COVID-19 and flu

In March 2020, the World Health Organization (WHO) declared 2019-nCoV illness (COVID-19) a global pandemic. The common signs and symptoms of COVID-19 (such as fever, cough, and dyspnea) are similar to those of influenza illness. Currently, COVID-19 continues to cause severe illness in Minnesota and globally. It is not known whether and to what extent COVID-19 will circulate during the 2020-21 influenza season. However, in anticipation of that possibility, influenza vaccination of those aged 6 months and older is particularly important this season. Vaccination provides important protection from influenza illness and its potential complications. Despite an overall estimated vaccine effectiveness of 30-40%, influenza vaccination prevents outpatient medical visits, hospitalizations, and respiratory and circulatory deaths each season in the United States. Prevention and reduction in the severity of influenza illness and reduction of outpatient illnesses, hospitalizations, and intensive care unit admissions through influenza vaccination also could potentially alleviate stress on the already burdened health care system due to COVID-19.

Vaccination activities must include precautions to prevent COVID-19 disease transmission. Providers should consult CDC guidance and adhere to state and local regulations and recommendations (e.g., mask requirements, social distancing, etc.) to help prevent COVID-19 disease. These CDC resources provide more details on how to implement vaccination clinics during the pandemic.

- Vaccination Guidance During a Pandemic (https://www.cdc.gov/vaccines/pandemic-guidance/index.html)
- Vaccination During COVID-19 (https://www.health.state.mn.us/people/immunize/hcp/vaxpan.html)
Flu vaccine for 2020-21

This guide provides a summary of CDC’s flu vaccination recommendations for the 2019-20 flu season. For more details, read the full MMWR on Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2020–21 Influenza Season (www.cdc.gov/mmwr/volumes/69/rr/rr6908a1.htm).

This season’s vaccine contains:

- A/Guangdong-Maonan/SWL1536/2019 (H1N1) pdm09-like virus
- A/Hong Kong/2671/2019 (H3N2)-like virus
- B/Washington/02/2019 (B/Victoria lineage)-like virus
- B/Phuket/3073/2013-like virus (This is a Yamagata lineage virus contained in quadrivalent vaccine)

For more information on flu vaccine antigen selections, see Selecting Viruses for the Seasonal Influenza Vaccine (www.cdc.gov/flu/about/season/vaccine-selection.htm).

New options for flu vaccine are available nearly every season. This makes flu vaccine more accessible, but may also increase medication errors. Double check the package insert for age indication, route, and dosage. This information is summarized in the chart below and is available online in the 2020-21 Seasonal Influenza Vaccine Dosage Chart on Influenza Vaccine Administration (www.health.state.mn.us/diseases/flu/hcp/vaccine/admin.html).

<table>
<thead>
<tr>
<th>Manufacturer*</th>
<th>Trade Name</th>
<th>Age</th>
<th>Dose-Presentation</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seqirus</td>
<td>Fluad</td>
<td>65 years and older</td>
<td>0.5 mL - prefilled syringe</td>
<td>IM (intramuscular)</td>
</tr>
<tr>
<td>Sanofi Pasteur</td>
<td>FluBlok</td>
<td>18 years and older</td>
<td>0.5 mL - prefilled syringe</td>
<td>IM</td>
</tr>
<tr>
<td>Seqirus</td>
<td>Flucelvax</td>
<td>4 years and older</td>
<td>0.5 mL - prefilled syringe</td>
<td>IM</td>
</tr>
<tr>
<td>Sanofi Pasteur</td>
<td>FluZone High-Dose</td>
<td>65 years and older</td>
<td>0.7 mL - prefilled syringe</td>
<td>IM</td>
</tr>
<tr>
<td>GlaxoSmithKline</td>
<td>Fluarix</td>
<td>6 months and older</td>
<td>0.5 mL - prefilled syringe</td>
<td>IM</td>
</tr>
<tr>
<td>GlaxoSmithKline</td>
<td>FluLaval</td>
<td>6 months and older</td>
<td>0.5 mL - prefilled syringe</td>
<td>IM</td>
</tr>
<tr>
<td>Seqirus</td>
<td>Afluria Quadrivalent</td>
<td>6 through 35 months</td>
<td>0.25 mL - prefilled syringe</td>
<td>IM</td>
</tr>
<tr>
<td>Seqirus</td>
<td>Afluria Quadrivalent</td>
<td>3 years and older</td>
<td>0.5 mL - multi-dose vial</td>
<td></td>
</tr>
<tr>
<td>Sanofi Pasteur</td>
<td>Fluzone Quadrivalent</td>
<td>6 months and older**</td>
<td>0.5 mL - prefilled syringe</td>
<td>IM</td>
</tr>
<tr>
<td>Sanofi Pasteur</td>
<td>Fluzone Quadrivalent</td>
<td>6 months and older**</td>
<td>0.5 mL - single-dose vial</td>
<td></td>
</tr>
<tr>
<td>AstraZeneca</td>
<td>FluMist</td>
<td>2 through 49 years</td>
<td>0.2 mL - prefilled intranasal sprayer; 0.1 mL in each nostril</td>
<td>Intranasal</td>
</tr>
</tbody>
</table>

*Make sure you are using the correct codes to enter doses into the Minnesota Immunization Information Connection (MIIC) by going to MIIC Codes for Data Submission and Exchange (www.health.state.mn.us/people/immunize/miic/data/codes.html).

**The Fluzone 0.25 mL pre-filled syringe dose for children ages 6 through 35 months is not available this season.
Pediatric flu vaccines

There are now four influenza vaccine products approved for children as young as age 6 months: Fluzone, FluLaval, Fluarix, and Afluria. The dosages differ according to the product. Be sure to follow the package insert instructions. In summary: the dosage for Fluzone, FluLaval, and Fluarix is 0.5 mL; the dosage for Afluria differs between children ages 6 through 35 months (0.25 mL) and for 3 years and older (0.5 mL). Additionally, Fluzone may be given as a 0.25 mL dose or a 0.5 mL dose for children 6 through 35 months.

Note: if a 0.5 mL single-dose vial of Fluzone is used for a 0.25 mL dose, only half the volume should be administered and the other half should be discarded. LAIV is licensed for persons age 2 through 49 years and is given as 0.1 mL in each nostril.

Two-dose recommendations for certain children

Give two doses of influenza vaccine, at least 4 weeks apart to children age 6 months through 8 years who are receiving influenza vaccine for the first time or if they have not received two or more doses of influenza vaccine previously. Two doses are recommended even if the child turns 9 between receipt of dose 1 and dose 2.

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 Did the child receive 2* or more doses of trivalent or quadrivalent influenza vaccine in prior seasons?

- Yes
- 1 dose
- No
- 2 doses at least 4 weeks apart

*The two doses do not need to have been received during the same or consecutive seasons.
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See Influenza vaccine dosing algorithm for children 6 months through 8 years old, 2019-20 influenza vaccination season below and on Influenza Vaccine Administration (www.health.state.mn.us/diseases/flu/hcp/vaccine/admin.html).

Administering vaccine safely

Influenza vaccine protocols should be reviewed every year before vaccination begins. Protocol information and templates can be found on Vaccine Protocols (www.health.state.mn.us/people/immunize/hcp/protocols/index.html).

The route of vaccine administration varies by product. Influenza vaccines recommended for use this season are administered in one of two routes: intramuscular or intranasal.

Screening for contraindications and precautions

Flu vaccine is one of the most widely administered vaccines and in general, most people, even those with egg allergy, can safely receive the vaccine.

• Do not administer flu vaccine to patients who have a contraindication.
• Patients that have a precaution should generally not be vaccinated unless the benefits outweigh the risks as advised by their health care provider.
**Flu vaccination and COVID-19 testing**
The highest priority when holding events for flu vaccination or COVID-19 testing is preventing infection.

- Providing flu vaccine should not increase an individual’s risk of exposure to COVID-19.
  - Consider drive-through models, if flu vaccine is offered, to reduce exposures between healthy individuals and individuals with COVID-19.
- Community COVID-19 testing sites targeting a broad audience should not offer flu vaccine as a way to draw people into the event. This creates an unnecessary risk of exposure for healthy individuals.

In addition to infection control, vaccination protocols should be carefully reviewed to follow the clinical recommendation that individuals experiencing COVID-19 symptoms, and individuals with suspected or confirmed COVID-19 disease, should not be vaccinated until their symptoms have resolved.

**Contraindications and Precautions**

- A previous severe allergic reaction to flu vaccine, regardless of the component suspected of being responsible for the reaction, is a contraindication to future receipt of the vaccine.

- A person who has experienced Guillain-Barre Syndrome (GBS) within 6 weeks of receipt of a flu vaccine may be vaccinated after having a conversation with their medical provider regarding the risks and benefits of vaccination. While GBS is extremely rare after vaccination, a person who has experienced GBS within 6 weeks of a flu vaccination could be at higher risk to experience it again after vaccination.

- Mild illness is neither a contraindication nor precaution to flu vaccination. A mild illness is one in which there are no expectations of a worsening illness course. Examples include otitis media in which antibiotics are prescribed and fever may or may not still be present, or cold symptoms that have been declining. Immunization programs should have a policy with clear criteria about what symptoms would warrant deferral (e.g., fever >100.5 degrees F, or an acute illness that began within the past 24-48 hours) and when the patient may be vaccinated.

- People with COVID-19-like symptoms should not get a flu vaccine.

- LAIV: Because LAIV is a live vaccine, additional contraindications and precautions include, pregnancy, conditions that suppress the immune system, receipt of antivirals, CSF leak, or cochlear implants. Additionally, ACIP does not recommend LAIV for people with asthma and underlying medical conditions that place a person at high risk for influenza (e.g., diabetes, heart disease, etc.).

**Egg allergy and flu vaccination**

- People with egg allergies can receive any licensed, recommended, age-appropriate flu vaccine (IIV, RIV4, or LAIV4) and should be observed for the standard 15 minutes.

- People who have severe egg allergies should be vaccinated in a medical setting and be supervised by a health care provider who is able to recognize and manage severe allergic conditions.

- All vaccination providers should be familiar with the procedure for treating an acute reaction and be currently certified in cardiopulmonary resuscitation (CPR). Epinephrine and equipment for maintaining an airway should be available for immediate use.

**Intramuscular (IM) administration**
Injection technique is the most important factor in delivering the vaccine into the muscle. Proper intramuscular injection ensures the vaccine will be most effective, cause the patient the least amount of discomfort, and reduce potential injury.

**IM site for infants and toddlers (birth to 3 years of age)**

```
IM injection site area
vastus lateralis (shaded area)
```

**IM site for older toddlers, children, adolescents, and adults**

```
deltoid muscle (shaded area)
eacromion
```

```im
IM injection site area
elbow
```
• **Select the appropriate needle length**
  ◦ Appropriate needle length depends on age and body mass. For all IM injections, the needle should be long enough to reach the muscle mass and prevent vaccine from seeping into subcutaneous tissue, but not so long as to involve underlying nerves, blood vessels, or bone.
  ◦ Needle size and site of injection must be decided for each person based on the size of the muscle and the thickness of adipose tissue around the muscle. This is usually a 1 to 1 ½ inch needle for adults.

• **Prevent injection injuries**
  ◦ Giving the IM injection too close to the shoulder joint can cause bursitis, fasciitis, and other injury. These types of injuries are reported more often during flu vaccination season.
  ◦ Place three fingers from the top of the shoulder. Have the patient lift their arm (you should be able to see and feel the deltoid muscle contract). Once you have located the middle of the muscle, have the patient relax their arm and give the injection at a 90-degree angle at that point.

See [How to Administer IM (Intramuscular) Injections](www.health.state.mn.us/people/immunize/hcp/admim.pdf) for more information regarding preferred IM sites and needle length guidance.

**Intranasal administration**

See the [FluMist Quadrivalent: Resources for you](www.flumistquadrivalent.com/flu-vaccine-resources.html) for instructions on proper vaccine administration.

**Managing acute vaccine reactions**

Administer vaccines in settings where staff are trained to recognize and respond to reactions.

• Have a signed hardcopy of a medical management of vaccine reaction plan and protocol that staff have reviewed and are ready to implement.

• Immediate systemic reactions can include syncope (fainting) and anaphylaxis.
  ◦ To minimize syncope, have a place for patients to sit down while they are vaccinated, and be ready to lower them to a laying position if needed.
  ◦ Although rare, anaphylaxis to a vaccine can occur and is a life-threatening event. Have the appropriate equipment on hand, and have trained staff available to administer epinephrine and maintain an airway in settings where vaccinations are given.

• The Immunization Action Coalition has examples of emergency plans. See [Medical Management of Vaccine Reactions in Children and Teens](www.immunize.org/catg.d/p3082a.pdf) and [Medical Management of Vaccine Reactions in Adult Patients](www.immunize.org/catg.d/p3082.pdf) for more information.

**Vaccine Adverse Event Reporting System (VAERS)**

• Health care providers are required to report any event after vaccination that requires medical attention, regardless of whether it is related to vaccination. Report events electronically to the [Vaccine Adverse Event Reporting System (VAERS)](https://vaers.hhs.gov/index).

• While it is relatively rare to experience any kind of event, CDC relies on reports of adverse events to signal any problems with flu or other vaccines.

**Documenting flu vaccination**

Include the following information in your permanent electronic or paper records.

**Federal law requires:**

• Published date of the Vaccine Information Statement (VIS).
• Date the VIS was given to the patient.
• Name, address (office address), and title of the person who administers the vaccine.

**Best practice (may be required by agency):**

• Site
• Route
• Dose
• Date the vaccine is administered.
• Vaccine type, manufacturer, and lot number of each dose administered.

Minnesota Immunization Information Connection (MIIC)

Flu vaccine is given in a variety of settings. It is important for health care providers to be able to access immunization records for their patients no matter where the vaccines were given. Minnesota’s immunization information system, MIIC (www.health.state.mn.us/miic), stores electronic immunization records that combine immunizations individuals received at different locations across the state. It is a best practice for all providers to enter vaccines they administer – including flu – into MIIC. MIIC’s combined immunization records help make sure Minnesotans get the right vaccines at the right times.

Providers can enter vaccine into MIIC in several ways:

• Submissions directly from electronic health record systems.
  ◦ Current MIIC users with electronic health record systems can submit immunization information to MIIC through an electronic connection with their systems. Find more information about setting up a connection with MIIC at Process for Working on Data Exchange with MIIC (www.health.state.mn.us/people/immunize/miic/data/dxprocess.html).

• MIIC Flu Spreadsheet uploads.
  ◦ The MIIC Flu Spreadsheet is an Excel template for providers to quickly record and upload administered vaccines. The template is especially useful for mass vaccination clinics and targeted vaccination campaigns.

• Direct data entry.
  ◦ Providers who administer only a few doses of flu vaccine may enter these data directly into the MIIC application (https://miic.health.state.mn.us/miic/security_ui.showLogin).

MIIC assessment reports can help providers find out how well their client population is immunized and plan improvement activities. Check out a client population's flu immunization rates with the Single Vaccine Assessment Report.

• Use the standard report option to see rates for defined age groups during the most recently completed flu season. Use the list-based and custom report options to choose specific age groups and other details that can make the report most useful for you. Find more information at: Immunization Assessment: MIIC User Guidance and Training Resources (https://www.health.state.mn.us/people/immunize/miic/train/assess.html).

In addition to combined immunization records, MIIC offers several other tools to support immunization practice, monitoring, and improvement in Minnesota. If you need help using MIIC, or would like to enroll your organization, contact the MIIC Help Desk:

• Email: health.miichelp@state.mn.us
• Phone: 651-201-5503, 800-657-3970

Learn more about MIIC

• Participating in MIIC (www.health.state.mn.us/people/immunize/miic/participate/index.html). Information for health care providers, other health professionals, schools, and child cares that want to participate in MIIC.

• MIIC User Guidance and Training Resources (www.health.state.mn.us/people/immunize/miic/train/index.html). How-to guides and e-learning modules for MIIC features, as well as a sign-up for email updates on MIIC user guidance and training.
Storage and handling

Proper storage and handling of flu vaccine is critical to its effectiveness. Inactivated vaccines, like IIV, are especially sensitive to freezing temperatures. Here are some key tips to help ensure that your flu vaccine remains effective:

• Follow CDC and manufacturer specifications for maintaining the recommended temperature range (36° through 46°F/2° through 8°C, aim for 40°F/5°C) for storing flu vaccine.

• Optimal storage unit include “stand alone” or pharmacy grade units; they provide uniform temperatures inside the unit. If using a combination unit, do not use the freezer compartment to store vaccines because the freeze-thaw cycles impact the temperatures in the refrigerator portion and increase the risk of exposure to freezing temperatures. Include water bottles in the refrigerator to add additional temperature buffering.

• Use a calibrated temperature monitoring device; a continuous temperature monitoring device, such as a data logger, is recommended.

• Check and document the minimum and maximum temperature once a day and the current temperature twice a day. Take action if the temperature goes out of range.

• See the CDC’s Vaccine Storage and Handling Toolkit (www.cdc.gov/vaccines/hcp/admin/storage/toolkit/) for full guidance on storage and handling of vaccines.

Note: There are specific storage requirements for those that participate in the Minnesota Vaccines for Children (MnVFC) Program (www.health.state.mn.us/vfc). Refer to your site’s Policies and Procedures Manual for guidance.

Transport of flu vaccine

Vaccine should be delivered directly to the location where vaccination takes place whenever possible. If flu vaccine must be transported off-site from its main storage area, keep these key things in mind:

• Temperatures need to be continuously monitored and recorded. Take action if the temperature goes out of range.

• Follow specific packing recommendations. Better yet, use portable refrigeration units whenever possible.

• Storing vaccine in a home refrigerator is not acceptable. If overnight storage is a frequent aspect of your flu vaccination program, use portable refrigeration units.

Transport packing guidance can be found in CDC’s Packing vaccines for Transport during Emergencies on Vaccine Storage and Handling: Recommendations and Guidelines (www.cdc.gov/vaccines/hcp/admin/storage).

Providing information before vaccination

An essential part of flu vaccination is providing information about the risks and benefits of flu vaccination, which includes the Vaccine Information Statement (VIS), alerting vaccinees of common symptoms after vaccination, and instructions for follow-up care if needed.

Vaccine Information Statements (VISs)

• Providing the most current VIS before administering the vaccine is required by federal law.

• The VIS gives patients basic information on flu disease and vaccine risks and benefits.

• The VIS is available in multiple languages from the Immunization Action Coalition at Vaccine Information Statements (www.immunize.org/vis).

Potential side effects

Preparing a patient about what to expect and when to follow-up with a health care provider is a best practice and can ease anxiety about vaccination. Most reactions to flu vaccine are mild, resolve on their own, and do not result in serious outcomes. Common side effects include:

• Pain or redness at the injection site

• Achiness

• Headache

• Mild fever

These symptoms usually resolve in a day or two and should not be mistaken for flu disease.
Influenza and COVID-19 testing

It is important that providers distinguish between influenza and COVID through PCR testing for both infections whenever possible. The availability of a multiplex test that includes influenza and COVID is uncertain. Because COVID testing continues to rapidly evolve, we expect guidelines to change throughout the influenza season. At this time, PCR testing is considered to be the gold-standard diagnostic test for COVID and influenza. MDH will communicate any changes in guidelines at Specimen Collection and Testing for Seasonal Influenza (https://www.health.state.mn.us/diseases/flu/hcp/lab.html) and through the Health Alert Network (https://www.health.state.mn.us/han).

Antiviral recommendations

Antiviral use is recommended as soon as possible for patients with suspected or confirmed flu who are:

• Hospitalized.
• Have severe, complicated, or progressive illness.
• Outpatients at higher risk for influenza complications (e.g., children under age 2 years, pregnant women, those with immunosuppression, etc.).
• Residents of nursing homes and other chronic-care facilities.
• Have uncomplicated influenza and present within 48 hours of illness (based on clinical judgment).

For more information on influenza antivirals, see CDC’s Influenza Antiviral Medications (www.cdc.gov/flu/professionals/antivirals/index.htm).

Rapid flu testing

While rapid flu testing can be useful, it has limitations.

• False negative flu rapid testing results are common, and a negative rapid test result does not rule out flu.
• Likewise, a positive rapid test does not confirm flu, especially during times of low prevalence of disease in the community.
• Antiviral treatment should not be withheld from patients with signs and symptoms suggestive of flu and a negative rapid flu test result. Providers are encouraged to use clinical judgment for treatment and infection control decisions. More information on rapid tests can be found at Rapid Influenza Diagnostic Testing (www.health.state.mn.us/diseases/flu/hcp/rapid.html).

Recap of 2019-20 flu season in Minnesota

• 4,058 hospitalizations
• 906 outbreaks of influenza-like illness (ILI) in schools
• 107 outbreaks of influenza in long-term care facilities
• 3 pediatric deaths

The 2019-20 flu season began with Influenza B as the dominant strain, but A/H1 became more prevalent as the season progressed. The season was considered moderate in severity. Influenza activity abruptly ended when the COVID-19 pandemic emerged in the spring of 2020.
Commonly asked questions

Sometimes patients ask for more information about flu vaccine. Review answers to these commonly asked questions so you can provide reassurance to patients who may be hesitant and build confidence in vaccination.

What is flu (influenza)?
- Flu (influenza) is caused by viruses that attack the lungs, nose, and throat. This group of viruses is very different from those that cause stomach upset and diarrhea—or what some call the “stomach flu.”
- Flu symptoms can be mild or severe, but typically cause a cough, sore throat, body aches, and fever.
- Usually flu is more severe than a cold, and symptoms start very suddenly.

Who is at high risk for flu?
Most healthy people will recover from flu without complication; however, many people are in an age group or have a condition that places them at high risk for complications from flu. These groups include:
- Children under age 5 years, but especially those under 2 years
- Adults over age 65 years
- Pregnant women
- Persons with a chronic medical condition, such as asthma, neurological and neurodevelopmental conditions, lung and heart disease, chronic kidney disease and diabetes, weakened immune system, and obesity (especially those with BMI ≥40).

Why does flu vaccine change every year?
- The flu virus is continuously changing, which results in a change of the most common strains circulating. The flu vaccine changes each year to try and match the strains that are expected to cause the most illness in the upcoming season.
- Whether the strains change or not, it’s important to get a flu vaccine every year since immunity decreases over time.
- Everyone 6 months of age and older should get a flu vaccine each year.

How effective is flu vaccine?
- Efficacy can vary based on things like how healthy you are, how old you are, and whether you’ve been vaccinated before.
- While the vaccine won’t prevent every case of flu, it is the most specific tool we have against the flu. Even in years when efficacy is low, influenza vaccination prevents severe disease and death.

Is flu vaccine safe?
- Year after year, flu vaccine is shown to be safe. They have been extensively studied for safety and are continuously monitored for safety.

Can people with egg allergies get the vaccine?
- Yes. Extensive reviews of data indicate that severe allergic reactions are rare among persons with egg allergy who receive flu vaccination. Flu vaccination is safe for these individuals.
When is the best time to get vaccinated?

- Aim to vaccinate your patients by the end of October.
  - Timing of vaccination must be balanced between the unpredictable timing of influenza season and concerns that vaccine-induced immunity might wane over the course of a season.
- Efforts should be structured to optimize vaccination coverage before influenza activity in the community begins.
  - Providers should begin offering vaccine as soon as they have it, and the public should take advantage of flu vaccination services in their community whenever they have the opportunity.
- For those requiring only 1 dose for the season, early vaccination (i.e., July and August) is likely to be associated with suboptimal immunity before the end of the influenza season, particularly among older adults. Children that require two doses should get the first dose when the vaccine becomes available.
- Booster doses of flu vaccine during the influenza season does not provide benefit and is not recommended.
- Delaying vaccination until later in fall or winter may lead to missed opportunities and non-vaccination.
- Continue to vaccinate throughout the season until you run out of vaccine or it expires.

Stay informed about flu

- For information on flu activity in Minnesota, subscribe to our Weekly Influenza & Respiratory Activity: Statistics [www.health.state.mn.us/diseases/flu/stats/index.html].
- Get an email alert when updates are made to Influenza Information for Health Professionals [www.health.state.mn.us/diseases/flu/hcp/index.html].
- Subscribe to Got Your Shots? News [www.health.state.mn.us/people/immunize/hcp/gys/index.html] for monthly immunization updates from MDH.

Get ready for National Influenza Vaccination Week!


Questions?

MDH Immunization Program
651-201-5503 or 1-800-657-3970
health.flu@state.mn.us
www.mdhflu.com

CDC INFO: 1-800-232-4636