



National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

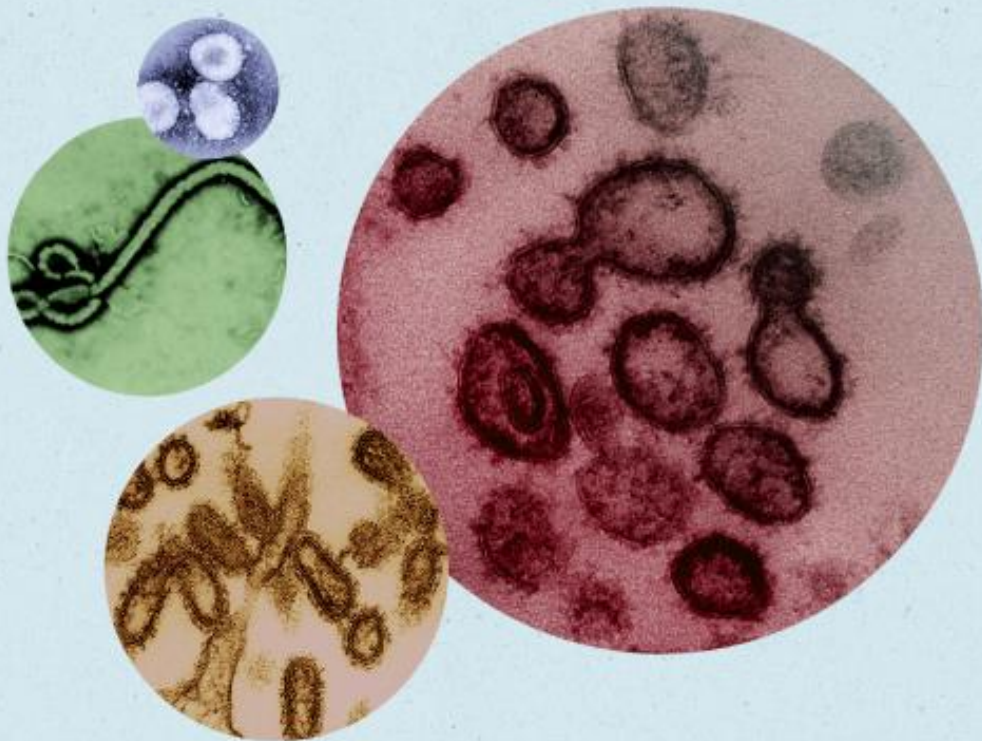
From Ebola to COVID-19

Same same but different

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NEWS

China: One dead from mysterious new virus, dozens sick

GLOBAL HEALTH

From Jan. 2020: China Identifies New Virus Causing Pneumonialike Illness

The new coronavirus doesn't appear to be readily spread by humans, but researchers caution that more study is needed.

HEALTH

WHO says mysterious illness in China likely being caused by new virus

Wuhan pneumonia outbreak: Mystery illness 'caused by coronavirus'

© 9 January 2020

China pneumonia outbreak may be caused by Sars-type virus: WHO

World Health Organization says a new coronavirus, the family linked to Sars and Mers, may be behind Wuhan cases

Birth of a pandemic: inside the first weeks of the coronavirus outbreak in Wuhan

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Global pandemic, here we come? Deadly Chinese coronavirus arrives in US as Russia, India & others boost border screenings

22 Jan, 2020 02:04 / Updated 1 year ago

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World Health Organization

Novel Coronavirus (2019-nCoV)

SITUATION REPORT - 1

21 JANUARY 2020



COVID-19 vs SARS and MERS

- › **SARS & MERS: Deadly, but not easy to transmit**
- › Did not cause the same level of devastation that COVID-19 has largely because they are not easily transmitted
- › These viruses are not spread through presymptomatic transmission
- › Infected people typically stayed home or were hospitalized, making it harder for them to spread the virus around
- › **This differs significantly from COVID-19, which can be spread by people without symptoms**
- › Therefore, social distancing has become such a crucial part of our strategy to combat the spread of COVID-19





COVID-19 vs Swine Flu (H1N1)

- > **Swine flu: Easily transmitted, but not as deadly**
- > Spread easily person-to-person, just like COVID-19
- > The 2009 pandemic of H1N1 swine flu spread very, very well, but the fatality rate was low, and that's the reason why it wasn't dubbed as a particularly serious pandemic
- > Even with a low case fatality rate, the swine flu had a high overall death toll due in part to how easily it spread
- > **With an even higher case fatality rate and perhaps even a higher rate of transmission, COVID-19 has required drastic measures to reduce its spread**





COVID-19 vs Ebola (EVD)



- › **Ebola: Very deadly, but hard to transmit**
- › Infected people don't spread the virus until they start showing symptoms
- › Spread through direct contact with the bodily fluid of an infected person
- › If you're in an Ebola zone, you can be sure if the person you're talking to is a potentially risky contact
- › **It's a striking difference from COVID-19, which we know can be spread without any symptoms at all**
- › Ebola is prevalent in developing countries due to their agrarian economies. In contrast, COVID-19 is more pronounced in developed countries



COVID-19's bottom line

- › Previous viral outbreak lacked one key component that allowed COVID-19 to tip over into a global pandemic
- › COVID-19 can be mild enough that some people who have it don't know they have it
- › It's easily transmissible, can be transmitted by presymptomatic people and is severe enough to kill a significant number of people who have it
- › SARS-CoV-2 has led to an outbreak that is **unusually difficult to track and control**
- › It has lead to a seismic shift in our everyday lives

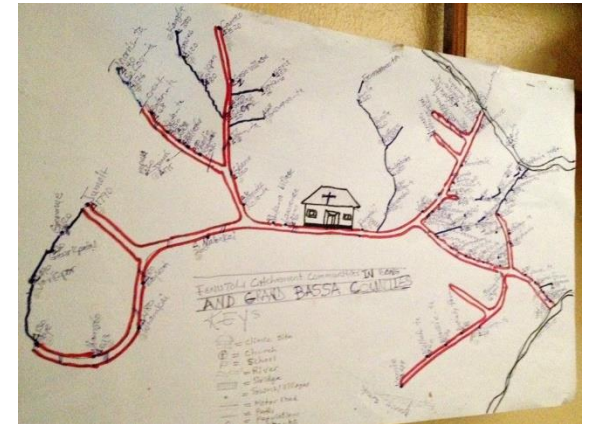
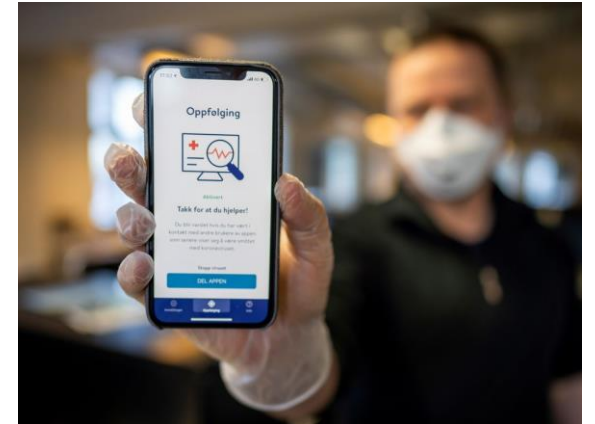




Outbreak management: Common themes

- > 1. Establish an outbreak curve by identifying and counting cases
- > 2. Establish the progress of the outbreak
- > 3. Quarantine and isolate
- > 4. Communicate
- > 5. Coordinate
- > 6. Expect the unexpected

It all starts with basic outbreak investigation and response

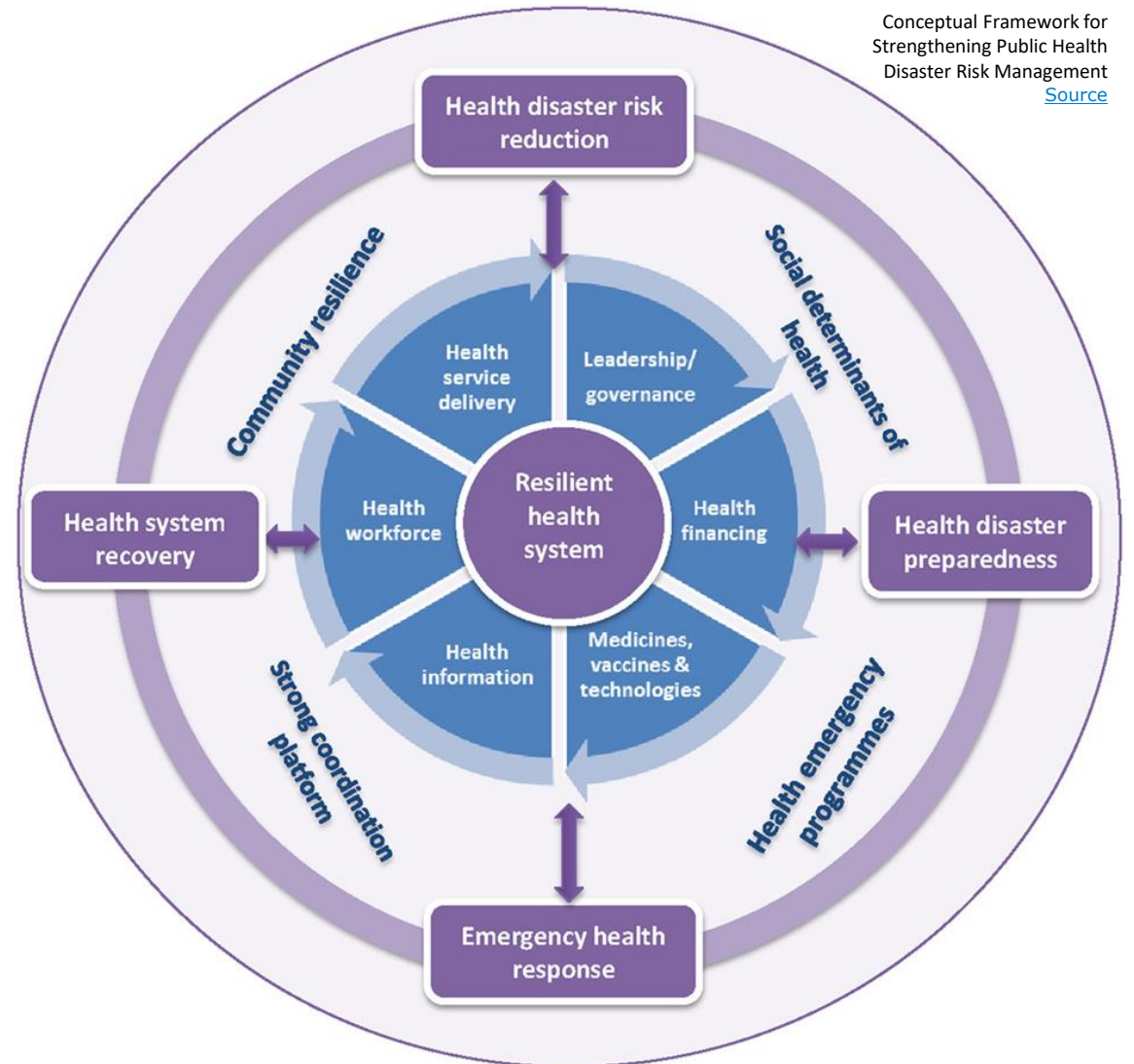




Resilient Health Systems

- > Includes all organizations, people and actions whose primary intent is to promote, restore, or maintain health
- > Involves all health-improving activities implemented either at home, in the community, and the formal health sector and the social determinants of health
- > The health system framework has 6 building blocks:
 1. health service delivery
 2. health workforce
 3. health information
 4. medical products
 5. health financing
 6. health leadership and governance

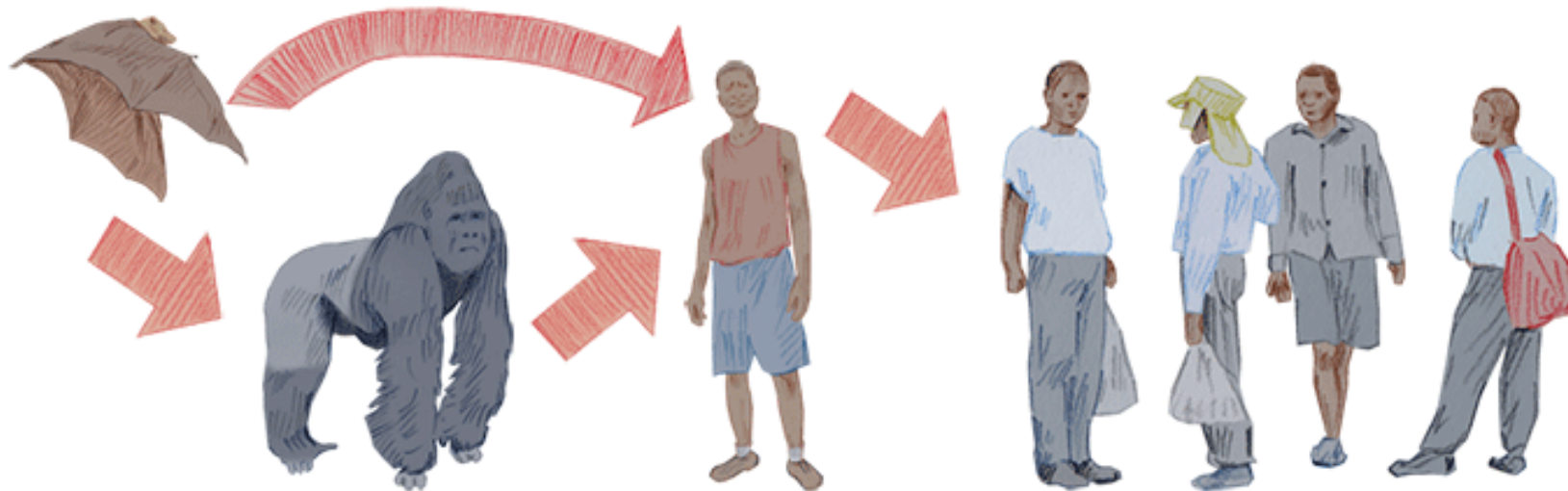
Conceptual Framework for
Strengthening Public Health
Disaster Risk Management
[Source](#)





Zoonotic Transmission Cycle

- › Introduced to human populations through close contact with bodily fluids of infected animals through broken skin or mucous membranes
- › Ebola spreads through human-to-human transmission via **direct contact with blood and bodily fluids** of infected people





Transmission Cycle

- › Health-care workers frequently infected while treating patients. Occurred through close contact with patients when infection control precautions are not strictly practiced
- › Burial ceremonies involving direct contact with the body of the deceased can also contribute in the transmission of Ebola
- › People remain highly infectious after death

Deceased bodies being sprayed with chlorine by staff in full PPE





Environmental health

- > **Deforestation** and **habitat loss** (estimated at more than 80%) brought potentially infected wild animals, and the bat species thought to be the virus' natural reservoir, into closer contact with human settlements
- > Forest areas are being destroyed by foreign **extractive industries** including mining and timber operations



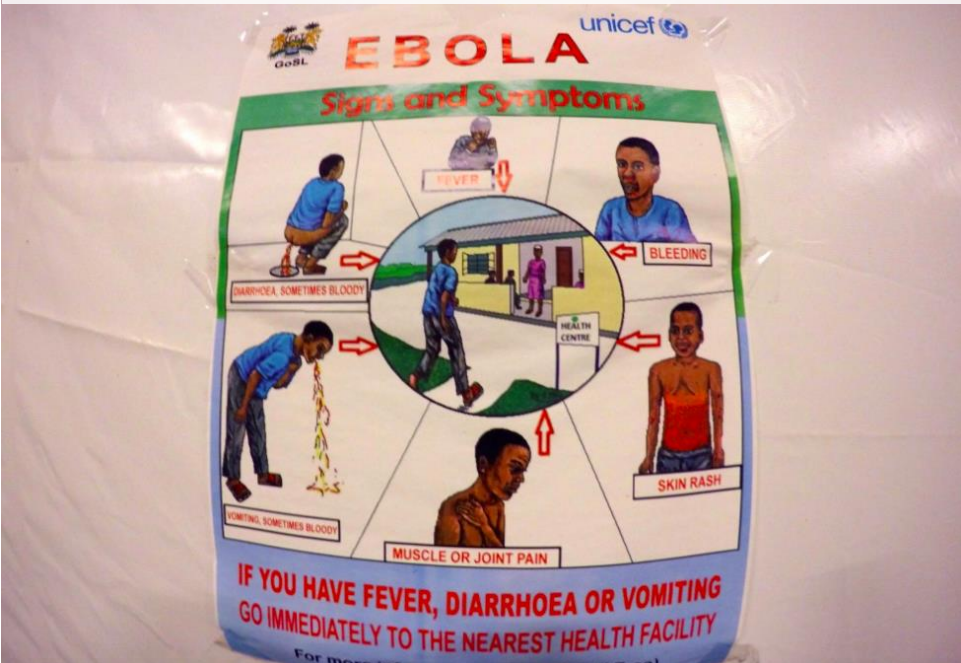


Response and outbreak control

- > **Good outbreak control** relies on applying a package of interventions: case management, surveillance, contact tracing, a good laboratory service, safe burials, and social mobilisation
- > **Community engagement** is key to successfully controlling outbreaks. Raising awareness of risk factors for Ebola infection and protective measures that individuals can take is an effective way to reduce human transmission.



Billboards and posters could be seen across the country





Risk Reduction Activities

- > **Reducing the risk of wildlife-to-human transmission** : from contact with infected fruit bats or monkeys/ apes and the consumption of their raw meat.
- > **Reducing the risk of human-to-human transmission**: from direct or close contact with people with Ebola symptoms, particularly with their bodily fluids
- > **Outbreak containment measures**: safe burial, contact tracing, quarantine, infection control procedures





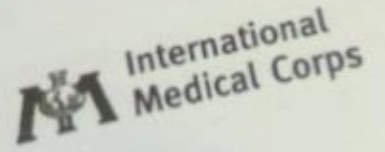
Safe burial and culturally appropriate considering the nature of the outbreak



The treatment centre in the rural area of a key urban centre



This form is NOT to be shared with anyone other than the individual being assessed and the HR Department, unless required by public authorities. It will remain confidential within the HR Department.



Ebola Virus Disease (EVD) Risk Assessment Form

Personal Information of the IMC Staff Member being evaluated:

Date of Assessment: _____ Location of Assessment: _____

First Name: _____ Last Name: _____

Title: _____ Office Location: _____ Tel. No: _____

Gender: Male Female Email: _____ Tel. No: _____

Emergency Contact: Name: _____ Email: _____ Tel. No: _____

Information on person completing this form (An IMC Medical Doctor, Medical Director or Medical Coordinator) or another Public Health Expert appointed by Headquarters):
Name: _____ Tel No: _____

Paperwork was important for the collection of surveillance data to control the outbreak. The top right of the photo is a heat radar to test

A suspected family entering the facility.

Staff are decontaminating the area with chlorine.

Blood sample is taken inside the building and processed



Patients are triaged into suspected, confirmed, and convalescent tents. These are communal



If a family are confirmed as Ebola positive, the children sometimes survive longer than the parents. But also succumb from the virus.





Supportive care: rehydration with oral fluids and treatment of specific symptoms, improves survival

The survivors wall, where patients who clear the virus leave their
mark





Infrastructure and logistics were challenging. The laboratory was basic, but fully functional

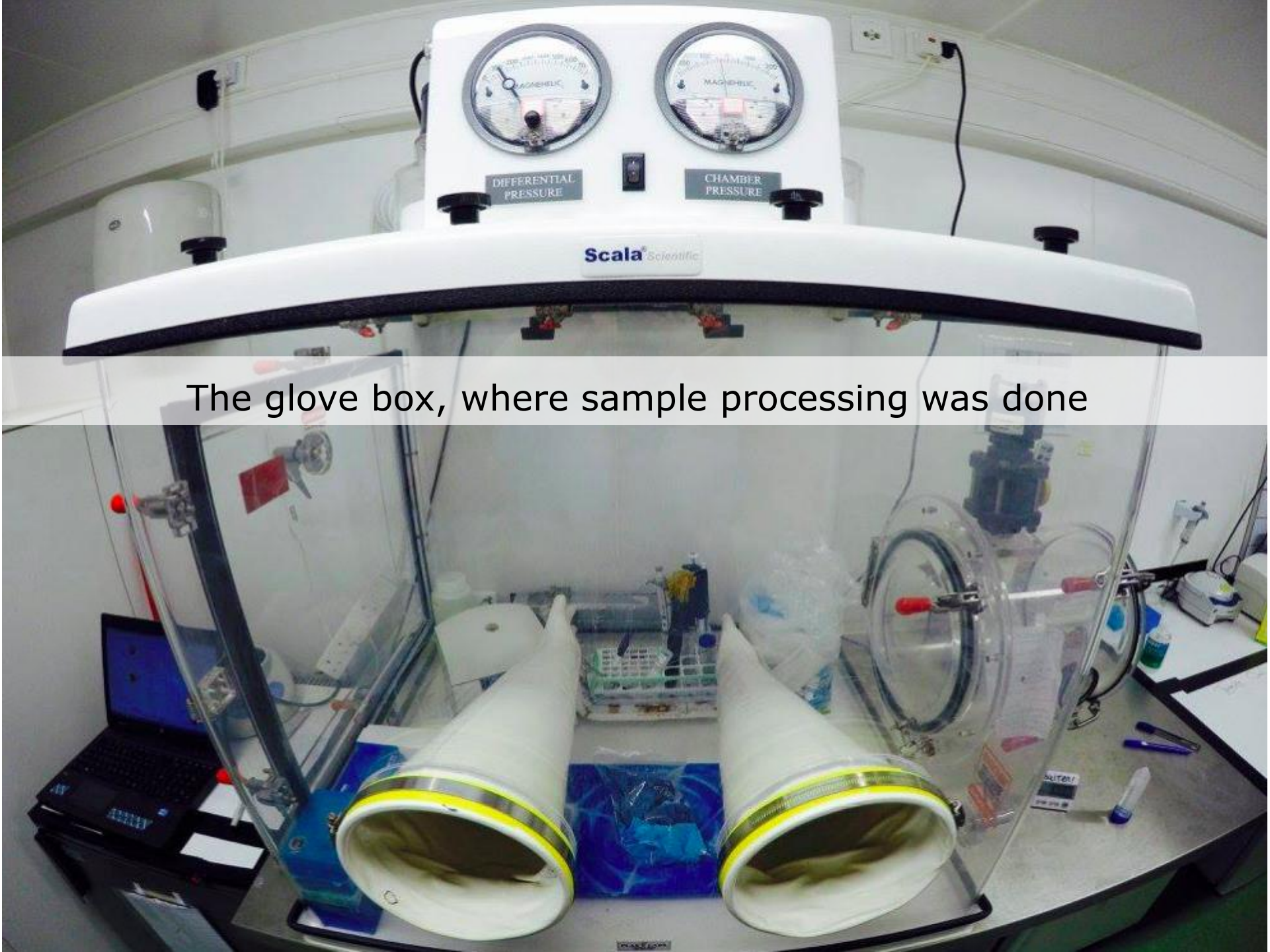


Confirmatory Diagnosis

- > Difficult to symptomatically distinguish EVD from other infectious diseases e.g. malaria, typhoid fever, and meningitis.
- > Confirmation that symptoms are caused by Ebola virus infection were made using clinical diagnostic methods: **polymerase chain reaction** (RT-PCR) assay



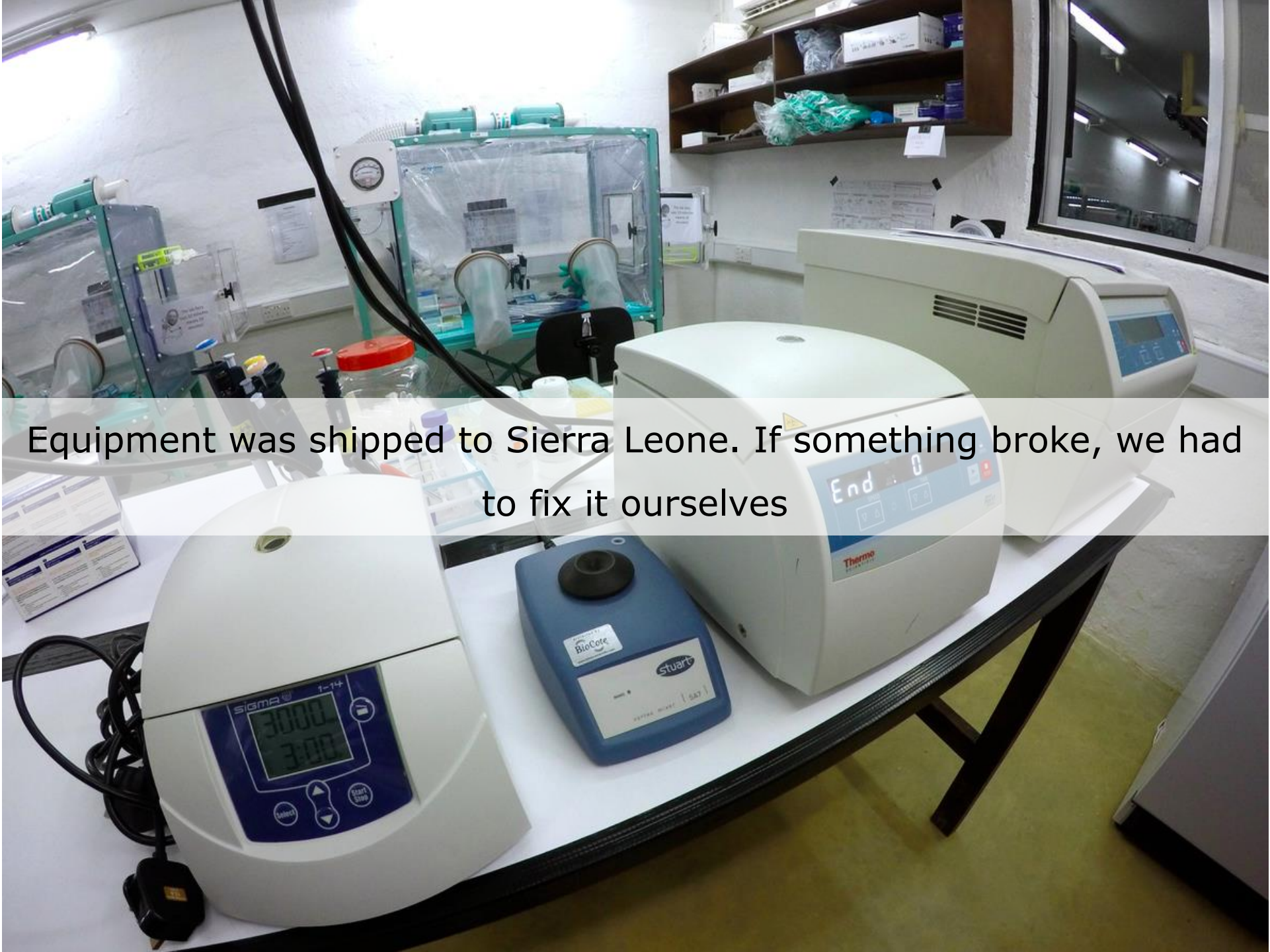
Specimen reception was often performed outside



The glove box, where sample processing was done



Working in the crisis required a strong and dedicated team on rotation



Equipment was shipped to Sierra Leone. If something broke, we had to fix it ourselves

The laboratory office, where reports and results would be made and sent across the country





Mental health

- > “The anguish of being firsthand witnesses to relentless, extreme human suffering”

Report

"Sadness, we are full of sadness": Ebola's psychosocial toll on frontline health workers

June 30, 2016

Editorial

Potential mental health consequences for workers in the Ebola regions of West Africa – a lesson for all challenging environments

Neil Greenberg Simon Wessely & Til Wykes

Pages 1-3 | Published online: 14 Jan 2015

Sierra Leone

Ebola burials traumatise aid workers

News and Press Release • Source: Mail & Guardian • Posted: 7 Aug 2015 •

[Health Policy Plan](#). 2016 Nov; 31(9): 1232–1239.

Published online 2016 Jun 8. doi: [10.1093/heapol/czw055](https://doi.org/10.1093/heapol/czw055)

PMCID: PMC5035780

PMID: [27277598](https://pubmed.ncbi.nlm.nih.gov/27277598/)

Healthcare providers on the frontlines: a qualitative investigation of the social and emotional impact of delivering health services during Sierra Leone's Ebola epidemic

[Shannon A. McMahon](#),^{1,2} [Lara S. Ho](#),^{3,*} [Hannah Brown](#),⁴ [Laura Miller](#),⁵ [Rashid Ansumana](#),^{6,7,8} and [Caitlin E. Kennedy](#),²



What do we know about violence?

Ebola crisis: Red Cross says Guinea aid workers face attacks

🕒 12 February 2015

Ebola drives increase in sexual violence in Sierra Leone, experts say

Stigma, closed schools and lost jobs and family have left many women and girls vulnerable to violence and exploitation

February 20, 2015 5:00AM ET

by **Nina Devries** - [@ninareporter](#)

DISPATCH

The Ebola Rape Epidemic No One's Talking About

When the outbreak hit West Africa, fevers spiked – and so did rates of teenage pregnancy.

By **Seema Yasmin**

A New Covid-19 Crisis: Domestic Abuse Rises Worldwide

Movement restrictions aimed to stop the spread of the coronavirus may be making violence in homes more frequent, more severe and more dangerous.

Medical News & Perspectives

FREE

April 21, 2021

Navigating Attacks Against Health Care Workers in the COVID-19 Era

Howard Larkin

JAMA. 2021;325(18):1822-1824. doi:10.1001/jama.2021.2701

Nurses' Experience With Type II Workplace Violence and Underreporting During the COVID-19 Pandemic

Ha Do Byon, PhD, MPH, MS, RN , Knar Sagherian, PhD, RN, Yeonsu Kim, BSN, RN, more...

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First Published August 3, 2021 | Research Article |

<https://doi.org/10.1177/21650799211031233>

Article information ▾



Chinese in UK report 'shocking' levels of racism after coronavirus outbreak

Asian community faces verbal and physical abuse in aftermath of first recorded cases of virus in Britain



Misinformation trends in technology

- › Misinformation and conspiracy theories about the scale of the COVID-19 pandemic and the origin, prevention, diagnosis, and treatment of the disease.
- › False information has been spread through social media, text messaging, and mass media
- › False information has been propagated by celebrities, politicians, and other prominent public figures
- › Without evidence, some people have claimed the virus is a bioweapon accidentally or deliberately leaked from a laboratory, a population control scheme, the result of a spy operation, or the side effect of 5G upgrades to cellular networks
- › The World Health Organization (WHO) declared an "infodemic" of incorrect information about the virus that poses risks to global health



Risk of geographic spread via travel

- › Rapid spread of COVID was facilitated by air travel
- › Spread of Ebola occurred mainly via land border crossings
- › Numerous travel stakeholders are affected by, and affect, pandemics
- › The International Health Regulations (IHR) aims to prevent unwarranted interruptions to trade and travel during large transnational infectious disease outbreaks
- › Stakeholders react in different ways depending on political pressure, public sentiment and the media
- › WHO did not issue any travel restrictions for the Ebola outbreak, yet air travel reduced
- › The reasons were complex, with decisions by States partly contributing to bans. Decisions by non-state actors, particularly the travel industry itself, were major drivers.



Impact on households and small businesses

- › Large differences in the socioeconomic impact of these two outbreaks
- › Impacts of EVD on revenues, access to food and behavior were limited compared with COVID
- › Impacts of COVID on livelihoods are higher than for Ebola, especially in urban centers driven by job losses
- › Different infectious disease outbreaks can have very different effects, largely unrelated to case numbers of the disease
- › Moderately lethal but highly transmissible viruses such as Covid-19 can trigger a steep economic downturn, especially in areas with high economic interconnectedness





Response of African Countries to COVID-19

- › Responses to the current pandemic have been similar to other countries worldwide
- › Experiences of Ebola informed actions this time around for COVID
- › Timely actions:
 - Public information campaigns
 - Universal testing policies (RDT based)
 - Control on international travellers
 - Containment measures, including school closures and restrictions on internal movement

Countries with previous experience of significant epidemics were more cautious and responded faster to the coronavirus pandemic