014/10/06/the_toxic_politics_of_ebola_guinea

Secretary-General's Special Envoy for Ebola, David Nabarro.

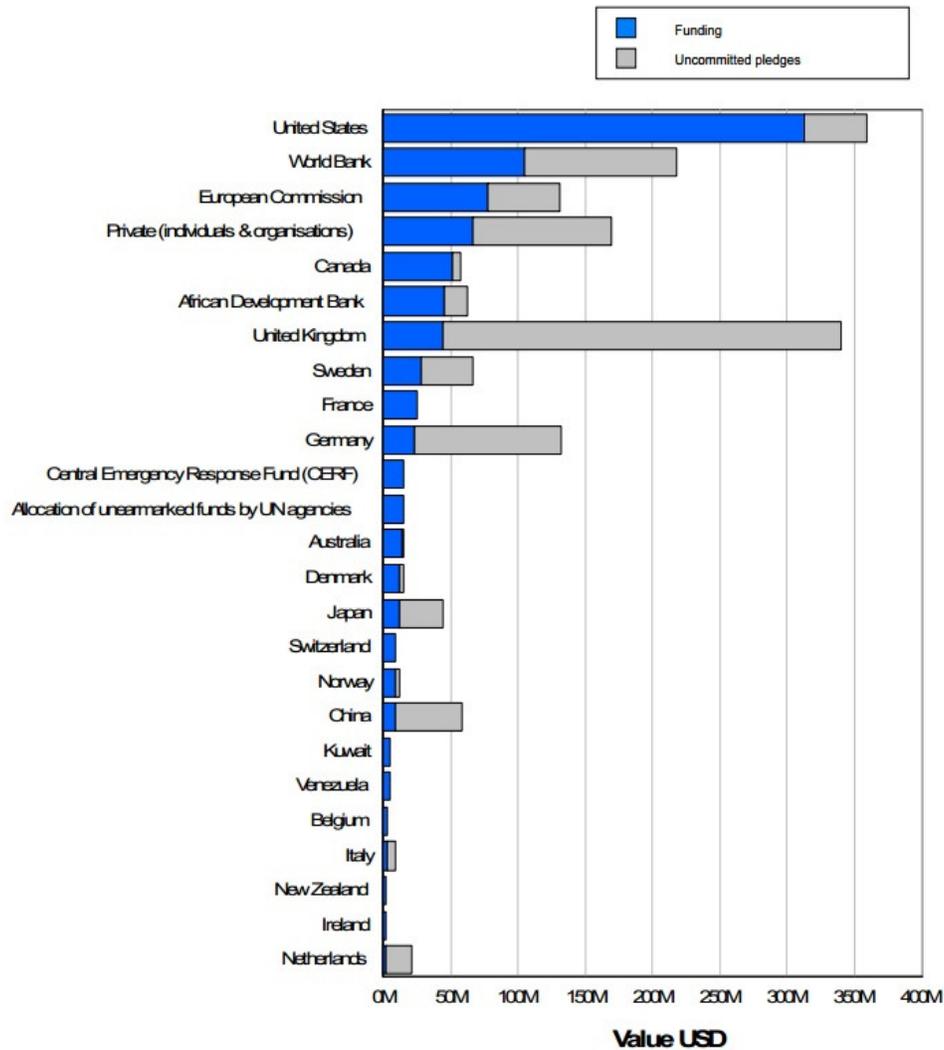
Ebola Virus Outbreak has received a total funding (i.e. contributions and commitments) of 907 million USD while the pledges remain 930 million USD as of 30 October 2014 according to Financial Tracking Service (FTS). Aid agencies have expressed "bitter disappointment" at the international community's lack of response.

In response to UN pledge of nearly \$1 billion to combat Ebola, the international contribution is as follows:

5.3 World response to Ebola crisis

- World Bank has donated some \$105 million to fight the Ebola epidemic.
- European Commission has contributed \$76 million.
- African Development Bank has donated \$45 million.
- America has contributed more than \$300 million and has pledged some \$46 million along with sending 3,000 American troops. According to the U.S. Department of Defense, about 600 U.S. service members are now in Liberia and 250-bed unit in Monrovia to treat health-care workers is expected to be fully operational by November.
- Canada has chipped in \$51 million. Canada is working on experimental vaccine, known as VSV-EBOV along with US Walter Reed Army Institute of Research and has announced to donate 800 vials of its vaccine (the only vaccine tested on non-human primates) to the WHO in Geneva.
- United Kingdom has contributed \$44 million and is also building a 92-beds treatment centers.
- Sweden has donated \$27 million.
- France donated \$25 million and is building 3 treatment centers in its former colony of Guinea.
- Germany has contributed some \$22 million but pledged around 100 million euros (\$127 million).
- Australia has donated \$13 million.
- Denmark, Finland and Japan have contributed some \$11 million each.
- Switzerland and Norway around \$8 million each
- China has sent nearly 200 medical staff and humanitarian aid worth \$46 million to West Africa and has pledged to give another \$82 million in aid.

- Spain has put in a mere \$5 million.
- Cuba has sent over 200 doctors and nurses to Sierra Leone.^{26 27}



5.4 Disappointed Response of Corporate Sector

In recent years the African region has attracted significant foreign investment from some of the world's leading resources corporations. But unfortunately the media has been consistently focusing on how Ebola crisis is affecting business, rather than

²⁶ Rodney Muhumuza, "International community ramps up Africa Ebola aid", Medical Xpress, October 27, 2014. Accessed at: <http://medicalxpress.com/news/2014-10-international-ramps-africa-ebola-aid.html>

²⁷ Xinhua, "China Offers New Anti-Ebola Aid to West Africa", CRI English, October 10, 2014. Accessed at: <http://english.cri.cn/12394/2014/10/25/3742s849306.htm>

enquiring what role these multinationals have played that boast of their corporate social responsibilities and relations with local communities.

The UN Financial Tracking Service has disclosed that Rio Tinto, working in Guinea for more than 50 years, has donated just US\$100,000 to the UN Ebola Virus Outbreak appeal. BHP Billiton, an Australian resources company that has mining operations in Guinea and Liberia, has donated a total of US\$400,000. A Canadian-based firm such as Aureus Mining Inc. has contributed just US\$30,000; while IMAGOLD has given a mere US\$35,000.

The London Mining Company, owning an iron ore mine in Sierra Leone that generated US\$299 million in revenue in 2013, has collectively donated US\$279,643, but individually the company has donated just US\$122,100.

Remarkably the leading private sector contributor to the Ebola crisis has been the IKEA Foundation which has donated over US\$6.7 million followed by General Electric which, according to the UN, has donated US\$2 million, and Kaiser Permanente and GlaxoSmithKline have donated US\$1 million each.

Some of the companies that have donated cash include the Bridgestone Group (US\$500,000), Coca-Cola (US\$248,000), DuPont (US\$250,000), and ExxonMobil (US\$225,000). Chevron Corporation (ambulances), Ericsson (collecting donations), and FedEx (shipping logistics) have offered in-kind contributions.²⁸

5.5 Global response has ‘failed miserably’

World health associations and experts believe that the world response towards handling Ebola has not been satisfactory and the virus has already taken a disastrous shape. “It’s late. It’s really late,” said the president of the World Bank, Jim Kim. “We should have done so many things. Healthcare systems should have been built. There should have been monitoring when the first cases were reported. There should have been an organized response.” Admitting that the international community had “failed miserably” in its response to the Ebola virus, he said: “Now that there are cases in Spain and the US, the chance of the virus going to other European countries is fairly high.”

²⁸ Adam Kamradt-Scott, "Mining companies must dig deep in the fight against Ebola", Medical Xpress, October 21, 2014. Accessed at: <http://theconversation.com/mining-companies-must-dig-deep-in-the-fight-against-ebola-33071>

More dollars and doctors are needed in Ebola fight, urge the experts. As Jim Kim urged global community to provide \$20bn (£12bn) to fight Ebola and said crisis might get much worse if countries do not react instantly to emergencies.²⁹

5.6 Travel bans issued in reaction to Ebola

Instead of more assistance and actions in the form of enhanced financial, medical and human resources, the response by some rich countries is inadequate and abysmal.

The deadliest pandemic has prompted some countries to respond with travel bans, in an attempt to curb the spread of the deadly virus. However the WHO has recommended against any general ban on travel or trade with the West African countries that have been affected by the epidemic. Countries that have imposed travel bans since August 2014 include Zambia, Kenya, South Africa, Gabon, Rwanda, Senegal, Ivory Coast, Seychelles, Guyana, Haiti, Mauritius, Colombia, St. Kitts and Nevis, Jamaica, Antigua and Barbuda, Belize, Dominican Republic, Suriname, St. Lucia, North Korea, Cape Verde, Equatorial Guinea, St. Vincent and the Grenadines, Australia.³⁰

5.7 Travel Restrictions - a Misstep in US Policy to Stop the Disease

The new US policy requires travellers arriving from Liberia, Sierra Leone, and Guinea to be tested for fever or other Ebola-like symptoms by public-health officials. Entry into the United States by West African travelers is limited to five airports - JFK, Newark, Dulles, Atlanta, and Chicago's O'Hare - that have Ebola-screening equipment.³¹ But experts believe the travel restrictions would not solve the problem rather would delay the timely movements that especially the air travel provides.

²⁹ Larry Elliott, "Ebola crisis: global response has 'failed miserably', says World Bank chief", The Guardian, October 9, 2014. Accessed at:

<http://www.theguardian.com/world/2014/oct/08/ebola-crisis-world-bank-president-jim-kim-failure>

³⁰ Leslie Adler and Lisa Shumaker, "Factbox-Travel bans issued in reaction to Ebola", Reuters, October 31, 2014. Accessed at: <http://www.trust.org/item/20141023220952-qk0by>

³¹ David Francis, "Are Ebola Travel Restrictions a Misstep in Obama's Fight to Stop the Disease?", Reuters, October 21, 2014. Accessed at:

http://thecable.foreignpolicy.com/posts/2014/10/21/are_ebola_travel_restrictions_a_misstep_in_obama_s_fight_to_stop_the_disease

5.8 Why Travel or Visa Bans for diseases like Ebola won't work?

Travel restrictions are not something and in fact have long been tried. Experts say that it won't work now just as it didn't in 1377 when the Mediterranean city of Dubrovnik enforced a 40-day isolation period on ships arriving in the city that were supposed to be carrying the Black Death disease.

Travel limitations have become the first tactic in case of disease threat, most recently Ebola. Several countries have already imposed travel bans. "Our immediate response should be to tighten regulation and introduce measures such as screenings at airports, train stations and ferry ports to ensure that this deadly disease cannot take more lives. Greater support must be ensured to deal with this outbreak to prevent it reaching the UK". This statement of Keith Vaz, chairman of Britain's Commons home affairs select committee, well represent the reaction by world leaders.

But World Bank president insisted: "We don't need to stop all travel from these countries. It's going to be impossible to stop people. The way to stop the flow of patients from these countries getting to the rest of the world is to have programmes that will treat people and increase survival dramatically. It's possible."³²

Major reasons why travel bans won't work:

- 1) Travel bans following 1984 HIV/AIDS threat didn't stop the disease from spreading.
- 2) Flights bans did not prevent bird or swine flu infections but rather delayed it by few weeks.
- 3) Airport screenings and travel restraints after SARS or 9/11 incident did not help catch cases but was considered a waste of money and human resources.³³
- 4) This map demonstrates no flights go directly from Ebola-stricken countries to the US. A travel ban then would mean to focus on stopping connecting flights or banning people based on their nationality — much more intimidating task than simply stopping flights

³² Tara Smith, "Travel Ban, Visa Ban—Either Way, It Won't Work", Politico, October 21, 2014. Accessed at:<http://www.politico.com/magazine/story/2014/10/travel-ban-visa-baneither-way-it-wont-work-112084.html>

³³ Julia Belluz and Steven Hoffman, "The evidence on travel bans for diseases like Ebola is clear: they don't work", Vox, October 18, 2014. Accessed at:
<http://www.vox.com/2014/10/18/6994413/research-travel-bans-ebola-virus-outbreak>

from West Africa.³⁴



The obvious problem with travel bans is that determined people will find ways to cross borders anyway or could lie, and health officials can't track their movements. Also the idea of sealing borders or strict flight bans is too impractical to be applied in this modern globalized era. Public health officials have precisely pointed out that the biggest challenge and setback with travel restrictions is that it would hinder aid, medical teams and resources to reach the region to contain Ebola at the source.

Health experts generally believe that travel sanctions would be needless and may even backfire. As Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases comments: "To completely seal off and don't let planes in or out of the West African countries involved, then you could paradoxically make things much worse in the sense that you can't get supplies in, you can't get help in that we need to contain the epidemic."

³⁴ Nate Silver, "Why An Ebola Flight Ban Wouldn't Work", FiveThirtyEight, October 17, 2014. Accessed at: <http://fivethirtyeight.com/datalab/why-an-ebola-flight-ban-wouldnt-work/>

The World Bank president Jim Kim used a burning house analogy to describe the problem of closing borders: "It's as if you were in a burning house, in your room, and you start putting wet towels under the door to keep the smoke from coming in." He added: "That is not an effective strategy. We've got to get back to putting out the fire."

5.9 Alternatives to Travel Ban

Instead of using airport screening and travel banning techniques, the world leaders should focus their attention and resources on the heart of the issue and take real action where the outbreak is emerging from. Because the longer Ebola inflicts disaster in West Africa, more people would get infected, which would only increase the chance of spreading throughout Africa and to the world.

Health experts suggest that the focus should be to set up quality services in place in affected places to discourage people to leave their countries because poor healthcare systems in the West African is one of the reasons people to travel abroad for treatment, thereby spreading the virus. It is vital to comprehend that developed countries have best health-care systems in place and way more doctors per capita than any of the countries struggling to contain Ebola outbreaks. While the US in 2012 spent \$8,895 per person for health care, Guinea spent \$32 per person, Liberia spent \$66, and Sierra Leone spent \$96.

6. Future Scenario and Recommendations

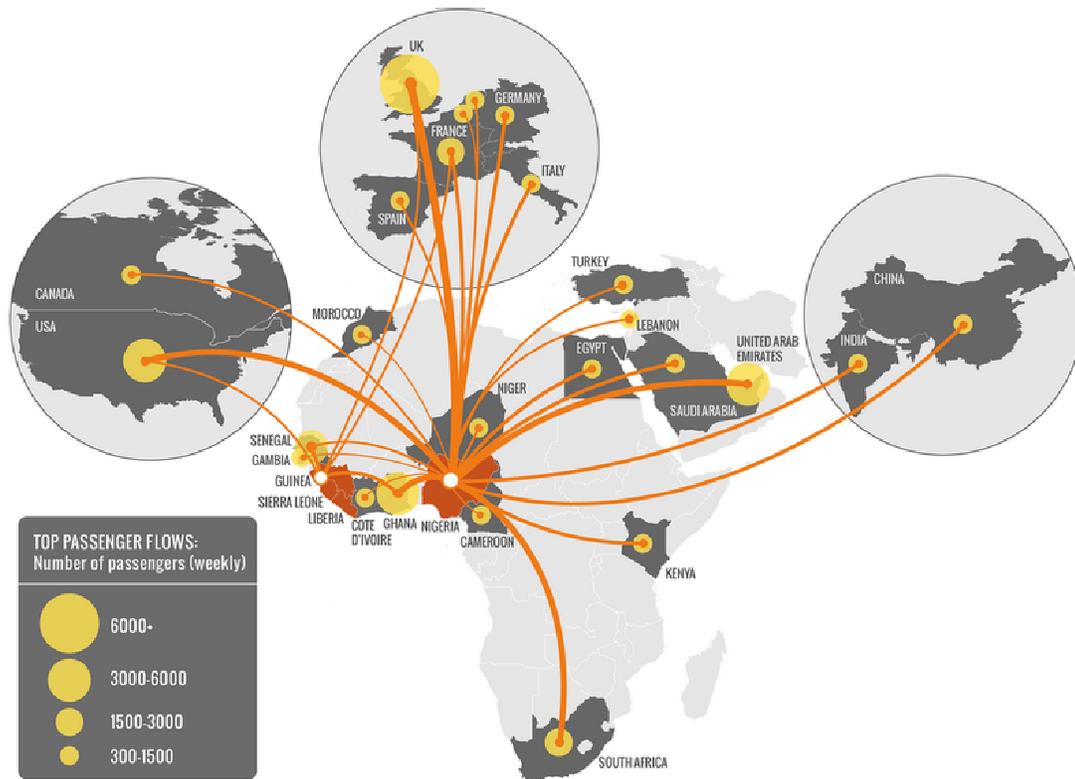
Ebola disease is not only a threat for African region alone but poses a serious danger for the whole world which requires coordinated efforts and timely actions. At the same time, the crisis also awakens the world to the fallacies of the scientific age and remind of the challenges to face in times of future crisis like Ebola. The terrifying attitudes of health experts and world leaders on the current Ebola crisis divulges that the world maybe technologically advance but it is certainly not prepared to deal with disasters as huge and widespread as Ebola.

6.1 Number of infections is expected to rise

The CDC has warned that if the response to Ebola doesn't improve, the number of infected people could increase up to 1.4 million by January. The major reason for the sharp increase would be that the world response has been too impassive and slow because the disease is far away from their countries to react quickly. Secondly, the affected countries do not have the basic health resources such as doctors, nurses, or hospital beds to contain the Ebola epidemic. It has been estimated that Liberia, for example, needs 84,841 body bags to deal with the impact of endemic but it only has 4,901. "We're nine months into an exponential growth process," said infectious disease modeler David Fisman who believes that Ebola is an unbelievably enormous malady that has been allowed to reach a point that it has basically become the biggest infectious-disease one could imagine.

6.2 Where Ebola is likely to go next?

Using a computer model that traces the regularity of international traffic to different countries, researchers have mapped the possible movement of the disease. The risk is relatively high in the UK and France, but very low in India and China. The good news is that UK, US and France have advanced health-care systems and are better prepared to deal with an Ebola outbreak. But countries like China and particularly India, the ones with considerably bigger populations, could struggle to deal with an epidemic like Ebola.



6.3 Ebola 2014 is more contagious than ever

A top scientist, Peter Jahrling, who has spent his lifetime studying some of the most perilous viruses, says he has been witnessing Ebola endemic with a mixture of fear, concern and scientific curiosity. Because the Ebola today has mutated to become more contagious than the ones that have appeared in the past. When his team has run tests on patients in Liberia, they seem to carry a much higher "viral load."³⁵

6.4 Lessons for the world from Ebola-free Nigeria and Senegal

When Nigeria's first case of Ebola was identified it was anticipated to become an apocalyptic outbreak, advancing at an unprecedented pace. But World Health Organization's announcement on October 20 that "Nigeria is now free of Ebola virus

³⁵ Julia Belluz, "A top scientist worries that Ebola has mutated to become more contagious", October 13, 2014. Accessed at: <http://www.vox.com/2014/10/13/6959087/ebola-outbreak-virus-mutated-airborne>

transmission" was a massive relief and also a "spectacular success story".³⁶

If a country like Nigeria with about 174 million people, hampered by serious security and social problems, poor public-health infrastructure, can manage to contain the disease then any country can hold transmission to just a handful of cases, believes WHO Director-General Margaret Chan.

Richard Downie, an expert on Nigeria at the Center for Strategic and International Studies credits Nigeria, a country with a GDP of \$510 billion for its effective action. What impressed Downie most was Nigeria's swift response as they collected a list of anyone who may have come into contact with the index case. "They came up with a plan, hit the streets and did the legwork on the ground." Isolation wards were then created, followed by treatment facilities. People who tried to escape were digitally tracked. MSF and WHO trained local doctors to treat the disease.

6.5 What steps did Nigeria take?

Nigeria's success "is a first-class effort," Downie said, that offers a lot for other countries to learn. Detailed analysis of measures adopted by Nigeria and Senegal offer valuable lessons for all.

- 1. Identify, isolate, and treat** - Ebola can be dealt firmly if possible disease victims are traced and isolated rapidly so they can't pass it on to others, and are later treated.
- 2. Detect early, before more people are exposed** - Anyone with Ebola disease is expected to infect about two more people, so the goal should be to detect Ebola sooner as the faster the victim is isolated, the smaller the number of people will become infected.
- 3. Strong leadership is critical** - The WHO described that Senegal and Nigeria's Ebola-free movement was made possible because of their strong leaders who made the Ebola-free drive top national priority. "The most critical factor is leadership and engagement from the head of state and the Minister of Health," reads the WHO report.
- 4. Public should be taken on board** - Ebola has become a global problem partly

³⁶ David Francis, "In fight to stop Ebola, Nigeria got right everything that the US got wrong", Foreign Policy, October 21, 2014. Accessed at: http://thecable.foreignpolicy.com/posts/2014/10/20/in_fight_to_stop_ebola_nigeria_got_right_everything_a_merica_got_wrong

because mistrust of government runs deep in Liberia, Sierra Leone, and Guinea. West Africans don't trust their leaders after years of civil war, violence, government corruption. But putting aside the political barriers, focusing on the urgent issues and taking people on board helped Nigeria win the battle against Ebola.³⁷

6.6 Global Response Plan to combat Ebola virus

The Accra Response Strategy:

Health ministers from 11 countries in the West African region summoned in July 2014 to define a common approach to the current Ebola outbreak. Participants agreed on three pillars for action: (1) immediate outbreak response interventions; (2) enhancing coordination and collaboration; and (3) scale-up of human and financial resource mobilization.

WHO Ebola Response Roadmap:

Roadmap outlines activities required to halt the transmission of Ebola in affected countries within 6-9 months and to prevent its international spread through medical and non-medical interventions. WHO Roadmap objectives are three-fold: (1) to achieve full geographic coverage with Ebola response activities in countries with intense transmission; (2) to ensure emergency and immediate application of comprehensive Ebola response interventions in countries with an initial case(s) or with localized transmission; (3) to strengthen preparedness in all countries to rapidly identify and response to an Ebola exposure, especially those sharing borders with transmission areas.³⁸

Doctors without Borders (MSF):

Along with health workers, international and national governmental organizations, Doctors Without Borders or Médecins Sans Frontières (MSF) has been at the forefront of

³⁷ Karen Weintraub, "From Senegal and Nigeria, 4 Lessons on How to Stop Ebola", National Geographic, October 24, 2014. Accessed at:

<http://news.nationalgeographic.com/news/2014/10/141024-ebola-nigeria-outbreak-lessons-virus-health/>

³⁸ WHO, "Ebola Response Roadmap", WHO - Global Alert and Response (GAR), August 2014. Accessed at: <http://www.who.int/csr/resources/publications/ebola/response-roadmap/en/>

medical response to Ebola disease.³⁹

The International Federation of Red Cross and Red Crescent Societies (IFRC)

IFRC appeal aims to strengthen and upgrade operations support, coordination, communication, capacity building and preparedness for at risk countries and mobilization with full community engagement.⁴⁰

6.7 Recommendations for Ebola Response Strategy

Developed Health Systems in Poor Countries

There should be world-class health systems in every poor country that should focus particularly on their capacity to do disease investigation and to cope with outbreaks to keep the world safe from future Ebola like events. “We need to spend as much as is necessary to assure equal health care in Washington, DC (US), and in Monrovia (Liberia)” urges Mead Over, a senior fellow at the Center for Global Development.

The health system of the affected countries is already weak and Ebola has further pushed it backward. “Once the outbreak is over and it's not in the headlines, people will forget how devastated these countries are. It is then that we will need to ensure continued support and awareness to reconstruct and build health systems” reminded Estrella Lasry, Tropical Medicine Advisor for Doctors Without Borders.

Mead Over says international community should do its best to fund health-secure transportation and have high-quality treatment and personnel who are trained to protect themselves plus high-quality, expensive treatment centers.

Fear, not Ebola, is the biggest threat

Ebola’s fear factor has turned out to be more perilous than the virus itself. The Ebola hysteria among public and media in US is largely because 1 American man visiting from Liberia died and both nurses who cared for the infected reportedly contracted the disease; whereas more than 5000 have died and thousands are infected in West Africa. But the government policies and coverage of media somehow depicts that Ebola crisis is

³⁹ Médecins Sans Frontières (MSF) - <http://www.msf.org/>

⁴⁰ International Federation of Red Cross, "Ebola virus disease outbreak" - <http://www.ifrc.org/ebola-crisis>

bigger in America than Africa.⁴¹

It is high time that to deal the situation coherently and calibrate the fear among people properly because public fright and anger can quickly turn into panic which moves faster than any virus.

Replace Panic with Precaution

The current Ebola epidemic offers this lesson: the reverse of panic is not calm, but attentiveness and complacency. A faster and calculated response, rather than edgy behavior, would enable containment of the virus before it jumped to other continents.

There is a difference between urgency and crisis, informed caution and panic and between short-term and long-term solutions. And Nigeria understood it well. Faisal Shuaib, a doctor at Nigeria's Ebola Emergency Operation Center, said that stopping public panic was instrumental in making Nigeria Ebola-free. With informed caution "people began to realize that contracting Ebola was not necessarily a death sentence," and realized that reporting early to the hospital boosts survival. Shuaib added that keeping Nigerian borders open helped to contain panic.

On the other hand, many countries including US, UK, Australia, have adopted the complete opposite strategy of Nigeria. It took US some 11 days to diagnose Thomas Eric Duncan with Ebola and later two nurses who treated Duncan, Nina Pham and Amber Joy Vinson, contracted it. Meanwhile, the political efforts have depicted a panic-like situation rather than promising as the politicians call for a travel ban, while local news channels cover the US cases as if it is a national outbreak.

Coordination and Communication vital for Future Preparedness

To face the challenges of dangerous epidemics, such as Ebola, or Congo virus, it is essential for the world community to keep the line of communication open with each other without any discrimination so as to be prepared better for future disasters. Because

⁴¹ Danielle Kurtzleben, "Fear, not Ebola, is the biggest threat to West Africa's fragile economies", Vox, October 26, 2014. Accessed at: <http://www.vox.com/2014/10/26/7067847/fear-not-ebola-is-the-biggest-threat-to-west-africas-fragile-economies>

every time a catastrophe of huge extent such as Ebola rages on any region of the Africa, it also poses an equal threat to all parts of the world. It is indeed a requirement of the globalized and advanced age to share information, resources and knowledge with one another to collectively combat any calamity. Sincere coordination and cooperation is what is needed for the future preparedness and for the progress of mankind.

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