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# Influenza Vaccination for 2009-10: Seasonal and Novel H1N1

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Vaccination is the best way to prevent influenza and its complications. Approximately 83% of the United States population is specifically recommended for annual vaccination against seasonal influenza; however, <40% received the 2008-09 influenza vaccine (Centers for Disease Control and Prevention (CDC), 2009c).

**Recommendations.** This season, full protection from influenza will require both novel influenza A (H1N1) and seasonal influenza vaccines. Fortunately, seasonal influenza vaccines are available early this year and CDC recommends that vaccination begin as soon as possible. Since there is no clinically important waning immunity related to early season vaccination (Skronski, et al, 2008), patients vaccinated early will still have good protection later in the influenza season.

CDC has published new recommendations for seasonal influenza vaccination (CDC, 2009c). This guidance includes a new emphasis for seasonal influenza vaccination for all children ages 6 months to 18 years; previously the pediatric focus was on children 6 months to 4 years of age.

CDC has also issued recommendations for the novel influenza A (H1N1) vaccine (CDC, 2009d). This vaccine represents a strain change to the seasonal influenza vaccine and it has been found to be safe. Thus, although this vaccine is new, it is not experimental. The FDA approved it September 15, 2009. It does not contain an adjuvant (CDC, 2009a) and it is being made using the

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# Influenza Season Update

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South Carolina influenza surveillance consists of voluntary and mandatory components. State-mandated influenza-related reportable conditions are:

- positive influenza cultures
- positive rapid antigen tests
- influenza A, novel or avian
- influenza-related deaths
- influenza hospitalizations **(NEW)**

The voluntary influenza monitoring networks are:

- Viral Isolate Network
- Influenza-like Illness Network (ILINet)

**Virologic Surveillance.** Positive viral cultures are reportable within 7 days. In addition, a network of sentinel physicians submit a sampling of isolates for testing at the DHEC Bureau of Labs (BOL). Since October 4, 2008, BOL has reported 1106 positive influenza specimens. Another 513 positive specimens have been reported by other labs.

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## Influenza Vaccination for 2009-10: Seasonal and Novel H1N1

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same processes and facilities that are used to make seasonal influenza vaccines (CDC, 2009b; FDA, 2009).

**Safety Profile & Monitoring.** Over the years, hundreds of millions of Americans have received seasonal influenza vaccines. The most common side effects are mild, such as soreness, redness, or swelling at the injection site. It is expected that the novel influenza A (H1N1) vaccine will continue to have a safety profile similar to seasonal influenza vaccine (CDC, 2009a). Providers are reminded to report any clinically significant adverse event that occurs after the administration of any vaccine licensed in the United States, including the new novel influenza A (H1N1) vaccine, to the federal Vaccine Adverse Event Reporting System (VAERS: http://www.vaers.hhs.gov). Of particular interest are cases of Guillain-Barré Syndrome (GBS) occurring after novel influenza A (H1N1) vaccine. However, there is no reason to suspect this will occur in association with the vaccine. The novel influenza A (H1N1) virus is genetically different from the 1976 "Swine Flu" virus (CDC, 2009b) whose vaccine was associated with cases of GBS (approximately 1 additional case per 100,000 people who received the vaccine) (CDC, 2009a). CDC has implemented enhanced safety monitoring for the novel influenza A (H1N1) vaccine and DHEC will work with CDC to ensure serious adverse events related to the vaccine are reported and investigated.

**Immunization Campaigns.** This year's influenza vaccination season presents one of the biggest challenges faced by public health in recent memory. The demand for both vaccines is expected to exceed what public health could deliver on its own. As a result, DHEC has partnered with other providers to assure that all South Carolinians have the opportunity to be vaccinated. DHEC invited healthcare providers in various types of practice settings (including medical offices, hospitals, pharmacies, schools, and universities) to volunteer to provide the novel influenza A (H1N1) vaccine through a health alert network (HAN) notice this summer. The response was encouraging, with over 1,700 providers pre-registering to provide this vaccine. Pre-registration is temporarily closed while DHEC undergoes the final registration of these providers. The first group of final registrants will include providers most able to reach the target populations (Box). The novel influenza A (H1N1) vaccine is expected by mid-October and will be available at DHEC clinics, schools and with providers who complete the final registration process. Because initial doses will be limited, the vaccine will be given to target populations first. As supplies increase, vaccination will be available to everyone.

For more information, visit http://www.cdc.gov/h1n1flu/vaccination/. To identify vaccine clinics near you (or to list your vaccine clinic) visit http://www2.thecarolinascenter.org/FCF/fluclinicfinder.aspx.

### References


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**BOX. Initial target groups for novel influenza A (H1N1) vaccination programs and a subset of these target groups to receive vaccine if initial vaccine availability is not sufficient to meet demand***

**Initial target groups**

ACIP recommends that programs and providers provide vaccine to all persons in the following five initial target groups as soon as vaccine is available (order of target groups does not indicate priority):

- pregnant women,
- persons who live with or provide care for infants aged <6 months (e.g., parents, siblings, and daycare providers),
- health-care and emergency medical services personnel †,
- children and young adults aged 6 months–24 years, and
- persons aged 25–64 years who have medical conditions that put them at higher risk for influenza-related complications.§

**Subset of initial target groups**

ACIP recommends that all persons in the following subset of the five initial target groups receive priority for vaccination if vaccine availability is not sufficient to meet demand (order of target groups does not indicate priority):

- pregnant women,
- persons who live with or provide care for infants aged <6 months (e.g., parents, siblings, and daycare providers),
- health-care and emergency medical services personnel who have direct contact with patients or infectious material,
- children aged 6 months–4 years, and
- children and adolescents aged 5–18 years who have medical conditions that put them at higher risk for influenza-related complications.§

***Footnotes***

***** Priority should be given to persons in the subset of the five target groups only if initial vaccine availability is not sufficient to meet demand for all persons in the five target groups. As vaccine availability increases, vaccination programs should be expanded to include all members of the initial target groups. Vaccination of other adult populations is recommended as vaccine availability increases.

**†** Health-care personnel (HCP) include all paid and unpaid persons working in health-care settings who have the potential for exposure to patients with influenza, infectious materials, including body substances, contaminated medical supplies and equipment, or contaminated environmental surfaces. HCP might include (but are not limited to) physicians, nurses, nursing assistants, therapists, technicians, emergency medical service personnel, dental personnel, pharmacists, laboratory personnel, autopsy personnel, students and trainees, contractual staff not employed by the health-care facility, and persons (e.g., clerical, dietary, housekeeping, maintenance, and volunteers) not directly involved in patient care but potentially exposed to infectious agents that can be transmitted to and from HCP. The recommendations in this report apply to HCP in acute-care hospitals, nursing homes, skilled nursing facilities, physicians' offices, urgent care centers, and outpatient clinics, and to persons who provide home health care and emergency medical services. Emergency medical services personnel might include persons in an occupation (e.g., emergency medical technicians and fire fighters) who provide emergency medical care as part of their normal job duties.

**§** Medical conditions that confer a higher risk for influenza-related complications include chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, cognitive, neurologic/neuromuscular, hematologic, or metabolic disorders (including diabetes mellitus) and immunosuppression (including immuno-suppression caused by medications or by human immunodeficiency virus).

Source: *MMWR 2009 RR-10*, p. 6 (http://www.cdc.gov/mmwr/PDF/rr/rr5810.pdf)

# Brucellosis

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**Epidemiology.** Brucellosis is a nationally notifiable disease that is found rarely in humans in the United States. In 2007, the Centers for Disease Control and Prevention (CDC) reported that Brucellosis was detected at a rate of less than 0.5 cases per 100,000 people in the US (CDC, 2007). During that year, one confirmed case in SC was reported to SC DHEC, which corresponds to .02 Brucellosis cases per 100,000 population. (SC DHEC, 2009) Human Brucellosis occurs more commonly in developing nations, where high quality animal husbandry and hygiene are not practiced.

Four species of *Brucella* organisms cause most cases of human disease. *Brucella melitensis*, which is transmitted by infected goats and sheep, is the most frequently isolated species of *Brucella* in the US. *Brucella abortus* (from cattle), *suis* (from swine), and *canis* (from dogs) are the other species that cause significant numbers of cases of human Brucellosis (CDC, 2007).

**Clinical and Laboratory Findings in Brucellosis.** Brucellosis is characterized by fever, chills, lethargy, night sweats, myalgia, arthralgia, depression, and weight loss. Clinical onset may be acute, insidious, or recurring. Clinical course is variable, and the symptoms may persist for days to months, with occasional untreated cases lasting more than a year. Chronic sequellae are common. Osteoarticular complications represent the most common chronic manifestations found, occurring in 20-60% of cases. Orchitis, epididymitis, and endocarditis comprise the other frequent chronic sequellae of this disease.

Often, symptoms of Brucellosis will relapse, even after a patient has undergone recommended therapy, proving the basis for the disease's common name, "Undulant Fever". The incubation period for this disease is quite variable, but most often ranges from 5 to 60 days (Heymann, 2008). Cases of Brucellosis are laboratory confirmed by either: isolation, a four-fold or greater increase in agglutination titers between acute and convalescent samples, or immunofluorescense.

**Transmission and Risks.** *Brucella spp* organisms are found in the placenta, blood, milk, urine, and other tissues of infected animals. **Transmission to humans occurs through three routes: inhalation, ingestion, and contamination of wounds with infectious materials**. Ingestion of unpasteurized dairy products is a major source of human Brucellosis.

Certain occupations also have high risk of exposure to *Brucella spp* due to their frequent contact with animals; these include abattoir workers, veterinarians, and farmers. Individuals in these occupations should take care to wear proper protective clothing, wash away any animal tissues and body fluids in contact, and dispose of animal tissues/fluids appropriately, to decrease their risk of exposure to *Brucella* organisms.

Laboratorians are also at greater risk of exposure to *Brucella spp*, due to their work with isolates in clinical specimens. In fact, Brucellosis is one of the most common laboratory-acquired bacterial infections. Laboratorians should handle all isolates of *Brucella spp* in Biosafety Level 3 (BSL 3) facilities, according to CDC guidelines. All manipulations of *Brucella spp* organisms should be performed by laboratorians under Class II or higher biological safety cabinets, utilizing appropriate protective procedures. Whenever *Brucella spp* are suspected by clinicians, laboratory specimens and requests should be appropriately labeled, in order to try to prevent accidental exposure of laboratorians, who might manipulate these specimens without the benefit of BSL3 precautions (CDC, 2006).

Hunters of feral swine are also at increased risk of exposure to *Brucella suis*. Serologic studies have shown *Brucella suis* to be endemic in feral swine in South Carolina. (5) Hunters may potentially be exposed to *Brucella suis* organisms during the dressing of killed feral hogs. Additionally, workers in deer processing plants, that also process feral swine, have an increased risk of exposure to *Brucella suis* organisms. South Carolina currently has six combination deer and feral swine processing plants. This spring, SC DHEC received report of a confirmed Brucellosis case in an individual, who contracted the disease through the processing of feral hogs at such a facility. Processors of feral swine should take precautions to wear protective clothing, gloves, and masks during this activity to avoid infection with *Brucella suis* (CDC, 2009a).

**Resources for More Information**. Multiple resources are available for further information on human

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# Brucellosis

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Brucellosis. The *Control of Communicable Diseases Manual, 19th ed*. (Heymann, 2008), the 2009 Redbook (AAP, 2009), and *Principles and Practice of Infectious Diseases, 6th ed*. (Mandell, 2005), each contain informative sections on Brucellosis.

CDC webpages on Brucellosis are accessible at: http://www.cdc.gov/ncidod/dbmd/diseaseinfo/brucellosis_g.htm. Several issues of the *Morbidity and Mortality Weekly Report* (CDC, 2006, 2009a) have addressed Brucellosis, including feral swine transmission to processors and laboratory-acquired disease.

The *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2009* (CDC, 2009b), published by the National Association of State Public Health Veterinarians, describes the potential transfer of Brucellosis and other zoonoses to humans.

The US Department of Agriculture (USDA) has published information for farmers and hunters on *Brucella suis* in feral swine (USDA, 2005). All of the web-based resources listed above are linked from the reference list.

**Reporting.** In South Carolina, Brucellosis is urgently reportable; therefore, local health departments should be notified of cases within 24 hours of diagnosis.

### References & Resources


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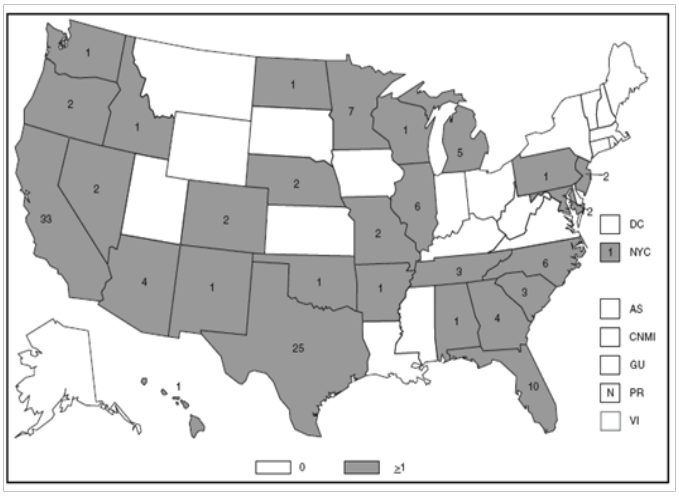
**Brucellosis. Number of reported [human] cases, — United States and U.S. territories, 2007**




The incidence of brucellosis in the United States has been increasing slightly in recent years. Although brucellosis in U.S. cattle is in the final stages of eradication, the disease persists in feral swine, elk, and bison, increasing the risk of transmission to hunters while cleaning and dressing these animals. Reports of human brucellosis cases are more frequent along the southern U.S. border, as the disease remains endemic in Mexico. Consumption of unpasteurized milk products, including soft cheeses from regions where brucellosis is common in cattle, sheep, and goats, presents a significant risk. Outside of the United States, brucellosis remains endemic in a number of areas, including Mexico and the Mediterranean region, again related to consumption of unpasteurized dairy products. (Edited from CDC, 2009c, 2007 data).

# Influenza Season Update

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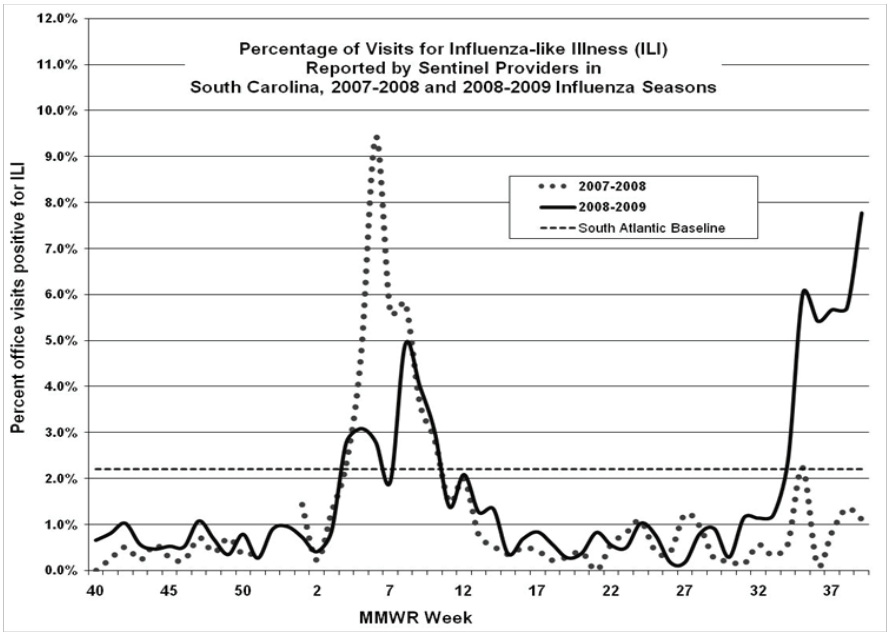
**Influenza-like Illness Surveillance.** The Influenza-Like Illness (ILI) network (ILINet) monitors the number of patients presenting with influenza-like illness. ILI is defined as: fever (>/100 F), cough, and/or a sore throat in the absence of other known cause. Providers voluntarily submit the number of ILIs and total number of patients seen weekly via fax or the internet to the CDC. Participation is encouraged throughout the summer months as well. For the week ending September 19, 2009, SC state ILI% was 5.67%. SC ILI percentage has been at or above the national baseline of 2.4% for the past 4 weeks.




We are currently accepting new ILI providers. If you wish to enroll in ILINet, contact Chasisity Springs at (803) 898-0870.

**Rapid Antigen Tests.** The total number of positive rapid influenza tests are reportable to DHEC within 7 days. Providers should submit their weekly reports to the regional health department by noon on Monday for the previous week. From September 28, 200 to September 26, 2009, there were 39,151 positive rapid flu tests. During the 2007-2008 season, there were 30,235 positive tests from MMWR week 40 ('07) through 38 ('08).

| Positive rapid test results reported to SC DHEC 2007-08 vs. 2008-09 | | |
|---|---|---|
| | **9/30/07-9/27/08** | **9/28/08-9/26/09** |
| **# of positive tests** | 30,235 | 39,151 |
| **Influenza A** | 11,576 | 18,294 |
| **Influenza A/B** | 16,345 | 10,062 |
| **Influenza B** | 1,812 | 6,398 |
| **Unknown** | 502 | 204 |

**Influenza hospitalizations and deaths.** Hospitals are now required to submit the total number of laboratory confirmed influenza hospitalizations and deaths (by age group) to DHEC within 7 days. Reports should be submitted to the regional health departments by noon on Monday for the previous week. Laboratory confirmation may include culture, RT-PCR, DFA, IFA or rapid test.

| Positive confirmatory influenza test results* October 4, 2008 – October 3, 2009 | | |
|---|---|---|
| | **BOL** | **Other labs** |
| **Number of positive specimens** | 1106 | 513 |
| **Pos. specimens by type/subtype** | | |
| **Influenza A** | | |
| **Influenza A (H1)** | 144 (13.0%) | 1 (0.2%) |
| **Influenza A (H3)** | 46 (4.2%) | |
| **Influenza A (unsubtyped)** | 1 (0.1%) | 170 (33.1%) |
| **Influenza A (novel H1N1)** | 776 (70.2%) | 287 (55.9%) |
| **Influenza B** | 137 (13.5%) | 52 (10.1%) |
| **Influenza A (H1) and A (H3)** | 1 (0.1%) | |
| **Influenza A (H3) and B** | 1 (0.1%) | |
| **Unknown** | | 3 (0.6%) |
| ***Culture and/or RT-PCR** | | |

A total of 99 influenza hospitalizations were reported by 47 hospitals during the week of September 27—October 3, 2009. Since September 1, 2009, there have been 272 hospitalizations and 9 deaths (confirmed associated with H1N1 reported to SC DHEC. Death and hospitalization data are updated each week at the DHEC Flu Surveillance website: http://www.scdhec.gov/health/disease/acute/flu.htm, in the weekly FluWatch summary.

**For More Information.** Providers with questions regarding either the viral culture network or ILINet should contact Chasisity Springs at springcb@dhec.sc.gov. Visit the DHEC flu surveillance website at http://www.scdhec.gov/health/disease/acute/flu.htm.

## Year-to-Date Summary of Reportable Conditions ‡
## January 1, 2009 to September 15, 2009

| Reportable Condition | Confirmed | Probable | Total |
|---|---|---|---|
| Animal Bites – PEP recommended | 260 | * | 260 |
| Arboviral Neuroinvasive Disease (includes West Nile Virus) | 0 | 0 | 0 |
| Brucellosis | 2 | 0 | 2 |
| Campylobacter enteriditis | 182 | 3 | 185 |
| Cryptosporidiosis | 43 | 2 | 45 |
| Cyclosporiasis | 1 | * | 1 |
| Ehrlichiosis | 1 | 2 | 3 |
| Enterohemorrhagic E. Coli (includes O157:H7) | 0 | 0 | 0 |
| Giardiasis | 69 | 0 | 69 |
| Haemophilius influenza | 53 | 0 | 53 |
| Hemolytic uremic syndrome | 2 | 0 | 2 |
| Hepatitis A, acute | 40 | * | 40 |
| Hepatitis B, acute | 39 | 2 | 41 |
| Hepatitis B, chronic | 91 | 344 | 435 |
| Hepatitis C, acute | 1 | 1 | 2 |
| Hepatitis C, chronic or past | 2,424 | 30 | 2,454 |
| Influenza, positive virus culture isolates (not Novel) | 190 | * | 190 |
| Influenza, Novel Influenza A Virus Infections (H1N1) | 898 | 4 | 902 |
| Legionellosis | 7 | 1 | 8 |
| Listeriosis | 8 | * | 8 |
| Lyme disease | 12 | 8 | 20 |
| Malaria | 3 | * | 3 |
| Measles (rubeola) | 0 | 0 | 0 |
| Meningitis, aseptic | 65 | * | 65 |
| Meningococcal disease | 11 | 1 | 12 |
| Mumps | 2 | 0 | 2 |
| Pertussis | 170 | 14 | 184 |
| Psittacosis | 0 | 1 | 1 |
| Rocky Mountain Spotted Fever | 3 | 14 | 17 |
| Rubella (includes congenital) | 0 | 0 | 0 |
| Salmonellosis | 623 | 8 | 631 |
| Shigellosis | 91 | 2 | 93 |
| Staphylococcus aureus, vancomycin-resistant (VRSA/VISA) | 0 | * | 0 |
| Streptococcus group A, invasive disease | 61 | * | 61 |
| Streptococcus group B, age < 90 days | 32 | * | 32 |
| Streptococcus pneumoniae, invasive | 342 | * | 342 |
| Varicella (only outbreak associated or hospitalized cases are reportable) | 77 | 10 | 87 |
| Vibrio infections (non-cholera) | 11 | 1 | 12 |
| Yersiniosis | 8 | 0 | 8 |

‡ *To save space, several conditions with zero reported cases in 2009 were omitted from this list.*
* *Probable cases status is not allowed for this condition.*

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## FOR DISEASE REPORTING

For immediately reportable conditions, call your local county health department or, for after hours, call 1-888-847-0902. Routine reports may be phoned in to your local health department or mailed on a completed DHEC DISEASE REPORTING CARD (DHEC 1129.) Local county health department numbers are listed on the Official List of Reportable Conditions.
For a copy of the current Official List of Reportable Conditions, call 803-898-0861 or visit www.scdhec.gov/health/disease.index.htm.

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