

Cole and Watkins

Lessons identified from the 2014–15 Ebola outbreak

*Journal of Business Continuity & Emergency Planning*

Vol. 9, 2, pp. 00–00

© Henry Stewart Publications 1749-9216

## **International employees' concerns during serious disease outbreaks and the potential impact on business continuity: Lessons identified from the 2014-15 West African Ebola outbreak**

**Jennifer Cole\* and Chris Watkins**

Received (in revised form): 19th August, 2015

\*Royal United Services Institute for Defence and Security Studies, Whitehall, London SW1A 2ET, UK

Tel: +44 (0)20 7747 2600; E-mail: [jenniferco@rusi.org](mailto:jenniferco@rusi.org)

*Jennifer Cole is Senior Research Fellow in resilience and emergency management at the Royal United Services Institute, a Reid Scholar in Health, the Human Body and Behaviour at Royal Holloway, University of London and a Visiting Fellow at Symbiosis School of Biomedical Sciences, Symbiosis University in Pune, India. She studied Biological Anthropology at Cambridge University. Dr Chris Watkins is her PhD supervisor.*

*Chris Watkins studied maths, philosophy and psychology at King's College, Cambridge (1980). His PhD was in machine learning and introduced the Q-learning algorithm. He is now a Reader at Royal Holloway. His current research interests are in machine learning, especially in reinforcement learning and evolutionary computation, in visualisation of high-dimensional data and in how gamified discussion forums such as reddit, Mumsnet, or Stackoverflow might be used to provide real-time information and interactive discussion to leverage expert advice during emergencies and for everyday medicine.*

### **ABSTRACT**

*This paper presents the findings of research carried out into the information seeking behaviour, and information requirements, of a small sample of international workers*

*stationed in West Africa during the Zaire Ebola virus outbreak of 2014–15. The research study under which these results were obtained was part of exploratory research for a PhD focused on the use, and potential uses, of social media platforms during serious disease outbreaks that might be used to inform policy planning for public health and emergency response interventions. Thus, the findings from this study may provide valuable insights to business continuity managers and emergency planners in making future decision about information exchange and crisis decision-making during future serious disease outbreaks.*

*Keywords: To come*

## **INTRODUCTION**

This paper presents the findings of research carried out into the information seeking behaviour, and information requirements, of a small sample ( $n=14$ ) of international workers stationed in West Africa during the *Zaire ebolavirus* outbreak of 2014–15. While a larger sample would have been preferable, the available resources for the study, and the timescale available, placed restrictions on the sample size. Further research during a future disease outbreak will be needed to verify and test these findings.

The research study under which these results were obtained was part of exploratory research for a PhD focused on the use, and potential uses, of social media platforms during serious disease outbreaks that might be used to inform policy planning for public health and emergency response interventions. The World Health Organization Outbreak Communication Planning Guide<sup>1</sup> states: ‘pro-active communication encourages the public to adopt protective behaviours, facilitates heightened disease surveillance, reduces confusion and allows for a better allocation of resources – all of which are necessary for an effective response’. Funk and Jansen<sup>2</sup> have modelled the potential impact that human behaviour might have on slowing and containing disease outbreaks. Social media use among the research cohort was unfortunately low (due primarily to a combination of low Internet penetration in the affected regions), but nonetheless valuable insights were gained into the information that users looked for, the sources from which they wanted to obtain it and were most likely to trust and how they shared this with friends and colleagues.

Interviews were conducted with 14 employees of international non-governmental organisations (NGOs), international organisations and international businesses with operations in West Africa, between 8th July and 5th November 2014. Ten were (or had been)

stationed in Liberia and four in Sierra Leone. Eleven of the interviewees were women, three were men and they ranged in age from mid-twenties to late-fifties. The cohort was recruited mainly through a request posted on the 'Liberia Expats' GoogleGroup, a members-only GoogleGroup for people who are, or who have previously been, working in Liberia. A brief description of the aims of the research was posted on the message forum, to which members who wanted to volunteer themselves could respond. The participants from Sierra Leone were recruited through purposive convenience sampling of people known by the author or her colleagues to be currently working in the affected region(s).

Study inclusion criteria were that the interviewee had to speak English, so that they could be interviewed verbally, be either currently in one of the Ebola-affected countries (Liberia, Sierra Leone or Guinea) or have returned from one of them since the outbreak began.

All interviews were conducted over Skype, with the exception of two: one that was conducted face-to-face with an interviewee who had recently returned from Liberia to her home in Washington DC and was available for interview when the author was also in the city; the other was completed by e-mail questionnaire after the Internet connection proved too poor to sustain a Skype session. All interviews were audio-recorded (using iFree Skype Recorder software) and transcribed by the author (with the exception of the interview conducted by e-mail) and the transcriptions were sent to the interviewees for verification and amendment. Interviewees were given the option at this stage to add in additional points they had not covered during the interview itself. The recorded interviews varied in length from 13 minutes 38 seconds to one hour, nine minutes and 36 seconds, with an average length of 35 minutes.

## **RESULTS**

### **Remembering the message source**

Wathen and Burkell<sup>3</sup> describe four characteristics of messages that contribute to how well they are trusted: source characteristics (who has sent the message); message characteristics (relevant to the content and how it is presented); medium (the channel or system through which the message is transmitted and received); receiver characteristics (relating to the person who receives the message). In this study, the source characteristics proved to be much more important than the medium through which the message was received.

In general, the interviewees did not remember clearly where they had first heard about the Ebola outbreak, who they had received the information from or how they had received it. All of those interviewed consumed information from many sources across many platforms and while they remembered the content of the message, and to some extent its source, they were less likely to remember the precise medium. Their recall can be grouped into three broad source categories: (1) official information sources, which includes government and international agencies such as the Liberian Ministry of Health, the American Embassy in Liberia, the World Health Organization (WHO) and the US Centers for Disease Control (CDC); (2) professional media, including international media such as BBC World Service, CNN and Al-Jazeera, and local professional media including newspapers and radio shows; (3) informal information sources, including friends and family, from whom communication was received by word of mouth, by e-mail or over social media platforms such as Twitter and Facebook. Recall was, generally, no more specific than this – ‘BBC, Al-Jazeera, something along those lines, on the web or on TV’.

Throughout later information-seeking behaviour, interviewees maintained a distinction between the three categories outlined above. This affected how they trusted and processed information from each, although generally they tended to use all three simultaneously.

### **Multiple-message sourcing**

The following response is typical:

‘I heard about [cases of Ebola] from friends, and then I went and looked it up on the news later ... I would generally look at BBC, Al-Jazeera, something along those lines, on the web or on TV, or I would read the WHO website’.

Another said:

‘[P]art of the problem was that the government and the Ministry of Health wouldn’t confirm anything until they’d got the test results back, but everyone knew when there was a suspected case. Everyone would sit around and call who they knew at the hospital and try this, that and the other to figure it out’.

Information heard through informal sources was generally considered to be rumour, which interviewees would try to confirm through official sources and the more trusted professional media.

This multiple-source information gathering was something the interviewees wanted and sought out, as the following reply shows:

‘I was just reading anything attached to it, I was reading all of the media on it, everything I could find on it from different sources – Google, journal articles ... all the media, I was reading everything I could find’.

This did not confuse the interviewees, nor cause information overload, but helped to reassure people. As one interviewee said, ‘I know that I can just Google something, and it’s just at my fingertips’. There also appeared to be an acknowledgement (and acceptance) from the interviewees that the three different categories described above provided different types of information, shown in Table 1.

**Table 1: Information sources and perceptions about them**

<b>Information source</b>	<b>Speed</b>	<b>Trustworthiness</b>	<b>Content</b>
Official information (eg WHO, CDC)	Slow	Trustworthy; confirmed; accurate	Facts, figures, statistics, big picture
Professional media (international)	Reasonably quick	Largely trustworthy; largely accurate (but needs to be confirmed); honest; can be alarmist, but this can be ‘needed to make people take notice’	Emotional, contextual, international coverage shows issues are ‘real’
Professional media (local)	Reasonably quick	May be sensationalist; needs to be confirmed; speculative	Emotional, contextual
Informal information	Immediate	‘From the frontline’ but also rumour; unconfirmed	What is really happening; personal experience

Interviewees saw larger organisations (and to some extent international media) as being often late to respond and, while the reasons for this were appreciated, people wanted (trusted) information quickly. Several interviewees reported getting information:

‘...sent to us in confidence from people in the medical body. The government didn’t necessarily want to share that detail of information ... it was through [informal] networks that we found out a lot more information than was publicly available’.

Another reported:

‘...some [friends] worked in public health sectors ... health departments, and generally I would trust them over anyone else. And they also had information much, much quicker. It would take days for someone like BBC or WHO to publish anything’.

They also saw official and media sources as being ‘[s]terile... I mean, they were just numbers ... but what [our friends] were telling us ... it was factual, not suppressed or manipulated in any way’.

The preferred source of information was someone personally known to the message receiver, who could be seen as having expert knowledge and/or direct experience of the situation. A number of the interviewees mentioned the value of information that came directly from friends working in the healthcare facilities where Ebola patients were being treated or in the Liberian Ministry of Health. This also extended to people who had experience from previous but similar situations as well as the current one. One interviewee in particular referred to the value of information coming from a colleague who had worked through a previous Ebola outbreak in the Democratic Republic of Congo, while another interviewee, who had himself worked through an Ebola outbreak in Uganda, spoke of how valuable his colleagues found his previous experiences. They looked to him for advice and a kind of leadership. In this regard, it may be valuable, during the early stages of similar emergency situations, for companies to identify employees who have such experience and bring them into crisis planning teams in an advisory capacity.

It was also clear from the interviews that the importance of sharing information often over-rode data protection rules that should have been observed around that information. Interviewees reported sharing information from subscription-only websites with non-subscribers. In one case, an interviewee reported being given a friend’s personal log-in details and passwords so that she could access information using his subscription. This poses a number of risks for organisations providing subscription services, not only from the loss of potential revenue but also from a security point of view. It would be worth considering how this risk can be managed, particularly as a number of the interviewees reported that they began to seek information from health-specific websites they were already aware of by reputation but did not otherwise regularly refer to. They generally turned to trusted brands: The World Health Organization, the CDC Website, National Travel Health Network and

Centre and International SOS were all mentioned. Luo and Najdawi (2004)<sup>4</sup> found that branding has the most significant effect on trust building online. A number of interviewees reported looking for information more actively (for instance, searching for news stories ahead of scheduled news programmes) and more often. They also reported sharing information more regularly with their friends. This provides valuable lessons for how information might be sought out in future.

It is interesting that the interviewees did not tend to draw a distinction between face-to-face informal sources, such as talking with friends and colleagues, and communications over social media. Internal company communications, such as an organisation's own website or internal e-mail group, was often thought of as belonging to this category by the company's own workers, but seen more as official communication from a trusted brand by non-employees, who reported seeking out information that had come from company communications from employee friends. Larger companies, particularly international companies, were thought of as having privileged access to information that may not be available to everyone (even though the company's information may only have come from government sources that were available to the public). In-house briefings and regular updates provided by employers were reported extremely favourably by those they were intended for and were seen as having the accuracy of official information sources combined with the speed and trustworthiness of informal information. Non-employees encouraged employee friends to pass on information, which was seen by the secondary recipient as an official source of information.

### **Consistency of information**

The second theme that emerged from the interviews was the importance of the information coming from the multiple sources to be consistent. Consistency, above all else, provided reassurance and helped the information to be trusted. Interviewees described putting together information from multiple sources (and multiple categories of sources) and then analysing it to construct their version of the truth. As one said: 'some of it you take in, some of it you discard, some of it you take with a grain of salt, some of it was actually quite useful'. In doing this, they would share information from the sources they considered to be the most factually accurate, sharing the components of their truth construct, not the construct itself. Particularly reassuring was the ability to turn to consistently accurate and reliable sources to

check, and hopefully confirm, the information constructed from the informal media sources and professional media. Holding regular briefings and meetings that bring together and communicate information from trusted official sources such as WHO, CDC and the local Health Ministry is therefore likely to provide significant employee reassurance. In situations where risk of infection may make it undesirable to bring large numbers of employees together in one place, companies should examine how this might be facilitated online.

The ability to ask questions and have them answered, preferably by experts – which a number of local media phone-in radio shows enabled – was considered to be extremely valuable. While interviewees described the media as tending to sensationalise, media organisations were also considered to be listening to people’s concerns and trying to address them. This enabled company communications offices to use the media to collect information as well as to push it out, as it can give a sense of how the situation is being seen by the local population in an open information exchange.

The interviewees reported that they and their friends and colleagues wanted to be able to ask questions (no matter how stupid they may seem to experts), not just be given facts and figures, and to be able to relate this factual information into a context that worked for them. The main reason for this was risk management. The individuals spoken to in this study did not want to be simply told what to do. They wanted some autonomy over their own decisions, to be able to determine the risk for themselves and make their own decisions on what level of risk they were willing to take. This was generally determined by two factors, the actual risk and the perceived risk, and where the individual felt they sat on the risk spectrum. Table 2 gives some examples of questions that interviewees reported asking or wanting to ask around information given out through official information sources.

**Table 2: Information provided and questions asked around it**

Information given by official sources	Questions/information required	Further information and clarification required
Medical description of symptoms	Clearer description: what does ‘gravely ill’ mean? Are they walking, or confined to bed? Do they look ill?	What is it like that I’m familiar with (eg Lassa fever etc)? Why/how is it different? How will I know it’s not [Lassa]? How is it affecting people? How are they feeling? How are they

		coping?
Geographic location (towns and villages) where cases have occurred	How close to there is it safe to travel? Are the train/bus stations safe?	Is it coming closer? Did the person catch it there or already have it when they travelled to the area?
How many cases (numbers) have been recorded?	How many dead? How many recovered? Why are some cases ‘suspected’ rather than ‘confirmed’?	What will happen (to me) if I catch it? What sort of people have caught it? How many cases before its really ‘dangerous’ [to me]?
Scientific information about how the disease is transmitted	Who spread it? Why did healthcare workers (who should have known how to protect themselves) catch it? What can <i>I</i> do to protect myself?	What if someone sneezes on me? Can I catch it from sitting next to someone in a taxi? From a doorknob? From food? Have people ‘like me’ caught it? (Occupation/socio-economic group etc)
Delayed but accurate figures	Earlier, estimated figures	Honesty about readjustments and corrections to earlier estimates
Geographic location of Ebola treatment centres	What will happen [to me] inside the centre?	What is it really like inside the treatment centre?
Measures to limit disease spread (eg don’t shop at markets/don’t eat bushmeat)	More practical information – not shopping at markets/eating bushmeat may be impossible for many people When might things change – eg schools close?	What is the next best option if advice can’t be followed perfectly? How difficult is the disease to contain bearing in mind local resources?
Where to call/go for help	What do I do if no-one comes? What’s the next best option?	Honesty when services are overwhelmed (and what to do)
What not to do	What can I still do? When will I be able to do things again?	When might everything be back to normal?

### **Risk perception and managing risk**

Most interviewees reported a preference for managed risk rather than zero risk. In the words of one interviewee: ‘I look more for numbers to help me make my own decisions about

whether to avoid those areas or not ... workers on the ground need to be able to make their own decisions'. Some of those interviewed arrived in Liberia and Sierra Leone after the outbreak had begun. Others were in a position to leave but chose not to.

Of particular interest is that none of those interviewed left Liberia or Sierra Leone because they personally felt at genuine risk of contracting Ebola. Those who left either did so because their employers made the decision for them, often from distant headquarters offices in the UK or the USA, (which caused resentment that the management did not genuinely understand the situation on the ground) or because of secondary effects of the outbreak, such as the introduction or threatened introduction of travel bans: 'I was concerned that travel restrictions meant if I didn't leave then it would be very difficult – in terms of cost as well as availability..'. The concern that health insurance would not cover them when UK Foreign and Commonwealth Office travel advice advised against remaining in-country and concern that should they face another health problem (a broken leg or appendicitis were offered as examples) the degraded healthcare system<sup>5</sup> would not be able to treat them were also cited.

### **Attitudes to personal risk**

The interviewees demonstrated a strong ability to conceptualise risk, eg: 'I don't feel at any particular risk myself because I [...] take the necessary precautions'. They absorbed the information on offer and rationalised (correctly) that if they were not working in an Ebola Treatment Centre, nor had they touched anyone who had been diagnosed with Ebola, they were extremely unlikely to be infected (particularly if they took precautions regardless). Risk perception did change as cases began to come closer. The comment: 'When it was in Guinea, and it was in the East, it wasn't of concern to me... It was more when it came to my own area, it started to be of slightly more concern', was a typical response. Another respondent said: 'there was a sense that people more broadly were starting to pick it up who weren't necessarily family members living with the people who had had the disease. That [was] a tipping point for me'.

Being able to conceptualise the risk did, however, depend on information that was easily understood as well as factually accurate, as the following quote identifies:

'[T]he information says you have to be acutely ill for the levels of Ebola virus in your body to be high to enough to transmit, but I would like more information on what that means – terms like "acutely" or "gravely ill". What does this mean? Could they still

be walking around? Are they bedridden? I'd like it to be more precise, so I know what to avoid'.

An important part of a company being able to reassure its employees may depend on being able to 'translate' medical and scientific information into a format that can be understood by non-experts. A positive example of this is given by an interviewee describing her reaction to a briefing she and her colleagues received from a doctor invited by her company to talk to its employees: 'So basically you would need to lick a sweaty person who is sick with the virus in order to catch it? Exactly! So that's pretty much how it was seen'.

### **Risk perception on behalf of others**

During the planning and early response phases, business continuity managers and emergency planners will need to ask themselves not only what their approach to risk management means to the company's operations and to the team in-country, but what competing interests might be at work. Keeping offices and operations open when other companies have closed theirs and withdrawn staff may give the perception that the company is putting profits before staff safety, but local incomes and economies may be dependent on operations continuing.

Interviewees reported being more cautious when it came to making decisions for others: 'Generally I and others are more cautious when it comes to other people's safety than their own – people will do things themselves but will be more cautious about sending someone else to do it'. Over-managing the risk for employees on the ground, who would prefer to be able to make their own decisions, can give the impression that distant management do not really understand what is happening: 'I mean, if they had thought about it, they'd realised that [...] we're going to have an exodus of these expat workers', said one respondent, 'it means that so many of our projects and so much of our work is going to grind to a halt but, actually, I don't think they thought that far ahead'.

Pulling operations can also make the situation seem more serious than it is – especially to local workers and smaller companies in the area, who think the larger organisations have better information. The interviews suggested that smaller companies may look to larger ones, which are likely to have better communications teams, able to generate more granular information, for a steer on how to act. It is important to consider the consequences of this.

Companies need to carefully consider how they might manage risk, what contingencies they have to consider and how and when to escalate. This may involve having a multi-phase emergency plan with clear distinctions between phases I, II and III, for example, and a clear indication of the trigger(s) that will signal a move from one phase to another (during both escalation and scaling down). Another important factor, which many interviewees mentioned, was the need to have an idea of, ‘when and how should we resume activities?’.

### Stages of risk

The way in which the interviewees described and contextualised risk was broadly down to how immediate it was, which can be categorised as shown in Table 3.

**Table 3: Far at-risk, near at-risk and actual at-risk**

Far at-risk	Near at-risk	Real at-risk
<p>The individual is highly unlikely to be at genuine risk of contracting Ebola; cases may be present in the country but the interviewee is distanced from realistic transmission chains.</p> <p>Also includes geographically distanced friends and family of those at near or real-risk who may put pressure on them to leave affected regions.</p>	<p>The individual is unlikely to be at genuine risk of contracting Ebola, although cases are present in their town or immediate area.</p> <p>The interviewee has not come into direct contact with Ebola patients nor knows anyone personally who has contracted Ebola.</p>	<p>The individual may have a genuine chance of contracting Ebola.</p> <p>Cases of Ebola have been diagnosed within their immediate social circle or among colleagues.</p> <p>Personally knows people who have contracted Ebola and has been in physical contact with them.</p>

The majority of the interviewees who took part in the study belonged, or had belonged to at some point, the near-at-risk group, with three belonging to the real at-risk group (one had colleagues who had contracted Ebola while working in a treatment unit; one had travelled in a taxi with a colleague who was subsequently diagnosed with Ebola; one had been visited at home by a family friend who was subsequently diagnosed with Ebola). How

individuals perceived themselves within these categorisations and what triggered their perception of moving up into a higher group is interesting.

Interviewees generally described their perception of risk, and of moving from the near-at-risk to the real at-risk group in particular, as being triggered by hearing that someone they knew personally, or felt an affinity to, had contracted the virus. There was a definite sense that if ‘someone like me’ can be affected, ‘I’ might be too. In this regard, it is important to know who employees see as their community and ‘people like me’. One interviewee remarked: ‘After the two US health workers got infected, that’s when everything changed – people started quitting their jobs and moving overseas, NGOs were pulling out’. Others, interviewed earlier in the outbreak before Western NGO workers contracted the disease, mentioned that such an event would be likely to trigger their withdrawal from the country. Other Westerners were seen as much more ‘like me’ than geographically closer African colleagues. People generally did not seem concerned when the disease was in their country, nor even in their town. Concern came when someone they knew personally had it. ‘Particularly if more than one case [happened] simultaneously’, said one interviewee. ‘If they made a mistake, might I?’.

Behavioural changes, such as changing shopping habits or avoiding crowded places and social gatherings, seemed to kick in at the border between the near and real at-risk rather than at the border between far at-risk and near at-risk. Those in the far at-risk group generally showed more concern for people they knew in higher risk categories than for themselves. The geographically and socially closer that cases came, the more likely people were to start isolating themselves from one another and ask questions such as: Should we go out for dinner? Do we go out dancing anymore? Interviewees reported that people became more careful about shaking hands and taking shared taxis. ‘When I went out to buy groceries, it was based on necessity’, reported one interviewee. People began to want to work from home as much as was practical. Some of the concerns voiced here are shown in Table 4.

This is interesting from a business continuity point of view. Should offices be shut and staff withdrawn at the trigger point between far at-risk and near-at-risk, when the office staff themselves appear to prefer to act when events trigger a move from near-at-risk to real-at-risk? There may be a number of different (and competing) factors that the organisation needs to consider here, such as whether the reputational risk has a higher trigger point than the operational risk requires. Such decisions may not be influenced by the company’s direct

interests alone. Their continuing relationship with the local government, how events are being reported in the media and the perception and influence of the families of employees at home may also influence what decisions need to be made. The economic damage caused by the withdrawal of an international company that contributes significantly to the economy and employs a large local workforce might be more devastating on a region than the impact of the disease itself. '[We] put the safety and health of our staff first, but sometimes the perception of what that is, is different to what it should be', explained one interviewee.

'If I have a Board that is nervous around Ebola and [is asking] why are we even operating there anymore, why haven't we shut down things when all the voluntary workers have been pulled out, it becomes hard to argue that. So you're being pushed by one group to be perhaps hyper-cautious and over-react and by [others] to push towards "this is normal, we are managing it"'.

As individuals moved from one risk group to another, the granularity of information they wanted increased.

'[I want to know] whether or not there are confirmed cases in [my town], how many, where they came from and whether that person has been out in public ... it used to be at the county level but now it's more immediate. Everyone might know someone who's had it and we all talk about it more, we want to know about exact locations of where it is in the county, which hospitals... and what do they do?'

The desire for information definitely increased as the perceived risk became more immediate.

'When the two US health workers got sick and a Liberian-American, Patrick Sawyer, died after getting off a plane in Nigeria, then I started to get Google news updates on Ebola. I looked for it specifically, in international media, CNN, BBC, Guardian, NY Times and talked about it with Liberian co-workers'.

Interviewees reported avoiding discussing Ebola on open social forums, such as Facebook, so as not to worry relatives and friends at home, some of whom put pressure on them to leave the region; they preferred more private e-mail groups.

**Table 4: Difference in questions asked by far at-risk, near at-risk and actual at-risk groups**

Far at risk	Near at risk	Genuine at risk
Geography of cases; where is it in town, country, area?	Number of cases: how many cases in country, town etc Detail is more important; where to avoid travelling to	Did I come into physical contact with [an infected person] while they might have been infectious?
Statistical information; numbers; facts	Developments in statistics; are numbers of cases increasing dramatically? Is it spreading more rapidly?	How did [the person I know/identify with] catch it? What mistake(s) did they make?
Scientific information; How does it spread? What can be done to contain it?	How fast is it spreading? Why are containment methods not working? Which are working better?	What should I do now? What can I do if professional healthcare cannot be accessed?
Passively receive information through news channels and official briefings	Actively seek information; share good information (information push as well as pull)	Search for more granular information; exchange large amounts of information with friends and colleagues.
Tendency to think the situation is being over-reported and the risk overemphasised	Situation is taken more seriously; more awareness of behaviour	Cautious behaviour implemented, including social distancing and self-isolation

From an organisational perspective, a number of respondents reported a sense that a stronger management of the situation would have given more assurance. ‘If [...] authority had been involved in giving regular updates or information or reports or something like this on what was going on [those affected] would have [acted earlier] and would have felt that [the authority] was in control’ remarked one respondent. Interviewees would generally have preferred information earlier than have it withheld because it was incomplete or estimated: ‘it would have been nice if the government had just issued a warning, saying, “there’s someone out there, we don’t know if he’s getting on public transport, we don’t know where he’s going...”. you know, just knowing there are people out there who have it’.

Interviewees would also have appreciated having warning, and explanations, of why the official situation had changed. ‘The official message changed from “nothing to worry

about” to “national emergency” without sensibly managed steps in between’, explained one interviewee. ‘At least, that’s how it appeared to the public’.

A last important factor for business continuity managers and emergency planners to consider is how, and on what timescale, the company’s operations might return to normal. This may include how survivors of the outbreak are re-integrated to the company and supported through this process. One respondent remarked: ‘I’d say it’s an incredibly psychologically draining disease’. It was also noticeable that, as the study went on and the outbreak escalated, some of the people interviewed seem to have volunteered simply so that they would have a chance to talk to someone for an hour: self-distancing by staying at home was isolating and lonely. Long-term psychological support might be needed to address this.

## **DISCUSSION**

There are clearly important lessons to be learned for business continuity from how the people interviewed sought, absorbed and processed information during the Ebola crisis. This will help companies to be aware of what kind of information employees require at different stages of an outbreak; how to formulate and distribute effective messages to employees, the media and international offices of the company; who to work with to formulate information; and how employees might act on it.

The most important component of a message was the sender. This was much more influential than the platform through which it was received. In most cases, interviewees could not recall how they had received the information, just what category of sender it had come from (informal, official information or professional media). They absorbed information from multiple sources and the more immediate they perceived the risk to be, the more likely they were to actively seek out information. They were most assured when consistent messages came from multiple sources. They did not mind receiving incomplete or estimated information, or information that was corrected later, and appreciated that information may not always be perfect. A lack of any information was seen as a failure to manage and control the situation. Information requirements differed depending on how immediate the risk was perceived to be; the closer the risk, the more granular the information required became. Socioeconomic closeness (‘someone like me’), often defined by occupation or race, made the risk more immediate than geographical closeness.

While the media was considered to sensationalise information, the interviewees expected this and saw media sources as less likely to be reliable than others and so would try to corroborate them with official information sources and trusted informal sources. The media proved valuable as a platform for listening to people's concerns, however, and for trying to address them, particularly when this could be done quickly. In West Africa, where Internet penetration is still low (only 4.6 per cent of the population have Internet access in Liberia, 1.7 per cent in Sierra Leone and 1.8 per cent in Guinea),<sup>6</sup> this was best achieved by radio phone-in talk shows. It suggests a greater application in future or in regions with better Internet penetration for website discussion forums that can run question and answer (Q&A) sessions. While utilised mostly by those far at-risk, the discussion website Reddit ([www.reddit.com](http://www.reddit.com)) ran a particularly successful Q&A session on Ebola<sup>7</sup> and an edited set of frequently asked questions<sup>8</sup> prepared by the site was picked up by international newspapers.

## **LIMITATIONS OF THE STUDY**

There are a number of limitations that must be considered with regard to the results of this study. First, the study was designed very quickly, so that the opportunity to interview people directly experiencing the Ebola crisis, while it was unfolding, would not be lost. There are undoubtedly more robust methodologies that could have been used and apologies are made for any compromise this caused to the results.

Secondly, the survey sample was very small ( $n=14$ ) and was recruited largely through purposive (convenience) sampling and self-selection. It represented a very narrow demographic – foreign workers who were outsiders to the affected West African region and socio-economically elite from the affected indigenous populations. They were better educated, wealthier, had better access to healthcare and were in a position to leave the region should they choose to do so. It should not be assumed that the responses they gave are representative of anything other than themselves and may not be transferable to either the populations of Western Europe and North America, from which they originated during a local health emergency, nor to international workers stationed in other regions of the world during a health emergency that might occur elsewhere. Any assumptions made along those lines would need to be tested in the appropriate contexts.

Thirdly, the interviews were originally written and set-up in order to ask the group about their social media use in relation to Ebola but in general, social media was not a

particularly relevant component of health seeking information for the survey sample. This was partly due to barriers to social media access in West Africa, including poor internet penetration creating infrastructure barriers even to those who are in an economic position to afford it, but did also appear to be due to a preference to take information from traditional media and official sources more than informal sources accessed via social media platforms. Any social media use was seen as an additional, informal source of information, not the preferred one, and the importance of consistency between messages from multiple sources was seen as paramount; this is consistent with findings from other studies.<sup>9</sup> Finally, the interpretation of the qualitative data provided by the interviewees has been analysed by the lead author only, and therefore may be influenced by inherent biases.

## **CONCLUSIONS**

Despite its limitations, the study suggests some valuable insights that may assist business continuity plans during future health emergencies. Due to the unexpected emergence of serious infectious disease outbreaks and reasonably quick onset, it would be valuable for planners to familiarise themselves with the type of questions that those affected are likely to ask, so that appropriate answers might be formulated quickly. They should also be aware that people have different questions depending on whether they are (or perceive themselves to be) ‘far at-risk’, ‘near at-risk’ or ‘real at-risk’.

Interviewees described triggers that would move their perception that they were ‘far at-risk’ to ‘near at-risk’ as cases being identified in ‘other NGO workers/other Westerners’, regardless of the NGO/organisation by which they were employed or where the case of infection was located. ‘Someone I know’, regardless of whether the interviewee had come into physical contact with the infected person during a relevant period also resulted in a perception that they were now in the ‘real at-risk’ group. Interestingly, although all of the Western NGO workers who became infected with Ebola were in extremely high-risk categories (healthcare workers who had been directly in contact with Ebola victims in medical facilities) where some cases of infection may have been considered inevitable, the reports of their infection heightened concern amongst the near at-risk and far-at risk groups.

Emergency planners should take note of these triggers. While the immediacy of risk can be defined in geographic terms, such as whether cases of infection have been detected in the same country, the same town or the same street as the at-risk individual, risk perception is

at least as dependent on emotional and perceptual factors such as the socio-economic or social group in which cases are occurring. Cases identified in workers employed by the same or a similar company, even if they are based in a geographically distant office, may result in a greater perception of risk than geographically closer cases identified in a socio-economic group with which the at-risk individual does not identify. Whether business continuity plans are enacted and operations are suspended are based primarily on real or perceived risk needs careful consideration.

## NOTES AND REFERENCES

- (1) WHO (2008) 'World Health Organization Outbreak Communication Planning Guide', available at: <http://www.who.int/ihr/elibrary/WHOOutbreakCommsPlanngGuide.pdf> (accessed 29th September, 2015).
- (2) Funk, S. and Jansen, V. A. A. (2013) 'The talk of the town: Modelling the spread of information and changes in behaviour'. In: P. Manfredi and A. D'Onofrio (eds). *Modelling the interplay between human behaviour and the spread of infectious diseases*. Springer-Verlag, Berlin, p. 93.
- (3) Wathen, C. N. and Burkell, J. (2002) 'Believe it or not: Factors influencing credibility on the Web', *Journal of the American Society for Information Science*, Vol. 53, No. 2, pp. 134–144.
- (4) Hamel, M. J. and Slutsker, L. (2015) 'Ebola: the hidden toll', *The Lancet Infectious Diseases*, Vol. 15, No. 7, pp. 756–757.
- (5) Luo, W. and Najdawi, M. (2004) 'Trust-building Measures: A Review of Consumer Health Portals', *Communications of the ACM*, Vol. 47, No. 1, pp.108-113.
- (6) Internet World Stats (2014) 'Usage and Population Statistics, Africa 2014', available at: <http://www.internetworldstats.com/stats1.htm> (accessed 29th September, 2015).
- (7) See [https://www.reddit.com/r/IAmA/comments/2g79ip/i\\_work\\_for\\_doctors\\_without\\_borders\\_ask\\_me/](https://www.reddit.com/r/IAmA/comments/2g79ip/i_work_for_doctors_without_borders_ask_me/) (accessed 7th July, 2015).
- (8) See [https://www.reddit.com/r/ebola/wiki/index#wiki\\_frequently\\_asked\\_questions](https://www.reddit.com/r/ebola/wiki/index#wiki_frequently_asked_questions) (accessed 7th July, 2015).

- (9) Bernhardt, J. M. and Felter, E. M. (2004) 'Online pediatric information seeking among mothers of young children: results from a qualitative study using focus groups', *Journal of Medical Internet Research*, Vol. 6, No. 1, p. e7.