

Minimising Ebola risk and mortality through mobile

 By Leigh Andrews

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When it comes to mobile, we can only prepare for the future by looking to the past. That's why it's so important to keep the lessons learned from the 2014 Ebola outbreak in mind, especially as mobile played its biggest role in health disaster management yet...

The GSMA [mHealth](#) and [Disaster Response](#) programmes co-hosted the optional afternoon session of the final day of Mobile360 last week, on the response to the Ebola crisis in West Africa, with a special focus on current response efforts and the role of the mobile industry.



Efforts were made to track the spread of the disease through analysis of the Call Data Records (CDR) data and mobility patterns, as hinted at by Ibrahim Dikko, director of regulatory affairs at Etisalat Nigeria, in a [previous session](#) on the day. They also discussed the potential impact of this type of big data on future disaster response based on lessons learned this time around, and in evaluating the blueprint

to increase preparedness for similar future scenarios.

Kyla Reid of GSMA showed a brief introductory video on GSMA's Ebola-related activities to date and how GSMA's programmes worked together in this regard. The disaster response programme works to make sure people can access life-saving communications when they most need it, with the Ebola crisis the first time it's worked in a pandemic situation. The mHealth mobile health programme in particular gives vulnerable women and children vital health services and information.

On the role of mobile in containing Ebola, Reid spoke of critical information dissemination, as well as the importance of making sure credible, verified information was spread to enhance community engagement and awareness. This involved strategic data collection, as well as providing health workers with tools and support to reduce infection rates and mortality to halt the spread of disease. Senegal in particular sent out over 4 million messages about staying healthy, but Reid says in spite of this success there are challenges to be addressed, mainly over the quality of content disseminated, so as to not spread myths and panic.

Reid explained that GSMA has a message blueprint and provides coverage data as well as enabling short codes and bulk SMS, which actually led to an inundation of duplicate requests, so end users were unfortunately spammed with content, which diluted the impact of the message. Added to this, mapping of activities was difficult as there wasn't any preparedness built into the system, making it very reactionary. Finally, Reid mentioned that network capacity and coverage issues meant congestion in system.

How Nigeria woke up to the Ebola crisis in July, and progress made since then

Then Reid handed over to the panelists. First up was Francis Ebuehi of Airtel Nigeria, who spoke of what it was like to wake up to news of Ebola in Nigeria. He explained that it happened when [Patrick Sawyer, a Liberian-American, flew into Lagos on 20 July](#). Sawyer was already ill and died in the country. This led to an Ebola emergency operation centre being set up in Lagos as a centralised hub, with information about the virus sent out in the media in various languages. A helpline was implemented, school holidays were extended and schools acquired temperature guns and hand sanitisers to reduce the probability of getting infected. Ebuehi said a photo of Nigeria's president Goodluck Jonathan using hand sanitiser increased the popularity of hand sanitiser astronomically in the country. An Ebola fund was also set up, and Airtel made an effort to send out critical information to citizens.

“ *"Many react rather than act - we need to change this mindset." @AirtelNigeria working to put in place health prgs ahead of time #mobile360- Olly Parsons (@ollyparsons) November 7, 2014* ”

Mobile's role in spreading Ebola awareness in the outlier states

Next to present was Benedict Suma from Vodafone Ghana on the mobile network operator's response to prevent spread of Ebola in Ghana. Suma started by requesting a moment of silence for those who have lost their lives to Ebola.



Benedict Suma of Vodafone Ghana tells #mobile360 how Ghana avoided Ebola outbreak, asks for a moment's silence. Powerful

Suma said not to forget that Ebola is one of the few diseases that can still be spread after a person is dead. They therefore needed to raise awareness of this, through a dedicated Ebola SMS service, as well as the expansion of Vodafone Ghana's health call centre which led to 50% increase in agents and is non-exclusionary as it's available to non-Vodafone subscribers. Suma recommended this as a fantastic template for telecommunications companies to use as an example to spread health awareness.

Following this, Jacob Korenblum, CEO of [Souktel](#), which has the tagline 'changing lives, one mobile phone at a time', spoke of approaching the Ebola crisis in Liberia and Sierra Leone and the bigger picture issues he sees. The response is evolving constantly, so he says the request for help from Red Cross three months ago is different to what they require today. Souktel was asked to map where Ebola-affected parties are and simplify the collection of bodies, as there were poor data sources in West Africa for Google Maps and the like. Korenblum says they partnered with IBM and crowdsourced the task through their existing network. The Red Cross identified specific communities, asking people to tag a satellite image on mobile phones, using their fingers to draw a physical tag around what they knew to be houses or dwellings in Liberia and Sierra Leone. The results were then crowd-validated to minimise error. Korenblum said by leveraging mobile devices in a non-conventional way, Souktel optimised the Red Cross' outreach.

“ *.@Souktel on problems in #Ebola response: 1. Duplication 2. Needs constantly changing 3. Resulting confusion. All need solutions #mobile360- Olly Parsons (@ollyparsons) November 7, 2014* ”

Then, in border countries like Mali and Ghana, Souktel worked with mobile network operators to see who is where, in order to create heat maps of where people were congregating and clustering for country-specific responses, as what you need in Mali is not what you need in Nigeria.

Quantity over quality? The mobile Ebola problem

Korenblum echoed Reid's earlier point that with dozens of mobile information services running, like the WHO and WhatsApp offering its own mobile content, the sheer amount of information being pushed is overwhelming. We need to ask whether it's all relevant, necessary and non-conflicting, and remember that the strategy needs to be constantly updated.

For example, when the Ebola outbreak first took hold in July there was lots of confusion about where the dead bodies were in houses in Monrovia, as families were afraid to speak up. Korenblum says this means teams would be sent out to collect a body and not be sure where to go next, driving aimlessly with dead bodies in the vehicle. To solve this, they leveraged a

GPS-based tracking system to at least track where the teams were going, and became more organised over time by also making use of a contact tracing system, getting people who they feared may have been infected to check in daily for a month and report they were still well. That said, Korenblum says you simply can't understate the initial degree of confusion and duplication.

Linus Bengtsson, MD and part of the [Flowminder Foundation](#) in Sweden spoke next, explaining that Flowminder is a non-profit organisation and that all involved in the foundation are academic, with expertise in applied mobile data analysis. On the topic of Ebola, Bengtsson said Flowminder pioneered the use of anonymous data from mobile operators to understand how infectious agents move. This led to the creation of mobility models with updated data, including travel restrictions that created problems for health care workers. The aim was to circumvent Ebola, while also finding out how it's affected population mobility as well as which areas were most heavily affected economically, all assisted by mobile phone consumption data.

“ Linus Bengtsson of [@flowminder](#) explaining how air traffic transformed the speed of disease spread [#Ebola](#) [#mobile360](#) [pic.twitter.com/1HADhySnrt](#) Edele Sheehan (@EdeleSheehan) [November 7, 2014](#) ”

Next, Craig Fredericks of the GSMA opened the floor to questions, asking Ebuehi about any noticeable challenges in mobile use during the outbreak. He said even if they had wanted to provide the services purely in English, not everyone in the country understands it - nor do they want to understand it. Another challenge is that many would rather go to their nearest hospital for information, but radio and TV were effective as primary media for information dissemination to reach the population.

Ebola crisis averted, business as usual? Nearly there, thanks to mobile, but what about the next health disaster?

Fredericks says the three suspected US Ebola cases resulted in millions of visits to the official [Wikipedia page on the Ebola virus](#). In Ghana, on the other hand, Suma says people are now going about their business as though nothing is happening as it's effectively been minimised as an active health threat.



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The next step, according to Fredericks, is to think of leveraging existing channels to drive demand generation. Korenblum says preparedness is crucial, which is why so many telecommunications companies now want to get involved in health awareness, to be ready and put measures in place before the next disaster. He says you need to get people interested in your service before actually they need it, listing the example of a service Souktel launched in Somalia that relayed soap opera information. He said it may seem simple, but in doing so they guaranteed they had a hooked audience already listening to them when the food crisis hit, which was willing to access the health information as they already trusted the entertainment content they were receiving.

Korenblum says working in high-risk countries has a specific social cause, and his team works to involve the ministry of health to focus on the bulk of population as 'youth'. This overlap of youth, health and education is critical in reaching the bulk of the audience and by getting the health ministries to understand that raising awareness has to come from infotainment like horoscopes, ringtones, and regular sport updates to ensure an active user base. Ebuehi added that it must be a win-win situation for all stakeholders as a bulk SMS blast that's run daily for the next few months will ultimately dull the audience's awareness.

In closing, Korenblum said it is about more than sending out vital information. Mobile's true effectiveness is revealed when people choose to pull vital information on demand, which sets it apart from other communication channels. But mobile is by no means perfect, so Korenblum cautions not to see mobile as the overall crisis communications solution. Reid agreed mobile is by no means a silver bullet for handling Ebola information, but definitely a vital part of an overall effective awareness campaign when facing a health disaster of this calibre.

[Click here](#) to read Craig Rossouw of Channel Mobile's article, 'Could mobile marketing be the key to combating Ebola in Africa?'

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