

Ebola outbreak: Analyzing the Data - Worksheet

Directions: Use the infographic and table to answer the following questions and to draw conclusions about the data.

Table: Number of cases and death by species among outbreaks of hemorrhagic fevers due to Ebola virus in Africa between 1976 and 2014 (Data source: The World Health Organization)

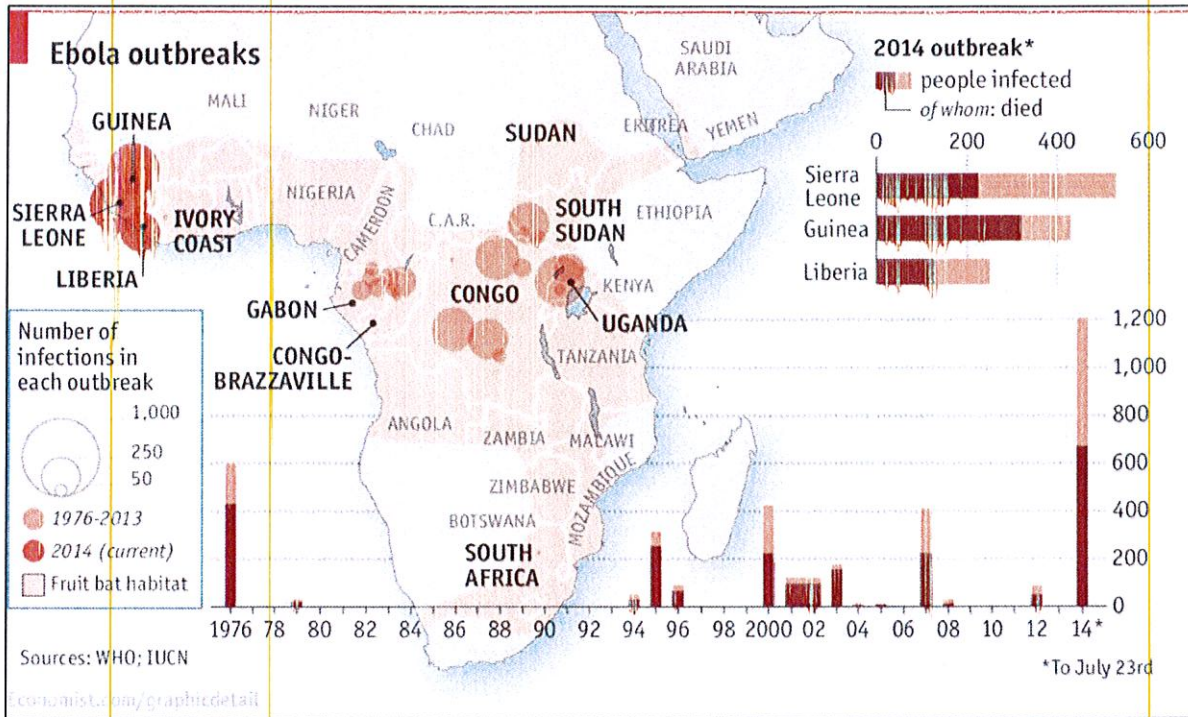
Country	Year	Number of cases	Number of death	Case fatality rate (%)
Sudan	1976	284	151	53
Democratic Republic of Congo	1976	318	280	88
Democratic Republic of Congo	1977	1	1	100
Sudan	1979	34	22	65
Gabon	1994	52	31	60
Democratic Republic of Congo	1995	315	254	81
South Africa	1996	1	1	100
Uganda	2000	425	224	53
Congo	2001	59	44	75
Gabon	2001	65	53	82
Sudan	2004	17	7	41
Congo	2005	12	10	83
Uganda	2007	149	37	25
Democratic Republic of Congo	2007	264	187	71
Democratic Republic of Congo	2008	32	14	44
Uganda	2011	1	1	100
Democratic Republic of Congo	2012	57	29	51
Uganda	2012	7	4	57
Uganda	2012	24	17	71
Liberia-Guinea-Sierra Leone (ongoing)	2014	453	245	54

- The last column, "Case fatality rate (%)," has been left empty. How would you calculate the rate of deaths per case (case fatality rate)?
Divide Number of death by Number of cases
- Use your equation and complete the table.
- Which outbreak(s) had the highest fatality rate? What limitations does the amount of data present when answering that question confidently? DRC 1977, South Africa 1996, Uganda 2011
There was only one person so we don't know as much as we
- What is the range of case fatality rate?
100 (highest) - 41 (lowest) could if there were more victims
Range = 59
- Calculate the averages of the case fatality rate?
 - mean: 68.42%
 - median: 71%
 - mode: 100%

Which average do you think best describes the data? Explain your answer.

The median. It helps to control for the outliers of either side.

Infographic: *The current Ebola outbreak is the worst on record* (Source: Economist.com/graphic detail; data source: World Health Organization and International Union for Conservation of Nature)



1. Give the bar chart located in the right lower section of the infographic the correct labels for its:
 - title: *Ebola outbreaks by year*
 - x axis: *Year (date)*
 - y axis: *Number of infected and number of deaths*
2. The infographic and the table both display nearly the same data. Besides the specific breakdown of the 2014 outbreak by country, what additional set of data is included in the infographic? *Fruit bat habitat*
3. Why do you think this additional set of data is important to understanding the origin of the outbreaks?
It helps us learn about the origin of the virus and the environment

Who does it better? *environment*

In the table below, decide if the table or infographic does a better job of presenting the data in a clear and organized way that allows you to effectively draw conclusions about the outbreaks and then explain your answer

Question	Table	Infographic	How did they present the data better?
Which outbreak had/has the highest case fatality rate (%)?			
What patterns do you see in the geography of the outbreaks?			
Which outbreaks infected the most people?			

Identify which part(s) of the Epidemiologic Triangle this information helps you to explore?
 Agent/Host/Environment?

Host and environment