

# 3

## Who is at risk?



CDC NERD Academy

Grade level  Suggested time

6–12

75 minutes

### Overview

In this module, students learn about factors that can affect health outcomes (e.g., risk factors). They also learn about the social determinants of health and how these determinants affect the health of communities. Using case studies for a fictional, novel emerging respiratory disease (NERD), students identify individuals' risk for NERD based on their personal biology, behaviors, and environment.

### Learning objectives

After this module, students should be able to

-  Explain how biological, behavioral, and environmental factors can affect health outcomes
-  Explain how a risk ratio quantifies the strength of an association between an exposure and a disease
-  Describe the difference between biological, behavioral, and environmental risk factors
-  Recognize the five key areas of the social determinants of health
-  Identify risk factors for NERD

### STEM connections & standards

**STEM connections:** Social studies: social determinants

**Problem-based skills:** Decision making, collaborative performance

**Epidemiology and Public Health Science Core Competencies:** HS-EPHS 1: Epidemiologic Thinking and a Public Health Approach; HS-EPHS3: Analytic Epidemiology  
<https://www.cdc.gov/careerpaths/k12teacherroadmap/pdfs/ephs-competencies.pdf>

**National Health Education Standards:** Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health. Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks. <https://www.cdc.gov/healthyschools/sher/standards/index.htm>

**Next Generation Science Standards:** Science & Engineering Practice(s): Using Mathematical and Computational Thinking, Constructing Explanations and Designing Solutions; Crosscutting Concept(s): Cause and Effect <http://www.nextgenscience.org/get-to-know>

**N**OVEL  
**E**MERGING  
**R**ESPIRATORY  
**D**ISEASE





## Timeline

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### 1 Introducing the content (30 minutes)

Students watch the “Who is at risk?” video (14:54 minutes) to learn about how determinants of health affect risk factors and health outcomes. Teachers can assess student knowledge of the video content using the **Knowledge Check**. The class can further discuss the role of a behavioral scientist using the **Career Spotlight**.

### 2 Activity (35 minutes)

In groups, students read case studies and identify risk factors for exposure to the NERD virus and experiencing more severe disease if infected. After compiling group findings, the class will propose measures to reduce risks to individuals and to advance health equity. Teachers can watch an activity demonstration video (2:29 minutes) that illustrates how to teach this activity in the classroom.

### 3 Class discussion (10 minutes)

As a class, students apply their knowledge to answer questions about factors that can affect health outcomes (e.g., risk factors).



### Vocabulary

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Determinant, exposure, health equity, measure of association, risk factor, risk ratio, social determinants of health.

See **Definitions**.



### Materials

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Handouts and highlighters.



### Meet Brandon, a behavioral scientist

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Learn more about a behavioral scientist’s role in the **Career Spotlight** and the “Who is at risk?” video.



## Teacher preparation

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- ☀ Preview videos.
- ☀ Make copies of handouts.
- ☀ Prepare space to display a classroom version of the **NERD Risk Factors Concept Map** (e.g., create on whiteboard or large poster, or prepare to project the image using digital concept mapping software). See **NERD Risk Factors Concept Map, Answer Key**.
- ☀ Make copies of the **NERD Factsheet** (one per group) or an enlarged classroom version.

The **NERD Factsheet** is not required for this lesson but may be useful as a reference.

The **NERD Factsheet** may be re-used across modules if previously distributed to students.



## Videos

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- ☀ “Who is at risk?” video (14:53 minutes) for students
- ☀ Activity demonstration video (2:29 minutes) for teachers

[www.cdc.gov/scienceambassador/nerdacademy/people-at-risk.html](http://www.cdc.gov/scienceambassador/nerdacademy/people-at-risk.html)



## Handouts

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- ☀ **Knowledge Check: Risk** (one per student)
- ☀ **Career Spotlight: Behavioral Scientist** (one per student or one classroom copy)
- ☀ **NERD Risk Factors Overview** (one per group)
  - **Case study 1: Rosa’s Story** (one per student in group 1)
  - **Case study 2: Gloria’s Story** (one per student in group 2)
  - **Case study 3: Richard’s Story** (one per student in group 3)
  - **Case study 4: Ramil’s Story** (one per student in group 4)
  - **Case study 5: Sara’s Story** (one per student in group 5)
  - **Case study 6: Alfred’s Story** (one per student in group 6)
- ☀ **NERD Risk Factors Chart** (one per student)
- ☀ **NERD Risk Factors Concept Map** (one per student)



## Introducing the content (30 minutes)

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### Say aloud

During this video, you will learn how biological, behavioral, and environmental factors increase or decrease a person's risk for infection and disease. These are called risk factors when they increase a person's chance of being exposed to an infectious agent or of getting sick. They are called protective factors when they decrease a person's chance of being exposed to an infectious agent or of getting sick. We can measure and compare the relationship between these factors and infection or disease. You will see how behavioral scientists study how behavior impacts health. They use what they learn to develop programs to help individuals and communities achieve better health.

- 1 Show the "Who is at risk?" video (14:53 minutes) to students.
- 2 Hand out the **Knowledge Check: Risk**. Allow students 3–5 minutes to answer the questions on their own. Then, review as a class using the **Knowledge Check: Answer Key** provided.
- 3 Hand out or display the **Career Spotlight**. Discuss the role of a behavioral scientist.



## Activity: Part 1 (20 minutes)

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### Say aloud

You just learned about exposures and how different biological, behavioral, and environmental factors can lead to a greater risk for disease. Each group will now read a different case study about a character who is in a population group that's considered to have a high risk for NERD virus exposure or severe disease. You will work as a group to fill out a NERD Risk Factor Chart for the character described in your group's case study.

- 1 Divide students into 6 groups. Hand out the **NERD Risk Factors Overview**. Have one student in each group read it out loud to their group. Provide the optional **NERD Factsheet** for additional reference.
- 2 Hand out **Case study 1: Rosa's Story** to all students in the first group. Hand out **Case study 2: Gloria's Story** to all students in the second group. Continue until each group has a case study. Have students read through the case study as a group. Encourage students to highlight or annotate any risk factors for the character described.
- 3 Hand out the **NERD Risk Factors Chart**. Encourage students to work together in their groups to fill the chart out for the character described in their group's assigned case study.



## Activity: Part 2 (15 minutes)

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### Say aloud

As a class, we will now work together to create a concept map of all potential NERD risk factors. Each group will share a summary of their case study and risk factors that they identified for their character. As groups share, listen for any similarities or connections in risk factors among your case study and others. As a class, we will combine these data and create a NERD risk factor concept map. Finally, we will look for ways to reduce specific risks for NERD and work toward health equity in all populations. This could include prioritizing limited resources, for example, reserving doses of a vaccine and finding ways to get the vaccine to individuals who have the highest risk for severe disease.

- 1 Hand out the **NERD Risk Factors Concept Map**.
- 2 Ask for a volunteer from each group to share a summary of their case study and risk factors that they identified for their character. As groups share, fill out the classroom version of the concept map. Use **NERD Risk Factors Chart: Answer Key** and **NERD Risk Factors Concept Map: Answer Key** as guides.

You could have students create a concept map for their group's assigned case study on the back of their **NERD Risk Factors Chart** handout before completing the concept map for all case studies as a class.

- 3 As a class, brainstorm ways to reduce risks for population groups that are more likely to have NERD virus exposure or to experience severe NERD illness. Discuss how these strategies might help advance health equity.



## Class discussion (10 minutes)

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- ☀ Which risk factors are associated with NERD, and why do you think these increase an individual's risk for exposure or experiencing severe disease? Which of these risk factors can be considered social determinants of health?
- ☀ How might social determinants of health affect outcomes of other infectious disease and noninfectious health conditions?
- ☀ What do you think can be done to work toward the goal of advancing health equity for all groups of people?



## Definitions

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**Determinant:** Any factor that brings about change in a health condition or other defined characteristic.

**Exposure:** Having come into contact with a cause of, or having a factor that influences, a particular health problem. Exposures can be disease causing (e.g., infectious agent, ultraviolet radiation) or preventative (e.g., sunscreen).

**Health equity:** A state in society in which everyone has an equal opportunity to be as healthy as possible.

**Measure of association:** Quantifies or assigns a numerical value to the strength of the statistical association between an exposure and outcome. Measures of association can be compared.

**Risk factor:** Characteristic or behavior that some people have that increases the risk for that person experiencing a negative health outcome, such as being exposed to an infectious agent or experiencing severe disease if infected.

**Risk ratio:** A comparison of the risk for disease among one group with the risk among another group. The risk ratio also quantifies how strongly associated a factor is to a disease.

**Social determinants of health:** Conditions in the places where people live, learn, work, and play that affect a wide range of health and quality-of-life risks and outcomes.

For more vocabulary, visit: <https://www.cdc.gov/scienceambassador/nerdacademy/glossary.html>.



## Extension ideas

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- ☀ Research risk factors for a noninfectious disease of their choice, including biological or genetic, behavioral, and environmental determinants.
- ☀ Explore the Social Ecological Model of Health at [https://www.atsdr.cdc.gov/communityengagement/pce\\_models.html](https://www.atsdr.cdc.gov/communityengagement/pce_models.html) often used in the context of violence prevention as described at <https://www.cdc.gov/violenceprevention/about/social-ecologicalmodel.html>.
- ☀ Choose a social determinant of their choice and find diseases it directly affects.
- ☀ Read more about the factors affecting health equity at <https://www.cdc.gov/healthequity/>.
- ☀ Explore your state or local health department website and their commitment to health equity, for example, California Department of Public Health at <https://covid19.ca.gov/equity/>.
- ☀ Explore the factors that put some people from various racial and ethnic minority groups at increased risk for COVID-19 at <https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html>.
- ☀ Practice calculating different measures of association:
  - ☀ Use the Hedging Your Bets lesson plan to learn about odds ratios: [https://www.cdc.gov/careerpaths/scienceambassador/documents/hs\\_hedging-your-bets-2016.pdf](https://www.cdc.gov/careerpaths/scienceambassador/documents/hs_hedging-your-bets-2016.pdf).
  - ☀ Work through the practice problems for calculating risk ratios in Principles of Epidemiology in Public Health Practice: <https://www.cdc.gov/csels/dsepd/ss1978/lesson3/section5.html>.
- ☀ Research methods for increasing access to and distributing vaccines, especially to communities with limited resources, by searching local news outlets or state health department websites. In addition to vaccine clinics, strategies may include providing transportation to those who can't get to a clinic on their own or bringing vaccines to people who are homebound, providing mobile vaccine clinics in public events like outdoor concerts and events, and offering various incentives. Examples for COVID-19 vaccine distribution include:
  - ☀ <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/distributing.html>.
  - ☀ <https://www.ruralhealthinfo.org/topics/covid-19/innovations/vaccination>.
  - ☀ <https://www.aarp.org/health/conditions-treatments/info-2021/vaccine-incentives.html>.
  - ☀ <https://covid19.ca.gov/vax-for-the-win/>.

## CDC Resources

Health Equity: Promoting Fair Access to Health

<https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/index.html>

Health Equity Data

<https://covid.cdc.gov/covid-data-tracker/#health-equity-data>

CDC COVID Data Tracker (Maps, charts, and data provided by CDC)

<https://covid.cdc.gov/covid-data-tracker/#demographics>

Social Determinants of Health

<https://www.cdc.gov/socialdeterminants/index.htm>

Measures of Association

<https://www.cdc.gov/csels/dsepd/ss1978/lesson3/section5.html>

Measures of Association Definitions

<https://www.cdc.gov/eis/field-epi-manual/chapters/analyze-Interpret-Data.html>

COVID-19 Information for Specific Groups of People

<https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/index.html>

What We Can Do to Promote Health Equity

<https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/what-we-can-do.html>

## Other Resources

Healthy People — Determinants of Health

<https://www.healthypeople.gov/2020/about/foundation-health-measures/Determinants-of-Health>

The CDC NERD Academy curriculum was developed by the Centers for Disease Control and Prevention's (CDC's) Science Ambassador Fellowship (SAF) program. Support for the curriculum is made possible through a partnership between the CDC Foundation and CDC. Videos for the curriculum were developed and produced by Osmosis.

**Disclaimer:** NERD (novel emerging respiratory disease) is a fictional disease created for this curriculum. NERD etiology, data, events, and information presented in the CDC NERD Academy curriculum are loosely based on the understanding of COVID-19 as of early Spring 2021 prior to a vaccine becoming available. Some details have been generalized for educational purposes.



# Knowledge Check: Risk

**Directions:** After watching the “Who is at risk?” video (14:53 minutes), answer the following questions.

1 Determine if the following statements about exposure are true or false.

True

False

Fill in the blank

Example
Exposure or contact with disease-causing agents, such as viruses or bacteria, is the first step in the infectious disease process.
Factors that influence health can sometimes be protective factors, such as sunscreen for skin cancer.
The consequences of an exposure to an infectious agent often depend on other factors such as age, immunity, or other health conditions.

2 Give at least two differences between the following categories of factors that influence health.

Biological

Behavioral

Environmental

3 What does a risk ratio greater than 1 mean?

4 Circle the five key areas of social determinants of health in the choices below.

Genetics/  
Inheritable  
Traits

Health Care  
Access and  
Quality

Neighborhood  
and Built  
Environment

Personal  
Behavioral  
Choices

Interpersonal  
Relationships

Education  
Access &  
Quality

Personal  
Biological  
Characteristics

Underlying  
Health  
Conditions

Social and  
Community  
Context

Economic  
Stability



# Knowledge Check: Answer Key

**Directions:** After watching the “Who is at risk?” video (14:53 minutes), answer the following questions.

1 Determine if the following statements about exposure are true or false.

True

False

Fill in the blank
True
True
True

Example
Exposure or contact with disease-causing agents, such as viruses or bacteria, is the first step in the infectious disease process.
Factors that influence health can sometimes be protective factors, such as sunscreen for skin cancer.
The consequences of an exposure to an infectious agent often depend on other factors such as age, immunity, or other health conditions.

2 Give at least two differences between the following categories of factors that influence health.

Biological
<ul style="list-style-type: none"> <li>Can't be easily changed or can't be changed at all</li> <li>Some actions can be taken to help lower biological risk</li> </ul>

Behavioral
<ul style="list-style-type: none"> <li>Can be changed by personal choices made by individuals</li> <li>Choices can help protect against disease</li> </ul>

Environmental
<ul style="list-style-type: none"> <li>Can be hard to change</li> <li>Can be social or physical</li> <li>Education and public health initiatives can help lower environmental risk</li> </ul>

3 What does a risk ratio greater than 1 mean?

**Answer:** When a risk ratio is greater than 1, the amount of disease among the exposed group greater than the amount of disease in the nonexposed group. The exposed group has a greater risk for getting the disease than the unexposed group.

4 Circle the five key areas of social determinants of health in the choices below.

Genetics/  
Inheritable  
Traits

Health Care  
Access and  
Quality

Neighborhood  
and Built  
Environment

Personal  
Behavioral  
Choices

Interpersonal  
Relationships

Education  
Access &  
Quality

Personal  
Biological  
Characteristics

Underlying  
Health  
Conditions

Social and  
Community  
Context

Economic  
Stability

# Career Spotlight



CDC NERD Academy



## Behavioral Scientist

A behavioral scientist studies why people behave the way they do and what factors influence decisions and encourage or discourage changes in behaviors. They use what they learn and know about human behavior to develop effective science-based interventions and programs to help people make positive changes.



Meet Brandon,  
a behavioral scientist

### Who do they work with?

Behavioral scientists work with individuals and groups. They can work with research or intervention teams, including doctors, nurses, and other health care professionals. They also work with health educators to encourage healthy lifestyles through behavior change techniques (e.g., incentives, positive encouragement, behavioral prompts) and educational outreach.

### Where do they work?

Behavioral scientists work in many settings, such as schools, universities, treatment centers, prisons, and health care facilities. They also work in local and state health departments, and in federal and international public health agencies, including the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO).

### What skills do they use?

Behavioral scientists have strong research, observation, and analytical skills. They also have strong communication, problem solving, and interpersonal skills.

### What qualifications do they need?

Behavioral scientists often have a bachelor's degree in behavioral science, behavioral psychology, or related fields, such as clinical psychology, social research, or sociology. To strengthen their background, most behavioral scientists get a master's or doctoral degree. Some master's and doctoral degree programs in public health focus on behavioral health science.



# NERD Factsheet



CDC NERD Academy

**N**OVEL  
**E**MERGING  
**R**ESPIRATORY  
**D**ISEASE

## What is Nerd?

NERD is a fictional novel emerging respiratory disease caused by a virus that can spread from person to person. NERD symptoms can range from mild (or no symptoms) to severe illness and death.

### Who can get NERD?

- ☀ People of any age can get NERD, even healthy young adults and children.
- ☀ People who are older or have certain underlying medical conditions are at higher risk of getting very sick from NERD.
- ☀ Other groups may be at higher risk for getting NERD or having more severe illness.



### What are the symptoms of NERD?

Symptoms may appear 2–14 days after exposure to the virus. People with these symptoms may have NERD:

- ☀ Fever or chills
- ☀ Cough
- ☀ Shortness of breath or difficulty breathing
- ☀ Fatigue
- ☀ Muscle or body aches
- ☀ Headache
- ☀ New loss of taste or smell
- ☀ Sore throat
- ☀ Congestion or runny nose
- ☀ Nausea or vomiting
- ☀ Diarrhea

### What do I do if I have symptoms?

- ☀ Stay home except to seek medical care. Separate yourself from other people.
- ☀ Get tested. If you test positive, tell your close contacts that they may have been exposed to NERD.
- ☀ You can be with others after at least 10 days since your symptoms first appeared and at least 24 hours with no fever.

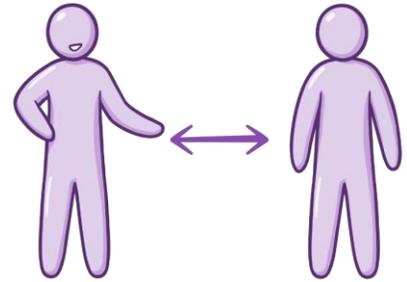
**Be aware of the signs of severe disease, including trouble breathing, pain or pressure in the chest, confusion, or trouble waking or staying awake. If someone is showing any of these signs, seek emergency medical care immediately.**



## How does NERD spread?

NERD **most commonly** spreads during direct, close contact:

- ☀ When people have direct contact with a person with NERD.
- ☀ When a person with NERD releases respiratory droplets when they cough, sneeze, sing, talk, or breathe, and these droplets are inhaled by another person who is physically near (within 6 feet).



NERD **sometimes** spreads through airborne transmission, especially indoors:

- ☀ When a person with NERD breathes heavily — such as when exercising, singing, or shouting — they can produce more respiratory droplets that can linger in the air for minutes to hours.

NERD is **less commonly** spread through contact with contaminated surfaces.

- ☀ When a person touches a surface or object with the virus on it and then touches their mouth, nose, or eyes.

## What if I have been in close contact with someone with NERD?

Close contact is defined as being within 6 feet of a NERD-positive individual for a total of 15 minutes or more.

- ☀ Separate yourself from other people. A person infected with NERD can spread the virus starting 48 hours, or 2 days, before the person feels any symptoms or tests positive.
- ☀ Watch for symptoms until 14 days after exposure.
- ☀ If you do not have symptoms, you can be with others 14 days after your last contact with someone with NERD.
- ☀ If you have symptoms, you can be with others after at least 10 days since your symptoms first appeared and at least 24 hours with no fever.
- ☀ Get tested. If you test positive and have no symptoms, you can be with others after 10 days have passed since the date you had your positive test.

## Three important ways to slow the spread

- 1** Wear a mask to protect yourself and others and stop the spread of NERD.
- 2** Stay at least 6 feet (about 2 arm lengths) from others who don't live with you.
- 3** Avoid crowds. The more people you are in contact with, the more likely you are to be exposed to NERD.

# NERD Risk Factors Overview

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## Why Risk Factors Matter

People with certain risk factors may be more likely to need hospitalization or intensive care if they have NERD, or they may be more likely to die of the infection. Learning about risk factors for severe NERD illness is important because it can help people do the following:

- ☀ Take precautions as they go about their daily life and attend events.
- ☀ More fully understand how a medical condition could affect their health if they get sick with NERD and plan ahead for any medical treatment that they might need if they get sick.
- ☀ Reduce their risk for severe NERD illness by managing any conditions that are risk factors.

## How We Learn about Risk Factors for Severe Disease

Because NERD is a novel, emerging disease, more work is needed to more fully understand risk factors for severe illness. While everyone has some risk for getting NERD or having a severe NERD illness, people in some population groups have greater risk. For example, certain racial and ethnic groups may be exposed to NERD or put at higher risk than other groups because of related conditions that affect health, including socioeconomic status, access to health care, and exposure at work.

Other potential NERD risk factors that have been identified so far include:

- ☀ Older age
- ☀ Certain underlying medical conditions
- ☀ Disabilities (because people with disabilities being more likely to have chronic health conditions, live in group housing, or face barriers to health care)
- ☀ Poverty and crowded housing
- ☀ Certain occupations (e.g., nurses, emergency room personnel, home health care workers, factory workers, food service, construction, other jobs where you cannot work from home or maintain distance)

Additional research will help public health experts confirm if there are risk factors for severe NERD and determine if there are other factors that increase a person's risk.

## Case studies

**Directions:** Each group will be responsible for reviewing one case study describing a person who is at greater risk for exposure to the NERD virus or at greater risk for severe illness from NERD. While reading, highlight or annotate any major risk factors you identify. After you have completed reading, work as a group to fill in the **NERD Risk Factors Chart** for the character described in your case study.



Rosa



Gloria



Richard



Ramil

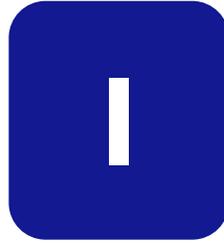


Sara



Alfred

- 1 Rosa's Story: NERD Among Workers in Meat and Poultry Processing Facilities
- 2 Gloria's Story: NERD Among People with Underlying Health Conditions
- 3 Richard's Story: NERD Among Racial & Ethnic Minority Groups
- 4 Ramil's Story: NERD Among Health Care Personnel
- 5 Sara's Story: NERD Among University Students
- 6 Alfred's Story: NERD Among Older Adults Living in Residential Communities



## *Rosa's Story*

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### **NERD Among Workers in Meat and Poultry Processing Facilities**

Rosa is a 31-year-old Latina woman, originally born in Honduras, who has been living in the eastern part of the United States for just over four years. After working odd jobs, she was happy to get a steady job at a local poultry plant. She knows that the meat and poultry processing industry is an essential part of the food infrastructure. She works in the cut-up and packaging section of the plant, standing on her feet in the same spot, close to her coworkers, for long hours. Rosa has access to personal protective equipment (PPE), but because of the fast pace of her work it is sometimes difficult to keep her mask on. Rosa is a diligent worker and her manager has noticed her good work. Rosa is hoping to get a promotion soon.

When Rosa is not working, she enjoys spending time with her three housemates who also work with her in the poultry plant. They like to watch movies, play cards, and trade cooking recipes from their different home countries. One of her housemates, Mateo, recently purchased a van and most mornings they carpool to work together along with some other coworkers who live along the route to work. Rosa much prefers riding in Mateo's van to taking the one, slow bus that comes through town.

Rosa is social and she looks forward to her breaks at work when her production line stops. During these breaks, Rosa and her coworkers pile into the small breakroom, sitting on worn chairs and leaning against the counters, sharing snacks, trading jokes and the latest gossip, and taking a break from wearing their masks. She's been concerned lately to learn that some of the workers on other production lines have been sick with a new disease called NERD. Some have had mild symptoms, but some have had such severe disease they were out of work for weeks! Rosa cannot

imagine how she would survive if she was not getting paid. There are new signs up around the breakroom, letting workers know that if they are exposed to someone who has NERD, they should not come to work for 14 days. Fourteen days! Rosa certainly cannot afford to take time off work and not get paid. Besides, she is one of a handful of workers who might earn a perfect attendance bonus for this quarter, and she'd have to be very sick to give up a chance at some extra cash. The rest of the sign has a lot of technical information and she had difficulty understanding it all in English. She would have much preferred someone to explain it to her in Spanish. And Rosa isn't alone in her facility, English is a second language for many of the workers.

Rosa heard on the news that foreign-born workers, like her, are five times as likely as U.S.-born workers to work in fixed locations on the production floor and assigned to jobs where workers stand close (within 6 feet) for long periods, such as her own job in meat cut-up and packaging. She also learned that compared with U.S.-born workers, foreign-born workers had nearly double the odds of commuting with persons from outside their household and 6 times the odds of living with coworkers who were not part of their family. All of these factors — close working conditions, shared commutes, and crowded, shared housing — put Rosa at higher risk for being exposed to NERD.

At meat and poultry processing facilities	Meat and poultry facilities should
<p><b>87%</b> of infected workers with reported race and ethnicity were <b>racial or ethnic minorities</b></p>	<p>Provide culturally- appropriate health education materials</p>
<p><b>5x</b> the odds of being assigned to jobs which required workers to <b>stand close</b></p>	<p>Install physical barriers between workers Provide face masks on-site, train workers on proper use, and require mask wearing at all times</p>
<p><b>1.9x</b> the odds of workers <b>sharing a commute</b> with people from outside their household*</p>	<p>Add additional vehicles to shuttle routes Encourage use of face coverings during commute</p>
<p><b>6x</b> the odds of <b>living with other meat or poultry workers*</b></p>	<p>Share messaging about actions employees should take to limit the spread of the virus while at home and at work Implement personnel policies that provide leave without loss of seniority or pay</p>

\*Among foreign-born workers as compared with U.S.-born workers

Data sourced from <https://www.cdc.gov/mmwr/volumes/69/wr/mm6950a5.htm> and <https://www.cdc.gov/mmwr/volumes/69/wr/mm6918e3.htm>, accessed July 2021.

# 2



## *Gloria's Story*

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### **NERD Among People with Underlying Health Conditions**

Gloria is a White, non-Hispanic, 67-year-old beloved high school English teacher in the Central school district in the southwestern part of the United States. The folks in town ask Gloria when she's going to retire, but she sees no reason to stop. Sure, she might like some extra time to work in her garden beds outside the two-story home she and her late husband bought together over 40 years ago on the edge of town, but her students are her joy every day. Everyone knows Gloria, or Ms. G, as the teenagers call her. Early in her career, Gloria would ride her bike down the dirt road all the way from her house right up to the steps of the school, but now she drives in her 30-year-old car. Her husband loved that car and, despite it needing quite a bit of service, Gloria will never give it up.

As Gloria has gotten older, her lifestyle has changed, and she's been gaining weight. Now Gloria has obesity. A few years ago, Gloria was also diagnosed with type 2 diabetes and recently has been struggling with medical complications from this disease. Gloria tries to prepare healthy meals and get exercise, but her busy schedule of teaching and volunteer work tires her out and often she'll eat whatever is convenient.

Lately, Gloria has been feeling very poorly. Her sister, who lives in the city, encourages Gloria to visit a doctor to get checked out. However, getting to the doctor is not that easy. There used to be a doctor in town, but he closed his practice 15 years ago so now the folks in town must travel 30 miles to a nearby town. Gloria worries her car might not even make it that far and no buses or taxis are available that can take her from her small town to the hospital. She's even heard that you can

have a doctor's visit online — imagine that! — but she's never been all that good with the computer. Gloria doesn't even have a cell phone.

Plus, Gloria has been hearing about this new virus called NERD, and she's a little nervous about heading to the city right now. A few families in town have been reporting symptoms after traveling to a nearby county and it seems like the cases have been increasing more in rural areas such as the very small town where Gloria lives. Most of the sick folks she knows had mild symptoms, but one of her student's grandfathers fell ill and passed away. From what she understands, the older you are and the more health problems you have, the higher the chance is of NERD being dangerous for you. Gloria reads the newspaper every day and she has read that if folks with health conditions like hers catch NERD, they are six times more likely to be hospitalized and five times more likely to need intensive care. They also say folks with NERD who have underlying health conditions, like obesity and type 2 diabetes, are 12 times more likely to die, compared with those folks with NERD who do not have those same underlying health conditions.



*\* as compared with NERD patients with no reported underlying conditions*

Data sourced from <https://www.cdc.gov/mmwr/volumes/69/wr/mm6924e2.htm> and <https://www.cdc.gov/mmwr/volumes/69/wr/mm6929a1.htm>, accessed July 2021.

# 3



## Richard's Story

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### NERD Among Racial & Ethnic Minority Groups

Richard is a Black, non-Hispanic, 42-year-old single father who lives with his school-aged son and his father who has a disability. They live together in a two-bedroom city apartment in a large urban area in the Midwest part of the United States. He takes public transportation daily to his job at a grocery store, where he works mostly as a cashier, but he fills in anywhere in the store for extra income when he can. His paycheck goes toward rent and food, cigarettes (a nasty habit, he knows), and to medical assistance for his father because they don't have health insurance to cover all the costs. The apartment complex they live in is old and crowded, but he is trying to save money to buy a house in a neighborhood so that his son can attend a better school.

Richard has become very concerned lately as the NERD cases in his area have been increasing very quickly and parts of his city have been labeled as "NERD hotspots." The county where Richard and his family live does not have many of the social and economic opportunities that some of the neighboring counties have, so the odds of NERD infection are three times higher in his county versus the surrounding areas. Richard must work his essential job to provide for his family, but he knows he could be exposed to NERD at any time while interacting with the public or traveling to and from work. He also knows from watching the evening news that multigenerational households with shared living spaces with more than one person per room increases the risk for transmission of NERD. If Richard were to get exposed at work, or his son was exposed through his school's athletic activities, there is no room in their apartment for someone to self-quarantine. In addition, Richard is his father's only caregiver and his father needs attention requiring close contact (within 6 feet) from Richard daily.

Richard is also worried that if he does get infected, he could experience severe disease. Richard belongs to a group (i.e., Black race) that may be exposed to NERD or put at higher risk than other groups because of related conditions that can affect health, including socioeconomic status, access to quality health care, and exposure at work. Research shows that older age, lack of insurance, male sex, and smoking could also increase the likelihood that a person with NERD needs hospitalization. Thankfully, Richard is still considered “young,” but the other risk factors trouble him. Black, non-Hispanic individuals are 2.9 times more likely to be hospitalized for NERD than White, non-Hispanic persons. And if Richard was hospitalized, who would take care of his son and father? Richard lacks health insurance and has limited access to health care, so he could also have other underlying health conditions he doesn’t know about. Richard knows he could get tested for NERD, but the closest testing center is 20 minutes away on the subway and always has long lines, which means that between caring for his father, getting his son to and from school, and working full-time, Richard doesn’t have a lot of extra time.

**Risk ratios for NERD infection, hospitalization, and death by race/ethnicity,\* compared with White, Non-Hispanic persons**

	American Indian or Alaska Native, Non-Hispanic persons	Asian, Non-Hispanic persons	Black or African American, Non-Hispanic persons	Hispanic or Latino persons
Cases	1.6x	0.7x	1.1x	2.0x
Hospitalization	3.3x	1.0x	2.9x	2.8x
Death	2.4x	1.0x	1.9x	2.3x

\*Race and ethnicity are risk markers for other underlying conditions that affect health, including socioeconomic status, access to health care, and exposure to the virus related to occupation (e.g., frontline, essential, critical infrastructure workers).

Data sourced from <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html> and <https://www.cdc.gov/mmwr/volumes/69/wr/mm6933e1.htm> and <https://www.cdc.gov/mmwr/volumes/69/wr/mm6938a4.htm>, accessed July 2021.

# 4



## Ramil's Story

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### NERD Among Health Care Personnel

Ramil is an Asian, non-Hispanic, 41-year-old man who works as a respiratory nurse in a continuing care retirement community (CCRC) in the northern United States. Because a CCRC supports all sorts of residents, from retired people living independently in an apartment to skilled nursing and end-of-life care, Ramil never finds his job boring. His job responsibilities can include running workshops to help educate and support retired people with lung disease or providing respiratory care for people who need end-of-life care. However, Ramil mostly works with residents in short-term rehabilitation after they have been in the hospital. Ramil might treat, manage, and educate the residents who were in the hospital with lung conditions like chronic obstructive pulmonary disease, asthma, or pneumonia, or who are recovering from surgery. Often Ramil is helping them with deep breathing exercises to strengthen the muscles needed to breathe. The residents, like all of us, produce respiratory droplets when they talk or breathe, and Ramil must be in close contact (within 6 feet) with residents when doing breathing treatments with them. Ramil wears personal protective equipment (PPE) such as a medical-grade face mask or respirator (when available) to protect himself and to protect the resident being treated. Sometimes there are shortages of this type of PPE in the facility and Ramil makes do with what he can find.

After watching his own father pass away from chronic kidney disease, Ramil was inspired to work with an older population to help people with chronic disease feel as comfortable as possible. Ramil watches his own health carefully, because he is prediabetic and has that family history of kidney disease. Although he does not have either diabetes or kidney disease yet, he may be likely to develop one or both of these conditions in the future.

Working closely with patients all day can be tiring and the nurses are a supportive community for one another. Ramil likes to spend time with the other nurses when he gets a break. Some of Ramil's colleagues take this opportunity to take their masks off after a long stretch of patient care, which could potentially expose them to other coworkers in the room. Ramil knows that, if exposed to the NERD virus, people are expected to self-quarantine, that is to stay home and monitor symptoms to reduce potential spread of disease. Many of his colleagues have been around residents who later tested positive for NERD. However, he knows that barely enough staff are available to cover the work that needs to be done at the facility where they work. And, without access to testing, it's hard for them to know if they have been infected unless they start to show symptoms. So, Ramil's colleagues often continue to come to work to prevent staffing shortages.

Ramil knows that he and his coworkers are at a high risk for exposure for NERD. He is concerned because he recently learned that among health care workers with NERD, males, persons aged  $\geq 65$  years, non-Hispanic Asians, and people with certain underlying medical conditions were more likely to die than other health care workers. Although many of Ramil's colleagues have a similar exposure risk for NERD, Ramil knows he is at an increased risk for dying if he were to become sick because he fits several of these criteria.

For health care personnel infected with NERD who died*			
<p>More were <b>male</b> (38% vs. 22%)</p>	<p>More were <b><math>\geq 65</math> years</b> (44% vs. 4%)</p>	<p>More were <b>non-Hispanic Asians</b> (20% vs. 9%)</p>	<p>More had <b>underlying medical conditions</b> (92% vs. 41%)</p>

*\*as compared with nonfatal NERD cases among health care workers*

Data sourced from <https://www.cdc.gov/mmwr/volumes/69/wr/mm6938a3.htm> and [https://www.cdc.gov/mmwr/volumes/69/wr/mm6943a5.htm?s\\_cid=mm6943a5\\_w](https://www.cdc.gov/mmwr/volumes/69/wr/mm6943a5.htm?s_cid=mm6943a5_w), accessed July 2021.

# 5



## *Sara's Story*

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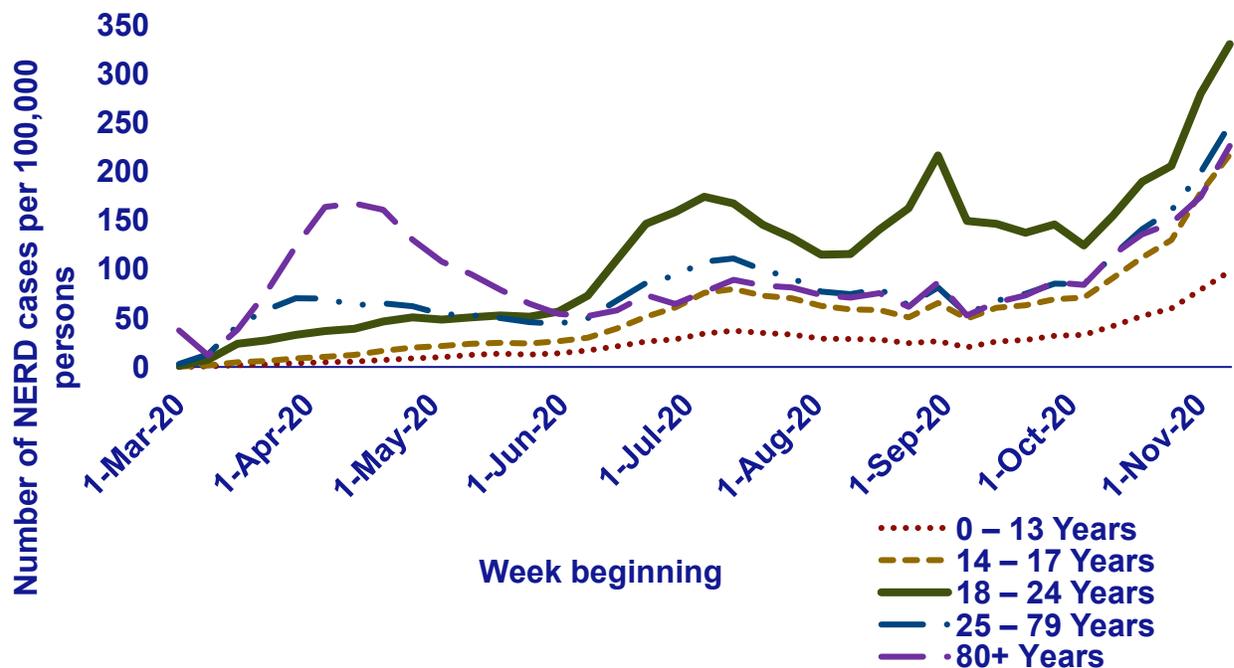
### **NERD Among University Students**

Sara is a Black, non-Hispanic, 21-year-old college junior who plays Division I volleyball at a university in the New England region of the United States. At the end of August, she returned to “college life” for the first time since universities closed last semester because of the NERD pandemic. Sara has moved in with her teammates in an off-campus apartment complex for university athletes but attends classes virtually. She spends a great deal of time with members of the volleyball team, between daily practices, team bonding activities and living with five of them in an apartment with a shared kitchen and living room, and two shared bathrooms. Because they are all so busy with volleyball practice and classes, they rarely do any major disinfecting or cleaning in their apartment.

Sara is extremely excited to be back with her friends. Being stuck at home with her parents and younger brother during the summer was boring! She has jumped headfirst into attending social activities beyond those with her volleyball team, including volunteering at events with a major campus organization of which she is a member. Sara knows that outbreaks of NERD at her university usually occur in clusters that are linked to common residences, sports teams, and organization membership. NERD is spreading mostly because of shared living areas and student gatherings, but Sara isn't too worried because she doesn't think she would get that sick from NERD if she did catch it. She often brags, “I know like five people that have had NERD, and they're all fine. I don't know anybody that's died and some of them have hardly even had symptoms.” The one thing that has caught her attention is that since college has reopened cases of NERD in her community have increased the most in her age range, compared with other age groups and that cases at the university have started to rise.

Sara only wears her mask when it is required or when she is with a group of friends who are all wearing a mask. If people around her aren't wearing their masks, which is most of the time, Sara doesn't wear hers because she doesn't want to be the only one. She says, "I feel like if everybody else in here is not going to wear a mask, I might as well just go in there and not wear a mask as well. I don't want to be seen as different." She also is confused because of the lack of a consistent message about mask wearing because "Some people are saying we need to wear masks for public health. Some people are saying they don't work. So, it's super hard to trust, and I think definitely looking at local and national leaders and seeing them not wear a mask. I think that has a really big effect on people and their own perception of the virus."

### NERD incidence, by age group — United States, March–November 2020



Data sourced from: <https://www.cdc.gov/mmwr/volumes/69/wr/mm695152a8.htm>, <https://www.cdc.gov/mmwr/volumes/69/wr/mm6941e2.htm>, and <https://www.cdc.gov/mmwr/volumes/69/wr/mm6939e3.htm>, accessed July 2021.

## NERD incidence, by age group — United States, March–November 2020

Date	0–13 Years	14–17 Years	18–24 Years	25–79 Years	80+ Years
1-Mar-20	0	0	1	3	37
8-Mar-20	1	1	7	13	12
15-Mar-20	2	5	24	42	38
22-Mar-20	3	6	27	59	77
29-Mar-20	4	9	33	70	124
5-Apr-20	5	10	37	70	164
12-Apr-20	6	12	39	63	167
19-Apr-20	7	16	47	65	161
26-Apr-20	9	20	51	62	130
3-May-20	10	21	49	54	108
10-May-20	12	24	51	53	95
17-May-20	14	25	53	50	79
24-May-20	13	24	51	46	65
31-May-20	14	26	57	44	54
7-Jun-20	17	30	73	50	52
14-Jun-20	21	40	110	68	58
21-Jun-20	26	51	146	86	73
28-Jun-20	28	61	159	93	64
5-Jul-20	34	76	174	108	77
12-Jul-20	37	80	168	111	89
19-Jul-20	35	73	146	99	84
26-Jul-20	33	70	132	91	81
2-Aug-20	29	62	115	77	74
9-Aug-20	28	59	116	75	71
16-Aug-20	28	58	141	80	75
23-Aug-20	24	51	163	63	61
30-Aug-20	26	65	217	81	87
6-Sep-20	20	50	150	54	53
13-Sep-20	26	61	147	68	66
20-Sep-20	28	63	138	75	73
27-Sep-20	32	69	146	85	87
4-Oct-20	33	71	125	85	84
11-Oct-20	42	91	155	114	115
18-Oct-20	52	112	190	141	136
25-Oct-20	60	130	206	160	147
1-Nov-20	79	179	280	200	174
8-Nov-20	98	217	331	248	226

Data sourced from: <https://www.cdc.gov/mmwr/volumes/69/wr/mm695152a8.htm>, <https://www.cdc.gov/mmwr/volumes/69/wr/mm6941e2.htm>, and <https://www.cdc.gov/mmwr/volumes/69/wr/mm6939e3.htm>, accessed July 2021.

# 6



## Alfred's Story

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### NERD Among Older Adults Living in Residential Communities

Alfred is a White, non-Hispanic, 87-year-old with dementia living in a skilled nursing facility in the Pacific Northwest part of the United States. He shares a room with Dakota, an 83-year-old American Indian man, who also has dementia. On good days, Alfred and Dakota enjoy playing cards in their room or heading down the hall to the common room where they play bingo, chat with the other residents, or watch their favorite baseball team on TV. Alfred is on a low-sodium diet because of his hypertension, but Dakota does his best to slip him snacks when the nurses aren't looking! Unfortunately, because of their dementia, sometimes they have bad days, too. Their favorite nurse, Tina, does her best to keep them calm by carefully explaining things as many times as it takes and by keeping them laughing with stories about her large family.

Life at the skilled nursing facility has become more serious during the past month, with the increasing spread of NERD. Visits from families are no longer allowed, so Alfred is unable to see his daughter Charlene and her children except on regularly scheduled video calls. The nurses have also started to wear masks and have increased how often they clean patient rooms and common areas. They've also moved the seating in the common room so there is more space between seats, but residents still eat together and there is only so much they can do to reduce contact because most of them share rooms.

Alfred's daughter Charlene is becoming more concerned about her father's wellbeing every day. She has heard about recent outbreaks in skilled nursing facilities where 30% of the residents became infected. She knows that NERD can be introduced easily by the staff, who may have limited experience with proper use of personal protective equipment (PPE) and regularly rotate

schedules for different shifts at different facilities. Charlene is worried that if NERD does enter the facility, stopping it will be hard because of the shared living environments and the possibility that anyone can be asymptomatic and might not isolate in time to prevent the spread. If infected, Alfred’s age makes him 95 times more likely than a teenager infected with NERD to be hospitalized and 8,700 times more likely to die. Alfred doesn’t understand the severity of NERD and thinks it is just like the flu. But the hospitalization rate for NERD is 17.2 per 100,000 people for adults aged  $\geq 85$  years, like him, compared with only 2.2–5.4 per 100,000 people his age with the flu during the same time frame in the past 5 years. Charlene is especially concerned about Alfred because of his hypertension, which was reported among almost 50% of patients hospitalized with NERD in one research study. She also knows that because of his dementia he might not remember to stay in his room and away from other residents, or he might not recognize early symptoms.

### Risk ratios for NERD infection, hospitalization, and death by age compared with persons aged 5–17 years\*

NERD cases, hospitalization, or death.	0–4 years	5–17 years	18–29 years	30–39 years	40–49 years	50–64 years	65–74 years	75–84 years	85+ years
Cases	<1x	Reference group	2x	2x	2x	2x	1x	1x	2x
Hospitalizations	2x	Reference group	6x	10x	15x	25x	40x	65x	95x
Deaths	2x	Reference group	10x	45x	130x	440x	1,300x	3,200x	8,700x

**Sample interpretation:** Compared with persons aged 5–17 years, the rate of death is 45 times higher among persons aged 30–39 years, and 8,700 times higher among persons aged 85+ years.

Data sourced from: <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-age.html>, <https://www.cdc.gov/mmwr/volumes/69/wr/mm6915e3.htm>, and <https://www.cdc.gov/mmwr/volumes/69/wr/mm6913e1.htm>, accessed July 2021.

# NERD Risk Factors Chart

**Directions:** Work together as a group to outline the risk factors for the main character in your case study. Organize the risk factors into the following three categories: biological (e.g., age, underlying medical conditions), behavioral (e.g., lifestyle choices, prevention measures), and environmental (i.e., social determinants of health). Fill in boxes only for the risk factors you find in your case study.

#	Biological Risk Factors		Behavioral Risk Factors		Environmental Risk Factors				
	Age	Underlying medical conditions	Lifestyle choices	Prevention measures	Neighborhood & built environment	Health care access and quality	Education access and quality	Social and community context	Economic stability

# NERD Risk Factors Chart: Answer Key

**Directions:** Work together as a group to outline the risk factors for the main character in your case study. Organize the risk factors into the following three categories: biological (e.g., age, underlying medical conditions), behavioral (e.g., lifestyle choices, prevention measures), and environmental (i.e., social determinants of health). Fill in boxes only for the risk factors you find in your case study.

**Answer:** Answers will vary. The table below provides some sample answers.

#	Biological Risk Factors		Behavioral Risk Factors		Environmental Risk Factors				
Case Study	Age	Underlying Medical Conditions	Lifestyle choices	Prevention measures	Neighborhood & Built Environment	Health Care Access and Quality	Education Access and Quality	Social and Community Context	Economic Stability
1	Rosa is 31.  Note: This case study does not provide information on risk by age group. However, 31 is considered a low-risk age group.	Information not provided.	Information not provided.	Rosa socializes in the breakroom often within 6 feet of others and without a mask.	Rosa has a shared living environment.  She shares a ride to work with members not in her household.  She works close together in a fixed location in the facility.	Information not provided.	Rosa has a language barrier for accessing posted information.	Rosa is an essential worker.	It would be difficult for Rosa to take time off work to self-quarantine or self-isolate.
2	Gloria is 57.  Note: 57 is not considered the highest risk, but a higher risk than younger age groups.	Gloria has obesity and type 2 diabetes.	Gloria does not exercise and does not eat a healthy diet, which may contribute to underlying health conditions.	Information not provided.	Gloria lives in a small town and cases are climbing in rural counties like hers.  She works at a school and has close contact with students and staff.  She lives in area that does not have public transportation.	Gloria must travel a far distance to access health care. It sounds like she has not been treated by a doctor in a while. As a teacher, she likely has health insurance.	Information not provided.	People in her community are traveling and possibly bringing virus back.	Gloria does not have a reliable car for transportation.

#	Biological Risk Factors		Behavioral Risk Factors		Environmental Risk Factors				
Case Study	Age	Underlying Medical Conditions	Lifestyle choices	Prevention measures	Neighborhood & Built Environment	Health Care Access and Quality	Education Access and Quality	Social and Community Context	Economic Stability
<b>3</b>	Richard is 42.  Note: This case study does not provide information on risk by age group. However, 42 is not considered the highest risk, but a higher risk than younger age groups.	Richard may have some underlying conditions but has limited access to find out.	Richard is a smoker, which increases his risk for hospitalization.	Information not provided.	Richard uses public transportation.  He lives in a multigenerational shared house with more occupants than bedrooms.  He lives in an old and crowded apartment building.  He lives in a NERD “hotspot” area.	Richard does not have health insurance.  The closest testing center is 20 minutes away using public transportation and has long lines.	Richard lives in a county without a great school system.  His county does not have many social and economic opportunities that neighboring counties have.	His race is Black, which is associated with increased risk for hospitalization.  He is the caretaker for his father who has a disability.	He is an essential worker and has frequent, close contact with shoppers, coworkers, and others who use public transportation.  It would be difficult for him to take time off work to self-quarantine or self-isolate.
<b>4</b>	Ramil is 41.  Note: This case study does not provide information on risk by age group. However, 41 is not considered the highest risk, but a higher risk than younger age groups.	Ramil has a family history of kidney disease.  He is pre-diabetic.	Information not provided.	Ramil wears PPE, but it is sometimes not available because of shortages.	Information not provided.	The facility that Ramil works at has inconsistent access to proper PPE.  Some of his coworkers may be infected and not self-quarantining because of staffing shortages.	Information not provided.	Ramil is non-Hispanic Asian, which is associated with increased risk for dying if he were to become sick  Sometimes his coworkers remove masks around him.	Ramil is an essential, health care worker, which puts him at high risk for exposure.

#	Biological Risk Factors		Behavioral Risk Factors		Environmental Risk Factors				
	Case Study	Age	Underlying Medical Conditions	Lifestyle choices	Prevention measures	Neighborhood & Built Environment	Health Care Access and Quality	Education Access and Quality	Social and Community Context
5	Sara is 21, and cases in her age group have increased.	Information not provided.	Athletics and being an active team member are an important part of Sara's college life.	Sara only wears a mask when everyone is wearing a mask.  Sara volunteers at events and actively participates in activities with her volleyball team, including practice and social events.	Sara lives with others.  Sara attends a university where cases have started to rise.	Although not explicitly said, Sara likely has access to health care through her university.	Sara goes to a university, which gives her access to a quality education.	She is a college student at a university where socializing and gatherings are the accepted norm.  Note: This case study does not provide information on risk by race. However, her race is Black, which is associated with increased risk for hospitalization.	Information not provided.
6	Alfred is 87, which is considered the highest risk age group for hospitalization and death.	Alfred has dementia and hypertension.	On a low-sodium diet, but sometimes sneaks snacks.	Because of his dementia, Alfred may unintentionally make choices that increase his risk (e.g., he may not remember that he needs to stay at least 6 feet apart from others).	Alfred lives in a nursing facility.  He has the potential to be exposed by a health care staff who may have limited experience with proper use of PPE and regularly rotate schedules for different shifts at different facilities.	Because Alfred is in a nursing facility, he has access to health care.	Alfred may not understand the potential risks of NERD.	Although the nursing facility has put preventative measures in place (e.g., nurses wearing masks, cleaning protocols, increased spacing), the residents still eat together and share rooms.	Information not provided.

# NERD Risk Factors Concept Map

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**Directions:** As a class, create a concept map of potential NERD risk factors using the six case studies. Then, brainstorm ways to advance health equity by brainstorming strategies to reduce risks for population groups that are more likely to have NERD virus exposure or to experience severe NERD illness.

## NERD Risk Factors

Biological Risk Factors

Behavioral Risk Factors

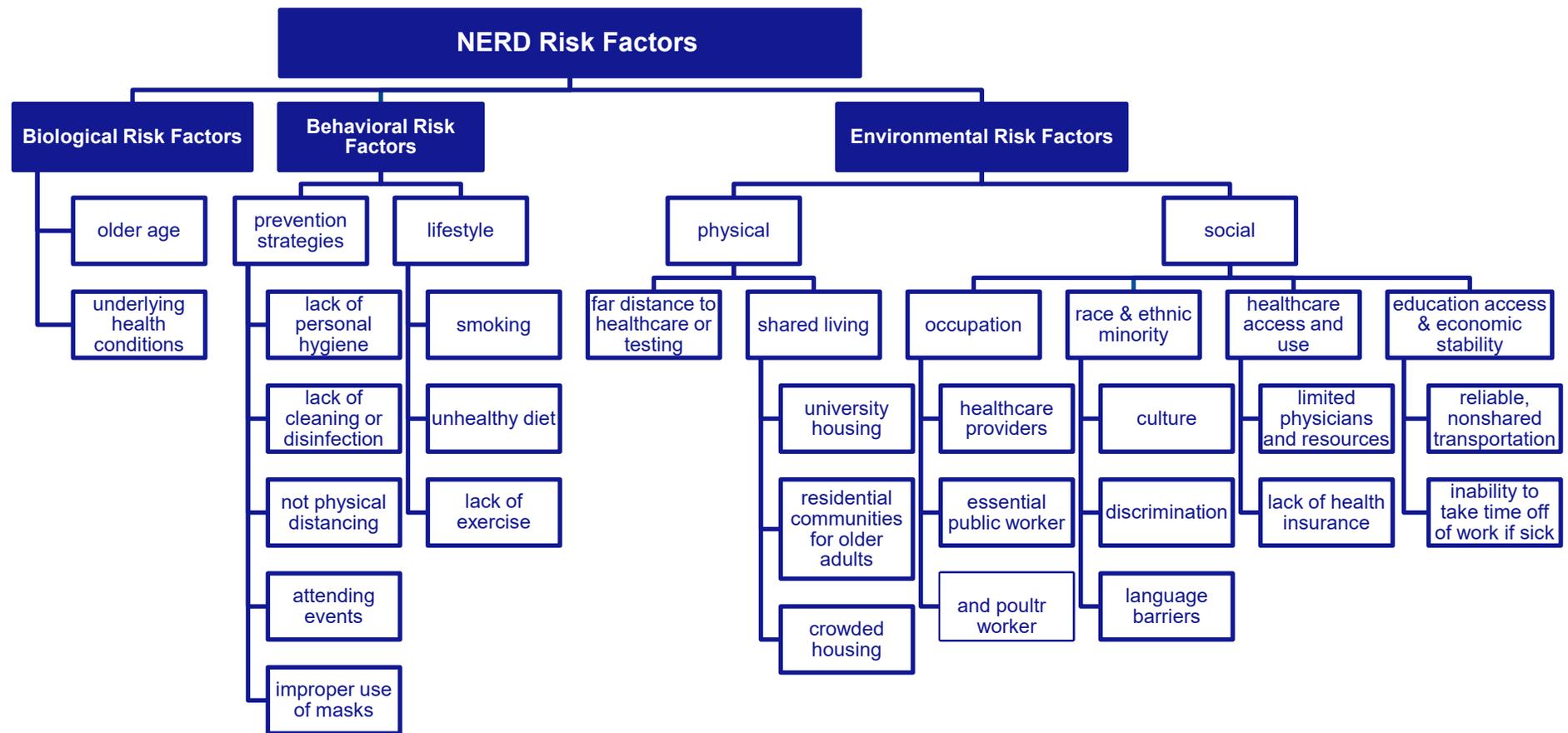
Environmental Risk Factors

Brainstorm strategies to reduce risks for population groups that are more likely to have NERD virus exposure or to experience severe NERD illness. Consider how these strategies might help advance health equity.

# NERD Risk Factors Concept Map: Answer Key

**Directions:** As a class, create a concept map of potential NERD risk factors using the six case studies. Then, brainstorm ways to advance health equity by brainstorming strategies to reduce risks for population groups that are more likely to have NERD virus exposure or to experience severe NERD illness.

**Answer:** Answers will vary. A sample concept map is provided.



Brainstorm strategies to reduce risks for population groups that are more likely to have NERD virus exposure or to experience severe NERD illness. Consider how these strategies might help advance health equity.

**Answer:** Answers will vary.

Examples might include:

- ☀ Supplying proper personal protective equipment (PPE) and training on how to use it for all persons in high-risk occupations, such as health care, meat packing plants, and grocery workers.
- ☀ Social distancing in workplaces, work from home options, and supplemental leave policy for those sick or exposed to encourage people to stay home if they have symptoms.
- ☀ Work environments can supply masks, hand sanitizers, handwashing stations, and PPE as appropriate. Improved workplace ventilation.
- ☀ Quarantine housing for people in shared living environments.
- ☀ Manage health conditions (e.g., diet, medication) and have doctors communicate to patients about their higher risks.
- ☀ Food delivery for elderly to encourage shelter in place.
- ☀ Increased and free testing accessibility.
- ☀ Free clinics for those seeking care without medical insurance.
- ☀ Health communications about NERD risks in different languages and different reading levels. Consider sharing information with different communities in ways you know are effective in reaching community members.
- ☀ Provide information and resources that are meaningful (e.g., culturally tailored) and easy to understand (e.g., linguistically appropriate) to all communities.
- ☀ Mask requirements when social distancing is not possible.
- ☀ Implementing limited social interactions opportunities when community transmission is high (e.g., virtual learning or stopping athletic events).
- ☀ Telemedicine and virtual alternatives to in-person events and social gatherings.
- ☀ When a vaccine is made available, make sure it is available in all places and to all people, prioritizing those at highest risk for severe disease and exposure. Work with communities to build trust, address common questions and concerns, and share clear and accurate information to help increase vaccine acceptance and make it easier to get vaccinated.