Yale SCHOOL OF MEDICINE

As of September 16, 2020

Teacher Guide 7: Contact Tracing

NGSS in this Module:

Science and Engineering Practices:

Developing and Using Models

- Develop, revise, and/or use a model based on evidence to illustrate and/or predict the relationships between systems or between components of a system.

Analyzing and Interpreting Data

- Analyze data using tools, technologies, and /or models in order to mak valid and reliable scientific claims.

Constructing Explanations and Designing Solutions

- Construct and revise an explanation based on valid and reliable evidence obtained from a variety of sources.

- Apply scientific reasoning, theory, and/or models to link evidence to the claims to assess the extent to which the reasoning and data support the explanation or conclusion.

Engaging in Argument from Evidence

- Construct, use, and/or present an oral and written argument or counter-arguments based on data and evidence.

Obtaining, Evaluating, and Communicating Information

- Critically read scientific literature adapted for classroom use to determine the central ideas or conclusions and/or technical information to summarize complex evidence, concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

- Compare, integrate, and evaluate sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a scientific question or solve a problem.

- Gather, read, and evaluate scientific and/or technical information from multiple authoritative sources, assessing the evidence and usefulness of each source.

Disciplinary Core Ideas:

Engineering Design

- Criteria and constraints also include satisfying any requirements set by society, such as taking issues of risk mitigation into account, and they should be quantified to the extent possible and stated in such a way that one can tell if a given design meets them.

- When evaluating solutions it is important to take into account a range of constraints including cost, safety, reliability, and aesthetics and to consider social, cultural, and environmental impacts.

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:

- CDC Publication: "Coronavirus Disease 2019 (COVID-19) - Contact Tracing" concise overview appropropriate for general public audience.

  https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/contact-tracing.html

- CDC Publication: "Contact Tracing Resources for Health Departments" contains an extensive list of resources.

  https://www.cdc.gov/coronavirus/2019-ncov/php/open-america/contact-tracing-resources.html

- Free **Coursera Course** offered by Johns Hopkins University titled "COVID-19 Contact Tracing" basic training for aspiring contact tracers. 5+ hours to complete, Completion certificate available.
  https://www.coursera.org/learn/covid-19-contact-tracing

Key terms:

- Contact Tracing
- Case
- Exposure
- "Close contact"
- Ethics

- Digital Contact Tracing Technology (DCTT)
- Opt-in
- Bluetooth
- Disease detective
- Reproductive Number (R0)
- Pathogen
- Pandemic
- Privacy
- Mitigation Strategies
- COVID-19
- SARS--CoV-2
- Lockdown
- Asymptomatic
- Transmission
- Case Investigation
- Workflow
- Rapport
- Capacity
- Equity

Module 7: CONTACT TRACING

The Story: As Tash continues his quarantine, he is called by a contact tracer, who hopes to identify all the people who Tash may have unwittingly infected. During their conversation, the contact tracer explains the various models of disease spread to Tash, who cannot help but wonder when the pandemic will end so he can live his normal life again. What role do contact tracers play in the COVIC-19 pandemic? How does contact tracing work to help mitigate the spread of COVID-19?

Performance Expectations:

- Acquire information about contact tracing from various media and generate questions that extend my learning as I pursue them.
- Develop a descriptive definition of the contact tracing.
- Communicate information about the history of contact tracing in public health.

- Construct an evidence-based explanation of ways that mitigations designed to slow the pandemic are based on understanding of transmission methods.
- Make evidence-based claims about the relative restrictions and effectiveness of lockdowns and contact tracing.
- Infer the rate of spread of CoronaVirus based on the value of the Reproductive Number.
- Develop rational why they should answer phone calls from contact tracers and what to expect during the phone conversation.
- Draw a flowchart that illustrates the sequential processes involved in contact tracing.
- Describe the sequential processes involved in case identification and contact tracing and relate them to the principles on which these public health strategies are based.
- Develop and use a model to represent connections among issues and possible solutions related to contact tracing.
- Compare and integrate sources of information about contact tracing presented in various media in order to create a model that shows relationships among issues and solutions.

Challenges:

1. What is Contact Tracing?
2. What do we need to know about a pathogen to slow its spread in a pandemic?
3. **What is the Process of Contact Tracing?**
4. **What are some issues related to Contact Tracing?**

CHALLENGE 1: What is Contact Tracing?

Learning Targets:

- I can define "contact tracing."
- I can describe ways that contact tracing has developed over time.

1.1 Activity 1: An Introduction to Contact Tracing

Estimated Time: 30 minutes

a. **Watch, Listen, & Record Ideas:** As you view 3 introductory videos about Contact Tracing and listen to a segment of a podcast, begin your personal "*I Notice… / I Wonder… Chart.*" It will be useful in future discussions throughout this module.

I notice...	I wonder...

- "What is Contact Tracing?" [3:10] https://www.youtube.com/watch?v=HKr0BO_dG5I
- **"**Checking In with Dr. Emily Gurley on COVID-19 Contact Tracing" [1:31 - 3:31] https://www.youtube.com/watch?v=vO8II3FgBSI
- "What is Contact Tracing?" | Bloomberg Philanthropies [1:53] https://www.youtube.com/watch?v=5DxIx1lD_es
- "What exactly is Contact Tracing?" [5:38] https://www.youtube.com/watch?v=j-XHd9yzigM

b. **Share and Consolidate:** Contribute your ideas to help create a class "*I Notice… / I Wonder… Chart".*
c. **Discuss:** Based on the class chart, identify some facts and concepts about Contact Tracing that you've learned about already and predict more ideas that you expect to investigate in the rest of this module.
d. **Write:** Based on what you've figured out so far, define Contact Tracing in your own words and describe the purpose of this public health strategy.

1.2 Activity 2: Is Contact Tracing something new?

Estimated Time: 60 minutes

a. **Watch:** "History of Contact Tracing: Past Present and Future" [2:12] https://www.youtube.com/watch?v=PVsbfbdn5YI
b. **Read:** 2 articles
   - "What is the History of Contact Tracing?" https://dailyhistory.org/What_is_the_History_of_Contact_Tracing%3F#:~:text=%20What%20is%20the%20History%20of%20Contact%20Tracing%3F,part%20due%20to%20contact%20tracing%20efforts...%20More%20
   - "Reflections on the History of Contact Tracing?" https://oneill.law.georgetown.edu/reflections-on-the-history-of-contact-tracing/
c. **Create:** Based on the information provided by these and other resources you may locate, create an evidence-based model that explains contact tracing use throughout history, i.e.; a timeline, poster, or other visual representation. (Work with a partner or in a small group if possible.)
d. **Review and Provide Feedback:** Post all of the class products for viewing. Critically review each of them and use sticky notes (real or virtual) with comments and/or questions to communicate productive feedback. Remember: This process should be about recognizing great ideas, providing useful suggestions, or asking for clarification.

e. **Examine & Revise:** In your working group, look at the feedback provided by your classmates and decide if and how to make improvements. Complete revisions as needed..
f. **Discuss:** Debrief this entire experience through a whole class discussion. The following prompts may be helpful:
    - What do you know now that you didn't know before this activity?
    - What were some features of the class products that made them particularly informative or easy for you to understand?
    - Which part of the process did you find most challenging?
g. **Write:** The title of this activity is: "Is Contact Tracing something new?" Make a claim that responds to this question and provide evidence (citations) that support your claim.

CHALLENGE 2: What do we need to know about a pathogen to slow its spread in a pandemic?

Learning Targets:

- I can explain how mitigations designed to slow the pandemic are based on understanding of transmission methods.
- I can make evidence-based claims about the relative restrictions and effectiveness of lockdowns and contact tracing.
- I can interpret the rate of spread of COVID-19 based on the value of the Reproductive Number.

2.1 Activity 1: Understanding how COVID-19 spreads can help to find ways to stop the pandemic

Estimated Time: 30 minutes

If you already completed ***Module 7: Prevention***, you probably already know a lot about how COVID-19 spreads from person to person. If you need a quick review of that topic…

a. **Watch: "**How Does COVID-19 Spread?" **[0:51]** https://youtu.be/WfJSVbQtHsk
b. **Read:** "How COVID-19 Spreads" https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.htm
c. **Write and Discuss:**
    - Under what conditions can SARS-CoV-2 (the virus that causes COVID-19) infect a healthy person?
    - What mitigations would minimize the number of people experiencing those conditions?
    - What strategies can stop (or at least minimize) the transfer of SARS-CoV-2 from an infected person to a healthy person?
    - From the list you just made, pick the 3 strategies you think should work best to minimize the transfer of SARS-CoV-2. Mark them: #1 = most effective, #2 = second most effective, and #3 = third most effective. Explain your reasoning.
d. **Conclude:** How does understanding how COVID-19 spreads help to find ways to stop the pandemic?

2.2 Activity 2: Comparing mitigation strategies: Lockdowns vs. Contact Tracing

Estimated Time: 60 minutes

In the previous activity you considered mitigation strategies designed to help stop the pandemic, including: large-scale lockdowns (stay-at-home orders), contact tracing, social distancing, wearing masks, and washing hands. Probably, most of them are based on the claim that: **A pandemic can be stopped by preventing the transmission of the pathogen from an infected person to people who are susceptible to the disease.**

a. **Listen:** to 2 brief clips from **"**Checking In with Dr. Emily Gurley on COVID-19 Contact Tracing" https://www.youtube.com/watch?v=vO8II3FgBSI
   - First, to find out about the effectiveness of contact tracing as a mitigation strategy for COVID-19. [6:18 -7:02]
   - Second, to find out about the effectiveness of lockdowns as a mitigation strategy for COVID-19. [8:04 - 9:11]

b. **Research:** To find out more about lockdowns related to the COVID-19 pandemic, consult "COVID-19 pandemic lockdowns" -- Wikipedia https://en.wikipedia.org/wiki/COVID-19_pandemic_lockdowns

c. **Make and Defend Claims:** Use evidence from this website to support your claims.
   - Which country or countries seemed to institute the most effective lockdowns? Provide evidence for your answer.
   - Compare US efforts at locking down with those of 2 other countries.
   - How many US States did not issue "stay at home" orders during the spring of 2020 in response to the COVID-19 pandemic?
   - What percent of (K-16) students in the world experienced school closure during the COVID-19 pandemic?
   - Two Asian countries that did not implement nationwide lockdowns had substantially lower COVID-19 related cases and deaths. Which countries were they? What mitigation method(s) did they implement instead?

d. **Discuss:** your findings about lockdowns.

e. **Compare:** Lockdowns with Contact Tracing
   - How restrictive?
   - How effective?
   - How difficult to implement effectively?
   - Why and how does each strategy work?

2.3 Activity 3: How is the rate of disease spreading through a population quantified?

Estimated Time: 50 minutes

Since the basic theory behind contact tracing is to prevent transmission of a disease from an infected person to people who are susceptible to the disease, it is important to know something about how fast a disease can spread in the population.

a. **Read:** "What is the R number and why is it relevant to coronavirus?". Scroll down to find this feature near the end of this article in BBC Science Focus Magazine.

   https://www.sciencefocus.com/news/covid-19-asymptomatic-carriers-should-self-isolate-regardless-of-symptoms/?utm_campaign=COVID+19%3A+Asymptomatic+carriers+should+self+isolate+%E2%80%98regardless+of+symptoms%E2%80%99&utm_medium=referral&utm_source=AppleNews

b. **Watch:** 2 videos

   "Coronavirus: How R-0 can be used to fight COVID-19" [1:37]
   https://video.search.yahoo.com/search/video?fr=mcafee&p=Video+Coronavirus%3A+How+R-0+can+be+used+to+fight+Covid-19#id=2&vid=ffee8c877cb030268beda93e812fa163&action=click

   "Why stopping transmission is so important" [9:26] -- Video created by Johns Hopkins University for the course "COVID-19 Contact Tracing".
   https://www.coursera.org/learn/covid-19-contact-tracing/lecture/1vwF0/why-stopping-transmission-is-so-important

c. Listen: to a brief clip from **"**Checking In with Dr. Emily Gurley on COVID-19 Contact Tracing" [12:22 - 14:10] to hear about ways that contact tracing impacts transmission. https://www.youtube.com/watch?v=vO8II3FgBSI

d. Reflect & Discuss:

- On average, how many people will one infectious COVID-19 case infect if there are no interventions to stop the spread?
- Typically, when is someone with COVID-19 able to infect others?
- What is R0 (R-Naught)? What does it quantify?
- Describe how the effectiveness of a contact tracing program can be measured?
- Assume that an infectious person (a case) is not wearing a mask or following social distancing guidelines. On average, how many contacts would you expect to become infected from that person when:
  - R0=1 ? If this rate of transmission remains constant for several months, what would you expect to happen to the number of infected individuals in the population?
  - R0=3 ? If this rate of transmission remains constant for several months, what would you expect to happen to the number of infected individuals in the population?
  - R0=0.5 ? If this rate of transmission remains constant for several months, what would you expect to happen to the number of infected individuals in the population?

e. **Explore:** "COVID-19 Spreading Rates"" a web-based data tool that provides an intuitive 'feel' of new COVID-19 cases spreading rates. This simulation shows you the ***average*** rate of newly reported COVID-19 cases in countries around the world.

https://covidspreadingrates.org/

f. **Reflect and Discuss:**
   - What feelings does this site provoke in you?
   - What surprised you the most as you were exploring this site?
   - Compare the current COVID-19 Spreading Rates between the US and three other countries.
   - How many countries are currently reporting no new cases in the last week? Do you see a pattern? What is it?
   - Which country reported the highest absolute spreading rate for last week? Which country reported the highest normalized spreading rate (per 1,000,000 people) for last week? If your answers to these questions were different, explain why.
   - How might you use this data-based simulation to inform others of the current global severity of the pandemic?

CHALLENGE 3: What is the Process of Contact Tracing?

Learning Targets:

- I can explain to my friends or family why they should answer phone calls from contact tracers and what to expect during the phone conversation.
- I can draw a flowchart that illustrates the sequential processes involved in contact tracing.
- I can relate the processes used to the principles of case identification and contact tracing.

3.1 Activity 1: What to expect if you receive a call from a Contact Tracer.

Estimated Time: 60 minutes

a. **Examine:** the CDC publication, "Contact Tracing: Do your part to keep your family, friends, and community safe." These 2 Infographics present a summary of your probable experience if you received a call from a Contact Tracer working for your local or state health department.

https://www.cdc.gov/coronavirus/2019-ncov/downloads/Contact-Tracing-Infographic-FINAL.pdf

b. **Reflect and Discuss:** The first Infographic shows what you can expect to happen during contact tracing if you have been diagnosed with COVID-19.
    - Predict your reactions if you received this call.
    - What part(s) of the process do you think you would find most difficult? Why?
    - What part(s) of the process do you think you would find most useful or comforting?
c. **Reflect and Discuss:** The second Infographic shows what to expect to happen during contact tracing if you may have been exposed to someone with COVID-19.
    - Predict your reactions if you received this call.
    - What part(s) of the process do you think you would find most difficult? Why?
    - What part(s) of the process do you think you would find most useful or comforting?
d. **Record:** Your conversation with a friend or family member explaining why they should answer phone calls from contact tracers and what to expect to happen during the call.

3.2 Activity 2: Principles and Workflow of Case Identification and Contact Tracing.

Estimated Time: 45 minutes

a. **Read:** The first 2 sections of an article in Time titled “What Is Contact Tracing? Here's How It Could Be Used to Help Fight Coronavirus”. They provide an overview of the process of contact tracing. Focus on these sections: “What is Contact Tracing?” and “How does Contact Tracing Work?”

   https://time.com/5825140/what-is-contact-tracing-coronavirus/

b. Reflect and Discuss:

- What are the key ideas of this reading selection?
- In what ways does this reading selection relate to the previous activities in this Challenge?

c. **Review:** 2 Infographics:

- COVID-19 Case investigation Workflow Infographic https://www.cdc.gov/coronavirus/2019-ncov/downloads/php/COVID-19-Case-Investigation-workflow.pdf
- COVID-19 Contact Tracing Workflow https://www.cdc.gov/coronavirus/2019-ncov/downloads/php/COVID-19ContactTracingFlowChart.pdf

d. Analyze and Discuss:

- How do the 2 Infographics relate?
- What is the purpose of each step?
- Why are the steps presented in the order that they are shown?
- How well do the infographics represent the summary you read at the beginning of this activity? Provide evidence for your evaluation.

e. **Read: The first 3 sections** of a CDC report titled: "Case Investigation and Contact Tracing : Part of a Multipronged Approach to Fight the COVID-19 Pandemic" to learn about the principles of case investigation and contact tracing. Focus on these three sections: "Certain core principles of case investigation and contact tracing must always be adhered to.", "Case investigation and contact tracing is part of the process of supporting patients and warning contacts of exposure in order to stop chains of transmission.", and "Time is of the essence." https://www.cdc.gov/coronavirus/2019-ncov/php/principles-contact-tracing.html

f. **Analyze and Discuss:** In what ways do the infographics support the CDC principles of Case Investigation and Contact Tracing?

3.3 Activity 3: The Role of Contact Tracers

Estimated Time: 30 minutes

a. Watch: 2 short videos:
   - "What is the role of a contact tracer?" [1:45] in which Multiple contact tracers make short statements about their jobs.

     https://www.youtube.com/watch?v=cqt3B6wENA4

   - a video clip from "What does a contact tracer do? And how is California fulfilling 10,000 tracing jobs?" [0:00 - 2:40]]
     https://www.youtube.com/watch?v=nmWKYJ4BXSY

b. **Write and Discuss:** Make a list of the things contact tracers are expected to do during a call to a case or contact. Discuss it with others.
c. **Watch:** "The Summary of the Six Steps of Case Investigation and Contact Tracing" [i:34]: to help you evaluate the thoroughness of your list.

   https://www.coursera.org/learn/covid-19-contact-tracing/lecture/KFlrF/summary
d. **Discuss:** How closely did your list of the expectations contract tracers during a call compare with the Six Steps?

3.4 Activity 4: Rapport and Communication: Necessary skills of effective contact tracers.

Estimated Time: 60 minutes

Now that you know some things about **what** contact tracers do, think about **how** they should do their job. What personality traits would you expect a contact tracer to have if they were calling you to inform you that you are a case or a contact?

a. **Brainstorm:** a list of traits, attitudes, feelings, and/or behaviors that contact tracers should exhibit when on a call.

b. **Watch:** "Summary of Effect Rapport and Communication" [2:45] in order to evaluate the brainstormed list.
https://www.coursera.org/learn/covid-19-contact-tracing/lecture/llYNY/summary

c. **Provide Examples:**

Make a table like the one shown below. From your brainstormed list, select 3 traits, attitudes, feelings, or behaviors to analyze.

Write each of them in a separate row of the left column of the table.

In the middle column, describe what a communicator who is expressing that rows' (trait, attitude, feeling, or behavior) does, looks like, and/or sounds.

In the right column, describe what a communicator who is expressing a complete lack of that rows' (trait, attitude, feeling, or behavior) does, looks like, and/or sounds.

Name of Trait, Attitude, Feeling, or Behavior	Expression of the Trait, Attitude, Feeling, or Behavior	Expression of **complete lack** of the of the Trait, Attitude, Feeling, or Behavior

d. **Roleplay:** the appearance of the traits, attitudes, feelings, behaviors to demonstrate the differences between exhibiting them and not exhibiting them.

e. Reflect and Discuss:

What did you realise about yourself during the roleplay?

How might those realizations affect interactions you have when communicating in day-to-day life?

f. **Watch:** "Tips for Effective Communication" [11:34] https://www.coursera.org/learn/covid-19-contact-tracing/lecture/1dYk6/tips-for-effective-comm

g. **Reflect and Discuss:**
   - How did the video examples help you identify some tips for effective communication?
   - Which 3 tips do you find most important? Why?

CHALLENGE 4: What are some issues related to Contact Tracing?

Learning Targets:

- I can develop and use a model to represent connections among issues and possible solutions related to contact tracing.
- I can compare and integrate sources of information about contact tracing presented in various media in order to create a model that shows relationships among issues and solutions.

4.1 Activity 1: Identifying Contact Tracing Challenges.

Estimated Time: 45 minutes

By working through this module, you've probably already realized that contact tracing is an important tool for slowing the spread of COVID-19, but it is not easy to implement. The resources included below present some of the challenges related to contact tracing, such as issues of capacity, equity, and privacy. Approaches to solving the identified issues and problems are also discussed.

Model: Your class has been asked to create a poster, infographic, or other visual display. To contribute to this project, work with one or two other students. Your team should work together to:

1. select one or more of the resources listed below to review.
2. identify specific issues or problems related to and related solutions mentioned in your resource.
3. use index cards or sticky notes (physical or virtual) to manage your notes. Use a separate note for each idea. Consider color-coding to distinguish challenges from solutions.
4. organize your group's notes into categories (that you create) and/or connect them with lines/arrows to show if/how they are related.
5. use your poster to explain your findings about contact tracing issues and possible solutions to others.

   NOTE: Throughout this challenge in each of the other activities your team will be adding to and revising your poster. Your final product should illustrate the issues/solutions related to contact tracing and how they are interrelated.

Resources:

a. **Article:** "The magnitude of America's contact tracing crisis is hard to overstate", a National Geographic article that discusses ways contact tracing programs are getting creative to overcome funding shortages, testing delays, case surges, and public distrust. https://www.nationalgeographic.com/science/2020/09/contact-tracing-crisis-magnitude-hot-mess-america-fixes-coronavirus-cvd/?cmpid=org=ngp::mc=crm-email::src=ngp::cmp=editorial::add=Science_20200902&rid=1E38AC52025ACF4B21103B3CB391CDD7

b. **Podcast:** "Contact Tracing 101: The Public Health Strategy That Could Help Control COVID-19 and Speed Up…" [16:30] from the podcast series "Public Health on Call". This podcast refers to many topics previously presented in Module 6. In addition, it points out issues and challenges related to effective implementation of contact tracing as a useful mitigation strategy to slow the COVID-19 pandemic. https://www.youtube.com/watch?v=SXd-byofNfE

c. **Podcast:** "Identify every case - Successful contact tracing and what it will take to reopen the US" [13:46] from the podcast series "Public Health on Call". This resource presents information about challenges and strategies associated with scaling up contact tracing in the US. https://www.youtube.com/watch?v=L3AmgrViKFY

4.2 Activity 2: Issues related to capacity.

Estimated Time: 30 minutes

In order to refine your poster, continue preparing notes for new ideas you discover as you:

Listen: "Checking In with Dr. Emily Gurley on COVID-19 Contact Tracing" [7:03 - 8:03]] https://www.youtube.com/watch?v=vO8II3FgBSI

Read: 3 articles related to contact tracing in Connecticut

- "COVID-19 contact tracers brace for more cases as Connecticut reopens" CT Mirror 6-22-20 https://ctmirror.org/2020/06/22/covid-19-contact-tracers-prepare-for-more-cases-as-connecticut-reopens/
- "Coronavirus CT Updates: Contact Tracing Program Revealed" https://patch.com/connecticut/across-ct/coronavirus-ct-updates-contact-tracing-program-revealed
- "ContaCT: Connecticut's Contact Tracing Platform" **https://portal.ct.gov/Coronavirus/ContaCT**

Watch: a segment of "What does a contact tracer do? And how is California fulfilling 10,000 tracing jobs?" [2:41 - 5:29] https://www.youtube.com/watch?v=nmWKYJ4BXSY

Collaborate and Revise: Work together to discuss what you discovered about problems and solutions related to building capacity for effective contact tracing. Add any new notes to your group's poster, rearranging as needed.

4.3 Activity 3: Potential Issues with Fraudulent Calls

Estimated Time: 15 minutes

In order to refine your poster, continue preparing notes for new ideas you discover as you:

Read: 2 articles:

- "Contact tracing slows the spread of COVID-19", is the first section of this web page. Focus on the information in the tan box. https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/contact-tracing.html
- "Don't be fooled by COVID-19 Contact Tracing Scam"

  https://www.wired.com/story/covid-19-contact-tracing-scams/

Collaborate and Revise: Work together to discuss what you discovered about problems and solutions related to fraudulent calls. Add any new notes to your group's poster, rearranging as needed.

4.4 Activity 4: Privacy and Sharing in a COVID World

Estimated Time: 30 minutes

In order to continue to revise your poster, keep preparing notes for new ideas you discover as you:

Watch: 3 videos

- **"What Contract Tracing Means For Your Privacy"**
  [7:10] https://www.youtube.com/watch?v=bZuezUUcTrA

- "Smartphone assisted, privacy preserving COVID-19 contact tracing" - MIT [2:25] https://www.youtube.com/watch?v=yuXzAh4slNw

- "Apple and Google Track Covid" [3:55] https://www.youtube.com/watch?v=PBJGJM9YseY

Read: "Johns Hopkins Releases Comprehensive Report on Digital Contact Tracing to Aid COVID-19 Response" https://www.prnewswire.com/news-releases/johns-hopkins-releases-comprehensive-report-on-digital-contact-tracing-to-aid-covid-19-response-301065473.html

Reflect and Discuss: ·

- What are some of the ethical challenges to contact tracing in the United States?
- If you tested positive for COVID-19, would you…
    - Is there personal information you would not be willing to share with a contact tracer? Why?
    - Tell the contact tracer who was at the party you attended the day before you were tested? Why or Why not?
    - Allow an app or Bluetooth technology to identify your past locations to track who you may have infected? Why or Why not?

Collaborate and Revise: Work together to discuss what you discovered about problems and solutions related to privacy and sharing of personal information. Add any new notes to your group's poster, rearranging as needed.

4.5 Activity 5: Issues Related to Equity

Estimated Time: 30 minutes

In order to continue to revise your poster, keep preparing notes for new ideas you discover as you:

Read: 3 articles:

- "Health Equity Considerations and Racial and Ethnic Minority Groups" https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html
- "COVID-19 Hospitalization and Death by Race/Ethnicity"

  https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html

- "COVID-19 is affecting Black, Indigenous, Latinx, and other people of color most."

  https://covidtracking.com/race

Reflect and Discuss:

- In what ways could contact tracing programs help to reduce racial and ethnic inequality related to COVID-19?
- What broad national or state policies should be in place in order to minimize equity issues?

Collaborate and Revise: Work together to discuss what you discovered about racial and ethnic equity as it relates to CORONA-19. Add any new notes to your group's poster, rearranging as needed.

4.6 Activity 6: Strategies for identifying asymptomatic cases

Estimated Time: 30 minutes

In order to continue to revise your poster, keep preparing notes for new ideas you discover as you:

Read: Contact tracers are concerned that since an asymptomatic person can be infectious it is easy to miss individuals that should be identified as cases. Individuals living in nursing homes, prisons, or shelters are at greater risk of becoming infected, so these are locations where frequent testing should be routine. New technologies have been developed to identify other places where higher-than-normal concentrations of not yet diagnosed cases of COVID-19 can be found and tested to confirm whether or not they should be classified as cases. Of course, these approaches are useful only if sufficient, rapid-results testing is available. Find out about some of these approaches:

Review an App/Website: "Tracking: How We Feel" - https://howwefeel.org/

Reflect and Discuss:

- In what ways could this technology help identify asymptomatic cases that need to be tested?
- Do you know of similar apps? If so, how do they compare with this one?

Read: "Yale's Wastewater Sampling Project Used Throughout CT to Predict COVID-19" https://seas.yale.edu/news-events/news/yales-wastewater-sampling-project-used-throughout-ct-predict-covid-19

Reflect and Discuss: In what ways could this technology help identify asymptomatic cases that need to be tested?

Collaborate and Revise: Work together to discuss what you discovered about strategies to improve identification of probably contacts. Add any new notes to your group's poster, rearranging as needed.

4.7 Activity 7: Strategies for finding contacts.

Expected Time: 30 minutes

In order to continue to revise your poster, keep preparing notes for new ideas you discover.

Watch: "How your phone will track coronavirus. [4:51]
https://www.youtube.com/watch?v=b7dxCRm5t5g

Reflect and Discuss: Explain how bluetooth technology makes this strategy possible and helps maintain privacy.

Watch: "COVID-19 Update 21: Why superspreaders are so important for the spread of SARS-CoV-2". [10:19]

https://video.search.yahoo.com/search/video?fr=mcafee&p=Covid-19+superspreaders#id=9&vid=19463768d2bedfc31a0b374ccff12eba&action=click

Reflect and Discuss: In what ways could identification of superspreader events help contact tracers identify potential contacts?

Collaborate and Revise and Share: Work together to discuss what you discovered about strategies to improve identification of probably contacts. Add any new notes to your group's poster, rearranging as needed. Share your results.