

TIME TO CHANGE EBOLA COMMUNICATION

BERNARD SEYTRE*

CLEAR COMMUNICATION IS OF THE utmost importance during an Ebola outbreak, where changing behavior is as important as timely biomedical intervention. In Liberia, Guinea, and Sierra Leone, abundant rumors and misunderstandings have hampered medical intervention, caused affected individuals to hide from medical staff, and have even resulted in the murder of healthcare workers. Unfortunately, it appears as though some aspects of the communication around Ebola from governmental and international organizations in these and other African countries have contributed to the spread of misinformation.

Misleading bushmeat messages...

In March 2015, with Dr Atiyihwè Awesso, from the University of Lomé, we conducted an anthropological study on the perceptions of Ebola and the communication messages in Togo, a country free from Ebola.¹ We conducted 52 focus groups, 75 one-on-one interviews, and observed at-risk behaviors, in various locations all over the country. As far as we know, this is the only large study of Ebola perceptions in an Ebola-free country, and the only study to evaluate Ebola-related communication. Widespread knowledge of the Ebola hotline number (111) demonstrated that the messages disseminated by national media, posters, and local radio, have reached a large part of the population. This makes the nature of these messages all the more important.

The first lesson from our study was that the most remembered Ebola-prevention message was ‘avoid eating bushmeat’, which was emphasized as equally or even more important than washing one's hands or avoiding contact with people sick with Ebola. Studies conducted in other countries ranked the bushmeat message, which has been widely promoted all over Africa, as among the most well-known.²

In a WHO Ebola Strategy document published in August 2014, ‘wild animal-to-human transmission’ is listed first among the information to be ‘used at the community level’, before ‘human-to-human transmission’.³ This document was designed to serve as the basis for all African Ebola communication programs. The WHO experts recommended that people ‘wear gloves and other appropriate protective clothing when handling wild animals’. In countries where hunters often go bare-footed and whose languages do not have a word for ‘glove’,

* Bernard Seytre (seytre@bnscom.fr) is Director of bnscommunication (Paris) and associate professor at Senghor University (Alexandria, Egypt).

¹ Bernard Seytre, Atiyihwè Awesso and Afèignindou Gnassingbé, ‘L’anthropologie au service d’une stratégie de sensibilisation, d’éducation et de communication au Togo’, EBODAKAR 2015, 19-21 May 2015. This study was supported by a grant from the Togolese government.

² Patricia Omidian, Kodjo Tehoungue, Josephine Monger, ‘Medical Anthropology Study of the Ebola Virus Disease (EVD) Outbreak in Liberia/West Africa’, WHO, 24 August 2014. Langry Zaongho, Elisabete de Carvalho, Alim El Gaddari and Pedro Garcia, ‘Ebola: La relation d’aide à distance, pour répondre à l’anxiété de la population», 6 November 2014, <http://www.grotius.fr/ebola-relation-daide-distance-repondre-lanxiete-population/> (23 October 2015). Lamine Ndiaye, ‘Entre dispositif sanitaire et pratiques traditionnelles: représentations et pratiques populaires à propos de la maladie à virus Ebola à Kolda’, EBODAKAR 2015, 19-21 May 2015. Brahim Toure, Nicoletta Bellio, Laurent Kouassi, M’Bra Kouadio and Issa Djibrine, ‘Analyse de la préparation à la riposte contre l’épidémie de la maladie à virus Ebola dans l’Ouest de la Côte d’Ivoire’, September 2014, epicentre.

³ ‘Ebola Strategy. Ebola and Marburg virus disease epidemics: preparedness, alert, control, and evaluation’ (WHO, August 2014), p. 40.

these recommendations were translated into a prohibition on hunting and eating bushmeat.

For example, an Ebola information picture book published by the Ivory Coast government, with the support of WHO, UNICEF, and the United Nations Operation in Côte d'Ivoire (UNOCI), and available on the UNICEF web site, contains four images demonstrating zoonotic transmission (from bats, monkeys, antelopes, and agoutis), versus only three for intra-human routes.⁴ A UNICEF poster, also distributed by the Centers for Disease Control and Prevention (CDC), lists six 'do not's', including three relating to wild animals.⁵ A Guinean Ebola picture book published by USAID, the Guinean Ministry of Health, and the NGO Plan, dedicates as much space to animal transmission as to human transmission (adding pigs, rodents and rabbits to the previous list).⁶

... *that have no scientific basis...*

The accuracy of the bushmeat messages is questionable. In the chapter 'What should be done once the epidemic is confirmed?' the already-mentioned OMS strategy document places 'wild animal-to-human transmission' as the first risk requiring explanation at the 'community level' and lists 'hunter' as first among the 'high-risk occupations', before 'health care workers, nursing staff'.⁷ Even though the onset of an Ebola outbreak is due to viral transmission from an animal to a human, this form of transmission does not play any further role in the continuing spread of the epidemic, as the virus is then exclusively transmitted from person to person.⁸ Therefore, messages about wildlife transmission not only have no utility during an epidemic but they distract from the vital messages, i.e. those that aim to prevent inter-human transmission.

What about the prevention of an epidemic in Ebola-free countries? Firstly, let's examine the case for mammals other than bats. As far as wild animals go, the Ebola virus has only been detected in gorillas, chimpanzees, and duikers.⁹ The human index cases from several Congo and DRC outbreaks had been infected by one of these species.¹⁰ Yet these infected animals were always dead when found by villagers.¹¹ Only half-a-dozen African countries have significant numbers of chimpanzees or small populations of gorillas. Therefore, in terms of

⁴ 'Boîte à images, Prévention de la maladie à virus Ebola', Gouvernement de la Côte d'Ivoire, http://www.unicef.org/cbsc/files/Boîte_a_images_EBOLA_Finale_17614-CI-FR.pdf (23 October 2015).

⁵ 'Ebola Do and Do Not's (Liberia)', <http://www.cdc.gov/vhf/ebola/resources/posters.html>, <http://www.unicef.be/fr/epidemie-debola/> (26 October 2015).

⁶ Author's documentation.

⁷ *Ebola Strategy*, pp. 39-40.

⁸ 'Ebola virus disease', Fact sheet N° 103, WHO, <http://www.who.int/mediacentre/factsheets/fs103/en/> (26 October 2015).

⁹ David M. Pigott, Nick Golding, Adrian Mylne, Zhi Huang, Andrew J. Henry, Daniel J. Weiss, Oliver J. Brady, Moritz U.G. Kraemer, David L. Smith, Catherine L. Moyes, Samir Bhatt, Peter W. Gething, Peter W. Horby, Isaac I. Bogoch, John S. Brownstein, Sumiko R. Mearu, Andrew J. Tatem, Kamran Khan and Simon I. Hay, 'Mapping the zoonotic niche of Ebola virus disease in Africa', *eLife* 2014;3:e04395.

¹⁰ Eric M. Leroy, Pierre Rouquet, Pierre Formenty, Sandrine Souquière, Annelisa Kilbourne, Jean-Marc Froment, Magdalena Bermejo, Sheilag Smit, William Karesh, Robert Swanepoel, Sherif R. Zaki and Pierre E. Rollin, 'Multiple Ebola virus transmission events and rapid decline of Central African wildlife', *Science*, 303 (2004), pp. 387-390.

¹¹ Pigott, 'Mapping the zoonotic niche of Ebola virus disease in Africa'. Michael T. Osterholm, Kristine A. Moore, Nicholas S. Kelley, Lisa M. Brosseau, Gary Wong, Frederick A. Murphy, Clarence J. Peters, James W. Le Duc, Phillip K. Russell, Michel Van Herp, Jimmy Kapetshi, Jean-Jacques T. Muyembe, Benoit KebelaIllunga, James E. Strong, Allen Grolla, Anja Wolz, Brima Kargbo, David K. Kargbo, Pierre Formenty, David Avram Sanders and Gary P. Kobinger, 'Transmission of Ebola viruses: what we know and what we do not know', *mBio*, (2): e00137-15. doi:10.1128/mBio.00137-15.

non-flying mammals, bushmeat messages should only be used in a handful of countries and should not mention hunting, but scavenging. They could read, for example: ‘do not eat or touch any dead gorillas, chimpanzees, or duikers, that you might find...’.

The suspected Ebola virus reservoir consists of several different bat species who inhabit an area spanning 22 Central and West African countries, populated by 22 million people (*figure 1*).¹² Over the last 14 years, one outbreak per year has occurred, indicating that the chance of contracting Ebola in the at-risk area is one out of 22 million, per year. For comparison, the estimated risk of contracting HIV from a blood transfusion in an industrialized country is more than ten times higher (about 1 in 2 million in the USA, 1 in 2.35 million in France).¹³ Of course, for Ebola the infection of one index case subsequently causes an outbreak. However this doesn’t change the risk level for one individual. Large fruit bats are considered game in Africa and are heavily hunted in some regions, yet the route of Ebola transmission from bats to man has not been clearly established. Even though some outbreaks have been traced to the handling of hunted bats,¹⁴ alternative evidence points to other transmission routes. A serological survey in Gabon showed no association between hunting and Ebola infection and suggested ‘fruit contaminated by bat saliva’ as a potential source of human exposure.¹⁵ The index case of the current epidemic in West Africa occurred in December 2013 when a two-year-old boy played in a hollow tree housing a bat colony.¹⁶

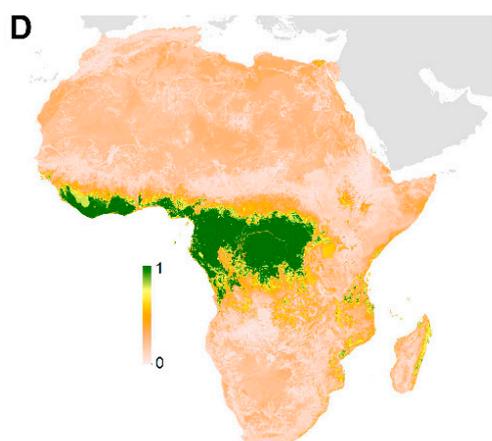


Figure 1. Predicted geographic distribution of reservoir bats

¹² Pigott, ‘Mapping the zoonotic niche of Ebola virus disease in Africa’.

¹³ ‘What are the risks of a blood transfusion?’, NIH, <https://www.nhlbi.nih.gov/health/health-topics/topics/bt/risks> (23 October 2015). ‘Surveillance épidémiologique des donneurs de sang’, Invs, http://www.invs.sante.fr/surveillance/donneurs_sang/risque.htm (23 October 2015).

¹⁴ Eric M. Leroy, Alain Epelboin, Vital Mondonge, Xavier Pourrut, Jean-Paul Gonzalez, Jean-Jacques Muyembe-Tamfum and Pierre Formenty, ‘Human Ebola Outbreak Resulting from Direct Exposure to Fruit Bats in Luebo, Democratic Republic of Congo, 2007’, *Vector-Borne and Zoonotic Diseases*, 9, 6 (2009). Osterholm, ‘Transmission of Ebola viruses’.

¹⁵ Pierre Becquart, Nadia Wauquier, Tanel Mahlakoiv, Dieudonné Nkoghe, Cindy Padilla, Marc Souris, Benjamin Ollomo, Jean-Paul Gonzalez, Xavier De Lamballerie, Mirdad Kazanji and Eric M. Leroy, ‘High prevalence of both humoral and cellular immunity to Zaire ebolavirus among rural populations in Gabon’, *PLoS ONE*, 5, 2, February 2010, e9126.

¹⁶ Almudena Mari Saéz, Sabrina Weiss, Kathrin Nowak, Vincent Lapeyre, Fee Zimmermann, Ariane Düx, Hjalmar SKühl, Moussa Kaba, Sebastien Regnaut, Kevin Merkel, Andreas Sachse, Ulla Thiesen, Lili Villányi, Christophe Boesch, Piotr W. Dabrowski, Aleksandar Radonic, Andreas Nitsche, Siv Aina J. Leendertz, Stefan Pettersson, Stephan Becker, Verena Krähling, Emmanuel Couacy-Hymann, Chantal Akoua-Koffi, Natalie Weber, Lars Schaade, Jakob Fahr, Matthias Borchert, Jan F. Gogarten, Sébastien Calvignac-Spencer and Fabian H. Leendertz, ‘Investing the zoonotic origin of the West African Ebola epidemic’, *EMBO Molecular Medicine*, published on line: 30 December 2014.

Firstly, people living outside the at-risk-area inhabited by the reservoir bats are not exposed to any risk and there is no ground to prohibit them from hunting bats. This concerns all the countries outside the 22 where those bats live and 96.6% of the 639 millions habitants of those 22 countries.¹⁷ Secondly, given that the individual risk level of contracting Ebola from bats is 1 in 22 million per year, and that hunting only represents one exposure pathway, what is the real risk level from bat hunting? Even in the 22 concerned countries, does this risk level, to which 3.4% of the population is exposed, justify depriving hundreds of millions of people an important food source, which accounts for between 20% to 90% of the animal protein eaten in many regions?¹⁸

... and that are not followed.

Our study showed that even though people knew that hunting was inadvisable or prohibited, they continued to hunt almost as usual. Although tallying hunting episodes was not a primary focus of this study, three out of our six investigator teams noticed bushmeat selling or encountered groups of hunters. During face-to-face interviews, the deputy head of a hospital said that ‘people have doubts about the disease and, despite awareness campaigns some people continue to eat bushmeat’. During different focus groups people stated that they felt the only reason to prohibit hunting was to protect wildlife, even adding on some occasions that Ebola was invented to prohibit hunting. During a filming of an awareness-raising video in the village of Barkouassi (central Togo) in July 2015, a man insisted on being filmed stating that he continued to hunt, and was not the only one... Press reports indicate that the practice of hunting and selling bushmeat still continues in various countries whether they are affected by Ebola or not, and papers have published pictures of hunters proudly handling game.¹⁹ What kinds of impressions will people form when they hunt, butcher, and eat bushmeat, pigs, agoutis, or rabbits, and don't get Ebola? Wilkinson and Leach pointed out that ‘the inaccurate sensitization, which jarred with people's experiences, met with suspicion’.²⁰

Changing people's behavior in order to avoid exposure to the virus is the first weapon in the fight against an Ebola epidemic. Infected people are only contagious when symptomatic. If the entire community avoids contact with the persons sick or dead from Ebola, and their belongings, no one will be infected and the outbreak will halt. However, during the current and previous epidemics these prevention messages have systematically been met with skepticism. Many families have hidden their sick or dead members. Almost two years after the beginning of the epidemic, some families continue to practice unsafe burials in Guinea.²¹

¹⁷ These countries are: South Soudan, DRC, Ivory Coast, Gabon, Uganda, ROC, Guinea, Nigeria, Cameroon, Central African Republic (CAR), Ghana, Liberia, Sierra Leone, Angola, Tanzania, Togo, Ethiopia, Mozambique, Burundi, Equatorial Guinea, Madagascar and Malawi (Pigott, ‘Mapping the zoonotic niche of Ebola virus disease in Africa’).

¹⁸ ‘Busmeat and the future of Protein in West Africa’, *West Africa Trends*, Issue 9, 2014, African Center for Economic Transformation.

¹⁹ ‘Bushmeat trade roaring again despite Ebola ban’, *IRIN*, 24 June 2015, <http://www.irinnews.org/report/101671/bushmeat-trade-roaring-again-despite-ebola-ban> (23 October 2015). Haby Niakate, ‘Ebola : viande de brousse, le goût du risque’, *Jeune Afrique*, 30 July 2014. ‘Ebola : la viande soigne plutôt’, BBC, 25 March 2014, http://www.bbc.com/afrique/region/2014/03/140325_ebola_viande (23 October 2015). ‘Guinée forestière: la viande de brousse est un aliment consommé par certaines communautés malgré Ebola’, *Guinée Matin*, 14 February 2015, <http://guineematin.com/actualites/guinee-forestieres-la-viande-de-brousse-est-un-aliment-consomme-par-certaines-communautes-malgre-ebola/> (23 October 2015).

²⁰ Annie Wilkinson and Melissa Leach, ‘Ebola—Myths, realities, and structural violence’, *African Affairs*, 2015, 114, 454, pp. 136–148.

²¹ See the weekly *Situation de l'épidémie de maladie à virus Ebola (MVE) en Guinée* published by Pr René

In light of these continuing difficulties, does it make sense to continue promoting, in both epidemic and pre-epidemic countries, bushmeat messages that have no efficacy and are not believed? This can only contribute to increasing doubts about all Ebola communications and opening the door to a host of misconceptions. As is frequently observed when dealing with public health, suspicion can lead to distrust, and distrust can turn to hostility.²²

Inaccurate prevention recommendations

The widely-used UNICEF previously mentioned poster lists five ‘dos’ to protect ‘yourself, your family, your community’, including ‘cook your food properly’. Another UNICEF poster recommends ‘avoiding undercooked food and bushmeat’.²³ The aforementioned USAID picture book shows women sweeping their courtyard and disposing of trash into dustbins with the following recommendations: ‘Clean drinking water sources (wells, drillings, pumps), clean and sweep toilets, collect and place garbage in dustbins, bury or burn garbage’. Another page states ‘Clean out pits to avoid stagnant water’. In actual fact, these practices have nothing to do with Ebola prevention and dilute, once again, any factually correct messages, those that can actually prevent human-to-human transmission. Whether the messages related to either transmission (do not) or prevention (dos), misinformation can only augment levels of suspicion, since no rational explanation can be given to support such unfounded messages.

In addition to incorrect information, negative messages are also being disseminated. The USAID picture book encourages communities to report any newcomers to the authorities. The WHO, UNICEF and ONUCI picture book includes a series of images showing a man denouncing a hunter to the police, with the caption ‘I should report all preventive measure violations to the authorities’ (*figure 2*). Even though both health workers and anthropologists have documented that stigmatization and coercion undermine efforts to control the disease, these books encourage a repressive management of the epidemic.



Figure 2. Example of advice on Ebola from a WHO/UNICEF/ONUICI picture book.²⁴

Migliani.

²² Seytre, ‘Vacciner, c’est convaincre’.

²³ ‘Ebola prevention’, 5 ways UNICEF is fighting Ebola, <https://blogs.unicef.org/blog/5-ways-unicef-is-fighting-ebolav1/> (26 October 2015).

²⁴ ‘Boîte à images, Prévention de la maladie à virus Ebola’, Gouvernement de la Côte d’Ivoire, http://www.unicef.org/cbsc/files/Boite_a_images_EBOLA_Finale_17614-CI-FR.pdf (23 October 2015).

Contributing to anxiety

Another major failure in current Ebola communication strategies is that there is no clear discrimination between areas or countries where people are at immediate risk of infection and those areas in which no Ebola cases have been recorded.

In 'pre-epidemic countries', WHO recommends the dissemination of 'simplified case definitions for community use'.²⁵ The definition includes 'Illness with onset of fever (...) bleeding, bloody diarrhea, bleeding into urine'. Following these guidelines, posters and radio spots detailing Ebola symptoms have been broadcast throughout sub-Saharan Africa. According to the available data, no Ebola cases were reported thanks to these messages in Western Africa, outside Guinea, Sierra Leone, and Liberia. In Mali, the index case was a little girl who had traveled for two days from Guinea while displaying symptoms. She was admitted to hospital after her grandmother had already consulted with two traditional healers.²⁶ In Senegal, the patient was diagnosed thirteen days after hospitalization,²⁷ and in Nigeria, the first patient collapsed on arrival at an airport.²⁸

While the use of these types of posters and radio spots is justified in areas where an outbreak is on-going, in other non-affected areas and countries it only contributes to raising anxiety levels, with doubtful utility. Our study in Togo emphasized the strong undercurrents of fear and uncertainty about the reality of Ebola. During the above-mentioned filming, in the town of Langabou, in central Togo, a nurse related to us how a group of people visiting his dispensary vehemently told him that 'Ebola is in the community but the government prohibit him to tell them'. Communities are simultaneously being told how to identify Ebola symptoms, but are also informed that the country is free from infection, resulting in mixed – and confusing – messages.

In addition, asking the community to identify infected cases has resulted in numerous community misdiagnoses. In Burkina Faso, for example, even though no actual cases of Ebola have been confirmed, general anxiety and panic is rife among the population.²⁹ In Togo, we heard of two sick people with an unknown disease who were left untreated and died, due to Ebola fears. Of course it has been necessary to widely communicate Ebola information across Africa. But in Ebola-free countries this should only take the form of providing information and should stop short of asking people to change their behavior. It should provide information about the causes of Ebola (a microbe) and methods to prevent infection, while clearly stating that Ebola is not present in the country. Describing the symptoms and asking people to identify cases must be limited to epidemic areas. Otherwise, these messages produce no benefits, generate anxiety and initiate negative attitudes.

A member of an African Ebola committee told us that scaring people is a way to make them follow the recommendations, expressing what might be a common belief among

²⁵ Ebola Strategy, WHO, pp. 21, 66.

²⁶ 'Mali case, Ebola imported from Guinea', WHO, 10/11/15, <http://www.who.int/mediacentre/news/ebola/10-november-2014-mali/en/> (26 October 2015).

²⁷ Dioumel Badji, Albert N. Gautier, Ndeye K. Khoudia and Alice Desclaux, 'Premier cas d'Ebola à Dakar : les effets socioprofessionnels d'une mise en surveillance communautaire à domicile', EBODAKAR 2015, 19-21 May 2015.

²⁸ Monica Mark, 'First case of ebola reported in Africa's most populous city Lagos', *theguardian*, 25 July 2014, <http://www.theguardian.com/world/2014/jul/25/first-case-ebola-lagos-nigeria> (26 October 2015).

²⁹ Blandine Bila and Assita Gouo, 'La menace Ebola au Burkina Faso entre rumeurs et riposte nationale', EBODAKAR 2015, 19-21 May 2015.

communication specialists, not only those from Africa. For example, the head of the French government's information office stated that the first step during crisis communication was to 'maximize the crisis' in order to 'generate room to maneuver', in other words to scare people to make them obedient.³⁰ This communication strategy was applied during the massive 2009 French influenza vaccination campaign ... which was a total failure.³¹ The recent Ebola crisis again demonstrates the inverse is true, communication should always strive to alleviate fear, not increase it.

Promoting unjustified behavior changes

Relatedly, another error in Ebola communication was requesting people change their behaviors when Ebola was not a direct threat. The WHO recommends that pre-Ebola countries 'promote and strengthen standard infection prevention and control practices within the community; e.g. hand washing, food safety, etc'.³² Consequently, washing hands, avoiding crowds, not shaking hands, etc. (of course along with avoiding bushmeat) have been widely promoted in non-affected countries.

Our study in Togo indicates that even though during the fall of 2014 people followed these recommendations, practices have subsequently significantly waned. Here again, questions are raised about the credibility of these Ebola communications. As for hand washing, which is beneficial against various diseases, linking this practice solely to Ebola outbreaks does not encourage people to continue these habits on a permanent basis. Hand washing would be promoted more efficiently as a protection against various infectious diseases, including Ebola.

Conclusion and proposals

When reviewing Ebola communication tools, one of the most striking aspects were that they listed 'dos' and 'do not's' but never mentioned the 'whys'. As such, communication messages recommended and ordered certain actions, without explaining the motivation for doing so. The goal of Ebola public health communication should be to improve health literacy.³³ This would involve a complete reworking of the current global Ebola communication strategy, replacing the top-down message delivery system with a strategy that emphasizes awareness-raising and education. Throughout every Ebola epidemic, the emergence of such a profusion of confused ideas relating to Ebola underlines the lack of general knowledge on infectious diseases. In addition to preparing for Ebola outbreaks, raising levels of infectious disease knowledge would foster greater adherence to major public health programs, such as vaccination or the use of mosquito nets. Disseminating knowledge about infectious diseases and their prevention would clarify the reasons supporting hand washing recommendations, which should not only be associated with Ebola prevention. Even often illiterate African people can understand both that Ebola is caused by a microbe and the routes this microbe uses to pass from one person to another.

We therefore propose the following:

³⁰ 'Rapport fait au nom de la Commission d'enquête sur la manière dont a été programmée, expliquée et gérée la campagne de vaccination contre la grippe A(H1N1)', n° 2698, Assemblée Nationale, Paris, 6 juillet 2010.

³¹ Bernard Seytre, 'Vacciner c'est convaincre', in Dominique Kerouedan (ed), *Santé Internationale* (Sciences Po Les Presses, 2011), pp. 89-104.

³² Ebola Strategy, WHO, p. 16.

³³ Don Nutbeam, 'Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century', *Health Promotion International*, 2000, 15, 3, pp. 259-267.

1. That the bushmeat messages be abandoned. In countries inhabited by these species, people should only be told not to touch dead chimpanzees and gorillas.
2. That communication should be clearly different in pre-epidemic and epidemic countries.
3. That in a pre-epidemic state, communication programs educate about Ebola and infectious diseases and should be centered on the notion of microbe and microbe transmission prevention, without promoting unjustified behavioral change or encouraging community-based Ebola disease identification.
4. That in epidemic areas communication not only includes recommendations and orders, but also explains the causes of Ebola, the way the Ebola virus is transmitted, and refrains from denouncing certain behaviors or individuals.

Of course, rumors, incorrect ideas, and adverse reactions have many cultural, political, and social causes, and communication alone will never be sufficient to erase them all.³⁴ However, one would hope that we can design communication tools that do not fuel them.

³⁴ Claire Chandler, James Fairhead, Ann Kelly, Melissa Leach, Frederick Martineau, Esther Mokuwa, Melissa Parker, Paul Richards and Annie Wilkinson, 'Ebola: limitations of correcting misinformation', *The Lancet*, 2015, 385, 9975, pp. 1275–7.