

## *Extra Life: A Short History of Living Longer*

### Episode 2 - Data

William Farr, Cholera, and the Curve



In the second episode of *Extra Life*, science author Steven Johnson and historian David Olusoga discuss how data has been a powerful tool in extending human lifespans across the globe.

#### **Warm-up:**

1. Brainstorm responses to the following questions about data:

- What is data?
- How do you capture data?
- What does data *look* like?

2. Review this definition of data found on [Merriam-Webster website](https://www.merriam-webster.com/dictionary/data).

**data** noun, plural in form but singular or plural in construction, often attributive

 Save Word

da-ta | \ 'dā-tə , 'da-  also 'dā-  \

**Definition of data**

- 1 : factual information (such as measurements or statistics) used as a basis for reasoning, discussion, or calculation  
*// the data is plentiful and easily available*  
 — H. A. Gleason, Jr.  
*// comprehensive data on economic growth have been published*  
 — N. H. Jacoby
- 2 : information in digital form that can be transmitted or processed
- 3 : information output by a sensing device or organ that includes both useful and irrelevant or redundant information and must be processed to be meaningful

- How does this definition of data compare to your definition of data?
- Is this definition missing anything?

3. Think about the way we are using data in the fight against COVID-19. As we try to rid the world of coronavirus, make a list of the kinds of data scientists are collecting in tracking the spread of the virus and predicting the nature of the virus.

**Key Vocabulary:**

Smallpox  
 Epidemics  
 Cholera  
 Dehydration  
 Medical statistician  
 Data analysis  
 Farr's curve  
 Sewage system

Introducing the Video: [Extra Life | Episode 2: Farr, Cholera, and the Curve](#)

[In this video clip](#), historian David Olusoga tells the story of London's cholera epidemic and the contribution of medical statistician William Farr, whose pioneering data investigation in 1866 has not only extended global life expectancy, but aided prediction trends in the fight against COVID-19.

Watch the clip (10 minutes and 59 seconds) and answer the comprehension questions below.

For more curricular materials connected to *Extra Life* and "The Living Century" by Steven Johnson, visit [www.pulitzercenter.org/extralife](http://www.pulitzercenter.org/extralife).

**Comprehension Questions:**

Describe the death toll due to cholera from mid-July to August 1866 . How would you characterize its growth?	
What is cholera?	
Why was life expectancy only 37 years in London in the mid-1800s?	
What kind of data did William Farr collect? What question drove his data collection?	
What is Farr's curve and how does it predict the outbreak of an epidemic?	
What was the connection between cholera and sewage systems in London?	

Using data collection, what did Farr determine was the cause for the cholera epidemic in London? How did Farr's data inspire action in the community?	
How is Farr's curve utilized today in our global fight against COVID-19?	

### Discussion Questions:

1. In what ways is data collection a necessary component of innovation? How do doctors, scientists, journalists, politicians, and teachers use data to drive their work? What other types of professionals rely on data?
2. Farr used data to uncover a mystery. In what other ways do you see people use data today?

### Extension Activity:

**Create an infographic about a problem in your community.** Farr was driven by a desire to identify the source of cholera in East London. Identify a problem in your community that you want to demystify, collect data around the issue, and present your findings in an infographic. Here is a suggested process:

1. Craft a question that will drive your investigation.
2. Brainstorm the kinds of information you will need to collect.
3. Create a plan to record the information.
4. Take time to evaluate your findings.
5. Decide how you will present your data (bar chart, pie chart, table, etc.).
6. Create your infographic.