

Profile

I grew up in New York City and earned a B.S. in Biochemistry from Stony Brook University. After graduation I worked as an analyst at a pharmaceutical company outside of Atlanta. Two years later I began in a PhD program at Emory University in microbiology studying influenza virus replication in conjunction with a CDC laboratory. After graduation I joined the Commissioned Corps of the US Public Health Service instead of an academic post-doctoral position and began work as a staff scientist studying emerging viral diseases at a lab associated with the Uniformed Services University of the Health Sciences in Bethesda, Maryland. I decided to pursue a research career in a government lab because I felt a need to pursue research that had direct impact on the public.

How did I get involved?

An officer from the Epidemic Intelligence Service (EIS) sent me lab samples from an outbreak of an unknown virus with origins in the Philippines, specifically, from the Subic Bay region. Several people in the US have contracted the virus and died. A Petty Officer in the Navy also fell ill and is now recovering. Preliminary reports believe that disease is caused by a virus and not a bacteria or fungus. With these samples in my lab, I am tasked with trying to isolate viruses from the blood, stool and tissue samples provided. Any viruses found will have their genetic material isolated sequenced and compared against sequences in our database, US Army and CDC databases, and the National Center for Biotechnology Information database.

Excerpts taken from Lab notebook and sample reports

- "...subjected blood samples to ELISA testing to see if any were positive against antibodies for common viruses as well as more exotic species of virus...we tested our samples against antibodies for influenza, rhinovirus, herpesvirus, lassavirus, flavivirus, Filovirus (pron."fee-lo-virus"), paramyxovirus and poxvirus..."
- "...Tissue and stool samples were homogenized and clarified. Homogenates were applied to a monolayer of cells. We used a variety of cells from monkey, cat, and human, bovine, porcine (pig) and dog...If there was cytopathic effect after 24-48 hours; we collected cells, lysed them and applied a portion of the lysate to a new monolayer of the same cell line. After a few passages, we purified any virus present, isolated any nucleic acids present and then sequence them..."
- "...Samples were coded in order to remain blind. I don't know which sample came from which patient, just those that came from human or animal..."
- "...from what I understand, samples from wildlife in the area were also taken. Those samples were sent to the CSIRO lab in Geelong, Australia. I'm eager to see what they have discovered.

I have included an abbreviated summary of the samples analyzed so far. More samples are in transit from the EIS officer, and we still waiting on the sequencing results for several samples

Sample origin	Tissue Type	Seropositive per ELISA assay	Virus genomes found (% Sequence similarity compared to database entries)	Notes
Human	Blood	Influenza	H3N2 influenza (100% positive)	Reston ebolavirus is usually only found in monkeys?
	Liver	Filovirus	Filovirus (40% similar to Reston Ebolavirus)	
Human	Skin	Herpesvirus	HSV-2 (100% positive for Strain 17)	
Macaque	Blood	Retrovirus	SIV Type II (100% positive for Strain A256)	
	Liver	Filovirus	Filovirus (85% similar to Reston Ebolavirus)	
Flying Fox	Liver	Not tested	Filovirus (50% similar to Reston Ebolavirus)	Don't think I've seen this in flying foxes before
	Brain			
	Blood			
Pig	Brain	Not tested	Filovirus (18% similar to Reston Ebolavirus)	Unusual to find this type of filovirus in pig.
	Blood			
Human	Blood	Filovirus	Filovirus (25% similar to Reston Ebolavirus)	
Pig	Blood	Not Tested	Filovirus (45% similar to Reston Ebolavirus)	
Human	Blood	Filovirus	Filovirus (25% similar to Reston Ebolavirus)	
	Liver			
	Skin			

Points to Ponder prior to discussion:

From your profile, what are some important facts you know about the outbreak?

What do you need to know about the outbreak?

What do you believe is the cause and source of outbreak? Why?

How do you think the virus is being transmitted?

Are there any terms on the previous pages that are unfamiliar to you? If so define them