

Special Report from the National Emergency Management Agency in partnership with the Center for Disease Control File number: Z0M813

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Attn: President Goodluck Jonathan,

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## **Summary**

The National Emergency Management Agency has been notified by the Center for Disease Control of a potential viral outbreak that is rapidly spreading across the Nigerian state. Symptoms of the infected subjects include limb stiffness, irrational and aggressive behaviour as well as a peculiar pre-occupation with brains. This special report, prepared by a sub-committee assembled within the National Emergency Management Agency, will provide an analysis of the spread of the virus as well as the proposed crisis management strategy.

#### Chronology

Day 1: The viral outbreak was first reported when an elderly woman was attacked by an infected subject in the north-eastern city, Maiduguri. Witnesses reported that the attacker seemed to be unaware of its surroundings and moved sluggishly, yet aggressively towards the victim. The attacker was unarmed, and used a combination of biting and clawing to assault the victim. A police officer arrived on scene while the attack was still in progress. The attacker was unresponsive to verbal cues to cease its attack. After several warnings, the officer followed the appropriate protocol and fired a shot meant to debilitate the attacker. Despite a wound to the left calf, the attacker continued to assault the victim. At this point, the officer had no choice but to use lethal force to intervene in the attack and, therefore, administered a shot to the back of the attackers head. The attacker then collapsed to the ground; however, at this point the victim was already non-responsive. Both the victim and the attacker were pronounced dead on the scene. An autopsy on the corpse of the attacker was ordered in order to determine the cause of the irrational and peculiar behaviour.

**Day 2:** The following day, another five attacks were reported within the Maiduguri city limits. Two attacks with similar characteristics were also reported in Kano, and yet another in Kaduna.



**Day 3:** By the third day, the attacks began to increase rapidly in Maiduguri. More than 27 attacks were reported. Similarly, attacks in Kano and Kaduna began to increase with another 11 and 7 incidents reported, respectively. New outbreaks were also reported in Abuja (3), Oshogbo (4), Ibadan (2) and Lagos (3).

**Day 4:** On the fourth day of the viral outbreak, attacks increased in all previous areas and continued to spread south-westwardly throughout the state. The summary of attacks is as follows: Maiduguri (132), Kano (57), Abuja (52), Oshogbo (12), Ibadan (18), and Lagos (11). New cities reporting attacks were as follows: Benin City (16), Onitsha (2). Furthermore, Porto-Novo in the bordering state of Benin also reported two similar types of attacks.

Autopsies from corpses in all three of the initial regions confirmed that all attackers had been infected with the same strain of a virus known as Zombidoviridae from the Mononegavirales order. Although there is little medical research regarding the virus as it is believed to have been dormant since medieval times, historical research suggests that the virus can only be transferred via direct physical contact that breaks the skin membrane. In all the cases documented, the virus has been transmitted by bites or scratch marks similar to the rabies virus.

### Analysis of the spread of Zombidoviridae

An analysis of the Zimbidoviridae outbreaks reveals a south-westward trend in the diffusion of the virus. Because of its rapid spread, it must be assumed that the infected individuals migrated by some means of modern transportation. Due to the altered physical and mental state of the infected individuals, it is not plausible to believe that the infected parties were able to travel the 595 km route from Maiduguri to Kano, or the 813 km route from Maiduguri to Kaduna via automobile – especially considering there is no direct major highway connecting Maiduguri to either of these cities. Even more curiously, there is no direct railway connection between these cities. The only reasonable explanation seems to be that the infected individuals were somehow admitted onto an aircraft as Maiduguri and Kaduna each have a local domestic airport, while Kano is home to an international airport. It is likely that the disease was spread by individuals returning home from conducting business as Maiduguri is considered to be the principal trading hub of northeastern Nigeria.

Abuja, Ibadan, Lagos, Benin City and Porto-Novo in neighbouring Benin are all also equipped with either domestic or international airports that may further explain the spread of the virus via aircraft transportation. Only Oshogbo and Onitsha, which reported outbreaks on days 3 and 4 respectively, are not connected with the other cities via the aviation network. Being only 116 km apart, the virus was most likely spread to Oshogbo by a passenger returning from Ibadan via railway as both cities are on the Western railway line. The most curious incident concerning



the spread of the disease to date lies in the outbreak in Onitsha. As there is no airport, no railway line and no major highway connecting the city to any of the other infected cities, the most plausible explanation seems to be an infected subject arrived in Onitsha via the Niger River.

Alerts have been sent out to all international and domestic airports within the state to implement rigorous screening procedures of all on-boarding passengers to prevent the further diffusion of the virus. However, now that the virus has become so wide-spread it is likely that the number of infected individuals will continue to grow as the attacks begin to increase. The Nigerian military has been dispatched to the infected cities with instructions to shoot to kill. To this point, it is the only known way to neutralize the threat.

### Predictions for the next 24-48 hrs

Although Maiduguri was the original source of the virus outbreak, our Crisis Management team predicts that they will quickly be able to contain the outbreak in this region as it is reasonably isolated from the other affected areas. Effectively immediately, there will be no air or railway passengers permitted to enter into the city. If the situation elevates to a critical point, civilians may be evacuated from the city via airway or railway after having been cleared by medical staff. If necessary, the Crisis Management team may request that the Office of the President reach out to neighbouring states Chad or Cameroon for assistance in providing shelter for evacuated residents of Maiduguri.

Both Lagos and Kano have been identified as being top priority for outbreak control tactics as the population density in these cities and surrounding areas surpasses 500 people per square mile. As Zombidoviridae is documented as being spread by physical contact, the close proximity of inhabitants increases the opportunity for individuals to come into contact with an infected subject. The situation in Kano is further complicated as the region is landlocked and does not have easy access to open water for a high-scale evacuation. As well, the land surrounding the city of Kano is a short grass savannah; therefore if infected subjects begin to spread beyond the city limits, the virus could quickly infiltrate the country side.

Based on the data collected thus far, Port-Harcourt has also been identified as a potential threat for a future outbreak as it is a major industrial center due to the traffic generated by the petroleum industry. Port Harcourt is the most southern end on the Western railway line, has an international airport and two seaports. Therefore, there are many individuals travelling on a regular basis from other infected cities such as Abuja, Benin City and Lagos. Due to the presence of many diverse travellers, the spread of the disease to Port-Harcourt would pose a great threat to not only the remainder of the Nigerian state, but also a wide variety of neighbouring states.



#### Regional approach for outbreak control measures

To coordinate the Crisis Management team and the Preventative Outreach program, the National Emergency Management Agency has considered two different sets of regions which will be further elaborated upon in the following section.

**Geopolitical/Administrative Regions -** Since the late 1990's Nigeria's 36 states have been organized into the following six zones based on political boundaries:

- North west (Kaduna, Kebbi, Zamfara, Sokoto, Kano, Jigawa and Katsina state)
- **North central** (Kogi, Niger, Benue, Kwara, Plateau and Nassarawa state along with the Federal Capital Territory)
- North east (Tabara, Borno, Bauchi, Adamawa, Gombe and Yobe state)
- **South west** (Oyo, Ogun, Lagos, Ondo and Osun state)
- **South east** (Ebonyi, Enugu, Imo, Abia and Anambra state)
- **South south** (Akwa-Ibam, Edo, Bayelsa, Cross River, Rivers and Delta state)

These regions have been taken under consideration simply for logistical reasons. Because of the pre-existing communication networks that exist within the regions, cooperation between these states should be easy to facilitate. Furthermore, elected officials should already be familiar and accustomed to working and negotiating with one-another. Additionally, the National Emergency Management Agency currently has an office established in each of these six regions to orchestrate and oversee the Crisis Management and Preventative Outreach programs.

Vegetation Regions – Although all the outbreaks to date have been reported in major cities, the National Emergency Management Agency has prepared for the possibility that the outbreak will spread to the rural areas. Without access to airports, major roads or railways, infected subjects will most likely be travelling to these regions by foot. The rural regions of greatest concern are those with Short grass and Marginal savannah vegetation as there are very few natural barriers to incoming aggressors. NEMA has been in contact with local law enforcement in these regions to brief them on the situation at hand. Military personnel will be made available as necessary to assist. For the Rain forest and Woodland regions, NEMA is currently working on awareness campaign for rural areas instructing individuals to seek shelter in tree tops should a Zombidoviridae outbreak occur in their area. Those in the areas surrounding the montane region are encouraged to migrate towards the more elevated areas if possible to seek refuge from any potential attacks from infected subjects.



#### Final remarks

At this point the Zombidoviridae outbreak is considered to be at a critical juncture. If the spread cannot be contained within the next 48 hrs, the Crisis Management Agency will need to put in place wide-scale evacuations for civilians in the identified high-risk areas. Due to the high cost associated with this undertaking and the demand for medical equipment and emergency personnel, the National Emergency Management Agency strongly recommends that the President and his executive team engage in diplomatic relations with the United States to request international aid. As they are Nigeria's largest foreign investor and Nigeria is responsible for 1/5 of the their oil supply, NEMA feels as though the United States has an invested interest in preventing the collapse of the Nigeria economy.

The National Emergency Management Agency will provide a detailed follow up report within the next 24hrs with an update as to the spread of the virus, as well as further details regarding the Crisis Management implementation plan.