

! COVID-19: CDC Museum Closed to the Public

Due to ongoing concerns about the novel coronavirus (COVID-19), the David J. Sencer CDC Museum is closed to the public and will remain closed as we continue to assess and monitor developments. All CDC Museum tours are canceled until further notice.

This decision is being made out of an abundance of caution and based upon the guidance of the CDC regarding social distancing and the elimination of large gatherings.

Please continue to check our website and social media accounts for additional updates.



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Teen Newsletter: October 2020 – Influenza (Flu)

The David J. Sencer CDC Museum (CDCM) Public Health Academy Teen Newsletter was created to introduce teens to public health topics. Each month will focus on a different public health topic that CDC studies. Newsletter sections: Introduction, CDC's Work, The Public Health Approach, Special Feature, Out of the CDC Museum Collection, and Activities.

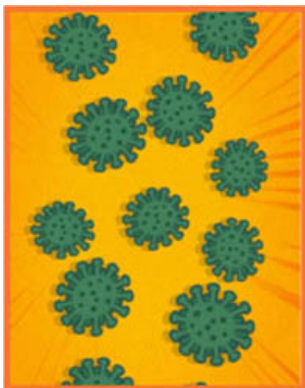
Introduction – Influenza (Flu)

You voted during our September Newsletter Zoom for this month's topic—and you picked influenza! Be sure to join our live Newsletter Zoom to vote on the next public health topic, too. This month we added a new activity—Ask a CDCer, this activity along with all the others (Zooms, digital scavenger hunts, and social media challenges) can be found at the end of each newsletter. Join in on the fun and win some prizes! We also expanded the Out of the CDC Museum section, check it all out below.

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What is Influenza (flu)?

Flu is a contagious respiratory illness caused by influenza viruses. It can cause mild to severe illness. Serious outcomes of flu infection can result in hospitalization or death. Some people, such as older people, young children, and people with certain health conditions, are at high risk of serious flu complications. There are two main types of

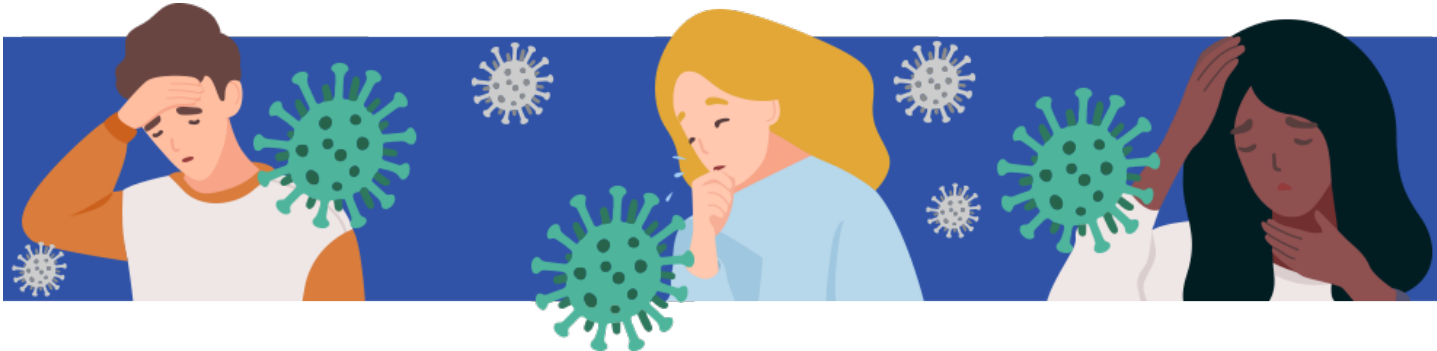


flu virus: Types A and B. The influenza A and B viruses that routinely spread in people (human influenza viruses) are responsible for seasonal flu epidemics each year.

While seasonal flu viruses are detected year-round in the United States, flu viruses are most common during the fall and winter. The exact timing and duration of flu seasons can vary, but influenza activity often begins to increase in October. Most of the time flu activity peaks between December and February, although activity can last as late as May.

Since flu activity is starting to increase this month, let's talk a little about flu and COVID-19. Because of the COVID-19 pandemic, reducing the spread of respiratory illnesses, like flu, this fall and winter is more important than ever.

Influenza (flu) vs Coronavirus Disease 2019 (COVID-19)?



Influenza (flu) and Coronavirus Disease 2019 (COVID-19) are both contagious respiratory illnesses, but they are caused by different viruses. COVID-19 is caused by infection with a new coronavirus (called SARS-CoV-2) and flu is caused by infection with influenza viruses.

COVID-19 seems to spread more easily than flu and causes more serious illnesses in some people. It can also take longer before people show symptoms and people can be contagious for longer. Another important difference is that while there is a vaccine to protect against flu, there is currently no vaccine to prevent COVID-19.

Because some of the symptoms of flu and COVID-19 are similar, it may be hard to tell the difference between them based on symptoms alone — testing may be needed to help confirm a diagnosis. Click [here](#) for flu symptoms.

While more is learned every day, there is still a lot that is unknown about COVID-19 and the virus that causes it. Click [here](#) to learn more about COVID-19 and flu, given the best available information to date.

CDC's Work – Influenza (Flu)

The [Influenza Division](#), under the [National Center for Immunization and Respiratory Diseases](#), provides scientific and programmatic leadership for the diagnosis, prevention, and control of influenza domestically and internationally.

Mission: 1) improve global control and prevention of seasonal and novel influenza, and 2) improve influenza pandemic preparedness and response.

Core activities of the Influenza Division:

- Build influenza disease surveillance and response capacity
- Monitor and assess influenza viruses
- Improve influenza vaccines and other medical interventions
- Conduct research to improve the scientific basis for enhancement of influenza prevention and control policies and programs



The Public Health Approach – Influenza (Flu)

Public health problems are diverse and can include infectious diseases, chronic diseases, emergencies, injuries, environmental health problems, as well as other health threats. Regardless of the topic, we take the same systematic, science-based approach to a public health problem by following four general steps.

1. Surveillance (What is the problem?)

In public health, we identify the problem by using surveillance systems to monitor health events and behaviors occurring among a population.

CDC collects, compiles, and analyzes information on influenza activity year-round in the United States and produces:

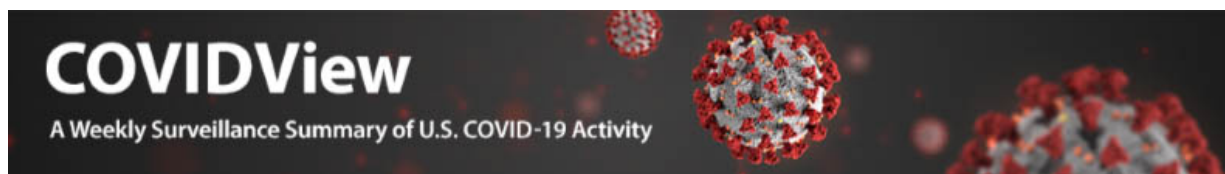
- [FluView](#) – weekly surveillance report
- [FluView Interactive](#) – allows for more in-depth exploration of flu data

The U.S. influenza surveillance system is a collaborative effort between CDC and its many partners in state and local health departments, public health and clinical laboratories, vital statistics offices, health care providers, and clinics and emergency departments. Information is collected from eight different data sources that allow CDC to:

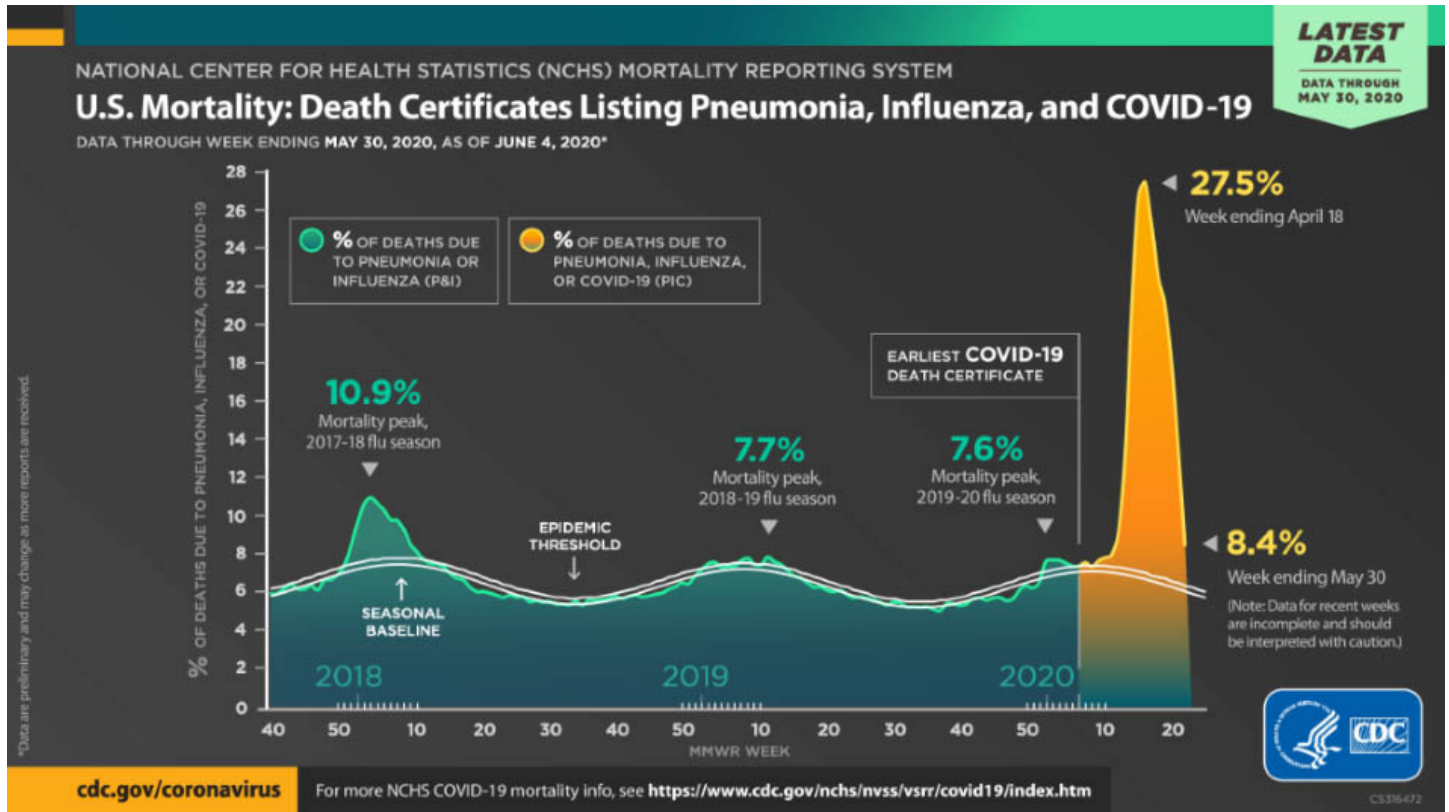


1. Find out when and where influenza activity is occurring
2. Track influenza-related illness
3. Determine what influenza viruses are circulating
4. Detect changes in influenza viruses
5. Measure the impact influenza is having on hospitalizations and deaths in the United States

Above we talked about flu and COVID-19. CDC also has [COVIDView](#), similar to [FluView](#), it is a weekly surveillance summary of COVID-19 activity in the United States.



Check out this graphic from May 2020 of the deaths due to pneumonia, flu, and COVID-19. It compares the mortality peaks of the 2017-2018, 2018-2019, and 2019-2020 flu seasons to when the first COVID-19 death was recorded until the week ending April 19, 2020.



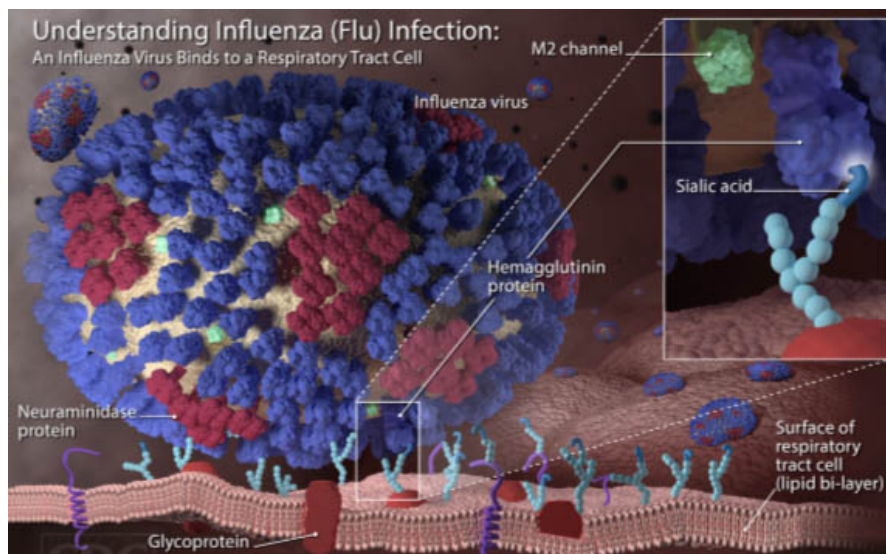
2. Risk Factor Identification (What is the cause?)

After we've identified the problem, the next question is, "What is the cause of the problem?" For example, are there factors that might make certain populations more susceptible to disease, such as something in the environment or certain behaviors that people are practicing?

As you learned above in the introduction, flu is a contagious respiratory illness caused by influenza viruses. But how exactly does it spread and infect our bodies?

Flu can infect the nose, throat, and sometimes the lungs. People with flu can spread it to others up to about 6 feet away. Flu viruses spread mainly by droplets made when people with flu cough, sneeze or talk. These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs. Less often, a person might get flu by touching a surface or object that has flu virus on it and then touching their own mouth, nose, or possibly their eyes.

After the influenza viruses enter the human body, they attach to the cells within the nasal passages and throat (i.e., the respiratory tract). The hemagglutinin (HA) surface proteins of the influenza virus bind to the sialic acid receptors on the surface of a human cell like a key to a lock. The influenza virus is then able to enter the infected cell. This marks the beginning of a flu infection. Click [here](#) to learn more.



Symptoms can begin about 2 days (but can range from 1 to 4 days) after the virus enters the body. People with flu are most contagious in the first 3-4 days after their illness begins. That means that you may be able to pass on the flu to someone else before you know you are sick, as well as while you are sick. Some people can be infected with the flu virus but have no symptoms; those people may still spread the virus to others.

3. Intervention Evaluation (What works?)

Once we've identified the risk factors related to the problem, we ask, "What intervention works to address the problem?" We look at what has worked in the past in addressing this same problem and if a proposed intervention makes sense with our affected population.

The best way to prevent flu is by getting vaccinated each year.

Do you know how flu vaccines work? Flu vaccines cause antibodies to develop in the body about two weeks after vaccination. These antibodies provide protection against infection with the viruses that are used to make the vaccine. Click [here](#) to learn more.

The seasonal flu vaccine protects against the influenza viruses that research indicates will be most common during the upcoming season. The U.S. influenza surveillance system allows CDC to determine what influenza viruses are circulating and detect changes in influenza viruses! Bonus points if you remembered this last fact earlier in this newsletter.

CDC has worked with vaccine manufacturers to have extra flu vaccine available this flu season. Manufacturers have already begun distributing flu vaccine and will continue to distribute vaccine throughout the season. CDC recommends getting a flu vaccination in September or October but getting vaccinated anytime during the flu season can help protect you.

[Find !\[\]\(642aa997563f9a325b310230bb5078b7_img.jpg\)](#) flu vaccines in your area.



4. Implementation (How did you do it?)

In the last step, we ask, “How can we implement the intervention? Given the resources we have and what we know about the affected population, will this work?”

CDC’s seasonal flu vaccination campaign materials are available to assist partners in communicating about the importance of vaccination. This [digital toolkit](#) includes details on events/activities, sample social media and newsletter content, graphics, web assets, and media prep material.

CDC conducts studies to measure the benefits of seasonal flu vaccination each flu season to help determine how well flu vaccines are working. These vaccine effectiveness studies regularly assess and confirm the value of flu vaccination as a public health intervention.

CDC has been working with researchers at universities and hospitals since the 2003-2004 flu season to estimate how well flu vaccine works through observational studies using laboratory-confirmed flu as the outcome. CDC uses three networks to estimate vaccine effectiveness:

1. [U.S. Flu VE Network](#)
2. [Hospitalized Adult Influenza Vaccine Effectiveness Network](#)
3. [New Vaccine Surveillance Network \(NVSN\)](#)

As you can see, using The Public Health Approach helps public health professionals identify a problem, find out what is causing it, and determine what solutions/interventions work.

Special Feature – Influenza (Flu)

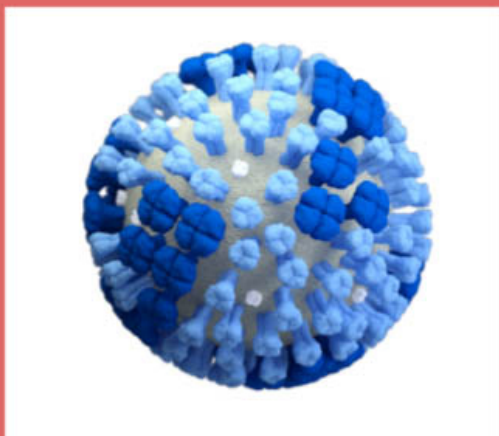
This month we are featuring work by **Angelique Wheeler** from Chappaqua, New York. Angelique was a student in the [CDC Museum Public Health Academy 2020 Online Summer Course \(OSC\)](#). The OSC was new and offered to the 615 students who applied to the CDC Museum Public Health Academy 2020 [Disease Detective Camp](#). The OSC was created and offered to those students because in-person Disease Detective Camp was canceled this summer due to COVID-19. During one section of the OSC, students picked a public health topic and created a case study and communication material. Angelique picked influenza. Please be aware that you are not able to click on any of the links in her work. Check out what the [CDC Museum Public Health Academy](#) has to offer.

INFLUENZA

Angélique Wheeler
Chappaqua, New York

Influenza is relevant to the community
because it is a virus that causes seasonal

Chappaqua, New York



Illustrator: Dan Higgins

epidemics and affects everyone.

Influenza is caused by viruses that mutate frequently and cause respiratory illness. While influenza has been present in human and animal populations for a long time, it is hard to prevent the continued spread and prevalence of influenza cases because of the viruses' frequent mutations.

While influenza can affect everyone, it has a more serious effect upon people age 65+ or younger than 5, pregnant people, and people with chronic illnesses such as asthma, diabetes, and heart disease.

DATA:

- 3% to 11% of the U.S. population has symptomatic influenza each year.
- Influenza is most common in children and adolescents, with a 9.3% incidence rate.

Citation: Jerome I Tokars, Sonja J Olsen, Carrie Reed, Seasonal Incidence of Symptomatic Influenza in the United States, *Clinical Infectious Diseases*, Volume 66, Issue 10, 15 May 2018, Pages 1511–1518, <https://doi.org/10.1093/cid/cix1060>

INTERVENTIONS:

Yearly vaccinations are the best way to prevent influenza and serious complications caused by it. Other interventions to prevent the spread of influenza are handwashing, covering coughs and sneezes, and avoiding people who are sick.



Image Credit: Kimberly Smith



Image Credit: Scott Housley

Slide 2: My Communication Material

WANT TO STAY HEALTHY THIS WINTER?



Talk to your doctor about getting an influenza vaccine!



Influenza vaccines help keep you and others around you healthy and can prevent severe illness caused by the virus.

Need help finding a flu shot? Scan the QR code below!



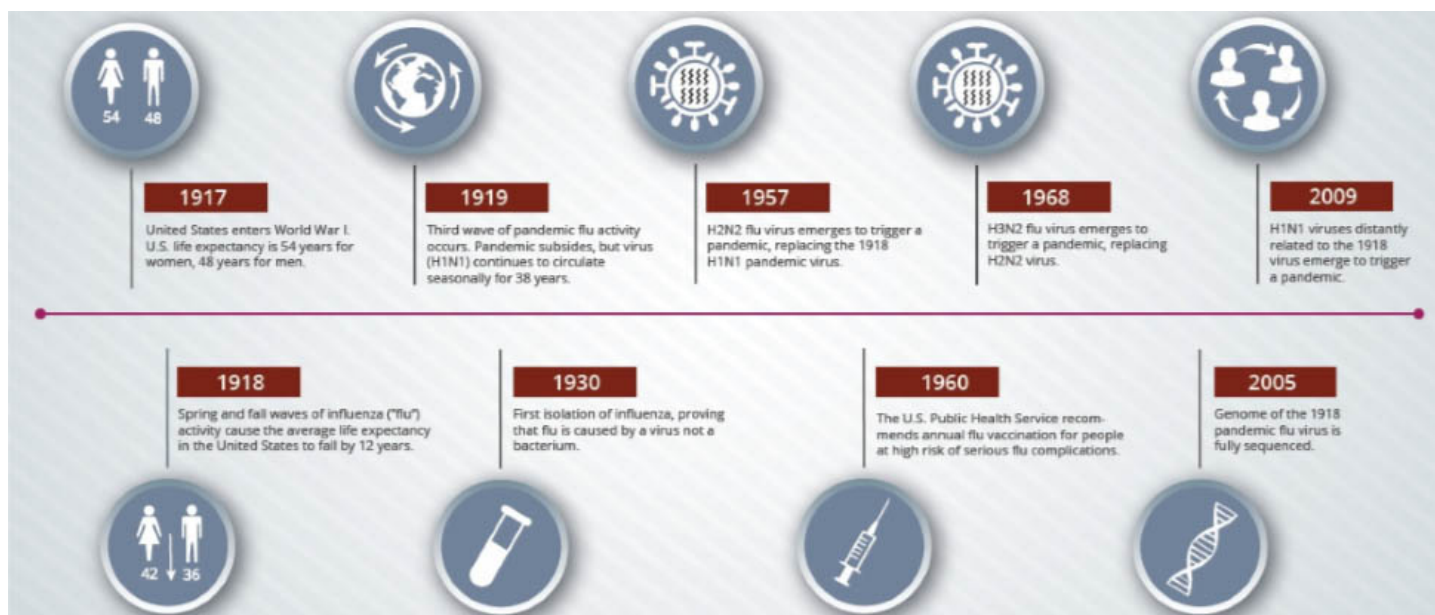
CDC MUSEUM



ONLINE
SUMMER
COURSE

Out of the CDC Museum Collection

Since this month is all about flu, let's check out the history of flu. Below you see influenza (flu) milestones from 1917-2009. Click [HERE](#) for more details.



In 1960, the [US Surgeon General](#), in response to substantial morbidity and mortality during the 1957–58 pandemic, recommended annual influenza vaccination for people with chronic debilitating disease, people aged 65 years or older, and pregnant women.

On the right you can see a vaccination device that was used in the 1960s-1970s. It is a jet injector known as the Hypospray (not to be confused with the science fictional hypospray from Star Trek). Jet injectors administered vaccines by using a pressurized, fine jet stream that penetrated the skin, delivering medications under the skin.



Another item we want to show you is a video clip from the 1998 [Epidemic Intelligence Service \(EIS\)](#) conference. In the clip you get to see [Dr. Stephen B. Thacker](#) introduce [Dr. Robert Couch](#) to give the Langmuir Lecture on pandemic flu.

The [Stephen B. Thacker CDC Library](#) is named after Dr. Thacker to honor his extraordinary legacy of leadership and 37 years of service at CDC.

The [Langmuir Lecture](#) is the preeminent lecture in the U.S. It is named for Alexander D. Langmuir, MD, MPH, a public health visionary who founded EIS and brought the [Morbidity and Mortality Weekly Report](#) to CDC.

Click to watch – [Pandemic Influenza: Again?](#) [↗](#)

When the CDC Museum reopens come view our [flu exhibit!](#)

Newsletter Activities

Scavenger Hunt

Want to learn more about mental health and do a fun digital scavenger hunt?

Time: ~40 min to complete

See below for more details.

Zoom

Want to learn more from CDCers who work in the [Influenza Division?](#)

Click [here](#) [↗](#) to watch.

Social Media Challenge #CDCTeenNewsletter

Roll your **#SleeveUp** to **#FightFlu**
Encourage your followers on social media to roll their sleeves up for an annual flu vaccine.

Increasing the number of people vaccinated can reduce flu illnesses, hospitalizations, and deaths this fall and winter, which can in turn help reduce the burden on our medical system and save medical resources for the care of COVID-19 patients.

Click [here](#) [↗](#) for instructions and to submit a screenshot of your post.

Use the hashtags **#CDCTeenNewsletter**
#SleeveUp **#FightFlu**

****NEW**** Ask a CDCer

For live Zoom only.

CDCM PHA Teen Newsletter Scavenger Hunt October 2020

Step 1: Download the GooseChase iOS or Android app

Step 2: Choose to play as a guest

Step 3: Enter game code – **3K67J3**

Step 4: Enter password – CDC

Step 5: Enter your email as your player name

Step 6: Go to www.cdc.gov/mentalhealth to complete your missions

Tips for Winning:

- All answers are found on the website, see Step 6.
- Open-ended answers and photo submissions are evaluated for accuracy.

Have fun!

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Content source: [Centers for Disease Control and Prevention](https://www.cdc.gov)