
Addressing Taboos Through Afghan Poetry

Objective:

You will be able to...

- Explain how vaccines are developed, and how potential vaccines against COVID-19 may work
- Analyze the factors which make the search for a vaccine difficult, time-consuming, and potentially unethical
- Look for answers to their questions about the ongoing pandemic from accurate, reputable, and diverse sources

Warm-up:

1. Coronavirus (COVID-19) has been dominating the news and other media lately. Take a moment to consider where you're getting most of your news about the pandemic. Here are some examples:

- Social media (Instagram, Facebook, Twitter)
- Print media (Newspapers like the New York Times or Washington Post)
- Online media (Websites like Politico.com, propublica.org, and others)
- TV (National or local TV stations)
- Radio

2. What stories or themes are most common from the above sources? Do you hear about individuals' stories, about national politics, or about other aspects of the crisis?

a. What have you learned about the virus so far? List a few things.

b. What are you still curious about? Write down a list of questions you have about the virus, its spread, how it can be treated, or how the world can fight it.

3. What is a **vaccine**? Can you think of an example of one that you may have received?

a. What do they do, and how?

b. If you're not sure, make an educated guess using the definition below.

(Definition: Broadly, a vaccine is a biological agent that provides active acquired immunity for an infectious disease often made from weakened or killed parts of the bacteria or microorganism). In your own words, what does this mean?

Background:

In this lesson, you'll hear from Pulitzer Center grantee [Jon Cohen](#) in a recorded webinar titled "[COVID-19 Vaccine Efforts: Science Journalist Jon Cohen Explains.](#)" He is a veteran magazine reporter and non-fiction writer specializing in covering epidemics. For past Pulitzer Center projects, he has reported on HIV/AIDS, Ebola, and influenza, and is now a core member of the team from Science Magazine reporting for the project "[The Science of COVID-19.](#)"

In this webinar, part of the Science and Health series from the Pulitzer Center, Jon Cohen focuses his talk on the search for a vaccine for **SARS-CoV-2**, the virus that causes COVID-19. In doing so, you'll learn how the epidemic has **spread**, **how vaccines work**, how they're **tested**, who will **distribute** them, and what effect (if any) **seasonality** will have.

Some useful vocabulary with this lesson:

- [Outbreak](#)
- [Immunity](#)
- [Genetic/DNA sequence](#)
- [Antibody](#)
- [Surface protein](#)
- [Vector](#)

Introducing the Resource:

Resource 1: “COVID-19 Vaccine Efforts: Science Journalist Jon Cohen Explains.”

Watch 20 minutes of the embedded recording of the webinar at this [link](#). The introduction of the video is optional, Jon Cohen’s talk starts at 5:56, and his presentation ends (before a Q&A) at 25:40. Feel free to pause the video as you’re watching to look more closely at the images.

Write down your answers to the following questions on a separate sheet of paper.

1. How many cases of the COVID-19 were there worldwide by April 15th?
2. Cohen explains that the bat version of SARS-CoV-2 did not directly lead to the human version currently spreading around the world.
 - a. Contrast that with the example he gives of SARS (which spread throughout China and the world in the early 2000s). How can he tell that civet cats spread SARS, but that bats didn’t spread COVID-19?
3. As of April 11, how many potential COVID-19 vaccines are in clinical trials? How many are being evaluated?
 - a. Is that surprising? Why or why not?
4. What is a “spike protein”? Draw a picture of the SARS-CoV-2 virus as it’s depicted in the presentation and circle the spike protein.
5. What is the “second arm of the immune system”?
6. He gives a couple examples of types of vaccines being researched. Pick one and explain, in your own words, how it works.
7. What is the “huge question overshadowing all vaccine research”?
8. Why is he “confident that we can have a vaccine against SARS-CoV-2 quickly”?
9. What reasons does Cohen give for the statement that any effect that seasonality might have on the spread of COVID-19 will be “drowned out”?

Reflection:

Write your answers down on a separate sheet of paper:

1. Cohen says that onlookers in early January began to think differently as more information came out about what looked like a routine pneumonia outbreak.
 - a. Why was it significant that there was a “novel coronavirus”?
 - b. What diseases does he compare it to? What do you know about SARS or MERS?
2. How did the virus’s sequence end up on GISAID?
 - a. Why did the researchers post it there? What purpose does that serve?
3. Why, according to Cohen, will a vaccine take at least 1 year to produce?

- a. What measures did he say could speed up the process?
4. Many such measures come with ethical questions. As a young person, what do you think about “challenging” young people unlikely to get seriously ill from the virus to test vaccines?
 - a. Would you volunteer if you were over 18?
 - b. Why or why not?
 - c. What about if you could be infected with a weakened version of the virus?
5. Cohen mentions Gavi, The Vaccine Alliance, a global health partnership based in Switzerland, and its calls to put together a “Manhattan Project” for creating a virus to SARS-CoV-2.
 - a. What was the Manhattan Project? How does that term apply here?
 - b. Do you agree global efforts on this front should be coordinated? Why or why not?
 - c. What are the potential drawbacks?

Extension Activities:

Option 1: Asking Questions

It is important to ask questions and seek out accurate information about a crisis such as this one, and the people that participated in the webinar had the opportunity to do so after Cohen’s talk. Take a look at the webinar’s Q&A transcript below the video. Were the questions that you wrote down in the warm-up answered?

If not, and you have Twitter, tweet your question to Jon Cohen ([@sciencecohen](https://twitter.com/sciencecohen)) using the hashtag #PulitzerScience and tag us ([@PulitzerCenter](https://twitter.com/PulitzerCenter)) to see if he’ll answer you. Using the hashtag, the Pulitzer Center’s education team will create a list of your questions and get them answered by the reporters on the Science Magazine project.

Option 2: Research and write

In the warm-up, were you curious about the economic implications of COVID-19? Its impact on different marginalized communities? Its effects in different countries around the world? Based on your questions you wrote down, look through the Pulitzer Center’s [COVID-19 issue page](#), and find a story that speaks to your curiosity.

Here are some projects to get you started:

- *Science Magazine*: [The Science of COVID-19](#)
- *Centinela*: [Probing Latin America's response to COVID-19](#)
- The Associated Press: [Unprotected: Coronavirus and the World’s Most Vulnerable People](#)
- *CNN, The Nation*: [The Frontliners With No Benefits](#) (Photojournalism, The Philippines)
- *The Philadelphia Enquirer*: [Portraits of a Pandemic](#) (Photojournalism)

After you've read/listened to/looked at the reporting, write an essay about what you learned.
Once you're done, send it to education@pulitzercenter.org.