Risk Communication for Ebola Outbreak in Sierra Leone

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Sarah Gregory] Hi, I'm Sarah Gregory, and today I'm talking to Maike Winters, a doctoral candidate at the Karolinska Institute in Sweden, where she's calling me from today. We're talking about how risk was communicated to the public during the Ebola outbreak in Sierra Leone. Welcome, Maike.

[Maike Winters] Thank you, Sarah. So nice to be on the podcast.

[Sarah Gregory] So, talk to us a little bit about risk communication—what it is and what function does it serve?

[Maike Winters] Risk communication is essentially about the exchange and the dissemination of information and understanding about events that involve some kind of risk. In an ideal world, with that information, people can make informed decisions and understand how that risk affects their lives.

[Sarah Gregory] Why is communication so important during a disease outbreak?

[Maike Winters] Well, you can imagine, a disease outbreak is a very scary event. There is a risk. There is a lot of uncertainty. So people need to know the latest information on how many people are infected, how infectious it is, what can you do when you are infected, and how you can protect yourself from getting infected—of course with the aim, in the end, to prevent new cases and to curb an outbreak. You can have the best drugs in the world, but if people don't know about them or don't trust them, these drugs are essentially worthless. So communication is very important in an outbreak.

[Sarah Gregory] Give us some background on how Sierra Leone was affected by the Ebola outbreak in 2014 and '15.

[Maike Winters] Sure. Sierra Leone was, together with Guinea and Liberia, one of the epicenters of the outbreak. There were many cases back then, more than 28,000 in these three countries, and Sierra Leone actually had the highest number of cases, over 14,000. It all started back in May in 2014, when cases from Guinea and Liberia spilled over to Sierra Leone. And this was essentially, in the beginning, more in the eastern part of the country, but later on it also hit the capital city, Freetown—it's a city with more than 800,000 people—and at some point it was throughout the entire country and it affected every aspect of life. Schools were closing down, public gatherings were being banned. So, it was really an invisible enemy that impacted everybody.

[Sarah Gregory] Your article that you did for the EID journal was a survey, basically. You want to tell us how you conducted it?

[Maike Winters] Sure. The survey, actually, was four surveys that we sort of pulled together. And it was, actually this great organization in Freetown, called Focus 1000, who conducted these surveys. It was quite a new NGO back then, founded by Sierra Leoneans, and they felt that the response to the outbreak needed to be better informed by actual data. So, they designed a

questionnaire and went out in August 2014—and this was really in the exponential phase of the outbreak, so many cases, completely out of control—and they talked to people in the most heavily affected parts of the country. I think it was about 1,400 people, in total. And they asked them about their knowledge, about attitudes and practices, and with that, they got a good view of what the response should be focusing on. And later on, they repeated these surveys with even bigger samples around the country. So, in the end, there were four surveys with more than 10,000 respondents. And, actually, that is where I came in. So, I did the data analysis and looked at the association between communication channels and people's knowledge and behaviors.

[Sarah Gregory] You found that messaging led to misconceptions, as well as positive behavior change. Why would this be and what kinds of information led to misconceptions?

[Maike Winters] Yeah, we found that information channels, like radio, but also community sources, like religious leaders, were associated with appropriate Ebola knowledge and protective behaviors, so really good things. But also, almost all channels were associated with misconceptions and risk behavior, with weaker associations, but still. And it sounds quite counterintuitive, right? You have enhanced knowledge, but at the same time, there were misconceptions and risky behaviors. To place this in a context of an infectious disease outbreak, it's a disease with lots of uncertainties. So it's very difficult to send messages that reflect the uncertainty, and to still try to give people the information that they need. And you saw this early, in the beginning of the outbreak. People didn't really believe that Ebola was real. They thought it was just stories made up, for instance, to attract foreign donors. That was one of the many explanations to it. But to highlight the severity of the disease, the messages, in the beginning, just focused on the fact that Ebola is real, and they also said Ebola has no cure. And this, in a sense, is true—Ebola had no cure. There was no vaccine at that point and only supportive care could be given. So when people heard these messages, they understood that it would mean that they would inevitably die. And instead of going to health centers, sometimes very far away from their loved ones, they would choose to stay home and to die with their families around. And that, of course, only fueled the outbreak further. So there is a message that, in a sense, is true—it had no cure—but the misconceptions and risk behaviors can still arise from it.

And I think there's another example that will highlight this. It's actually a story that a colleague of mine told me, who worked in Freetown at this organization, Focus 1000. And this was in August 2014, when almost everybody in Sierra Leone was woken up in the middle of the night by a text message or a phone call with the urgent message to get up, right now, and to wash themselves with salt and hot water. Because the message said than an important religious leader from Nigeria had said that, by doing this, you will be protected from Ebola. So, the entire country got up and started washing themselves because, well, it couldn't hurt, right? And this, in itself, seems harmless. You wouldn't get sick from washing yourself. But, unfortunately, it also meant that people thought that this would actually mean that they were protected from getting infected, and would also go back to risky behaviors, like washing dead bodies. So, you can see, like, some kind of messages or some kind of recommendations might not be harmful in itself, may actually be true in itself, but it could still drive misconceptions and risk behaviors. It also shows, especially with this religious leader, it shows that a powerful source and one that was really trusted, they have actually lots of power to drive behavior. So yeah, in the future, it's important to use credible sources and the right channels to get the right information out.

[Sarah Gregory] Okay, so along those same lines, what was the most common way people were getting their information and did education have an impact on how people perceived the information?

[Maike Winters] What we saw was, very clearly, that radio was, by far, the most common way of getting informed. Sierra Leone, you also have to understand, has a very high illiteracy rate. More than half the population can't read or write. And that's why radio is very important. And radio itself is important in the way that journalists on the radio can disseminate information. But, of course, radio can also host different people, so they could also host religious leaders who could talk to their gathering. They could host health workers who would update audiences about the latest cases and the latest problems. So, it sort of came together in radio, and that's why we could see radio was very important.

[Sarah Gregory] Was the protective value of the information useful at all levels of the outbreak?

[Maike Winters] In theory, especially in the beginning of an outbreak, risk communication really can save lives. Mathematical models have also shown this. And also, if you think about it, if people know about all the risks, know how to avoid getting infected, and actually adhere to those recommendations, in theory, an outbreak would be quickly under control. But in real life, it doesn't work like that.

In Sierra Leone, there was quite a lack of communication at the beginning of an outbreak. Actually working on a qualitative study with Sierra Leonean journalists to understand how they perceived their roles in the outbreak. And our preliminary results show that journalists experienced a lack of information in the first few months and that the quality of the messages that they did get was very low—just created more questions, essentially. In the beginning, the information was not enough and was not useful, and also stuck for a long time with these messages: "Ebola is real. Ebola has no cure." And the message only evolved very late in the outbreak, and it changed to "Stay alert, stay alive. Ebola stops with me." to try to encourage people to adhere to protective behaviors. So, as an outbreak evolves, different messages are needed, and different audiences need to be targeted, and you need to be aware what kind of people or channels are most trusted, and try to build a bridge with them to spread the message.

[Sarah Gregory] I know that finding the balance between communicating important information and the varying cultural norms can be tricky. You sort of referenced this with the religious leader and the salt baths. Some Western news coverage reported that Ebola was spread through sacred burial practices. Was this true in Sierra Leone, and if so, how did health workers balance these cultural values and risk communication?

[Maike Winters] Yes, that's a very important point, actually. And you could also see in Sierra Leone that transmission of the virus happened also through burial practices, and in the country, these practices are very important. You wash the body of your loved one to give him or her a dignified end. But yeah, in an outbreak situation, it was very dangerous. So you really need to find a way to balance these cultural values and risk communication. It's very important to understand why a ritual is so important to people and work together to create the practice that is safe and, at the same time, still dignified. Some Sierra Leone patients who died from Ebola were initially buried without their families being present, and it was of course safe, but it was unacceptable to the public, and it only created resistance. And later on, they allowed families to

watch from a safe distance and they had imams or pastors present to give a last prayer. So, it's very important to find a balance there, and that is very tricky in an outbreak situation, where every minute actually counts.

[Sarah Gregory] Ultimately, does exposure to correct information actually help people avoid getting the Ebola virus—the bottom line being, does enhanced information actually change behavior?

[Maike Winters] That's a very difficult question to answer and one that academics and practitioners are not agreeing on. From our data, we could see, definitely, an association between communication channels and protective behavior, but we can't say anything about causation at this stage. I do think correct information, which came later on in the outbreak, definitely had a part in fighting the outbreak, but to what extent, I can't really say. And also, as I mentioned before, it's not about just the correct information, it's also about who disseminates the information and through what channel. Another factor that might be very important, also, is risk perception. In another study, we will look at how this is associated with different information sources, and people's knowledge and practice. Because it seems that, when people perceive a certain level of risk, they will be more likely to engage in protective behavior.

[Sarah Gregory] What was the most challenging part of the study and what were its greatest strengths?

[Maike Winters] Well, for me, coming from Europe, it's a challenge to understand the local context in Sierra Leone. For instance, the media landscape of Sierra Leone is very different, and there you really need help from people in Sierra Leone to understand the local context. So, for instance, in Europe, we tend to look at media as traditional media, which would be like print, TV and radio, and new media, or social media. But in Sierra Leone, this is very different because of the high illiteracy rate, so print is a very different kind of media there, which is almost not used. So, there's very low usage of newspapers and electronic and print radio…sorry, electronic and print media are much more important.

And about the strengths…of course it was amazing that this data was collected during an ongoing outbreak—nationwide, representative, with an enormous sample—and I think we can only thank the people working at Focus 2000 for having done such an incredible job. And that still allows us to look back and to understand, or to draw learning, from this outbreak.

[Sarah Gregory] In what way can the information from your study be used to design better communication strategies in the future?

[Maike Winters] I think the study really shows the importance of risk communication in an emergency situation. So, it shows that it, it has a role there and it is an important role. And I think you can also see, in a low-income setting with high illiteracy rates, that radio is very important, and it's often a very much trusted source of information. So efforts should be made to engage actively with local radio stations in the early phase of an outbreak. And also we saw that exposure to multiple information sources increases the chances of having knowledge and showing protective behaviors, so to make sure that people not only hear it on the radio, but also hear it in their communities, hear it from government campaigns, and so on.

[Sarah Gregory] So, with 50 percent illiteracy, I guess there's not a whole lot of social media being used, in Sierra Leone, at least?

[Maike Winters] Yeah, and well, it's surprising, but actually, social media is also very popular. So, the people who have a phone and who can read, most of them do have WhatsApp; that was very popular in the outbreak also. There were enormous WhatsApp groups that would inform each other on the current news of the outbreak. So, social media was important, but it's not as big as in the U.S. or in Europe.

[Sarah Gregory] Okay, Maike, tell us a little bit about yourself. What's your job? What do you find most exciting about it? How did you become involved in risk communication?

[Maike Winters] I actually have a background in journalism. I worked several years as a journalist in the Netherlands, where I'm from, and I also worked in East Africa and Germany. I've always had an interest in global health and in research, so I decided a few years ago to pursue a master's degree in epidemiology, which I did here in Sweden, at the Karolinska Institute. And I'm a PhD student now, here, and in my research I actually tried to combine these two worlds of media and global health. And in this paper, specifically, we looked at communication and media in an epidemiological way. And, with that, you can quantify communication as an exposure, and look at outcomes, such as knowledge and practices. And I think that's a very interesting and a challenging way to look at it, so I'm very happy to continue with this in the next years.

[Sarah Gregory] Well, thank you so much, Maike. Listeners can read the entire article, Risk Communication and Ebola-Specific Knowledge and Behavior during 2014–2015 Outbreak, Sierra Leone, online at cdc.gov/eid.

I'm Sarah Gregory for *Emerging Infectious Diseases*.

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