



TGuide 10: U.S. Public Health System and COVID-19

NGSS in this Module:

Crosscutting Concepts:

Systems and System Models

- Models (e.g., physical, mathematical, computer models) can be used to simulate systems and interactions—including energy, matter, and information flows—within and between systems at different scales. (HS-LS1-2)

Structure and Function

- Investigating or designing new systems or structures requires a detailed examination of the properties of different materials, the structures of different components, and connections of components to reveal its function and/or solve a problem. (HS-LS1-1)

Stability and Change

- Feedback (negative or positive) can stabilize or destabilize a system. (HS-LS1-3)



Teacher Resources:

Challenge 2:

CT State Dept of Health <https://portal.ct.gov/dph>

CT COVID Response <https://portal.ct.gov/Coronavirus>

Challenge 3: What are some of the inequities in the healthcare system magnified by COVID-19?

FAQs about Social Determinants of Health

<https://www.cdc.gov/nchstp/socialdeterminants/faq.html#what-are-social-determinants>

Key Terms:

- Health determinants
- Social determinants of health (SDOH)
- Epidemiology
- Scientific inquiry
- Core sciences of public health
- Partners in public health
- Health impact pyramid



The Module: The Public Health System and COVID-19

The Story

While continuing their research into the impacts of COVID-19, high school friends Tash, Ray, and June recognize the recovery and spread of the virus are very different across the globe and across different populations in the U.S. They want to know more about the public health system, how it works, and what is being done to combat the virus. What are the roles of federal, state, and local agencies? What is each person's individual responsibility? Why are some communities recovering faster than others? Why are other communities disproportionately affected by the coronavirus, and what can we do about it?

Performance Expectations

- Identify organizations, government agencies and community partners that make up the public health system and what they do.
- Use data as evidence to determine how effective federal agencies have been in combating COVID-19.
- Identify how health determinants have impacted patients afflicted with COVID-19.
- Determine the inequities of the public health system and how the pandemic has magnified them.

Challenges:

1. What is the purpose and what are the core functions of the public health system?
2. Why is it essential for individuals to adopt socially responsible behaviors to defeat COVID-19?
3. What are some of the inequities in the healthcare system magnified by COVID-19?
4. What have states done to successfully combat the virus?



Challenge 1: What is the purpose and what are the core functions of the public health system?

Learning Targets:

- I can describe the role of the public health system and how it has evolved over time.
- I can assess in general how the public health system has responded to the COVID pandemic.
- I can describe the functions of the public health system.
- I can describe what federal agencies are doing to combat COVID-19.
- I can use evidence to determine how effective federal agencies have been in combating COVID-19.

Activity 1: An introduction to public health - Part one

Estimated time: 45 minutes

- a. **View and complete** the questions in each “Knowledge Check” when prompted in this CDC webinar “Introduction to Public Health”
<https://www.cdc.gov/training/publichealth101/e-learning/public-health/>

(TOPICS 1-3)

b. **Reflect and Write/Discuss**

- The speaker described “A Public Health Approach” to combating diseases. Identify ways the public health system used the 4-step approach (listed below) to combat COVID-19. List 1-3 ways for each step using data as evidence to support your claim.
 - Surveillance
 - Risk-factor identification
 - Intervention/Evaluation
 - Implementation

c. **Share** your results in class.



Activity 2 -How are the core sciences combating COVID-19?

- a. **Review the Core Sciences:** Describe some of the ways the public health system has combated the coronavirus using each of these core sciences. Identify 1-3 ways for each:
 - Prevention
 - Epidemiology
 - Laboratory
 - Informatics
 - Surveillance
- b. **Share** your results with classmates.
- c. **Reflect, Write, and Discuss:**
 - The speaker says “At the core of public health is a principle of ‘social justice’, that people have the right to be healthy and live in conditions to support their health.” Today, some people see public health as a “privilege” instead of a “right.” What is the difference? Do you think our public health system operates as a privilege or a right? Use at least 3 sources with evidence to support your claim.
- d. **Reflect, Write, and Discuss:**
 - Do you agree or disagree that the US public health system was prepared for the coronavirus pandemic? Why or why not? Use at least 3 sources with evidence to support your claim.

Activity 3: An introduction to public health continued - Part 2

Estimated time: 45 minutes

- a. **View and complete:** the questions in each “Knowledge Check” when prompted in Part Two of this CDC webinar “Introduction to Public Health”
<https://www.cdc.gov/training/publichealth101/e-learning/public-health/>

(TOPICS 4-6)

- b. **Reflect, Research, and Discuss:**

The speaker highlights historic policy decisions made to protect the public health, including writing health codes, adopting tobacco laws and food labeling.



- What are some of the policy decisions made to protect the public health during the COVID pandemic? Use at least 3 sources of evidence to support your claim.

c. **Complete the table.**

- In groups, fill in the information:

Consult federal, state and local government websites to identify the responsibilities for the three major functions of public health systems at each of these levels. Record your findings on a chart like the one shown.

Core Functions at Government Levels to Combat COVID-19

	Assessment	Policy Development	Assurance
Federal			
State			
Local			

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- **Share and Discuss** your results.



d. Reflect and Write:

Compare and contrast what you think the core systems of government should be doing with what the systems are doing. Identify the gaps.

What are some possible solutions to reconcile what the core systems of government should be doing with what they are doing?

Activity 4- What federal agencies are primarily responsible for combating COVID-19?

Find out and Discuss: Create a table (spreadsheet) on which to record information that answers the Questions (1-4) for the federal agencies listed below.

- Department of Health and Human Services (HHS)
- National Institutes of Health (NIH)
- Center for Disease Control and Prevention (CDC)
- Biomedical Advanced Research and Development Authority (BARDA),
- Food and Drug Administration (FDA)
- National Institute of Allergy and Infectious Diseases (NIAID)
- Federal Emergency Management Agency (FEMA)

1. What are the core functions of the agency?
2. Who is the current head of the agency?
3. Describe what the agency is doing to combat the coronavirus.
4. Is the head of the agency appointed by the President? If yes, how might that affect policies and decision-making about how to defeat the coronavirus?



Challenge 2: Why is it essential for individuals to adopt socially responsible behaviors to defeat COVID-19?

Learning Targets:

- I can provide evidence to show how individual behaviors impact the ability of the public health system to defeat COVID-19.
- I can provide evidence to support why the adoption of socially responsible behaviors slows the spread of COVID-19.
- I can make a plan for myself to adopt socially responsible behaviors.

Estimated time: 30 minutes

Activity - How does my individual behavior impact the spread or containment of COVID-19?

Watch: “Why fighting the coronavirus depends on you” [6:29]

<https://www.youtube.com/watch?v=dSQztKXR6k0>

Reflect and Write/Discuss:

- How does the spread of COVID-19 put stress on hospitals?
- What do you consider to be individual “socially responsible behaviors” that will help contain the spread of COVID-19? Name at least three.
- How does social distancing impact the spread of COVID-19?
- Why do some people neglect social distancing? Name at least three reasons why and possible solutions for combating their neglect.
- What can you do to help decrease the spread?
- How can individual behaviors impact the public health system in trying to defeat COVID-19?

Create and Share:

- Create a chart that identifies at least three socially responsible behaviors that decrease the spread of COVID-19.
- Use evidence to support each claim and cite your sources.



Challenge 3: What are some of the inequities in the healthcare system magnified by COVID-19?

Learning Targets:

- I can identify and describe social determinants of health.
- I can use evidence to explain how structural inequities make staying healthy more difficult for people in underserved communities to combat COVID-19.
- I can identify tangible steps to be taken to address structural inequities in the healthcare system.

Activity 1- “Why are health inequities important for everyone?”

a. **Read: “Disparities in Health and Health Care: Five Key Questions and Answers”**

<https://www.kff.org/disparities-policy/issue-brief/disparities-in-health-and-health-care-five-key-questions-and-answers/>

b. **Watch: What Does Race Have to Do With COVID-19? [8:47]**

<https://www.youtube.com/watch?v=12xAxX1Xvpk>

c. **Reflect and Answer:**

- What are “adaptive mutations”?
- Give an example of an “ancestry informative marker” associated with a variant?”

Activity 2: Interventions for more equitable public health

1. **Reflect and Write/Discuss:**

- There are many “partners in public health.” Considering health determinants, how do inequities in these partnerships affect the health of people of color (POC) in poor communities more severely? Name 3-5 sources of data used as evidence to support your claim.. (For example, POC in poor communities who don’t have easy access to transportation will have a difficult time getting to a doctor’s appointment.)
- How might people living in rural communities also be negatively impacted?
- Given your examples, can you describe an intervention that might solve any of the problems you’ve identified?



- Share your answers in class.

2. **Read Pages 33-34: “Towards Health Equity in Connecticut”**

<https://ctdatahaven.org/sites/ctdatahaven/files/DataHaven%20Health%20Equity%20Connecticut%20061820.pdf>

3. **Reflect and Write:**

“Race” is socially constructed.” How has this negatively impacted public health? Cite at least 3 sources of evidence to support your claims.

Challenge 4: What have states done to successfully combat the virus?

Learning Targets:

- I can describe the power and limitations the states have in responding to COVID-19.
- I can compare how the federal, state, and local government agencies have responded to COVID-19 and use evidence to demonstrate successful strategies used to contain the virus.

Estimated Time: **30 minutes**

3.1 WATCH and READ: Visit the National Governors Association COVID-19 website.

<https://www.nga.org/coronavirus/>

Based on the most current information you can find:

- 1) Name 3 actions that a governor in any state has taken to combat the virus and whether that action had a positive or negative impact on the combatting the virus.
- 2) What evidence do you have to support your claim that those actions have been effective or ineffective?



- 3) How has the federal government had an impact on these state actions? Please describe the impact negatively or positively.

3.3 FIND OUT and DISCUSS:

- a. What are some of the steps Connecticut public health system leaders and residents of the state took to tame the virus? Use 3 sources of evidence to support your claim.
- b. Name 3 steps the federal government took that either has helped or hindered the State of Connecticut to fight the virus. Use 3 sources of evidence to support your claim.
- c. Provide an update on Connecticut's coronavirus status. Use 3 sources of evidence to support your claim.

Professional Opportunities:

Pulmonologist

<https://www.indeed.com/career-advice/careers/what-does-a-pulmonologist-do>

Nurse Practitioner

<https://www.indeed.com/career-advice/careers/what-does-a-nurse-practitioner-do>

Community Health Worker

<https://www.mphonline.org/job-description-community-health-worker/>

Health Educator

<https://www.careeronestop.org/videos/careeronestop-videos.aspx?videocode=21109100>

Regulatory Affairs Specialist

<https://www.careeronestop.org/Toolkit/Careers/Occupations/occupation-profile.aspx?keyword=Regulatory%20Affairs%20Specialists&onetcode=13104107&location=US&lang=en&frd=true>

Public Administrator

<https://mastersinpublicadministration.com/everything-you-need-to-know-about-a-career-in-public-administration>