

**2009 H1N1 Influenza
Updated Key Points
September 25, 2009**

What's New and Updated

- Activity Update
- International Situation Update
- Antiviral Supply/Dosing
- 2009 H1N1 Influenza Vaccine
- 2009 H1N1 Influenza Vaccine Safety
- Seasonal Influenza Vaccine

A Summary of CDC Key Public Health Messages this Season

- Flu activity is increasing in most of the United States with more than half of all states reporting widespread influenza activity.
- CDC recommends a three-step approach to fighting the flu: vaccination, everyday preventive actions including covering coughs, frequent hand washing, and staying home when sick, and the correct use of antiviral drugs if your doctor recommends them.

Activity Update

- Each week CDC analyzes information about influenza disease activity in the United States and publishes findings of key flu indicators in a report called [FluView](#).
- Information collected during the week of September 13-19, 2009 is reported in FluView on September 25, 2009.
- A review of the key indicators from the most recent week's data found that influenza activity continued to increase in the United States compared to the prior weeks.
- Visits to doctors for influenza-like illness (ILI) increased nationally for the sixth consecutive week. This level of activity is very unusual for this time of year.
- Total influenza hospitalization rates for adults and children are similar to or lower than seasonal influenza hospitalization rates depending on age group, but are higher than expected at this time of year.
- The proportion of deaths attributed to pneumonia and influenza (P&I) based on the 122 Cities report was low and within the bounds of what is expected at this time of year. However, 49 pediatric deaths related to 2009 H1N1 have been reported to CDC since April 2009, including three deaths reported this week.

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- Twenty-six states (Alabama, Alaska, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Illinois, Kansas, Kentucky, Louisiana, Maryland, Minnesota, Mississippi, Nevada, New Mexico, North Carolina, Oklahoma, Pennsylvania, South Carolina, Texas, Tennessee, Virginia, and Washington) are reporting widespread influenza activity at this time.
- Any reports of widespread influenza activity in September are very unusual.
- Almost all of the influenza viruses identified so far are 2009 H1N1 influenza A viruses.
- These 2009 H1N1 viruses remain similar to the viruses chosen for the 2009 H1N1 vaccine, and remain susceptible to the antiviral drugs oseltamivir and zanamivir with rare exception.
- On August 29, 2009, CDC closed out reports of 2009 H1N1 hospitalizations and deaths for the 2008-09 season.
- Effective August 30, 2009, CDC began compiling information from states related to **all** influenza and pneumonia-associated hospitalizations and deaths for the 2009-2010 season using new case definitions.
- The number of influenza and pneumonia-related hospitalizations and deaths reported in this new system is 10,082 hospitalizations and 936 deaths. Only a minority of these hospitalizations and deaths are laboratory confirmed influenza:
 - Laboratory confirmed influenza: 1,690 hospitalizations and 114 deaths.
 - Influenza and pneumonia syndrome influenza: 8,392 hospitalizations and 822 deaths.
 - It is not known what proportion of the non-laboratory confirmed syndromic hospitalizations and deaths are influenza-related.
- More information on how hospitalizations and deaths are being reported this season is included below and at <http://www.cdc.gov/h1n1flu/reportingqa.htm>
- During Week 37 (the week ending September 19, 2009), three influenza-associated pediatric deaths were reported to CDC.
 - These deaths occurred in Texas [2] and Virginia, and all were associated with 2009 H1N1 virus infection.

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- These deaths occurred between August 30 and September 19, 2009.
- Since September 28, 2008, CDC has received 117 reports of laboratory confirmed influenza-associated pediatric deaths that occurred during the 2008-09 influenza season, 49 of these deaths were due to 2009 H1N1 influenza virus infections.
- CDC anticipates that 2009 H1N1 influenza viruses will co-circulate with regular seasonal influenza viruses over our influenza season.
- The timing, spread and severity of 2009 H1N1 virus – in addition to our regular seasonal influenza viruses – are uncertain.

International Situation Update

- The 2009 H1N1 influenza virus continues to be the dominant influenza virus in circulation in the world.
- From April 19 to September 12, 2009, 60.6% of influenza specimens reported to WHO were 2009 H1N1 viruses.
- In temperate regions of the Southern Hemisphere, disease due to 2009 H1N1 is largely declining.
- In tropical regions, there is still substantial disease due to 2009 H1N1.
- In temperate regions of the Northern Hemisphere, there is increased influenza like illness (ILI) activity due to 2009 H1N1 in most of the United States, parts of Mexico, and some countries in Europe.
- The epidemiology of disease caused by 2009 H1N1 influenza in the Southern Hemisphere is very similar to that described in the United States during the spring of 2009.
- There have been no significant changes detected in 2009 H1N1 influenza viruses isolated from persons in the Southern Hemisphere as compared to viruses isolated from persons in the Northern Hemisphere.
- In August, a White House report was prepared by the Department of Health and Human Services (HHS) in coordination with the Office of the Director for National Intelligence (ODNI) and the Department of State (DoS) and describes the characteristics and impact of 2009 H1N1 influenza A virus in the Southern Hemisphere. The full report can be accessed by the link provided in the Reports and Publications section below.

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- As of September 25, 2009, WHO reported that more than 10,000 2009 H1N1 influenza isolates worldwide were tested and found to be sensitive to oseltamivir, an antiviral medicine used to treat influenza disease. Only 28 2009 H1N1 isolates tested have been found to be resistant to oseltamivir – 11 of these isolates were detected in the United States.
- On September 18, 2009, the United States, together with Australia, Brazil, France, Italy, New Zealand, Norway, Switzerland and the United Kingdom, announced plans to donate pandemic vaccine to the developing world.
- As of September 20, 2009, the World Health Organization (WHO) regions have reported at least 318,925 laboratory-confirmed cases of 2009 H1N1 with more than 3,917 deaths, which is an increase of at least 22,454 cases and more than 431 deaths since September 13th. The laboratory-confirmed cases represent a substantial underestimation of total cases in the world, as many countries focus surveillance and laboratory testing only on people with severe illness.

Antiviral Supply

- At this time, discussions with the antiviral supply chain (manufacturers, distributors and retailers) indicate that supplies of adult formulation (75 mg) oseltamivir (Tamiflu®) and zanamivir (Relenza®) are meeting current demand for this product.
- However, the Food and Drug Administration (FDA) and Roche (maker of Tamiflu®) have acknowledged that commercial and stockpiled supplies of Tamiflu® oral suspension (pediatric liquid formulation) are limited.
- FDA has posted a statement on their website at <http://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm100228.htm> to remind health care providers and pharmacists of the FDA-approved instructions for the emergency compounding of an oral suspension from Tamiflu® 75mg capsules as described in the FDA approved manufacturer package insert for oseltamivir (Tamiflu®).
- Compounding is the mixing of drugs by a health care professional to fit the unique needs of a patient.
- Compounding an oral suspension from Tamiflu® 75mg capsules provides an alternative oral suspension when commercially manufactured oral suspension formulation is not readily available.
- Alternatively, for children who may not be able to swallow capsules, Tamiflu® capsules also may be opened and mixed with sweetened liquids,

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such as regular or sugar-free chocolate syrup, if oral suspension is not available.

- On September 22, 2009 CDC issued an update to pharmacists available at http://www.cdc.gov/H1N1flu/pharmacist/pharmacist_info.htm. This update provided:

1.) Background information on influenza activity to date and how pharmacists may be affected this season,

2.) An update on antiviral drug supplies,

3.) Information about compounding an oral suspension from Tamiflu® 75mg capsules, and

4.) Information about the dosing dispenser provided with certain formulations of Tamiflu® oral suspension. (More information on this below.)

- Over the course of this pandemic, it is possible that in areas experiencing widespread flu activity, there may be temporary limited availability of some antiviral medications.
- CDC is developing a tool to assess antiviral supply that may be used over the course of the pandemic.
- CDC has coordinated with manufacturers, distributors and retailers to gather information on available quantities of certain medical supplies, including antiviral drugs.
- CDC will use this information to get a national picture of commercial availability of certain medical supplies, including antiviral drugs.
- The goal of the tool is to improve information about the commercial supply of certain medical supplies to help inform decision-making about when the Strategic National Stockpile (SNS) should be released.
- CDC has been communicating with pharmacists and clinicians to improve awareness about the option to compound adult formulation of Tamiflu® to create an alternative pediatric suspension (i.e., liquid) formulation.
- In the spring of 2009, CDC deployed 25 percent of the pandemic influenza supplies in the SNS to all U.S. states and territories. These included antiviral drugs (11 million treatment courses), personal protective equipment and respiratory protection devices.

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- States also purchased 24 million courses of antiviral drugs for use in a pandemic from HHS subsidized contracts in addition to what was distributed through the SNS.
- There has been very modest use of the supplies deployed in the spring.
- As of September 15, 2009, the U.S. Strategic National Stockpile has 49.9 million treatment courses of antiviral drugs. This total includes the replenishment of the antiviral drugs that were deployed in April. This replenishment is nearly complete.
- SNS assets will be made available to distribute to states and territories if it becomes necessary.
- Antiviral drugs are prescription medicines (pills, liquid or an inhaled powder) that fight against the flu by keeping flu viruses from reproducing in your body.
- Antiviral drugs can make illness milder and shorten the time you are sick. They can also prevent serious flu complications.
- For treatment, antiviral drugs work best if started within the first 2 days of symptoms.
- It's important for the public to remember that most people sick with 2009 H1N1 influenza have recovered without medical care or antiviral drugs, and the same is true of seasonal flu.
- The priority use for antiviral drugs this season is to treat people who are very sick (hospitalized) or people who are sick with flu-like symptoms and who are at increased risk of serious flu complications, such as pregnant women, very young children, people 65 and older and people with chronic health conditions.

Note on Tamiflu Oral Suspension Syringe

- Tamiflu® oral suspension is provided with an oral dosing dispenser with 30 mg, 45 mg, and 60 mg graduations in the packaging for the manufacturer's product rather than graduations in milliliters (mL) or teaspoons (tsp).
- There have been cases where the units of measure on the prescription dosing instructions (mL, tsp) do not match the units on the dosing device (mg), which can lead to patient or caregiver confusion and dosing errors.

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- The CDC update to pharmacists issued on September 22, 2009, (available at http://www.cdc.gov/H1N1flu/pharmacist/pharmacist_info.htm) noted that when dispensing commercially manufactured Tamiflu® oral suspension, pharmacists should ensure the units of measure on the dosing instructions match the dosing device provided.
- On September 24, 2009, FDA issued a Public Health Alert to notify prescribers and pharmacists about potential dosing errors with Tamiflu (oseltamivir) for Oral Suspension (available at <http://www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm183714.htm>).

2009 H1N1 Influenza Vaccine

- The U.S. Food and Drug Administration has approved four vaccines against the 2009 H1N1 influenza virus.
- The vaccines that are made by each manufacturer cover the following groups:

Manufacturer: Sanofi Pasteur, Inc.

Indication: Vaccination of persons 6 months of age and older against influenza disease caused by 2009 H1N1 virus.

Manufacturer: Novartis Vaccines and Diagnostics Limited

Indication: Vaccination of persons 4 years of age and older against influenza disease caused by 2009 H1N1 virus.

Manufacturer: MedImmune LLC

Indication: Vaccination of healthy individuals 2-49 years of age who are not pregnant against influenza disease caused by 2009 H1N1 virus.

Manufacturer: CSL Limited

Indication: Vaccination of persons ages 18 years of age and older against influenza disease caused by 2009 H1N1 virus.

- All four manufacturers of the 2009 H1N1 vaccines are using the same processes that they use for making the seasonal flu vaccines, which have a long record of producing safe seasonal influenza vaccines.
- **(NEW)** States will be able to place their first orders for the 2009 H1N1 vaccine on Wednesday, September 30, 2009. Approximately 3 million doses of vaccine are expected to be available for ordering at that time.

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- **(NEW)** It is important to keep in mind that while some doses of vaccine will be distributed beginning the first week of October, initial supplies are small and it will take several days for those doses to reach clinics and doctors offices.
- **(NEW)** During the upcoming weeks more vaccine will be available to the public in more places. We expect 10 to 20 million doses of vaccine to be available for distribution each week after the first week in October. The federal government has purchased enough product to provide a total of 250 million doses.
- **(NEW)** This vaccine program is a massive and challenging undertaking and is being carried out at a time when state and local health departments have experienced severe budget cuts. There will likely be bumps along the way, but we are optimistic that we will achieve our goal of making the 2009 H1N1 vaccine available to all of those who need and want it.
- **(NEW)** On September 21, 2009, The National Institute of Health (NIH) announced that early results from a trial testing a 2009 H1N1 influenza vaccine in children look promising. Preliminary analysis of blood samples from a small group of trial participants shows that a single 15-microgram dose of a non-adjuvanted 2009 H1N1 influenza vaccine – the same dose that is in the seasonal flu vaccine – generates an immune response that is expected to be protective against 2009 H1N1 influenza virus in the majority of 10- to 17- year-olds within eight to 10 days following vaccination. These results are similar to those recently reported in clinical trials of healthy adults. Younger children generally had a less robust early response to just one dose of the vaccine.
- **(NEW)** It is likely that children younger than 10 years will need two doses of 2009 H1N1 flu vaccine. This is slightly different from CDC's recommendations for seasonal influenza vaccination which state that children younger than 9 who are being vaccinated against influenza for the first time need to receive two doses. Infants younger than 6 months of age are too young to get the 2009 H1N1 and seasonal flu vaccines.
- **(NEW)** CDC recommends that the two doses of 2009 H1N1 vaccine be separated by 4 weeks. However, if the second dose is separated from the first dose by at least 21 days, the second dose can be considered valid.
- The national vaccine program will be voluntary. Those interested in vaccination for themselves or their children will receive accurate information about 2009 H1N1 influenza vaccine and the vaccine's benefits and risks so they can make an informed decision.

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- A report in the August 21, 2009, Morbidity and Mortality Weekly Report (MMWR) provides official recommendations by CDC's Advisory Committee on Immunization Practices (ACIP) regarding the use of vaccine against 2009 H1N1 influenza.
- The guiding principle of these recommendations is to vaccinate as many persons as possible as quickly as possible. Vaccination efforts should begin as soon as vaccine is available.
- Highlights of these recommendations include 1) the identification of five initial target groups for vaccination efforts comprising an estimated 159 million persons (pregnant women, persons who live with or provide care for infants aged <6 months, health care and emergency medical services personnel, children and young adults aged 6 months through 24 years, and persons aged 25 through 64 years who have medical conditions that put them at higher risk for influenza-related complications), 2) establishment of priority for a subset of persons within the initial target groups in the event that initial vaccine availability is unable to meet demand, and 3) guidance on use of vaccine in other adult population groups as vaccine availability increases.
- The recommendations are broad and allow for flexibility to accommodate local variability in vaccine needs and demands. Providers should be aware of and follow any additional guidance provided by their state or local health departments. If no additional guidance is provided at the state or local level, providers should vaccinate among the initial target group populations on a first come, first serve basis.
- Simultaneous administration of inactivated vaccines against seasonal and the 2009 H1N1 influenza viruses is permissible if different anatomic sites are used. However, simultaneous administration of live, attenuated vaccines against seasonal and 2009 H1N1 influenza viruses is **not** recommended.
- **(NEW)** If tested for the flu after receiving the live attenuated influenza vaccine (LAIV), a person could test positive on a rapid influenza diagnostic test because the tests are designed to detect influenza viruses and cannot differentiate between live attenuated viruses that could be recovered following administration of LAIV and wild-type flu viruses.
- Because vaccine availability is expected to increase over time, vaccine should not be held in reserve for patients who received one dose and might require a second dose.

2009 H1N1 Flu Vaccine & People age 65 and over

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- Younger people are more likely to get infected with the 2009 H1N1 influenza virus than those 65 years and older. Therefore, younger persons are recommended to receive the first available doses of 2009 H1N1 influenza vaccine before persons 65 years and older.
- CDC's priority for people 65 and older is to have them get their seasonal influenza vaccine as soon as it is available.
- While people 65 and older aren't included in the high risk groups to be prioritized for 2009 H1N1 influenza vaccination, they can get the 2009 H1N1 influenza vaccine as soon as the high-risk groups have had the opportunity to be vaccinated and should not delay in seeking medical treatment if they develop symptoms of influenza.

2009 H1N1 Influenza Vaccine Safety

General H1N1 Vaccine Safety

- We expect the 2009 H1N1 influenza vaccine to have a similar safety profile as seasonal flu vaccines, which have very good safety track records.
- CDC expects that any serious side effects following vaccination with the 2009 H1N1 influenza vaccine would be rare.
- **(Updated)** The types and frequencies of side effects from the 2009 H1N1 vaccine will likely be similar to those experienced following seasonal influenza vaccines which are mild, localized reactions.

Vaccine Safety Monitoring

- **(Updated)** The CDC and FDA closely monitors the safety of all vaccines licensed for use in the United States including seasonal influenza vaccines in cooperation with state and local health departments, healthcare providers, and other partners. Additional special monitoring is occurring to assure that any rare side effects of the 2009 H1N1 vaccine detected as soon as possible.
- Vaccine safety monitoring is a complex process that uses both active and passive surveillance.
- Vaccine safety monitoring includes reviewing adverse events reported by providers, manufacturers, people who were vaccinated or their caregivers, and comparing the rate of these adverse events to the background rates (the rates at which they normally occur in the population).

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- An adverse event following immunization is a medical incident that occurs after someone receives an immunization.
- Adverse events may be coincidental (meaning occurring around the same time but not related to vaccination) or caused by vaccination.
- Adverse events can be reported by providers, manufacturers, people who were vaccinated or their caregivers.
- The purpose of vaccine safety monitoring is timely identification of any clinically significant adverse events following immunization, as well as to provide timely information to the public, vaccine providers, public health officials, and policy makers.
- CDC and its partners will use several systems to monitor the safety of 2009 H1N1 influenza vaccine. Two primary systems that will be used are the Vaccine Adverse Event Reporting System (VAERS), which is jointly operated with FDA, and the Vaccine Safety Datalink (VSD) Project.
- Additionally, CDC will conduct surveillance of adverse events through partnerships with other federal agencies, professional organizations, and academic institutions.

Adjuvants

- Some vaccines contain “adjuvants,” which are ingredients that help boost the vaccine’s potency. As a result, a smaller amount of vaccine is needed per person, and therefore, the vaccine supply can be used to reach more people.
- According to current federal plans, only unadjuvanted vaccines will be used in the United States during the 2009-10 flu season.
- This includes all of the 2009 H1N1 and seasonal influenza vaccines that will be available for children and adults in both the injectable and nasal spray formulations. None of these influenza vaccines that will be used in the U.S. during the 2009-10 season will contain adjuvants.
- Studies of 2009 H1N1 influenza vaccines with adjuvants are being conducted to determine if 2009 H1N1 influenza vaccines with adjuvants meet safety and efficacy requirements for use in the United States.

Thimerosal

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- Thimerosal is a mercury-based preservative that is used in some influenza vaccines to keep them free from contamination of microorganisms.
- **(Updated)** The 2009 H1N1 influenza vaccine is being manufactured in several formulations.
 - Several vaccine manufacturers will be producing some of the 2009 H1N1 influenza vaccine in single-dose units, which will not require the use of thimerosal as a preservative.
 - The live-attenuated version of the vaccine, which is administered intranasally (through the nose), is produced in single-units and will not contain thimerosal.
 - Some vaccine will come in multi-dose vials and will contain thimerosal as a preservative, as is the case with seasonal influenza vaccines in multi-dose vials.
- Multi-dose vials of seasonal influenza vaccine contain thimerosal to prevent potential contamination after the vial is opened. Seasonal flu vaccines that do not contain thimerosal are available.

Guillain-Barré syndrome (GBS)

- Guillain-Barré syndrome (GBS) is a medical condition in which the body damages its own nerve cells, causing muscle weakness and sometimes paralysis. Most people who develop GBS fully recover, but in some cases, death can result, usually from difficulty breathing.
- It is not fully understood why some people develop GBS, but it often occurs following infection. It is believed that stimulation of the body's immune system may play a role in its development.
- The infection that most commonly precedes GBS is caused by a bacterium called *Campylobacter jejuni*. Influenza virus infection has also been associated with GBS.
- In 1976, there was a small risk of GBS following influenza (swine flu) vaccination (approximately 1 additional case per 100,000 people who received the swine flu vaccine). That number of GBS cases was slightly higher than the background rate for GBS. Since then, numerous studies have been done to evaluate if other flu vaccines were associated with GBS. In most studies, no association was found, but two studies suggested that approximately 1 additional person out of 1 million vaccinated people may be at risk for GBS associated with the seasonal influenza vaccine.

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- FDA and CDC and several partners will be closely monitoring reports of serious vaccine adverse events, including GBS, following the 2009 H1N1 influenza vaccination.

Seasonal Influenza Vaccine

- **(New)** It has been reported in the Canadian media that research conducted in Canada suggests that getting a seasonal flu vaccine may increase a person's risk for getting 2009 H1N1 influenza. The research has not been published and thus CDC has not had the opportunity to review it formally.
- **(New)** The Centers for Disease Control and Prevention have not seen this effect in systems we have reviewed in the United States. Data collected in Australia also does not suggest that receipt of seasonal influenza vaccine influences the risk of 2009 H1N1 infection.
- **(New)** CDC continues to recommend seasonal flu vaccination. Currently the vast majority of influenza being reported to CDC is 2009 influenza A (H1N1). However, influenza is very unpredictable and an increasing amount seasonal flu may circulate at any point in the season.
- The new 2009 H1N1 influenza virus is a reminder of the unpredictable nature of influenza, and the importance of prevention.
- While the 2009 H1N1 influenza virus has been the focus of attention since the spring, it is important that we do not forget the risks posed by seasonal influenza viruses. We expect that seasonal flu viruses will circulate this season along with 2009 H1N1.
- We hope that people, especially those at high risk for serious complications and their close contacts, will seek seasonal flu vaccines now or as soon as vaccine is available in their communities.
- The seasonal influenza vaccine will be available earlier than the 2009 H1N1 influenza vaccine. Seasonal influenza viruses are still expected to cause illness this fall and winter along with 2009 H1N1 virus.
- Seasonal flu vaccine is now available in many locations. Individuals are encouraged to get their seasonal flu vaccine as soon as it becomes available in their community.

Seasonal Flu Vaccine & People age 65 and over

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- People age 65 years and over are at increased risk for complications from seasonal influenza and are recommended for annual seasonal flu vaccines. This year is no exception.
- CDC's priority for people 65 and older is to have them get their seasonal flu vaccine first, before the 2009 H1N1 flu vaccine is available.

Supply and Distribution

- At the current time, five influenza vaccine manufacturers are projecting as many as 114 to 115 million doses of seasonal influenza vaccine will be available from currently licensed manufacturers in the United States for use during the 2009-10 influenza season.
- Manufacturers project producing approximately 50 million doses of thimerosal-free, or preservative-free, seasonal influenza vaccine.
- **(Updated)** Approximately 60 million doses of seasonal flu vaccine have been distributed, as of September 18, 2009.
- Manufacturer projections indicate that the vast majority of vaccine will be distributed by the end of October. However, some vaccine distribution may continue into November, including doses that are ordered during the fall.
- 2009 H1N1 vaccine production efforts currently underway are being carried out in such a way to minimize any impact upon the total amount of seasonal vaccine available. In fact, the timing of 2009 H1N1 vaccine production, as directed by the federal government, was designed to allow sufficient time for manufacturers to be able to carry out their planned production of seasonal influenza vaccine.
- Despite vaccine production estimates that exceed past usage, providers seeking to order vaccine currently and during the past several weeks have experienced challenges in doing so. There are several reasons for these challenges. First, in early June, one of the manufacturers adjusted down their seasonal flu vaccine estimates, which resulted in some customers switching prebooks to other products. These switches reserved unprebooked vaccines that were still available for order, making doses that are normally available for order during the summer and early fall months no longer available. Second, there may be more providers seeking to purchase vaccine at this time of year than normally occurs due to (1) recent 2009 H1N1 disease and related coverage in the media that may have increased the demand for seasonal flu vaccination, and (2) a desire to complete seasonal flu vaccination efforts in advance of 2009 H1N1 vaccination efforts to the extent possible.

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- As in past seasons, availability of seasonal vaccine may change as the season progresses because some prebooks do not materialize into purchases. Providers looking to order additional vaccine should be encouraged to use the supplies that they have now and continue to look for additional flu vaccine for purchase in the coming weeks.
- To assist providers in finding flu vaccine available for purchase, the National Influenza Vaccine Summit supports IVATS, the Influenza Vaccine Availability Tracking System, which provides information about vaccine manufacturers and distributors with vaccine available for purchase. IVATS can be found at: <http://www.preventinfluenza.org/ivats/>. The information in IVATS is updated throughout the influenza vaccination season.
- CDC's seasonal influenza web site is now live at <http://www.cdc.gov/flu> with a new design, the latest information updates, and free resources.