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# Mistakes, Muddles, and Mixed Messages: How disjointed health reporting is confusing the issues and costing lives.

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# INTRODUCTION

Reflecting back on the media's coverage of the recent major disease epidemics – namely the Ebola outbreak in West Africa, the Zika outbreak in South America, and the Yellow Fever outbreaks, first in Central Africa and then Brazil – the critical absence of adequate health reporting has been continually raised as a dangerous issue affecting the poor coverage of these epidemics[1], which arguably caused immense damage through misinformation and possibly aggravated the loss of life [2]. As the fourth estate, tasked with providing the public with the clear and accurate information that they need to make informed decisions, the media generally failed in this mission[2] and continue to do so today in the reporting of public health emergencies.

Journalists and editors covering Ebola viral disease in West Africa, which swiftly hit outbreak status in early 2014, lacked the skills necessary to report with clarity and accuracy in a fast-evolving and dangerous situation[3]. Even skilled health reporters faced problems in finding ways to tell an accurate story amid the challenges of field reporting in the developing world, and also in relaying important life-saving information to communities.

The Ebola disease is, for now at least, largely past its outbreak stage, but there is a strong chance that it will flare up again. Meanwhile, the media has shifted focus to cover the Zika outbreak which ravaged through Brazil and neighbouring countries (and even some cities in the US for a time), and the Yellow Fever outbreak which devastated large parts of Central Africa in 2016, and Brazil again in early 2017. Given that these zoonotic[4] diseases seem to be spilling over with great scale and frequency it appears to be a good time to critically analyse and reflect on some of the grave lessons learned so the response can be improved for future media coverage.

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[1] Mulholland, Q. (2014, November 26). Harvard Political Review. *Be Very Afraid: How the Media Failed in Covering Ebola*. Retrieved April 09, 2017, from http://harvardpolitics.com/covers/afraid-media-failed-coverage-ebola/

[2] Senatori, P. (2016, March 13). MediaQuant. *Zika Virus: The Media Effect*. Retrieved July 18, 2017, from https://www.mediaquant.net/2016/03/the-zika-virus-the-media-affect/

[3] Sturgis, S. (2014, October 10). The Atlantic. *Being a Journalist in the Midst of Ebola*. Retrieved January 09, 2017, from https://www.theatlantic.com/international/archive/2014/10/covering-ebola-the-invisible-insurgency/381316/

[4] [Definition] Zoonotic: a disease that can be transmitted from animals to people or, more specifically, a disease that normally exists in animals but that can infect humans.

There has been an overall consensus[5] that countless mistakes, avoidable missteps were made during the reporting of epidemic that would have doubtlessly saved the lives of thousands of people. Key among the errors made was abhorrently disjointed, contradictory and slow communication around the outbreak, which seems lagging even today.

The author will argue that errors were manifold: from the World Health Organization responding slowly to each outbreak[6] and later being repeatedly overwhelmed by the extent of public health emergencies[7], to the media who reported on complex science issues without being rigorously trained in the subject matter, to the public themselves that become so caught up in panic and fear-mongering that they forwent the facts in favour of rumour and gossip, costing lives.

There was also the problem of evolving information – in the case of Ebola, this was the first-time doctors had to deal with an outbreak of this size and their knowledge base was constantly evolving. Following this evolving information quickly, accessing information in the latest scientific studies, finding reliable sources for information and interviewing doctors, scientists and researchers and delivering that vital information quickly to the public, is something trained science and health journalists do all the time.

The problem with this outbreak was that local community reporters are largely not trained science journalists and the communities they serve would opt to heed the advice of community leaders and buy into rumour long before they would even consider the reports coming from outsiders and the international media (if they could even access it). Yet hyper-local media play such an integral role in limiting the spread of these outbreaks as they have extraordinary reach, influence, and access to remote and affected communities that often sit on the frontlines of such health emergencies and are often, too, the most vulnerable.

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[5] Goodchild van Hiten, L. (2016, January 29). *Should the media take more responsibility in epidemics?* Retrieved July 23, 2017, from https://www.elsevier.com/connect/should-the-media-take-more-responsibility-in-epidemics

[6] Boghani, P. (2015, June 07). PBS Frontline. *Report: Ebola Outbreak Exposed "Organizational Failings" at WHO*. Retrieved July 01, 2017, from http://www.pbs.org/wgbh/frontline/article/report-ebola-outbreak-exposed-organizational-failings-at-who/

[7] Plucinska, J. (2015, November 22). TIME Magazine. *Ebola Crisis: Experts Call WHO Response a 'Failure'*. Retrieved April 12, 2017, from http://time.com/4123858/ebola-crisis-who-response-failure/

As the frequency of disease outbreaks across the world increases there's really an urgent need to close this gap between scientists, journalists and communities and strengthen local health and science journalism in the developing world. With the media's track record for covering public health emergencies in ill repute, misinformation, rumours, and ambiguous messaging are taking precedence and allowing panic and fear to spread even faster than the disease itself. So how do we as the media improve this deeply flawed system?

This is an area with very complex and persistent problems and no easy solutions, and the media's muddles have highlighted the need for more in-depth research in this area. More's the pity because in modern society mass media and infectious disease dynamics have a complex and inter-correlated relationship with wide-ranging impacts. If done right, news reporting actually has the potential to modify a community's knowledge of emerging infectious diseases and affect peoples' attitudes and behaviour in a way that significantly slow down the spread of an infection.

This research paper will explore these issues in more detail, tackling three basic questions:

1. Could the news media's coverage of the Ebola, Zika, and double-barrelled Yellow Fever outbreaks have influenced public perception and behavioural changes that may have contained the spread of the disease faster/earlier?
2. What shortfalls in media coverage/ editorial decisions does this spotlight and what are the possible implications?
3. And what are media organizations, journalists, and international organizations currently doing to strategically counter these communication and messaging issues?

The goal of this research, while analysing the missteps and mistakes made by the media in covering outbreaks and global health emergencies with a view to isolating the cause and thereby suggesting remedies for avoiding repeat sand traps, is to also look at the potential for cross-industry collaboration to seek out solutions.

## CHAPTER ONE

## Reporting on Outbreaks

Today, the way in which the media reports during a public health emergency can have an unprecedented impact on the long- and short-term effects and status of that crisis. Swift, accurate, and insightful reporting can increase awareness that helps authorities contain the spread of a disease faster, it enforces preventative behaviour among the local population that limits the scale of infection, and it halts misunderstanding and rumours from taking hold and causing further damage. But the lack of clear messaging, absence of transparency and inaccurate or contradictory information can cause panic, mistrust and confusion which inevitable aid the spread and impact of the disease or emergency.

In the past, the media have often dealt with public health emergencies as they would natural disasters, as an often rapid, quick-fire reporting on emergency relief efforts (verified or not, as long as it was quick), the extent and impact in terms of the number of people affected, and the potential for further loss of life. As with breaking news stories and disasters such as earthquakes and floods, getting the public's attention is important in rallying relief efforts, and the news machine takes charge and the disaster is framed as 'a catastrophe on camera' (the natural disaster equivalent of the old adage, 'if it bleeds it leads').

But in reality, reporting on outbreaks is actually a different story altogether – not quite a natural disaster, not entirely a purely public health story, in some ways a breaking news story but one requiring a very specific skillset to report on with accuracy. Indeed, the Ebola virus disease (EVD) outbreak, which erupted in West Africa in December 2013 and became an unprecedented public health disaster within mere months, presented media with a unique set of challenges.

The Ebola outbreak could not be reported on as other diseases had been before it because the scale and implications of the potential disaster were something quite new. In late August 2014, already almost a full year after the Ebola outbreak was first reported, the now former Director-General of the World Health Organization, Dr Margaret Chan labelled the outbreak

the "largest, most severe, most complex in the nearly four-decade history of this disease"[8]. For the media this statement should have in turn implied greater care, especially with regards to the complexity and sensitivity usually attached to reportage on public health issues. Unfortunately, for majority of the mass media, this was not the case.

Looking at media coverage at the onset of the outbreak[9] the content of the majority of health information was built around three pieces of information: Ebola was highly contagious, the mortality rate was high, and there was no cure. This was the core messaging adopted not just by major international media outlets but also by local media in affected countries, and health ministries and international organizations transmitting on local radio and television stations. It was a choice to hyper-focus on the viral transmission aspect of the outbreak which fuelled fear and also stigmatized people and communities that were infected, which greatly reduced their ability (and willingness) to receive urgent medical help. Writing in *Vanity Fair*[10], Jeffrey Stern detailed how public service announcements aimed at limiting the spread of infection created rather than prevented panic and messaging from media, health workers, and government completely undercut the incentive to cooperate.

In the case of outbreak reporting, providing accurate information quickly is important, especially for the media. Research has shown that the best way to reduce the rate of infection during an outbreak is to provide the information as early as possible[11]. Reporting inaccurate data can paradoxically cause more infections altogether, more so than no reporting at all. In the case of Ebola this could be seen right at the start from the World Health Organization's (WHO) critically slow response to reporting the news of the initial outbreak. For the media, this can be seen in the overflow of contradictory and confusing reportage during the initial

[8] Lamptey, J.B., 2014. The Spread of the Ebola Virus disease and its implications in the West African Sub-Region., 11(1), pp.130–143.
[9] Bennett, A. (2016, March 14). Emergency Journalism Network. *Reporting During a Health Emergency: An Evidence Based Approach to Understanding Lessons from Ebola*. Retrieved January 12, 2017, from http://emergencyjournalism.net/reporting-during-a-health-emergency-an-evidence-based-approach-to-understanding-lessons-from-ebola/
[10] Stern, J. E. (2015, January 29). Vanity Fair Magazine. *Why a Massive International Effort Has Failed to Contain the Ebola Epidemic*. Retrieved April 24, 2017, from http://www.vanityfair.com/news/2014/10/ebola-virus-epidemic-containment
[11] Mummert, A. & Weiss, H., 2013. Get the News Out Loudly and Quickly: The Influence of the Media on Limiting Emerging Infectious Disease Outbreaks. *PLoS ONE*, 8(8).

stages of the outbreak, which was compounded by sensationalist and inaccurate media reports later on.

The question of the role of the media reporting on an outbreak is an interesting one – should more be expected from the media during outbreaks and should the media in turn take more responsibility for what it communicates during epidemics? Hilten[12] highlights studies that show that the interventions developed by authorities to contain infection during outbreaks (such as encouraging hand-washing, and covering your face while sneezing), or encouraging the public to seek treatment, are only effective if this information can be passed on to the public in time. The media is critical for this part of the process.

Looking at the media's coverage of the 2009 H1N1 outbreak in China's Xi'an province, researchers[13] found that the public had to rely on the media for current information on the status of the outbreak, advice on where to go for treatment, and news on spreading infection. It was found that there was an obvious information bottleneck, which was impacted by the number of reported infected cases and which in turn impacted on the number of actual confirmed cases overall.

There is also a danger in selective media reporting, cherry-picking health facts and excluding others can influence what the public remembers about a health emergency[14]. Here we can observe from the exaggerated media coverage of the Ebola outbreak in 2014 that the public paid more attention to the information communicated by the media rather than common sense intuition about how to contain the spread of infection (again, hand washing, avoiding physical contact with those infected, seeking immediate treatment for fever).

Another unintended outcome of the selective media coverage is that it can shape what the public remembers of the information omitted from the reports. Media tended to hyper-

[12] Hilten, V.G.L., 2016. Should the media take more responsibility in epidemics? *Elsevier*, pp.1–5. Available at: https://www.elsevier.com/connect/should-the-media-take-more-responsibility-in-epidemics

[13] Jean M. Tchuenche and Chris T. Bauch, "Dynamics of an Infectious Disease Where Media Coverage Influences Transmission," ISRN Biomathematics, vol. 2012, Article ID 581274, 10 pages, 2012. doi:10.5402/2012/581274

[14] Coman, A. & Berry, J.N., 2015. Infectious Cognition: Risk Perception Affects Socially Shared Retrieval-Induced Forgetting of Medical Information . *Psychological Science* , 26(12), pp.1965–1971. Available at: http://pss.sagepub.com/content/26/12/1965.abstract?rss=1%5Cnhttp://pss.sagepub.com/content/26/12/1965

focus to certain symptoms of the Ebola outbreak, which caused the public to forget about the symptoms they had learned about previously. This caused major confusion in the course of deciding when to seek treatment and when quarantine was appropriate.

Media reports that also play up the devastating impact of the disease cause panic, fear and hysteria among the local communities at risk of infection, which in turn makes it very difficult for them to recall the symptoms, risk factors and aftereffects that had previously been explained to them[15]. Again, here we can see how confusion and misinformation can take hold and reign supreme in cases where the media sensationalizes its reportage during epidemics.

To report on a disease outbreak sensibly reporters need to make sense of early reports (which can often be conflicting and filled with unclear information) and build a sustained narrative so audiences can follow the developing story with updated information over a long time.[16] This requires an ability to apply critical thinking in a challenging reporting environment as well as an ability to take a scientific approach. Here the science, combined with wider social and economic perspectives, can aid in the production of stories that better serve the desired purposes than the author has been discussing thus far.

Another challenge to consider is the ethical implications within outbreak reporting – stigmatization, myth, rumour and fear can all thrive in the absence of solid, research-based science reporting[17]. In 2016 the WHO released an ethics guide for reporting on infectious disease outbreaks[18], and while this is not aimed particularly at the media but rather at health workers, governments, and international organizations providing aid during outbreak conditions, the implications for the media are clear as well. There are a myriad of issues that

[15] Doubleday, J. (2014, October 27). *The Media Coverage of Ebola is Terrifying -- But the Actual Impact of Ebola is at Least as Scary*. Retrieved August 23, 2017, from https://www.attn.com/stories/206/media-coverage-ebola-terrifying-actual-impact-ebola-least-scary

[16] Hepeng, J., & Nightingale, K. (2009, October 09). SciDev.net. *How to report a disease outbreak or pandemic.* Retrieved July 13, 2017, from http://www.scidev.net/global/health/practical-guide/how-to-report-a-disease-outbreak-or-pandemic-1.html

[17] Yale Daily News. (2014, November 07). The Yin and Yang of Fear. Retrieved July 14, 2017, from http://yaledailynews.com/blog/2014/11/07/the-yin-and-yang-of-fear/

[18] World H World Health Organization., W.H., 2016. Guidance for managing ethical issues in infectious disease outbreaks. , p.62

need to be understood and handled with sensitivity by the media in all circumstances regardless of deadlines and the need to feed the news cycle, from disclosing information to communities and those at risk, to patient confidentiality and public health surveillance.

Reporting on the aftereffects of an outbreak can also be as important as reporting at the onset and at the crest of peak infection – there are long-term psychological challenges faced by communities hit by multiple and devastating infectious disease outbreaks[19]. There are also implications for those infectious disease survivors returning to decimated communities with little support from poorly functioning health systems that risk either reinfection or infection with other opportunistic diseases, like the continual measles outbreaks among Ebola survivors, or the Yellow Fever outbreak that flared up in Zika-devastated Brazil.

In modern health emergency outbreak reporting social media also plays a large role in the way traditional media convey information. As journalists scrambled to keep updated on the fast-emerging facts of the Ebola and more recent Yellow Fever outbreak, it became clear that Facebook and Twitter were the preferred means of getting new information out quickly Social media was used by the WHO, CDC and MSF to communicate updates and locations of treatment centres, and also by journalists to relay that information onwards[20].

While this can be a good way to get figures and location information quickly, in general social media has proven widely problematic in communicating with clarity and accuracy, and is often a haven for rumour and myth which can do a good deal of damage. In a crisis, there is a dearth of accurate information and into that gap rumours inevitably flood in. On Twitter, just a single false statement can affect thousands of people. The language used on social media also tends to lack tact and sensitivity and can be aggressive and polarizing – such as referring to those who have been infected with the disease or survivors as "the infected" – which also creates stigmatization and hampers relief efforts.

[19] Liu, R., Wu, J. & Zhu, H., 2007. Media/Psychological Impact on Multiple Outbreaks of Emerging Infectious Diseases. *Computational and Mathematical Methods in Medicine*, 8(January 2010), pp.153–164.

[20] TIME Magazine (Oct 08, 2014). Retrieved on 17 March 2017: http://time.com/3479254/ebola-social-media/

Considering the challenges, organizations like the World Federation for Science Journalists argue that the need for initiatives that foster independent, science-based journalism is critical as they play an important role both in communicating vital and timely information during outbreaks and strengthen the processes of democratization by establishing standards for practices and content[21].

The ongoing outbreaks in the developing world – in particular EVD in West Africa, Yellow Fever in Central Africa and then South America, and Zika in South America – places a particular and urgent need on building reliable science and health communication channels between scientists, journalists, and key stakeholders (communities, local leaders, community workers, government personnel, and international response actors), and on positioning local media at the centre of the communication system strengthened (and not hampered/ contradicted) by international and specialized media outlets.

Through prioritizing some of these broad-based solutions mainstream media outlets may be able to tackle the wider issues of correcting the mistakes, clearing the muddles and unravelling the mixed messages that have plagued their coverage during outbreak reporting till now.

[21] World Federation of Science Journalists. (2015, November 30). *Ebola: Improving Science-Based Communication & Local Journalism*. Retrieved August 02, 2017, from http://wfsj.org/v2/2015/11/30/ebola-improving-science-based-communication-local-journalism/

## CHAPTER TWO

## Media in the Time of Ebola

*"Africa is a nation that suffers from incredible disease."*

*Former U.S. president George W. Bush, during a speech in Sweden on June 14, 2001.*

In December 2013, a mysterious fever struck down residents of Meliandou, a tiny village in a remote forested region of eastern Guinea, in West Africa. It began with a two-year old, Emile Ouamouno, who suddenly developed a fever, severe headache, and bloody diarrhoea - a few days later he was gone. Within a week his pregnant mother, Sia, and three-year-old sister Philomene developed the same symptoms and quickly passed away[22].

Soon local health workers began to fall ill with the same symptoms which quickly spread to neighbouring villages. Yet authorities were still stumped as to the cause – local doctors thought that perhaps it was Lassa Fever or even typhoid, both endemic to the region. The number of infected cases began to rise. The sick began filling up local clinics which soon became incubators for the virus, helping it to spread even faster and further.

Relatively quickly, the local MSF (Doctors Without Borders) pinned the disease down – Ebola – and alerted the authorities that they had an outbreak on their hands[23]. As first responders, they were on the frontline and for those doctors and medics treating villagers with this mysterious ailment Ebola was the obvious answer even though it is not endemic in that area of West Africa.

Still, the WHO did not immediately agree and it took almost three months to declare the outbreak and put the necessary quarantines and procedures in place that would have saved thousands of lives if enacted earlier[24]. And yet, even when the outbreak was declared the

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[22] Stylianou, N. (2014, November 27). BBC News. *How world's worst Ebola outbreak began with one boy's death*. Retrieved January 09, 2017, from http://www.bbc.co.uk/news/world-africa-30199004

[23] Hayden, E. C. (2015, June 03). NATURE. *Ebola outbreak thrusts MSF into new roles*. Retrieved February 12, 2017, from http://www.nature.com/news/ebola-outbreak-thrusts-msf-into-new-roles-1.17690

[24] Annie Wilkinson, Melissa Leach. (2015, November). *Briefing: Ebola–myths, realities, and structural violence*. Afr Aff (Lond) 114 (454): 136-148. doi: 10.1093/afraf/adu080

authorities could not agree on the right messaging, or the correct procedure, or even the appropriate treatments. Local health workers, the CDC (Centres for Disease Control), the WHO and local governmental departments in the region were used to working in silos, not sharing information and not used to coming up with a shared cohesive strategy[25].

The media, too, were stumped. With health authorities unclear on what was happening, what the parameters of the disease were, and what the best course for immediate action would be, news reports began to fill in the uncertainty with assumption and postulation. And yet news audiences wanted to know more – despite the lack of clear information the nature of the deadly outbreak captured global attention and the news media scrambled to feed the 24-hour news cycle and 'Ebola hysteria' set in.

Caught up in the frenzy, the media quickly fell back on old habits of disaster reporting in Africa – the much-maligned and now unfashionable narrative of Africa as a dark and dangerous place riven with conflict and disease, a land of 'the other' that is completely separate from the rest of the developed world… this was the story western media chose to tell[26].

This narrative of a 'viral Africa'[27] presents Ebola as phenomenon rather than a virus, a foreign invader bringing deadly pathogens to an unsuspecting non-African (western) public. This representation of threat, and of the African continent, goes a long way towards engendering false perceptions of the outbreak and causing mass hysteria and confusion that this paper will argue ultimately slowed down the appropriate response to the disaster and cost thousands of live in the long run.

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[25] O'Carroll, L. (2014, December 02). The Guardian. *World's Ebola response slow, patchy and inadequate, MSF says*. Retrieved March 19, 2017, from https://www.theguardian.com/global-development/2014/dec/02/ebola-medecins-sans-frontieres-west-africa

[26] Steinhauer, J. (2015, February 03). John W. Kluge Center. *Ebola, Colonialism, and the History of International Aid Organizations in Africa.* Retrieved January 11, 2017, from https://blogs.loc.gov/kluge/2015/02/ebola-colonialism-history-international-aid-organizations-in-africa/

[27] Millear, Anoushka. (2015). *Retelling Ebola's "Outbreak Narrative" through Media Coverage of the 2014 West African Epidemic.* Geography Honors Projects. Paper 46.

## 2.1 Africa's media landscape in the age of outbreaks

In March 2015, *New York Times* correspondent, Howard French, wrote an open letter to CBS News complaining about its program *60 Minutes* (the letter was initially published on French's blog). In the letter, French highlights the following[28] problems with *60 Minutes* coverage of Africa:

"…In a series of recent segments from the continent, *60 Minutes* has managed, quite extraordinarily, to render people of black African ancestry voiceless and all but invisible…

> "…a visit by your correspondent Lara Logan to Liberia to cover the Ebola epidemic in that country. In that broadcast, Africans were reduced to the role of silent victims. They constituted what might be called a scenery of misery: people whose thoughts, experiences, and actions were treated as is totally without interest…
>
> "Liberians… many of them contributed bravely to the fight against the disease, including doctors, nurses, and other caregivers, some of whom gave their lives in this effort. Despite this, the only people heard from on air were white foreigners who had come to Liberia to contribute to the fight against the disease.

French goes on to explain that American audiences have misguided and misinformed views of the complexities of the African continent guided in large part by this sort of misinformation by the mass media.

Importantly, many diversity groups have echoed this sentiment[29] – the US media in particular has been prone to sensationalist headlines that pivot on tropes of paranoia, racism, and xenophobia. Affected by 'Ebola Paranoia', or 'Fearbola', the US media seemed to have been caught up in the politicking storm that used Ebola as a weapon to discredit

[28] Bunce, M., Franks, S. & Paterson, C. (2017). *Africa's Media Image In The 21st Century: From The "Heart Of Darkness" To "Africa Rising"*. New York: Routledge. Pp 38-39
[29] Ilic, D. (2014, November 14). Fear Ebola, Fear Xenophobia in the Media. Retrieved January 09, 2017, from http://www.media-diversity.org/en/index.php?option=com_content&view=article&id=2861%3Afear-ebola-fear-xenophobia-in-the-media&catid=35%3Amedia-news-a-content&Itemid=34

then President Obama[30]. The author argues that this political maelstrom can therefore be seen to be biased, playing on false representations with an ulterior agenda that was not focussed on curbing the outbreak. Thus the media, in large part, playing into the hysteria and strengthened those false messages that ultimately fanned the fires of panic and fear.

## 2.2 Bridge over the River Ebola - Reporting on an African disaster

Despite the fact that African economies are growing, populations are thriving, literacy and education rates are rocketing across the continent, and banking systems and human rights have been significantly improving on the whole, the global media have stuttered at portraying Africa's changing story in a balanced way (though there has been considerate coverage of the former as well)[31].

The added problem now is that Ebola is threatening to become the new narrative for Africa, the defining image of the continent for the broader U.S. media[32] that is just as unbalanced and inaccurate as previous single-narratives have been[33].

So, what is the danger of this unbalanced and polarized single-narrative? For starters, it perpetuates a chasm between the U.S. and Africa which isolates the two, and it makes it seem like the only thing the U.S. had happening on the continent was Ebola response when really there were a myriad of ventures underway, including the Obama administration's multibillion dollar Power Africa initiative[34].

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[30] McManus, D. (2014, October 18). A political crisis called Ebola. Retrieved May 09, 2017, from http://www.latimes.com/opinion/op-ed/la-oe-mcmanus-column-ebola-politics-20141019-story.html

[31] Adekoya, R. (2013, November 28). The Guardian. *Why Africans worry about how Africa is portrayed in western media* | Remi Adekoya. Retrieved July 01, 2017, from https://www.theguardian.com/commentisfree/2013/nov/28/africans-worry-how-africa-portrayed-western-media

[32] Schneidman, W. (2016, July 29). Africa's Image and the Ebola Epidemic | Brookings Institution. Retrieved May 12, 2017, from https://www.brookings.edu/blog/africa-in-focus/2014/11/04/africas-image-and-the-ebola-epidemic/

[33] Sy, A., Copley, A., & Pugliese, J. (2016, July 29). The U.S.-Africa Leaders Summit: Major Trends in Media Coverage | Brookings Institution. Retrieved May 12, 2017, from https://www.brookings.edu/blog/africa-in-focus/2014/08/19/the-u-s-africa-leaders-summit-major-trends-in-media-coverage/

[34] Schneidman, W. (2016, July 29). Africa's Image and the Ebola Epidemic | Brookings Institution. Retrieved April 12, 2017, from https://www.brookings.edu/blog/africa-in-focus/2014/11/04/africas-image-and-the-ebola-epidemic

Image and bias are important things here because they affect and reinforce views about places and groups of people that can impact further down the line on how they are treated. In the U.S. several colleges and schools turned students away for fear of admitting the Ebola virus into their midst, despite the fact that these students (and potential students) had either not been to Africa in many years, or were from countries in Africa that were not affected by Ebola at all[35].

For most Americans, this xenophobia trumped empathy and much of the public, supported by targeted narratives from the mainstream media, didn't see a reason they should act to curb the spread of a disease happening thousands of miles away in countries many had never even heard of before[36].

The public was not emotionally invested in the Ebola outbreak. In a post on Oxford University's *Practical Ethics* blog, Dr G Owen Schaefer argues the following:

"The Ebola epidemic, though, does not seem to be at risk of overinvestment. If anything, wealthy countries appear too anodyne about the crisis; resources are trickling in, but not enough to bring the CDC's best-case scenario about. The dire headline, then, might serve as a self-defeating prophecy: it is a prediction whose fulfilment becomes less likely the more people believe it. Fear of a massive epidemic spreading across the globe may be a powerful motivator to free up the resources needed to set up treatment and quarantine facilities…."[37]

And yet the U.S. public did not seem to buy into the fear of a possible worldwide epidemic enough to drum up motivation to prioritize more resources to stopping the epidemic. The combination, perhaps, over time of 'compassion fatigue'[38] and the toxic combination of politics and public health messaging[39] in the media arguably made it difficult

[35] Zurcher, A. (2014, October 21). BBC News Blog. *Ebola, race and fear*. Retrieved April 01, 2017, from http://www.bbc.co.uk/news/blogs-echochambers-29714657

[36] Nuwer, R. (2014, October 15). Unbelievable Reactions People Have Had to the Ebola Outbreak. Retrieved January 20, 2017, from http://www.smithsonianmag.com/smart-news/unbelievable-reactions-people-have-had-ebola-outbreak-180953056/

[37] Schaefer, G. O. (2014, September 24). Ethics in the News: Framing the Ebola epidemic. Retrieved June 03, 2017, from http://blog.practicalethics.ox.ac.uk/2014/09/framing-the-ebola-epidemic/

[38] Moeller, S. D. (1999). *Compassion fatigue: How the media sell disease, famine, war, and death*. New York: Routledge.

[39] Stone, J. (2014, October 06). Ebola in the U.S.—Politics and Public Health Don't Mix. Retrieved March 29, 2017, from https://blogs.scientificamerican.com/molecules-to-medicine/ebola-in-the-u-s-politics-and-public-health-don-t-mix/

to grapple with the Ebola outbreak in a more personal way by overtaxing the audience's emotional response to sensational headlines and images, and so making it tricky to understand/internalize on an emotional level.

Countering this argument, should the media even care about whether the public are generally moved to take action on a public health emergency which doesn't seem to directly affect them? Bioethicist Arthur Caplan argues that it absolutely should. In fact, everyone should care… "the harsh ethical truth is the Ebola epidemic happened because few people in wealthy nations cared enough to do anything about it"[40].

To carry forward that argument, then, the author argues that perhaps the U.S. audience grew to fear that the spiralling Ebola outbreak would spread to its shores and ignite an outbreak there, which was only possible because it cared too little in the beginning of the outbreak to take decisive action that would have stopped the spread of the virus -- in essence it became a self-fulfilling prophesy. More on this later in this chapter.

### 2.3 Going Viral – fear monger or critical warning system?

> *"Theorists of journalism have long noted parallels to Heisenberg's uncertainty principle in physics: by reporting on something, one subtly but irrevocably changes it."*
> *— Ben Yagoda, The Art of Fact: A Historical Anthology of Literary Journalism*

When the WHO announced that Ebola had reached outbreak proportions the world changed – one of the world's deadliest outbreaks covered in a time of 24-hour news, social media, and a multimedia digital news revolution. If this much scrutiny had existed during the time of the Bubonic Plague the fear and hysteria generated by the constant media coverage may have triggered a catastrophic worldwide panic long before the disease even crossed medieval China's borders.

[40] Caplan, A. (2014, August 04). Bioethicist: Why Americans Should Really Worry About Ebola. Retrieved May 03, 2017, from http://www.nbcnews.com/storyline/ebola-virus-outbreak/bioethicist-why-americans-should-really-worry-about-ebola-n172436

To the media Ebola was an invisible menace that killed without discrimination and spread like wildfire. Everyone was at risk. No-one was safe. The virus relied on intimate human interaction to spread - a hug, a handshake, washing the body of a loved one after they had died from the disease (as was the traditional custom in West African societies) - Ebola spread through bodily fluids like sweat and blood, and so entire traditions and cultural practices had to be rewritten to deter the spread of the disease[41].

Other African countries started to become infected with fear. Guinea closed its borders with Sierra Leone, Liberia closed its borders with Guinea, and North Korea closed its borders to everyone[42] fearing all foreign tourists were potential contagions. Fuelled by excess of caution and a fair helping of panic, the border closures did little to stop the virus from spreading[43], but did make it more difficult to get medical assistance and health workers to the affected areas that desperately needed them[44].

Further afield, airports around the world were cranking up their screening procedures[45] and in the U.S. public fears were stoked to the point where some politicians and media outlets were calling for its borders to be shut to all countries where Ebola had been reported (ignoring for a minute the logic error, because the US was also, technically, an Ebola-affected country after a U.S. doctor tested positive for the virus after spending time with MSF in West Africa)[46]. Saudi Arabia refused to issue hajj and Umrah visas to Guineans and Liberians so they could attend the annual pilgrimage to Mecca (a serious setback for the largely Muslim Guinean population). Emirates ceased all flights to Guinea[47]. People were scared.

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[41] Mundasad, S. (2015, March 23). *How Ebola changed the world*. [News Website]. Retrieved April 27, 2017, from http://www.bbc.co.uk/news/health-31982078
[42] R. (2014, October 23). *North Korea shuts its borders to foreigners over Ebola fears*. [News Website] Retrieved June 02, 2017, from http://www.telegraph.co.uk/news/worldnews/ebola/11182142/North-Korea-shuts-its-borders-to-foreigners-over-Ebola-fears.html
[43] Giahyue, J. H. (2014, September 15). *End 'panic' measures undermining fight against Ebola: Ghana*. Retrieved June 04, 2017, from http://www.reuters.com/article/us-health-ebola-idUSKBN0HA1Z820140915
[44] MacKenzie, D. (2014, October 21). *Why closing borders won't stop Ebola's rampage*. [News Website] Retrieved March 13, 2017, from https://www.newscientist.com/article/dn26427-why-closing-borders-wont-stop-ebolas-rampage
[45] Mabey David, Flasche Stefan, Edmunds W John. *Airport screening for Ebola*. BMJ 2014; 349 :g6202
[46] Kaplan, R. (2014, October 06). *Why some shocking Ebola fears are likely Unfounded*? Retrieved June 15, 2017, from http://www.cbsnews.com/news/why-some-shocking-ebola-fears-are-likely-unfounded/
[47] Stern, J. E. (2015, January 29). *Why a Massive International Effort Has Failed to Contain the Ebola Epidemic*. Retrieved February 27, 2017, from http://www.vanityfair.com/news/2014/10/ebola-virus-epidemic-containment

Global news media outlets were covering the outbreak around the clock, updating information, adding new narratives, and raising brand-new fears and concerns at regularly programmed intervals. The problem was that the information being pumped out was not always clear, the updates were often full of conflicting information and flat-out inaccuracies, and rumour was being used in lieu of reliable statistics to fill in the news cycle. Audiences often couldn't tell the difference between a genuine new concern and a conspiracy-laden fabrication. The more the media told us about Ebola, the less we knew[48].

Yet, there is another side to this argument too – that the media, while it does have this propensity for fear mongering and stoking public fear, also has the capacity to allay fears and be a kind of early (or late) warning system that can have a positive impact on efforts to curb an outbreak and treat the infected and affected.

Part of the reasoning behind this plays into the theory of the 'sociology of moral panic'[49], which argues that the general media has a tendency to shift between alarming to reassuring coverage during a 'hot crisis' (dread inspiring events that develop in unpredictable ways like an infectious disease outbreak, natural disaster, terror attack, or public health emergency) once they've had time to reflect on the impact of their alarming coverage and reciprocally moderate their subsequent coverage in a framing narrative of 'containment' to allay fears instead.

We saw this happen in the latter part of the Ebola outbreak, which was markedly different from the initial media frenzy framed by a narrative of impending apocalypse. Media messaging shifted focus from victims to survivors, from spreading conspiracy theories to disproving rumours.

[48] Eric Boehlert. (2014, October 15). Media Matters Blog. *Ebola Coverage: The More You Watch, The Less You Know?* Retrieved April 30, 2017, from https://www.mediamatters.org/blog/2014/10/15/ebola-coverage-the-more-you-watch-the-less-you/201161

[49] Ungar, S. (1998). Hot crises and media reassurance: A comparison of emerging diseases and Ebola Zaire. *British Journal of Sociology*, 36-56.

Radio played a particularly important role here too - taking advantage of the popularity and influence of radio in West Africa (and the popularity of social media and chat apps like WhatsApp). BBC Media Action[50] began dispelling rumours by putting actual experts on the radio and allowing concerned listeners to text in their question which the experts then answered live on air. CNN switched to a similar format during its coverage of the outbreak for the U.S. audience. This proved incredibly successful because it allowed audiences to get their answers straight from the source, which increased the accuracy of information being passed on and boosted trust in the media source itself.

[50] B. (2014, October 16). [Web Video]. Retrieved February 27, 2017, from https://www.youtube.com/watch?v=A7c_KZS8NjU&list=PLuvkxTBwQE1YzfVfyulWEHhn5mffFXqGm&index=7

## CHAPTER THREE

## Framing Narratives: How we write about disease and disaster

*"The earth is attempting to rid itself of an infection by human parasite."*

*— Richard Preston, The Hot Zone: The Terrifying True Story of the Origins of the Ebola Virus.*

Much of the initial framing and confusing messages around the Ebola outbreak in the U.S. media appeared to be informed in part by *The Hot Zone*[51], a nonfiction book by Richard Preston written in 1994 that rocketed back onto the bestseller lists after the outbreak was officially declared. The problem was that it was far from factually accurate – the symptoms were often confused with other diseases like Marburg, descriptions of infections were highly exaggerated to the point of being ridiculous (terrifying, but still ridiculous), and it presented rumour and conspiracy as proven clinical fact[52].

Throughout the Ebola outbreak images conjured up by *The Hot Zone* pervaded media descriptions of those symptomatic with the virus – descriptions of those infected by Ebola bleeding from their eyeballs and liquidizing from the inside were discussed in the media and further fanned the panic around the disease[53]. This kind of narrative framing can become dangerously unbalanced and potentially leads to enormous discrimination against people infected with Ebola and Ebola survivors both in and out of Africa[54].

Much has changed since *The Hot Zone*'s initial release, but certain framing problems still persist today in the way we cover outbreaks, diseases, and the Ebola outbreak in particular.

In terms of narrative framing itself, in this paper we refer to the way journalists describe features and conventions of stories to audiences in a way that helps them make sense of the

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[51] Preston, R. (2014). *The Hot Zone: The Terrifying True Story of the Origins of the Ebola Virus*. London: Corgi Books.
[52] Tara C. Smith on October 21, 2014. (2014, October 21). *"The Hot Zone" and the mythos of Ebola*. Retrieved April 12, 2017, from http://scienceblogs.com/aetiology/2014/10/21/the-hot-zone-and-the-mythos-of-ebola/
[53] Smith, T. C. (2014, October 21). *"The Hot Zone" and the mythos of Ebola*. Retrieved September 19, 2017, from http://scienceblogs.com/aetiology/2014/10/21/the-hot-zone-and-the-mythos-of-ebola/
[54] Doucleff, M. (2014, November 11). *How 'The Hot Zone' Got It Wrong and Other Tales Of Ebola's History*. Retrieved September 19, 2017, from http://www.npr.org/sections/goatsandsoda/2014/11/11/362379449/how-the-hot-zone-got-it-wrong-and-other-tales-of-ebolas-history

complexities of the story and take away an intended message from the media piece[55]. In framing the media can draw attention to certain features of the issues while minimizing other features[56]. The frame itself likely contains various devices (metaphors, exemplars, stories, visual images, symbolic devices, and moral appeals) with the theory suggesting that by using these devices the media can affect the way the audience feels and interprets it. If we think of framing as part of the social construction of the news then the news story becomes the media's interpretation of an event and not always necessarily an exact/true account[57].

### 3.1. How news messages can affect behaviour

There has been significant research looking into the relationship between media reporting on health issues and the behaviour of a large population of the community[58]. Mass media play an important role of disseminating information during a public health emergency – as in the case of an outbreak like Ebola or Zika, the media provide the public with critical information on how the disease spreads, what the symptoms are, when and how those affected should seek treatment, and how to prevent infection, particularly in areas heavily affected.

Prior studies of mass media campaigns and community behaviour have indicated that prompt media messaging lessens public panic and reinforces positive behaviours such as hand-washing and avoiding direct contact with those affected by the virus[59]. West African cultural practices also played a role in the spread of the disease – communities gathered together to mourn lost loved ones, and families often sat with the body of the deceased for

[55] Theresa Velleck (2016). *Media Framing of the Ebola crisis*. [Published Thesis]. Duke University: Sanford School of Public Policy. Retrieved April 12, 2017, from https://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/11536/Vellek_Thesis_library.pdf%3Bsequence=1
[56] Unger, S. 1998. *Hot crises and media reassurance: A comparison of emerging diseases and Ebola Zair*e. British Journal of Sociology,36-56
[57] Shih, T., Wijaya, R., & Brossard, D. 2008. *Media Coverage of Public Health Epidemics: Linking Framing and Issue Attention Cycle Toward an Integrated Theory of Print News Coverage of Epidemics*. Mass Communication and Society, 11,141-160
[58] Jean M. Tchuenche and Chris T. Bauch, "*Dynamics of an Infectious Disease Where Media Coverage Influences Transmission,*" ISRN Biomathematics, vol. 2012, Article ID 581274, 10 pages, 2012. doi:10.5402/2012/581274
[59] McCauley, M., Minsky, S., & Viswanath, K. (2013, December 03). *The H1N1 pandemic: media frames, stigmatization and coping*. Retrieved August 13, 2017, from https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-13-1116

days, washing and attending to the body. The communities were not told quickly enough that this contact was how the disease was spreading and what they really needed to do was to avoid touching the bodies altogether and report all infected/sick community members to the authorities immediately so that they could be quarantined and treated.

Communities here are also distrustful of outsiders and of authorities. While reporting on Ebola the author observed many problems with the establishment of the numerous Emergency Treatment Centres (ETCs) – always cordoned off with opaque white plastic and staffed with health workers in full biohazard suites. Community members would see sick people going into the makeshift medical centre and not come out. This was largely because the many Ebola-infected people who came to the ETCs or were brought there by emergency personnel were already in the late stages of infection; with the high mortality rate associated with Ebola, there is a high risk that if you seek treatment when you are already very sick you will not be able to recover. That is why early detection and treatment is so critical.

And yet, none of this was explained to the communities, and so the ETCs themselves were seen a death sentence and many who were infected would avoid going there at all costs, even going so far as to run away from authorities and hide in their villages so health workers could not find them, thereby spreading the virus even faster and further.

The inability of the media (and authorities) to effectively communicate clear information quickly to Ebola-affected communities was a critical error in the early days of the outbreak. Similarly, in the case of the Zika outbreak, muddled messages and the pervasiveness of conspiracy theories over fact meant the public lost trust in the media so severely hampering its ability to help stop the spread of these diseases.

### 3.2. Communicating Uncertainty

The common belief is that science is solid and proven, a known set of rules and formulas that scientists, as the experts, can apply to a situation and provide definitive answers. But this isn't always the case. Some science is definitive: the earth is a globe, not flat. Other areas of science are slightly more nebulous, like infectious disease outbreaks. Viruses like Ebola

and Zika are relatively unknown entities – they emerge quickly in a spill-over event (where the virus jumps from its animal host to a human), they infect and kill quickly, evolving and adapting quickly, then they disappear. This makes them very difficult to study, especially since the only opportunity to do so is in a real-life setting like an outbreak where there are so many additional factors at play.

Still, the longer scientists study a thing, the more they know. The more time they had to investigate the Ebola outbreak[60], the more they knew about how the disease spread, how it adapted and infected, how long it could stay alive in the human body after first infection, how long the incubation period was, and how to treat those who were already infected.

From this balance of probabilities, we can make predictions (like a rain forecast in a weather report), find a best- and worst-case scenario for an event and gauge the likelihood that something will occur. Though this doesn't mean we know for sure. A 70% chance of sunshine still means there's a 30% chance it will rain, yet because we don't explain uncertainty to our audiences they only expect the sunshine, and when the rain appears they get angry and lose faith in the messenger. Paradoxically, when rain is predicted and there is only sunshine the audience does not seem to be similarly upset. Theorists call this the "wet bias"[61]

The biggest challenge when faced with uncertainty during an outbreak is to inform the public and prevent panic. In terms of the media, there are several ways to approach this:

- Rosenbaum[62] argues for "epistemic humility" where problematic terms are implied that highlight the risks of false-positives and false negatives. Particularly when it is difficult to ascertain whether our claims are correct or incorrect, this is a safer alternative.

[60] Kilianski, A., & Evans, N. G. (2015). *Effectively Communicating the Uncertainties Surrounding Ebola Virus Transmission*. PLoS Pathogens, *11*(10), e1005097. http://doi.org/10.1371/journal.ppat.1005097

[61] Rosenbaum, L. (2015). *Communicating Uncertainty — Ebola, Public Health, and the Scientific Process*. New England Journal of Medicine, *372*(1), 7-9. doi:10.1056/nejmp1413816v

[62] As above

- Language should be chosen with care to demonstrate "relative" rather than "absolute" belief in claims. As was the case in discussing whether Ebola could become airborne transmittable, or the Zika virus was spread by genetically modified mosquitoes, word choice can have an immense impact on public health policy, emergency planning, and the behaviour of those at risk of infection in the future.

### 3.3. How the media got it right – The case of Ebola Deeply

Navigating the intricacies of the Ebola outbreak was an immense challenge for both local and international media. Overall, the consensus was that the mass media coverage was unsteady, inaccurate (in some ways), lacked credible experts, delivered mixed messages that confused their audiences, and relied on emotionally charged headlines and images that triggered fear, panic and hysteria among the public[63].

Yet all Ebola coverage was not bad. Several news outlets including the Washington Post and the BBC Media Action Network adjusted to uncertainty and challenges and reframed messages in ways that were helpful to their audiences.

Particularly in the case of BBC Media Action's "Kicking Ebola Out" campaign[64], the journalistic narrative was reframed to include diverse voices and, in particular, voices and interviewees that were either directly affected by Ebola or from the region and closely affiliated to developing events. The reframed narrative allowed Ebola survivors to tell their stories in their own words. This put a human face on the catastrophic outbreak and augmented the impact of the human story of Ebola for the audience.

It also gave the BBC a chance to journalistically tackle issues that were taboo in West Africa around the issue of Ebola, like stigmatization of those who were infected with Ebola or Ebola survivors (or even being related to someone with Ebola). Combined with

[63] Cullen, T. (2017, September 03). *A tale of two epidemics: media reporting on Ebola*. Retrieved August 01, 2017, from https://theconversation.com/a-tale-of-two-epidemics-media-reporting-on-ebola-34803
[64] Kicking out Ebola - Media Action. (n.d.). Retrieved June 10, 2017, from http://www.bbc.co.uk/mediaaction/where-we-work/africa/sierra-leone/sierra-leone-ebola-response

a hard-hitting campaign of public service announcements and a partnership with local officials, media, humanitarian workers, and NGOs[65] the media campaign produced programs like "Kick Ebola From Liberia" which had an overwhelming positive impact on the local communities and on curbing the spread of the disease[66].

The author argues that one publication that seemed to far surpass its competitors was Ebola Deeply – emerging towards the end of the first outbreak as an in-depth, single-story news site that redressed many of the problems with narratives, framing, uncertainty, and experts that its competitors were still struggling with.

Ebola Deeply's creator, Lara Setrakian, created the site because she felt reporting is successful if you can work to help people better understand an issue and report on a crisis responsibly: "We're not going to find a cure," said Setrakian. "We do what journalists can do to help solve a crisis. We are not activists. We know that when we have better information, better things happen."[67]

Setrakian also argues for journalists to care more about the impact of their work, on the local communities that they cover and beyond. Journalism should have a "Hippocratic Oath", a "First Do No Harm" approach that considers the impact of the news and works actively to do a better job to represent these stories more accurately and fairly, and to build and foster trust with their audiences based on something more important than ratings.[68]

From the viewpoint of Setrakian and Ebola Deeply, consistent coverage is also a key factor of successful coverage. When the media fade in and out of reporting on

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[65] Marc, J. (2015, April 14). Radio Program "*Kick Ebola From Liberia" Shifts Focus; Addresses Immunizations, Education*. Retrieved May 07, 2017, from https://ebolacommunicationnetwork.org/weekly-radio-program-kick-ebola-from-liberia/

[66] Institute of Developmental Studies. *IDS-led team wins first prize for social science response to Ebola*. (2016, June & july). Retrieved April 12, 2017, from http://www.ids.ac.uk/news/ids-led-team-wins-first-prize-for-social-science-response-to-ebola

[67] Greenfield, R. (2017, April 18). "*Ebola Deeply" Is The Only Place You Should Be Getting Ebola News*. Retrieved March 08, 2017, from https://www.fastcompany.com/3037052/most-creative-people/ebola-deeply-lauching-today-is-the-only-place-you-should-be-getting-ebo

[68] Setrakian, L. (2017, January). TEDNYC. *3 Ways to Fix the Broken News Industry*. Retrieved July 01, 2017, from https://www.ted.com/talks/lara_setrakian_3_ways_to_fix_a_broken_news_industry/transcript?language=en

developing stories (as they did with the Ebola outbreak) it becomes difficult for audiences to remain invested for the long run. [69]

[69] Cardew, B. (2014, November 02). Ebola Deeply offers antidote to media scaremongering. Retrieved July 04, 2017, from https://www.theguardian.com/media/2014/nov/02/ebola-deeply-media-syria-deeply

## CHAPTER FOUR

## Ebola, Zika, and Yellow Fever – How did we do?

How did the media cover the Ebola outbreak overall? Opinions understandably differ, but from this brief snapshot the author will argue that overall the media coverage was hysterical, sensational, and not very good on the whole. The author will further argue that a quick poll of the general media's coverage of the Ebola outbreak may well be, 'The more you know, the less you understand…'.

### 4.1. Sample of the Media – The Most Shared Articles

For a balanced argument, it was important for this research paper to ensure that the overall impression of this mass media bias in the case of Ebola (and then subsequently Zika, then Yellow Fever) was a fair interpretation. To do this I took a brief wide sample of the most popular media at the time – these were chosen based on how popular the media articles were at the time in terms of how widely the video news clips and digital news articles were viewed, their ranking on Google, how widely they were shared on social media (i.e. Twitter and Facebook), how often they were quoted by other media sources, and how often they were quoted or referred to by analysts, commentators and in third-party narratives[70].

In this respect, it emerged that there were several media outlets that produced content that was widely viewed; though there were apparent divisions in the quality of the content based on the region from which the mass media originated -- the two main divisions here being the U.S and U.K media. For this reason, I selected a sample from the most popular media outlets from both regions, five from each and with a representation from radio, television, and print. I then separated the media outlets according to region to compare results.

[70] Referring to non-media blog posts, private citizen media (i.e. private blogging platforms and YouTube Channels)

The media outlets selected were:

- CNN (television - U.S)
- Washington Post (print/online - U.S.)
- New York Times (print/online - U.S.)
- NPR (radio/online - U.S.)
- CBS (television/online - U.S.)
- Al Jazeera English (television/online - U.K.)[71]
- BBC (radio/television - U.K.)
- Telegraph (print/online - U.K.)
- Guardian U.K. (print/online - U.K.)
- Daily Mail (print/online - U.K.)

In addition to being a selection of the most popular/viewed published content from each of these media outlets, each selected news item for this research paper was chosen based on its presentation of that publication's dominant voice for coverage throughout each of the infectious disease outbreaks.

Each news item, incidentally, is also an indicator of some of the key factors influencing each region's coverage of the outbreaks.

**See APPENDIX 1 – SELECTED MEDIA FOR ANALYSIS*

## 4.2. Method of Analysis – Looking at Context

The benchmark for analysis was to ensure the published news items was in fact accurate, science-based ethical journalism. According to the Poynter Institute and the Nieman Foundation there are several factors that can be considered in this regard:

[71] For the purposes of this research the primary *Al Jazeera* platform is categorized as U.K media to differentiate it from *Al Jazeera Arabic*, *Al Jazeera America*, *Al Jazeera Mubasher*, *Al Jazeera Balkans*, and *Al Jazeera Turk*.

- Reporting should be done with balance and fairness highlighting proper precaution without pandering to hysteria or an 'abundance of caution'[72].
- Reporting should represent the issues with as much fact and accuracy as possible[73].
- Reporting should make use of relevant and qualified experts.
- Published pictures (accompanying a news item) should be used bearing in mind context, fairness, and accuracy[74].

Using these key points as guidance, in addition to points raised in the earlier general analysis of the news media coverage of the Ebola outbreak, I devised eight core questions to use as indicators to analyse the selected news items:

1. Was the article factually accurate?
2. Was the information clear/easily understandable?
3. Did the news content use trigger/emotional language?
4. Could the news content be considered as sensationalized?
5. Was the theme/content misleading in its messaging?
6. Did the news content use relevant/reliable experts?
7. Was the image-use ethical and fair?
8. Did the news content convey critical information important to the affected audience?

For simplicity, each news item need only meet a YES/NO requirement to answer the question. The results were then compiled into a table to demonstrate the results.

Only one news item was selected to analyze the media's coverage of each of the infectious diseases -- Ebola, Zika, Yellow Fever -- the exception being Ebola, where two news items were sampled to accommodate for it being the focal point for this research

[72] Clark, R. P. (2014, November 24). *Public fear and 'an abundance of caution'*. [Website]. Retrieved June 25, 2017, from http://www.poynter.org/2014/public-fear-and-an-abundance-of-caution/278571/
[73] Hare, K. (2015, May 11). *The readers' quick guide for understanding a medical crisis*. [Website]. Retrieved May 25, 2017, from http://www.poynter.org/2014/the-readers-quick-guide-for-understanding-a-medical-crisis/261661/
[74] Lewis, H. (2016, January 5). *How Newsrooms Handle Graphic Images of Violence*. [Website]. Retrieved June 01, 2017, from http://niemanreports.org/articles/how-newsrooms-handle-graphic-images-of-violence/

paper and to recognise the extended length of the outbreak in comparison to the other two.

### 4.3. Results – What the Media Sample Indicates

**See APPENDIX 2 – MEDIA ANALYSIS TABLES*

For simplicity, the results/tables were analyzed overall to ascertain trends and/or commonalities within the media across both regions and of the media coverage as a whole. Within these parameters certain key trends emerged across both the U.S. and U.K media for the Ebola outbreak:

1. In general terms, the media repeatedly failed to convey the necessary/critical information to the affected audience.
2. Often used trigger/emotional language to make its point.
3. Images across the board were often not fairly used or contextually accurate.
4. While the information could often technically be considered accurate as a whole, the framing of that information was often not clear or confusing.

In terms of the U.S. media, the following general trends were observed:

1. The content on the whole was in some respects sensationalized.
2. Content messaging was often confusing.
3. Relevant experts were not always used.
4. Content could be read as misleading.
5. Content did not convey the relevant information to the affected audience.
6. Image use was not fair or contextually accurate.

In terms of U.K. media, the following general trends were observed:

1. Information was not always clear.

2. Information was not always contextually accurate.
3. Content did not always convey the relevant information to the affected audience.
4. Image use was not always fair or contextually accurate.

Retrospectively, an overall view of media coverage may indicate that the U.S media had a slightly more unbalanced news delivery. However, it would be unfair to simply put this down to problems reporting the science or framing the narrative, as previously discussed. Amid the rating battles and lack of clarity around the basics facts about the spread of the outbreak early on, the U.S. was also under pressure from political forces as the outbreak came square in the middle of election season.

This largely can be seen in the often-unbalanced communication of key issues by U.S. politicians during the outbreak where the response to the 'Ebola panic' was to stoke more fear and cast blame, without the facts to back up statements, with an inherent purpose of politicking in mind. By way of example, in a CNN's 'State of the Union' news show interview, Republican Senator Ted Cruz consistently proclaimed[75] that the only way for the U.S. to remain Ebola-free would be to close the borders to people coming from West Africa, something that both medical and security experts consistently refuted as illogical and inaccurate.

Then came the Zika outbreak and attention focused closely on whether the same political and communications pitfalls that plagued the Ebola outbreak would carry through to this one. A study done by the University of Michigan[76] observed the missteps brought on by an utter lack of communication between key players during the Ebola outbreak and an abundance of political finger-pointing and looked to see if these trends carried forward to the next big outbreak.

[75] Sen. Ted Cruz 2014, October 19. *Sen. Ted Cruz Discusses Ebola with Candy Crowley on CNN's State of the Union* [Video File]. Retrieved from: https://www.youtube.com/watch?v=HxPnjgU1Q68
[76] University of Michigan. (2016, June 27). *Political pitfalls in handling Ebola may carry over to zika*. [Website News Release]. Retrieved on May 10, 2017 from https://www.sciencedaily.com/releases/2016/06/160627125657.htm

The analysis, headed up by Scott Greer of U-M School of Public Health, found that the Ebola outbreak was bogged down by an entirely fragmented system that had almost no clear leadership, and "strategic politicization" of the message given the fact the biggest surge of the outbreak happened during a midterm election year.

Greer predicted that the Zika outbreak would trigger a similar trend of politicizing the messaging around the disease (which this time occurred in an election year) in order to secure funding. In looking at the politics of the message we can see that the Republicans consistently failed to provide then President Obama with the funds he requested to combat the spread of the diseases but then shifted blame to the presidency when Ebola and then Zika were detected in the United States, accusing him of slow and inadequate action in the face of a potentially widescale public health emergency.

Overall, analysis of the media sources from both sets (U.S. and UK) indicate largely that one of the biggest stumbling blocks was image use. Two sets of images largely pervaded reportage on both sides of the Atlantic: images of the virus itself (Ebola specifically), and people in hazmat suits. As discussed previously, the lack of participation of the actual people affected by the Ebola outbreak in this visual narrative framed them out of story. This can be a problem as audiences sometime "read" a story by simply looking at the headline and image used – using an image not directly related to the article or an image that provokes fear[77] without context is damaging to the narrative as a whole.

[77]Towers, S., Afzal, S., Bernal, G., Bliss, N., Brown, S., Espinoza, B., . . . Castillo-Chavez, C. (2015, June 11). *Mass Media and the Contagion of Fear: The Case of Ebola in America*. Retrieved August 01, 2017, from http://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0129179

# CHAPTER FIVE

## New Tools and Solutions

Many of the challenges highlighted in this paper focus on narrative framing, reporting ethics, and the need to improve accuracy while reporting on outbreaks. Of these the issue of improved accuracy can be addressed by developing science and health journalism capacity in newsrooms and supporting those general journalists who report on outbreaks with a set of tools to help them do their jobs better.

The World Federation of Science Journalist (WFSJ) responded to the unbalanced media coverage by stressing the need for rigorous scientific training for journalists who cover outbreaks and a desperate need for improved accessibility to credible scientific information, as well as mentoring for less experienced journalists who find themselves suddenly covering a breaking science story of this nature[78].

The author has worked with the WFSJ since mid-2015, working on training programs for local journalists in Ebola affected areas and mentoring and teaching them in intensive in-country workshops on how to report on the outbreak. Training included pointers for interpreting scientific data and turning that information into well-written news pieces that would effectively communicate the necessary information to the audiences that needed them the most: those directly affected by Ebola.

### 5.1 Building a journalist toolkit for outbreaks

Not every journalist that reports on infectious disease outbreaks can be a specialist science journalist. In the case of Ebola, most were not. While journalists have many transferable skills that serve them well from news genre to news genre, science stories,

[78] World Federation of Science Journalists. Ebola outbreak and the urgent need for science journalists. Retrieved October 10, 2015, from http://www.wfsj.org/news/news.php?id=375

and health stories in particular, can be very complex and difficult to understand and explain to audiences if you are not trained to do so.

Following the Ebola outbreak several media training NGOs began building toolkits specific to each outbreak. The National Press Foundation built a great one for the Zika virus outbreak that was complete with a video webinar explaining the scientific basics of this particular outbreak and advising on the best course of action to adequately cover it[79].

Valuable journalist toolboxes are also built by the WFSJ[80], the Science Development Network[81] (a resource built expressly for developing world journalists covering these complex issues on the ground within difficult circumstances), and the Poynter Institute[82]. On the face of it these toolboxes seem like an overtly simple solution to a complex problem – in reality, they're a great start for journalists looking to improve their coverage of complex issues while not being too time-consuming so as so distract from their work. A few resources also suggest ways journalists can stay safe during field reporting on outbreak, a critical factor that can contribute to how well a reporter can cover a story over a sustained period[83].

## 5.2 Translating a Disaster

From the author's experience covering Ebola in West Africa, language was a key stumbling block affecting both journalists and humanitarian workers during the outbreak. Messaging about the spread of the disease and updates on treatment and prevention were communicated predominantly in the main international languages of English and French. This turned out to be a big problem as only a minority of people

[79] *Understanding the Zika Threat*. Retrieved February 10, 2017, from http://nationalpress.org/topic/understanding-the-zika-threat/?st=5328&t=Health&mm=Video
[80] *Covering Ebola*. (2015). Retrieved May 19, 2017, from http://wfsj.org/ebola/
[81] *Communicating in a crisis like Ebola: Facts and figures*. Retrieved June 19, 2017, from http://www.scidev.net/global/ebola/feature/communicating-crisis-ebola-facts-figures.html
[82] Tompkins, A. (2015, March 02). *Resources for digging deeper and asking better questions on Ebola*. Retrieved July 14, 2017, from https://www.poynter.org/news/resources-digging-deeper-and-asking-better-questions-ebola
[83] Hare, K. (2014, August 15). *How journalists covering the Ebola outbreak try to stay safe*. Retrieved August 14, 2017, from https://www.poynter.org/news/how-journalists-covering-ebola-outbreak-try-stay-safe

within the affected region actually spoke these languages (approximately 20%)[84]. This means that both media reports and Ebola-relates reading material effectively were incomprehensible to locals[85].

For this reason, tackling the language problem became a critical objective for aid workers during the outbreak. To assist the Centres for Disease Control (CDC) and doctors working in the field during the outbreak the international organization Translators Without Borders was called in to translate fact sheets for local communities[86] which had a significant impact on the speed in which accurate information could be communicated.

Finding translators for African languages is tricky since, for many languages in West Africa in particular, professional translators don't exist[87]. Non-professional translators often make mistakes that could lead to immense misunderstanding and confusion. To remedy this, Translators Without Borders is working on a training program to help locals with language skills develop professional proficiency to be an effective tool for crisis translation on the continent – the pilot Training and Translation Centre is currently operating in Kenya and has trained more than 300 translators since 2012[88].

Translating critical messaging into local languages is important, not just in infectious disease outbreaks but also during natural disasters. After the successes of Translators Without Borders in West Africa, plans are being made to scale up the innovation (a plan

[84] Berger, N., & Tang, G. (2015, June). *Ebola: a crisis of language*. Retrieved May 13, 2017, from http://odihpn.org/magazine/ebola-a-crisis-of-language/
[85] Thicke, L. (2014, October 14). *How translators can help stem the Ebola crisis*. Retrieved July 06, 2017, from http://www.newstatesman.com/health/2014/10/how-translators-can-help-stem-ebola-crisis
[86] Translators Without Borders. (2016, May 24). *Ebola outbreak in West Africa: Translators without Borders helping to save lives with CDC information in four local languages*. Retrieved August 23, 2017, from https://translatorswithoutborders.org/ebola-outbreak-in-west-africa-translators-without-borders-helping-to-save-lives-with-cdc-information-in-four-local-languages/
[87] Translators Without Borders. (2015). *Words of Relief – Ebola Crisis Learning Review*. Retrieved August 12, 2017, from https://www.elrha.org/wp-content/uploads/2015/01/20150529-Ebola-Learning-Review_FINAL.pdf
[88] Translators Without Borders. (2017, August 08). *Kenya training centre*. Retrieved August 14, 2017, from https://translatorswithoutborders.org/kenya/

to merge TWB with the Rosetta Stone Foundation) so it can more easily be rolled out when needed to boost communication efficiency in emergencies[89].

[89] Rosetta Stone Foundation. (2017, June 15). *The Rosetta Foundation*. Retrieved August 04, 2017, from https://www.therosettafoundation.org/blog/translators-without-borders-and-the-rosetta-foundation-are-merging/

# CHAPTER 6

# CONCLUSIONS AND RECOMMENDATIONS

The lessons learnt from the media's coverage of the Ebola, Zika, and Yellow Fever outbreaks have been numerous and already many of the mistakes made during the first Ebola outbreak have been remedied or improved, such as monitoring smaller outbreaks using geolocational software[90] to see how fast and how far they are spreading (as was the case in the recent Ebola outbreak in Central Africa[91]).

In the course of this research certain themes have emerged with regards to the media's initial failure to adequately cover the outbreaks. These can be broken down into three main aspects:

1. There needs to be more investment in building capacity for health and science journalism in newsrooms – just as most editors would expect a specialized business journalist to cover the economy, so too should editors understand that specialized science reporters are needed to provide guidance during a breaking story like an outbreak. And with more outbreaks occurring, combined with science issues like climate change, energy, vaccine development, and developing technology, it is incredibly necessary for newsrooms to invest in building these science resources in the future. Better science literacy should also be strongly encouraged in newsrooms as a whole.
2. Media needs to be more sensitive to framing narratives used during the coverage of outbreaks to ensure the overall picture created doesn't reinforce stereotypes and racial bias against those affected by the outbreaks. In addition, the media should be aware of the political undercurrent that drives political reactions to outbreaks so that they do not reinforce these views, which in turn can create an unbalanced and unfair representation of critical issues.

[90] Global Incident Map Displaying Outbreaks of All Varieties of Diseases. (n.d.). Retrieved August 27, 2017, from http://outbreaks.globalincidentmap.com/
[91] Live Ebola Map. (n.d.). Retrieved August 27, 2017, from http://www.liveebolamap.com/

3. A diversity of voices needs to become a priority when covering outbreak stories that do not occur within a western context. Inclusion of affected communities, health workers, women and people of colour is critical for creating a rounded and balanced narrative that more accurately represents the intricacies of issues occurring during a public health emergency while also circumventing the dangers of relying on a single narrative.

A related theme that has emerged is the issue of ethics in health journalism. Lara Setrakian of Ebola Deeply made a solid case for a 'first do no harm' approach for how we report on these kinds of stories. It was an important point and one, the author feels, that will become a more pertinent topic for debate as the developing world is covered in more detail by the western media, particular since the audience in Africa can now access the media content produced and is becoming more vocal in calling out stereotypes and bias in reporting.

As outbreaks seem to now occur with more frequency too, it is likely the way we cover an outbreak as journalists and the impact that that has on broader society will be more critical in the future. However, though this is of great interest, through the time and space limitations of this study we cannot explore this further here.

The limitations of this study also affected the extent to which the author could include additional information on the media's coverage of the Zika virus outbreak[92] and Yellow Fever outbreaks. Significant mistakes were made particularly during the coverage of the Zika outbreak which led to ethically-questionable lapses in journalistic judgement, such as the publishing of patients' personal details without consent[93].

[92] Stone, K. (2016, July 27). *No, sleeping with a chicken probably won't save you from Zika or malaria*. Retrieved August 04, 2017, from https://www.healthnewsreview.org/2016/07/no-sleeping-with-a-chicken-probably-wont-save-you-from-zika-or-malaria/

[93] Holtz, A. (2016, June 14). *Fox News falls into ethical morass on Zika birth story*. Retrieved August 04, 2017, from https://www.healthnewsreview.org/2016/06/fox-news-falls-into-ethical-morass-on-zika-birth-story

There is also the issue of more common disease outbreaks, like the German Measles outbreaks in 2016/2017[94], which occurred in the developed world where the author could argue that poor communication around the issue of vaccine safety was a major contributing factor. It could be valuable to explore this aspect further.

In the author's experience reporting first-hand on the Ebola and Yellow Fever outbreaks from the field, it is admittedly not easy to balance uncertainty in a developing science story like an outbreak with the practicalities of reporting from politically unstable parts of the developing world. Ebola offered a challenging combination of difficulties not least among them being differences in language and custom, deep mistrust of the foreign media in many of the worst-affected African communities, and lack of access to experts to inform us of the complexities of the virus. The constraints of reporting in these challenging areas remains an issue we need to work to improve in the future.

[94] A. (2017, March 28). *Europe-wide measles warning as outbreaks of disease spread across a number of nations*. Retrieved September 01, 2017, from http://www.thejournal.ie/measles-outbreak-europe-who-3312030-Mar2017/

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## APPENDIX 1

## Selected media for analysis

**CNN**

- EBOLA

  *Ebola: Isis of Biological Agents.* Legal View with Ashleigh Banfield. October, 2014.

- EBOLA

  *Ebola in the Air? A Nightmare that Could Happen*. Elizabeth Cohen. (October 6, 2014.

- ZIKA

  *3 Deaths Linked to Zika Virus in Venezuela*. Faith Karimi. February 12, 2016

- YELLOW FEVER

  *Yellow Fever Outbreak Kills 146 People in Angola, WHO says*. Faith Karimi. March 18, 2016

**FOX NEWS**

- EBOLA

  *Travel Ban: Should We Block Ebola Infected Countries?* Elizabeth Hasselbeck. October, 2014

- EBOLA

  *Africans Infected with Ebola Might Seek Treatment from a Witch Doctor*. Andrea Tantaros. October 10, 2014.

- ZIKA

  *TUNE IN: Are We Facing a Worldwide Pandemic? Fox News Investigates the Zika Threat*. August 3, 2016

- YELLOW FEVER

  *Angola Declares End to the World's Worst Yellow Fever Epidemic in Decades*. [FROM REUTERS]. December 23, 2016

**NYT (New York Times)**

- EBOLA

  *What We're Afraid to Say About Ebola*. Michael T. Osterholm. Spetember 11, 2014

- EBOLA

  *Ebola Evolved into a Deadlier Enemy During the African Epidemic*. Carl Zimmer. November 3, 2016
- ZIKA

  *Zika Virus 'Spreading Explosively' in the Americas, WHO says.* Sabrina Tavernise. January 28, 2016
- YELLOW FEVER

  *The Looming Threat of Yellow Fever*. Seth Berkley. May 15, 2017

**Washington Post**

- EBOLA

  *How Ebola Sped out of Control*. Lena Sun, Michel du Cille. October 4, 2014
- EBOLA

  *The Ebola Virus Mutated to Better Infect Humans During the 2014 Outbreak*. Sarah Kaplan. November 3, 2016.
- ZIKA

  *Scientists are Bewildered by Zika's Path Across Latin America.* Dom Phillips, Nick Miroff. October 25, 2016
- YELLOW FEVER

  *Brazil's Response to Yellow Fever Outbreak: Kill the Monkeys*. Marina Lowes. April 15, 2016

**NPR**

- EBOLA

  *Why Ebola Won't Go Away in West Africa*. Jason Beaubien. June 19, 2015
- EBOLA

  *Ebola is Rapidly Mutating as it Spreads Across West Africa.* Michaeleen Doucleff. August 28, 2014.
- ZIKA

  *'Nobody is Immune': Bracing for Zika's First Summer in the US*. Fresh Air. June 28, 2016
- YELLOW FEVER

*Will Angola's Yellow Fever Be 'Another Zika?'*. Erin Schumaker. April 4, 2016

**CBS News**

- EBOLA

  *Ebola Virus Found Lurking in Doctor's Eye*. CBS/AP. May 8, 2015

- EBOLA

  *Ebola Fears, Conspiracies Spread Through Social Media*. Jessica Firger. October 3, 2014

- ZIKA:

  *Zika "Spreading Explosively", Health Experts Warn*. January 28, 2016.

- YELLOW FEVER

  *Report: Woman Dies After Receiving Yellow Fever Vaccine.* March 19, 2015

**Al Jazeera**

- EBOLA

  *Isolating Ebola-Affected Nations Could Worsen Outbreak, Experts Say*. Elijah Wolfson. October 10, 2014.

- EBOLA

  *Ebola Deadly but Malaria Steals More Lives*. Musaazi Namiti. September 18, 2014

- ZIKA

  *Zika Virus: Women Told to Delay Pregnancy for Two Years*. January 22, 2016

- YELLOW FEVER:

  *Deadly Yellow Fever Epidemic Flares Up in Angola*. [Agency]. February 2016, 2016

**BBC Online**

- EBOLA

  *WHO: Ebola an "International Emergency"*. August 8, 2014

- EBOLA

  *Ebola Outbreak: US Experts Head to West Africa*. August 3, 2014

- ZIKA

  *RIO 2016: Zika Outbreak Concern for British Olympians.* February 3, 2016

- YELLOW FEVER

  *Angola's Frontline Against Yellow Fever*. Firle Davies. June 21, 2016

**Telegraph**

- EBOLA

  *'Who is Clipboard Man?' Man Without Hazmat Suit Helps Ebola Patient onto Plane*. Andrew Marszal. October 16, 2014
- EBOLA

  *Man with Ebola Virus Flew on Three Flights to the US.* October 1, 2014
- ZIKA

  *Zika Outbreak: British Travellers Told to Put Off Trying for a Baby for a Month*. Sarah Knapton. January 29, 2016
- YELLOW FEVER

  *Congo Declares Yellow Fever Epidemic With a 1000 Suspected Cases*. Aislinn Laing. June 21, 2016

**Daily Mail**

- EBOLA

  *CDC Ebola Response in Disarray: Agency Blasted for Scapegoating Infected Texas Nurse for Breach of Protocol while Treating Dallas Patient – as Experts Say US Medics are Unprepared for Outbreak*. Ashley Collman. October 2014.
- EBOLA

  *Schoolchildren Exposed in US Ebola Scare: Texas Governor Rick Perry reveals fears for kids and says 18 Americans May Have Virus After Hospital Sent Infected Man Home.* Dan Bates, Paul Thompson. September 30, 2014.
- ZIKA

  *Rio Olympics MUST Be Cancelled Because of Zika: 150 Health Experts Call on WHO to Move or Postpone the Games Amid Virus Outbreak.* Lizzie Parry. May 27, 2016
- YELLOW FEVER

  *UN Bungles Response to Yellow Fever Outbreak*. [AGENCY COPY: AP]. August 5, 2016.

**Guardian UK**

- EBOLA

  *Nurse Faces Tribunal over Pauline Cafferkey Temperature Reading.* Sarah Bosely. November 14, 2016.

- EBOLA

  *West Africa Ebola Epidemic is 'Out of Control'.* Sam Jones. June 23, 2014

- ZIKA

  *'Nobody's Looking': Why US Zika Outbreak Could Be Bigger Than We Know.* Jessica Glenza. August 17, 2016

- YELLOW FEVER

  *Fears of Global Yellow Fever Epidemic Grow As Vaccine Stocks Dwindle*. Sarah Bosely. August 16, 2016.

## APPENDIX 2

## Media Analysis Tables

### TABLE 1 – EBOLA

| | CNN | | Washington Post | | New York Times | | NPR News | | CBS News | | Al Jazeera | | BBC | | Telegraph | | Guardian UK | | Daily Mail | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| 1. Was the article factually accurate? | • | | • | | | • | • | | • | | • | | • | | • | | • | | | • |
| 2. Was the information clear/easily understandable? | | • | • | | | • | • | | | • | | • | | • | | • | • | | | • |
| 3. Did the news content use trigger/emotional* language? | • | | • | | • | | | • | | • | • | | | • | | • | • | | • | |
| 4. Could the news content be considered as sensationalized? | • | | | • | | • | | • | | • | • | | | • | • | | | • | • | |
| 5. Was the theme/content misleading in its messaging? | • | | • | | | • | | • | • | | | • | • | | • | | • | | • | |
| 6. Did the news content use relevant and reliable experts? | • | | • | | • | | • | | | • | • | | • | | • | | • | | • | |
| 7. Was the image use ethical and fair? | | • | | • | • | | | • | | • | • | | | • | • | | | • | | • |
| 8. Did the news content convey critical information important to the affected audience? | | • | • | | • | | • | | | • | • | | | • | | • | | • | | • |

**TABLE 2 – EBOLA**

| | CNN | | Washington Post | | New York Times | | NPR News | | CBS News | | Al Jazeera | | BBC | | Telegraph | | Guardian UK | | Daily Mail | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| **1. Was the article factually accurate?** | • | | • | | • | | • | | • | | • | | • | | • | | • | | | • |
| **2. Was the information clear/easily understandable?** | | • | • | | • | | • | | | • | | • | | • | | • | • | | | • |
| **3. Did the news content use trigger/emotional* language?** | • | | • | | • | | | • | | • | • | | | • | | • | • | | • | |
| **4. Could the news content be considered as sensationalized?** | • | | | • | • | | | • | | • | • | | | • | • | | | • | • | |
| **5. Was the theme/content misleading in its messaging?** | • | | • | | • | | | • | • | | | • | • | | • | | • | | • | |
| **6. Did the news content use relevant and reliable experts?** | • | | • | | | • | • | | | • | • | | • | | • | | • | | • | |
| **7. Was the image use ethical and fair?** | | • | • | | | • | | • | | • | • | | | • | • | | | • | | • |
| **8. Did the news content convey critical information important to the affected audience?** | | • | • | | | • | • | | | • | • | | | • | | • | | • | | • |

**TABLE 3 – ZIKA**

| | CNN | | Washington Post | | New York Times | | NPR News | | CBS News | | Al Jazeera | | BBC | | Telegraph | | Guardian UK | | Daily Mail | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| **1. Was the article factually accurate?** | • | | • | | • | | • | | • | | • | | • | | • | | • | | | • |
| **2. Was the information clear/easily understandable?** | | • | • | | | • | • | | | • | | • | • | | | • | • | | | • |
| **3. Did the news content use trigger/emotional* language?** | • | | • | | • | | | • | | • | • | | | • | | • | • | | • | |
| **4. Could the news content be considered as sensationalized?** | • | | | • | • | | | • | | • | • | | | • | • | | | • | • | |
| **5. Was the theme/content misleading in its messaging?** | • | | • | | • | | | • | • | | | • | • | | • | | • | | • | |
| **6. Did the news content use relevant and reliable experts?** | • | | • | | | • | • | | | • | • | | • | • | | | • | | • | |
| **7. Was the image use ethical and fair?** | | • | • | | | • | • | | | • | • | | | • | • | | | • | | • |
| **8. Did the news content convey critical information important to the affected audience?** | | • | • | | | • | • | | | • | • | | | • | | • | | • | | • |

**TABLE 4 – YELOW FEVER**

| | CNN | | Washington Post | | New York Times | | NPR News | | CBS News | | Al Jazeera | | BBC | | Telegraph | | Guardian UK | | Daily Mail | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| **1. Was the article factually accurate?** | | • | • | | • | | • | | • | | • | | • | | • | | • | | | • |
| **2. Was the information clear/easily understandable?** | | • | | • | • | | • | | | • | • | | | • | | • | • | | | • |
| **3. Did the news content use trigger/emotional* language?** | • | | | • | | • | | • | • | | | • | | • | | • | • | | • | |
| **4. Could the news content be considered as sensationalized?** | • | | | • | | • | | • | | • | | • | | • | • | | | • | • | |
| **5. Was the theme/content misleading in its messaging?** | • | | • | | | • | | • | • | | | • | • | | • | | • | | • | |
| **6. Did the news content use relevant and reliable experts?** | • | | | • | | • | • | | | • | • | | • | | • | | • | | • | |
| **7. Was the image use ethical and fair?** | | • | | • | • | | • | | • | | • | | | • | • | | | • | | • |
| **8. Did the news content convey critical information important to the affected audience?** | | • | | • | | • | • | | | • | | • | | • | | • | | • | | • |