Epi Notes
Disease Prevention and Epidemiology Newsletter
South Carolina Department of Health and Environmental Control

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Changes to the SC List of Reportable Conditions for 2010

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As authorized by South Carolina Statute #44-20-10 and Regulation #61-20, the S.C. Department of Health and Environmental Control (DHEC) updates the list of Reportable Conditions in January of each year. Revisions to the list of reportable conditions are based on many factors, including: (1) the need for DHEC to conduct surveillance on new conditions or to increase surveillance on certain existing conditions in order to protect the health of the public and (2) changes in reporting requirements from the U.S. Centers for Disease Control and Prevention (CDC).

The following revisions have been made to the 2009 List of Reportable Conditions:

New for 2010

- Influenza hospitalizations (aggregate report of totals)
- Influenza laboratory confirmed cases by RT-PCR, DFA, and IFA
- Names of organisms have been added for some conditions
- Rabies post-exposure prophylaxis, when recommended, has been added.

Revisions to the List of Reportable Conditions

- Rabies (human) has been moved to immediately reportable by phone.
- Influenza, positive virus culture isolates has been reworded to "Influenza, lab-confirmed cases (culture, RT-PCR, DFA, IFA)".
- Influenza A, avian or other novel has been updated to read "Influenza A, avian or other novel (not H1, H3, or 2009 H1N1)".
- The footnote, "report weekly only total number of positive results; individual case reporting is not

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Are you using 2009 H1N1 Live Attenuated Influenza Vaccine (LAIV) in your Practice?

Riyadh D. Muhammad, MD, MPH, Medical Epidemiologist
Division of Acute Disease Epidemiology

Influenza A (H1N1) 2009 vaccines first became available in South Carolina in October 2009. Then and now, much of the H1N1 vaccine supply has been the intranasal formulation, LAIV (MedImmune). Since H1N1 vaccine supplies have been increasing slowly, it is important for medical providers to administer LAIV to as many appropriate population groups as possible (Box 1). **Using LAIV in your practice would allow more of your patients to be protected from influenza.** Each year, influenza causes approximately 36,000 deaths in the United States[1]. This year, the H1N1 pandemic has led to higher than normal flu activity, with younger age groups more severely affected than is seen in typical flu seasons[2].

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Changes to the SC List of Reportable Conditions for 2010

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necessary" has been removed. A note has been added next to influenza hospitalizations and positive rapid flu tests that reads "aggregate report of totals."

- Footnote (7) has been clarified. It now indicates that, for designated conditions, labs are requested to submit isolates, broths, and serum to the DHEC Bureau of Laboratories for confirmatory testing or genotyping.
- A new footnote has been added: (11) to indicate that, for influenza deaths and hospitalizations, only lab-confirmed should be reported; the footnote also clarifies for which tests results are reportable. The form" SC Laboratory Confirmed Influenza Hospitalizations and Death Summary Report (for Hospital Use)" should be used to submit this information to regional public health offices. See influenza reporting article, page 3 of this edition of the *Epi Notes*, for further details.

South Carolina 2010 Laboratory Reporting List

Adapted from the South Carolina 2010 List of Reportable Conditions

South Carolina Law §44-29-10 and Regulation §61-20 require reporting of conditions on this list to the local public health department.
South Carolina Law §44-53-1380 requires reporting of all blood lead values in children under 6 years of age by laboratories.
HIPAA: Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities for the purpose of preventing or controlling disease. (HIPAA 45 CFR §164.512)

IMMEDIATELY REPORTABLE BY PHONE All suspected and confirmed cases, including preliminary* laboratory results	URGENTLY REPORTABLE WITHIN 24 HOURS BY PHONE All suspected and confirmed cases	REPORT WITHIN 7 DAYS
☣ **Any outbreak, unusual disease, or cluster of cases (1)** ☣ **Any potential biological, chemical, or terrorist event (including exposures to toxins such as ricin)**	**PARASITIC** *Plasmodium* *Trichinella*	**PARASITIC** *Cryptosporidium* *Cyclospora* *Giardia*
VIRAL Influenza A, avian or novel (not H1, H3 or 2009 H1N1) Measles (Rubeola) Poliovirus Rabies virus (human) SARS associated Coronavirus (7) ☣ Variola major (Smallpox) ☣ Viral Hemorrhagic Fever agents (e.g., Ebola, Lassa, Marburg viruses)	**VIRAL** Arboviral Agents (e.g., Eastern Equine Encephalitis (EEE), LaCrosse (LAC), St. Louis Encephalitis (SLE), West Nile Virus (WNV)) (7) Dengue (*Flavivirus*) Hantavirus Hepatitis A, acute (IgM Ab + only) Hepatitis B, acute (IgM core Ab + only) Mumps virus Rubella Yellow Fever (*Flavivirus*)	**VIRAL** Hepatitis B, all positive tests Hepatitis C, D, E, all positive tests HIV-1 or HIV-2 infection (2) HIV CD4 co receptor HIV CD4 T-lymphocyte count/percentage – all results (2) HIV HLA-B5701 HIV subtype, genotype, and phenotype HIV viral loads – all results (2) Influenza • Deaths (all ages) (10) • Hospitalizations (aggregate report of totals) (10) • Lab confirmed (culture, RT-PCR, DFA, IFA) • Positive rapid flu test (aggregate report of totals) Varicella (6)
BACTERIAL ☣ *Bacillus anthracis* (7) ☣ *Clostridium botulinum or Botulinum toxin* ☣ *Francisella tularensis* (7) *Neisseria meningitidis*, invasive (4) (7) (9) ☣ *Yersinia pestis* (7)	**BACTERIAL** *Bordetella pertussis* ☣ *Brucella* (7) ☣ *Burkholderia mallei* (7) ☣ *Burkholderia pseudomallei* (7) *Corynebacterium diphtheriae* (7) ☣ *Coxiella burnetii* *Escherichia coli*, shiga toxin – producing (STEC) including O157:H7 (7) *Haemophilus influenzae*, all types, invasive (4) (7) *Mycobacterium tuberculosis* (7) ☣ *Rickettsia prowazekii* *Salmonella typhi* (7) *Staphylococcus aureus*, vancomycin intermediate / resistant (VISA/VRSA) (7) *Treponema pallidum (Darkfield exam positive)* *Vibrio* -all, including V. *cholerae* O1 and O139 (7)	**BACTERIAL** *Anaplasma phagocytophilium* *Borrelia burgdorferi* *Campylobacter* ☣ *Chlamydia psittaci* *Chlamydia trachomatis*, genital site *Clostridium tetani* *Ehrlichia* *Haemophilus ducreyi* *Legionella* (7) *Leptospira* *Listeria* (7) *Mycobacterium leprae* *Neisseria gonorrhoeae* *Rickettsia rickettsii* (Rocky Mountain Spotted Fever) *Salmonella* (7) *Shigella* (7) *Staphylococcus aureus*, Methicillin resistant (MRSA) – (Bloodstream infections) *Streptococcus* group A, invasive disease (4) *Streptococcus* group B, age < 90 days *Streptococcus pneumoniae*, invasive, (4), include antibiotic resistance patterns (3) Syphilis, positive serologic test *Yersinia*, not *pestis*
		OTHER Lead poisoning (5) Lead tests, all results (ages <6) Pesticide poisoning

☣ **Potential agent of bioterrorism**

1. Outbreak: An excess number of cases or syndromes over the expected occurrence of disease within a geographic area or population group.
2. Report HIV or AIDS when serum, urine, or oral fluid specimen is positive by: (a) confirmatory test (e.g. Western Blot), or (b) an HIV detection test (e.g., PCR nucleic acid test, including viral load), or (c) clinical diagnosis of a case of HIV or AIDS. All reactive rapid HIV test results must be reported to DHEC. All HIV viral load and CD4 test results must be reported by labs regardless of results.
3. Antibiotic resistant organisms: resistant pneumococcus - MIC > 2µg/ml of penicillin G (or Oxacillin disc zone < 19mm) or resistance to any single drug accepted as effective treatment. The definition of resistance may differ between laboratories by test methods used to determine susceptibility. Reports should specify the site from which the isolate was obtained and the drug susceptibility profile.
4. Invasive disease = isolated from normally sterile site: blood, bone, CSF, joint, pericardial, peritoneal or pleural fluid, protected bronchial sampling, or from lung aspirate/biopsy, necrotizing fasciitis, and cellulitis only if isolate is from a tissue biopsy. Always specify site of isolate.
5. Report serum lead level >10 µg/dL for children under 18 years of age and > 25 µg/dL for persons 18 years of age or older.
6. An outbreak of Varicella is defined as 5 or more cases within 8 weeks in a common setting, such as school, childcare or institutional setting.
7. Labs are requested to submit these isolates and positive serologies to the DHEC Bureau of Laboratories for confirmatory testing or genotyping.
8. Acute meningeal symptoms, fever, CSF pleocytosis, sterile culture. Consult DHEC in outbreaks to submit specimens to lab for virus identification.
9. Report Gram-negative diplococci in blood or CSF.
10. Report lab-confirmed only. Laboratory confirmation includes culture, RT-PCR, DFA, IFA, or rapid test. For deaths, also includes autopsy results consistent with influenza.

* Preliminary results are defined as gram stain results that may be indicative of an immediately reportable condition.

- A new footnote has been added: (12) to indicate that rabies post-exposure prophylaxis should be reported <u>when recommended</u> by a physician.
- Under "how to report", 4. **HIV and AIDS**, STD/HIV Surveillance Division has been changed to Division of Surveillance and Technical Support.

Revisions to the 2010 Laboratory Reporting List

- Rabies virus (human) has been moved to immediately reportable by phone
- Influenza, positive virus culture isolates has been changed (reworded) to lab-confirmed cases (culture, RT-PCR, DFA, IFA).
- Influenza A, avian or other novel has been updated to read "influenza A, avian or other novel (not H1, H3, or 2009 H1N1)".
- The footnote, "report weekly only total number of positive results; individual case reporting is not necessary" has been removed. A note has been added next to influenza hospitalizations and positive rapid flu tests that says (aggregate report of totals).
- A new footnote has been added: (10) to indicate that, for influenza hospitalizations and deaths, only lab-confirmed cases should be reported; it clarifies for which tests results are reportable.
- Under "how to report", 4. **HIV and AIDS**, STD/HIV Surveillance Division has been changed to Division of Surveillance and Technical Support.

Revisions to the Disease Reporting Card

- Section has been added to include the species and date if rabies post exposure prophylaxis (PEP) is recommended

Accessing the New Forms and Posters

The above changes may be found:

- On the DHEC Web site, linked from the Bureau of Disease Control page: http://www.scdhec.gov/health/disease/index.htm,
- On the 2010 DHEC Disease Reporting Card (color is yellow for 2010), and
- On the 2010 List of Reportable Conditions poster or the 2010 Laboratory List of Reportable Conditions.

Both the Disease Reporting Cards and the posters (sizes 8 by 11 inches and 12 by 24 inches) are available from the DHEC regional public health departments or from the DHEC Division of Acute Disease Epidemiology in Columbia.

Changes in the 2010 List of Reportable Conditions: Influenza

Chasisity Brown Springs, MSPH, Influenza Epidemiologist
Division of Acute Disease Epidemiology

The SC 2010 List of Reportable Conditions has been updated to make influenza hospitalizations reportable, to clarify which results are valid for reporting deaths and hospitalizations, and to include laboratory confirmation by RT-PCR, DFA, and IFA. On August 28, 2009, a Health Advisory was sent out informing recipients that aggregate totals of influenza hospitalizations were to be reported to DHEC (review the Health Advisory here: http://www.scdhec.gov/health/disease/han/docs/10181-DAD-08-28-09-H1N1.pdf).

Beginning in 2010, influenza hospitalizations (aggregate report of totals) have been added to the List of Reportable Conditions. Total numbers of influenza hospitalizations by age group should be reported weekly on Monday by hospitals to the regional health department using the SC laboratory confirmed influenza hospitalization and mortality summary report worksheet (this page or see http://www.scdhec.gov/health/disease/han/docs/10181-DAD-08-28-09-H1N1.pdf). Hospitals should also use this worksheet to report total numbers of influenza deaths by age group at the same time that they report hospitalizations. However, this worksheet does not take the place of name-based reporting of influenza deaths.

On the 2010 list of reportable conditions, both influenza deaths and hospitalizations are accompanied by a footnote (11) which states, "Report lab-confirmed only. Laboratory confirmation includes culture, RT-PCR, DFA, IFA, or rapid test. For deaths, confirmation also includes autopsy results consistent with influenza."

For the 2010 list, the verbiage "influenza, positive virus culture isolates" has been updated to include additional laboratory tests. The condition is now listed as "lab-confirmed cases (culture, RT-PCR, DFA, IFA)".

The footnote (#) for rapid tests has been removed. There is a note next to positive rapid flu tests within the text of the list that says, "aggregate report of totals".

Influenza conditions now appear on the list as follows:

- ♦Deaths (all ages) (11 = lab confirmed only)
- ♦Hospitalizations (aggregate report of totals) (11 = lab confirmed only)
- ♦Lab-confirmed cases (culture, RT-PCR, DFA, IFA)
- ♦Positive rapid flu tests (aggregate report of totals)

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SC laboratory confirmed influenza hospitalization and death summary report
(For Hospital Use)

Reporting hospital: _____

County: _____

Date of report: ____/____/____

Reporting week: ____/____/____ - ____/____/____ (Sunday-Saturday)

Contact name: _____

Contact telephone: _____

	Weekly numbers by age group	
Number of persons hospitalized with laboratory confirmed influenza	0-4	
	5-18	
	19-24	
	25-49	
	50-64	
	65+	
	Unknown	
	TOTAL	
Number of persons who died from laboratory confirmed influenza	0-4	
	5-18	
	19-24	
	25-49	
	50-64	
	65+	
	Unknown	
	TOTAL	

Complete this form and fax to the Regional Health Department even if there were no influenza hospitalizations or deaths in the preceding week. The report should be sent by noon each Monday.

South Carolina 2010 List of Reportable Conditions

Attention: Health Care Facilities, Physicians, and Laboratories

South Carolina Law §44-29-10 and Regulation §61-20 require reporting of conditions on this list to the local public health department.
South Carolina Law §44-53-1380 requires reporting by laboratories of all blood lead values in children under 6 years of age.
HIPAA: Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities for the purpose of preventing or controlling disease. (HIPAA 45 CFR §164.512)

IMMEDIATELY REPORTABLE BY PHONE

All suspected and confirmed cases, including preliminary clinical and laboratory results

- ☣ **Any outbreak, unusual disease, or cluster of cases (1)**
- ☣ **Any potential biological, chemical or terrorist event (including exposures to toxins such as ricin)**
- Animal (mammal) bites
- ☣ Anthrax (7) *(Bacillus anthracis)*
- ☣ Botulism *(Clostridium botulinum or botulinum toxin)*
- ☣ Foodborne outbreak - unusual cluster
- Influenza A, avian or other novel (not H1, H3, or 2009 H1N1)
- Measles (rubeola)
- Meningococcal disease (7) (9)
- ☣ Plague (7) *(Yersinia pestis)*
- Poliomyelitis, Paralytic and Nonparalytic
- Rabies (human)
- SARS - Severe Acute Respiratory Syndrome (7)
- ☣ Smallpox (Variola)
- ☣ Viral Hemorrhagic Fever (Ebola, Lassa, Marburg Viruses)

URGENTLY REPORTABLE

Within 24 hours by phone

All suspected and confirmed cases, including preliminary clinical and laboratory results

- Arboviral Neuroinvasive & Non-Neuroinvasive Disease (acute infection, acute flaccid paralysis, or atypical Guillain-Barré Syndrome): Eastern Equine Encephalitis, LaCrosse, St. Louis Encephalitis, West Nile Virus (7)
- ☣ Brucellosis (7)
- Dengue (*Flavivirus)*
- Diphtheria (7)
- *E. coli*, shiga toxin - producing (STEC) (7)
- *E. coli* O157:H7 (7)
- ☣ Glanders *(Burkholderia mallei)* (7)
- *Haemophilus influenzae*, all types, invasive disease (4) (7)
- Hantavirus
- Hemolytic uremic syndrome (HUS) (10)
- Hepatitis A, acute (IgM Ab + only)
- Hepatitis B, acute (IgM core Ab + only)
- ☣ Melioidosis *(Burkholderia pseudomallei)* (7)
- Mumps
- Pertussis
- ☣ Q fever *(Coxiella burnetii)*
- Rubella (includes congenital)
- *Staphylococcus aureus*, vancomycin-resistant or intermediate (VRSA/VISA) (7)
- Syphilis, congenital
- Syphilis, primary or secondary (lesion or rash)
- Trichinosis
- Tuberculosis (7)
- ☣ Tularemia
- Typhoid fever *(Salmonella typhi)* (7)
- ☣ Typhus, epidemic *(Rickettsia prowazekii)*
- Vibrio, all types, including *Vibrio cholerae* O1 and O139 (7)
- Yellow Fever *(Flavivirus)*

REPORT WITHIN 7 DAYS

- AIDS (2)
- Campylobacteriosis
- Chancroid *(Haemophilus ducreyi)*
- *Chlamydia trachomatis*, genital site (L)
- Creutzfeldt-Jakob Disease (Age < 55 years)
- Cryptosporidiosis
- Cyclosporiasis
- Ehrlichiosis / Anaplasmosis *(Ehrlichia* species / *Anaplasma phagocytophilum)*
- Giardiasis
- Gonorrhea
- Hepatitis B, chronic
- Hepatitis B Surface Antigen + (HBsAg +) with each pregnancy
- Hepatitis C, D, E
- HIV-1 or HIV-2 infection (2)
- HIV CD4 co-receptor (L)
- HIV CD4 T-lymphocyte count/percentage - all results (L) (2)
- HIV HLA-B5701 (L)
- HIV subtype, genotype, and phenotype (L)
- HIV viral load - all results (L) (2)
- Influenza
  - Deaths (all ages) (11)
  - Hospitalizations (aggregate report of totals) (11)
  - Lab-confirmed cases (culture, RT-PCR, DFA, IFA)
  - Positive rapid flu tests (aggregate report of totals)
- Lead poisoning (elevated blood lead levels, all ages) (5)
- Lead tests, all (age <6) (L)
- Legionellosis (7)
- Leprosy (Hansen's Disease)
- Leptospirosis
- Listeriosis (7)
- Lyme disease *(Borrelia burgdorferi)*
- Lymphogranuloma venereum
- Malaria *(Plasmodium* species)
- Meningitis, aseptic (8)
- Pesticide poisoning
- ☣ Psittacosis *(Chlamydophila psittaci)*
- Rabies Post Exposure Prophylaxis (recommended) (12)
- Rocky Mountain Spotted Fever *(Rickettsia rickettsii)*
- Salmonellosis (7)
- Shigellosis (7)
- *Staphylococcus aureus*, Methicillin resistant (MRSA) - (Bloodstream infections) (L)
- Streptococcus group A, invasive disease (4)
- Streptococcus group B, age < 90 days
- *Streptococcus pneumoniae*, invasive, (4), (include antibiotic resistance patterns) (3)
- Syphilis, latent or tertiary *(Treponema pallidum)*
- Syphilis, positive serologic test
- Tetanus
- Toxic Shock (specify staphylococcal or streptococcal)
- Varicella (outbreaks and individual cases resulting in death or hospitalization) (6)
- Yersiniosis *(Yersinia*, not pestis*)*

☣ **Potential agent of bioterrorism**

(L) Only Labs required to report.

1. Outbreak: An excess number of cases or syndromes over the expected occurrence of disease within a geographic area or population group.
2. Report HIV or AIDS when serum, urine, or oral fluid specimen is positive by: (a) confirmatory test (e.g., Western Blot), or (b) an HIV detection test (e.g., PCR nucleic acid test, including viral load) or (c) clinical diagnosis of a case of HIV or AIDS. All reactive rapid HIV test results must be reported to DHEC. All HIV viral load and CD4 test results must be reported by labs regardless of results.
3. Antibiotic resistant organisms: resistant pneumococcus - MIC ≥ 2µg/ml of penicillin G (or Oxacillin disc zone ≤ 19mm) or resistance to any single drug accepted as effective treatment. The definition of resistance may differ between laboratories by test methods used to determine susceptibility. Reports should specify the site from which the isolate was obtained and the drug susceptibility profile.
4. Invasive disease = isolated from normally sterile site: blood, bone, CSF, joint, pericardial, peritoneal, or pleural fluid, protected bronchial sampling or from lung aspirate/biopsy, necrotizing fasciitis, and cellulitis only if isolate is from a tissue biopsy. Always specify site of isolate.
5. Report serum lead levels ≥10 µg/dL for children under 18 years of age and ≥ 25 µg/dL for persons 18 years or older.
6. An outbreak of Varicella is defined as 5 or more cases within 6 weeks in a common setting, such as school, childcare, or other institutional setting.
7. Labs are requested to submit these isolates, broths, and serum to the DHEC Bureau of Laboratories for confirmatory testing or genotyping.
8. Acute meningeal symptoms, fever, CSF pleocytosis, sterile culture. Consult DHEC in outbreaks to submit specimens to lab for virus identification.
9. Report Gram-negative diplococci in blood or CSF.
10. HUS, with or without gastroenteritis: Triad of acute renal failure, thrombocytopenia, and microangiopathic hemolytic anemia.
11. Report lab-confirmed only. Laboratory confirmation includes culture, RT-PCR, DFA, IFA, or rapid test. For deaths, also includes autopsy results consistent with influenza.
12. Rabies post exposure prophylaxis should be reported when a physician recommends it.

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South Carolina 2010 List of Reportable Conditions

How To Report

Submit reports by **one** of the following methods:

1. **Immediately Reportable Conditions**
   - M-F, 8:30-5 PM: Call the regional public health office. See list below.
   - Nights, weekends, and holidays: Call the regional public health office night/ weekend phone / pager number (see list below), or the statewide DHEC emergency contact number (1-888-847-0902).
2. **Urgently Reportable Conditions:**
   - Call the regional public health office within 24 hours. See list below.
3. **Conditions Reportable Within 7 Days:**
   - Call the regional public health office, or
   - Complete the DHEC 1129 Disease Reporting Card and mail in an envelope marked confidential to the regional public health office (see list below), or
   - Submit an electronic morbidity report via DHEC's web-based reporting system. To learn more, call 1-800-917-2093.
4. **HIV, AIDS, and STDs (excluding Hepatitis):** To report these conditions: call 1-800-277-0873 or (803) 898-0758; or submit electronically via DHEC's electronic reporting system (call 1-800-917-2093 to learn more); or submit a DHEC 1129 Disease Reporting Card or appropriate CDC Case Report Form in a confidential envelope to:

   Division of Surveillance & Technical Support, Mills/Jarrett Complex
   Box 101106, Columbia, SC 29211.

What To Report

- Patient's name
- Patient's complete address, phone, date of birth, race, sex, county, social security number
- Physician's name and phone number
- Name, institution, and phone number of person reporting
- Disease or condition
- Date of diagnosis
- Symptoms
- Date of onset of symptoms
- Date of report
- Lab results, specimen site, collection date
- If female, pregnancy status
- Status: In daycare or a food-handler

Regional Public Health Offices

Mail or call reports to the Epidemiology Office in each Public Health Region.

Region I
Anderson, Oconee
220 McGee Road
Anderson, SC 29625
Phone: (864) 260-4358
Fax: (864) 260-5623
Nights / Weekends: 1-866-298-4442

Abbeville, Edgefield, Greenwood, Laurens, McCormick, Saluda
1736 S. Main Street
Greenwood, SC 29646
Phone: (864) 942-3600
Fax: (864) 942-3690
Nights / Weekends: 1-800-420-1915

Region 2
Greenville, Pickens
PO Box 2507
200 University Ridge
Greenville, SC 29602-2507
Phone: (864) 282-4139
Fax: (864) 282-4373
Nights / Weekends: 1-800-993-1186

Cherokee, Spartanburg, Union
PO Box 4217
151 E. Wood Street
Spartanburg, SC 29305-4217
Phone: (864) 596-2227, x - 210
Fax: (864) 596-3443
Nights / Weekends: 1-800-993-1186

Region 3
Fairfield, Lexington, Newberry, Richland
2000 Hampton Street
Columbia, SC 29204
Phone: (803) 576-2749
Fax: (803) 576-2993
Nights / Weekends: 1-888-554-9915

Region 3 (continued)
Chester, Lancaster, York
PO Box 817
1833 Pageland Highway
Lancaster, SC 29720
Phone: (803) 286-9948
Fax: (803) 286-5418
Nights / Weekends: 1-866-867-3886

Region 4
Chesterfield, Darlington, Dillon, Florence, Marlboro, Marion
145 E. Cheves Street
Florence, SC 29506
Phone: (843) 661-4830
Fax: (843) 661-4859
Nights / Weekends: (843) 660-8145

Clarendon, Kershaw, Lee, Sumter
PO Box 1628
105 North Magnolia Street
Sumter, SC 29150
Phone: (803) 773-5511
Fax: (803) 775-9941
Nights/Weekends: 1-877-831-4647

Region 5
Bamberg, Calhoun, Orangeburg
PO Box 1126
1550 Carolina Avenue
Orangeburg, SC 29116
Phone: (803) 533-7199
Fax: (803) 533-7134
Nights / Weekends: 1-800-614-1519

Aiken, Allendale, Barnwell
1680 Richland Avenue W., Suite 40
Aiken, SC 29801
Phone: (803) 642-1618
Fax: (803) 643-8386
Nights / Weekends: 1-800-614-1519

Region 6
Georgetown, Horry, Williamsburg
1931 Industrial Park Road
Conway, SC 29526-5482
Phone: (843) 915-8804
Fax: (843) 365-3153
Nights/Weekends: (843) 381-6710

Region 7
Berkeley, Charleston, Dorchester
4050 Bridge View Drive, Suite 600
N. Charleston, SC 29405
Phone: (843) 953-0060
Fax: (843) 953-0051
Nights / Weekends: (843) 219-8470

Region 8
Beaufort, Colleton, Hampton, Jasper
219 S. Lemacks Street
Walterboro, SC 29488
Phone: (843) 525-5910
Fax: (843) 549-6845
Nights / Weekends: 1-843-441-1091

DHEC Bureau of Disease Control
Division of Acute Disease Epidemiology
1751 Calhoun Street
Box 101106
Columbia, SC 29211
Phone: (803) 898-0861
Fax: (803) 898-0897
Nights / Weekends: 1-888-847-0902

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South Carolina Department of Health and Environmental Control

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Changes to the SC DHEC Disease Reporting Card for 2010

2010 SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL DISEASE REPORTING CARD

Disease reporting is required by SC Code of Laws Section 44-29-10, 44-53-1380, 44-1-110, and 44-1-140 and Regulation 61-20. **See other side for list of reportable diseases.**

Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities for the purpose of preventing or controlling disease. (45 CFR §164.512)

Patient Name Last First Middle	**Date of Birth** Month / Day /Year	**Patient Phone Numbers**	**Race** ☐ Asian ☐ Black ☐ White ☐ Am Ind ☐ Pac Isl ☐ Unk	**Ethnicity** ☐ Unk ☐ Hispanic or Latino ☐ Not Hispanic or Latino	**Sex** ☐ Male ☐ Unknown ☐ Female
Patient Address / City / ZIP Code		**County**		**Patient ID or SSN**	**If Female, Pregnant?** ☐ Yes ☐ No ☐ Unk
Disease (include stage, if appropriate) **Date of Diagnosis/Bite**	**Symptoms Date of Sx Onset _____** **If Lyme or RMSF, Rash?** ☐ Yes ☐ No ☐ Unk	**For Rabies PEP** Species: _____ Date PEP Recommended:		**For STD Reporting** Treated: ☐ Yes ☐ No ☐ Unk Treatment Date: _____ Rx: _____	**Patient Status** ☐ In Childcare ☐ Food Handler ☐ Unknown
Laboratory Results **Date** **Specimen Source (blood, stool, etc.)**	**Hepatitis** Jaundice ☐ Yes ☐ No AST: _____ ALT: _____ Date: _____	**Hepatitis A Results** Hepatitis A antibody (Acute IgM ant… ☐ Neg ☐ Unk **Hepatitis C Results** Hepatitis C – EIA ☐ Pos … s/co ratio:_____ Hepatitis C – RIBA ☐ Pos … Hepatitis C – PCR ☐ Pos … Hepatitis C – Viral Load:_____		**Hepatitis B Results**	Pos Neg Unk
				Hepatitis B surface Antigen (HBsAg)	☐ ☐ ☐
				Hepatitis B core Antibody IgM (HBcAb-IgM)	☐ ☐ ☐
				Hepatitis B core Antibody Total (HBcAb)	☐ ☐ ☐
				Hepatitis B surface Antibody (HBsAb)	☐ ☐ ☐
				Hepatitis B e Antigen (HBeAg)	☐ ☐ ☐
Responsible Physician & Phone #	**Reporting Lab/Facility, Person & Phone #**	**Date Rep… …ealth Dept.**		**Mail or Call Reports To:**	
For daytime & after-hours phone numbers: www.scdhec.gov/health/disease/docs/reportable_conditions.pdf. For after-hours reporting of immediately reportable conditions, call the state answering service: 1-888-847-0902. For more information, call the DHEC Bureau of Disease Control in Columbia: 803-898-0861 (M-F 8:30-5).		☐ **Send M… …To: (Address)**			
DHEC 1129 (01/2009) DHEC Use Only: County Review Date State Review Date C P S N					

Rabies PEP – If rabies post-exposure prophylaxis (PEP) was recommended following a bite, enter the species of animal and the date that PEP was recommended.

Reporting required by attending physician/designee and laboratory except where lab only (L) reporting is indicated.

Report IMMEDIATELY By Phone

- ☣ Any outbreak, unusual disease, or cluster of cases (1)
- ☣ Any potential biological, chemical or terrorist event (including exposures to toxins such as ricin)
- Animal (mammal) bites
- ☣ Anthrax (7)
- ☣ Botulism
- ☣ Foodborne outbreak - unusual cluster
- Influenza A - avian or novel (not H1, H3, or 2009 H1N1)
- Measles (Rubeola)
- Meningococcal disease (4) (7) (9)
- ☣ Plague (7)
- Poliomyelitis, Paralytic and Nonparalytic
- SARS, Severe Acute Respiratory Syndrome
- ☣ Smallpox
- ☣ Viral Hemorrhagic Fever

Urgently Reportable Within 24 Hours By Phone

- Arboviral Neuroinvasive & Non-Neuroinvasive Disease (acute infection, i.e., acute flaccid paralysis, atypical Guillain- Barré Syndrome); Eastern Equine Encephalitis, LaCrosse, St. Louis Encephalitis, West Nile Virus (7)
- ☣ Brucellosis (7)
- Dengue
- Diphtheria (7)
- *E. coli*, shiga toxin-producing (STEC)
- *E. coli* O157:H7 (7)
- ☣ Glanders *(Burkholderia mallei)* (7)
- Hantavirus
- *Haemophilus influenzae*, all types, invasive disease (4) (7)
- Hemolytic uremic syndrome (HUS)
- Hepatitis A, acute (IgM Ab+ only)
- Hepatitis B, acute (HBcAb-IgM +)
- ☣ Melioidosis *(Burkholderia pseudomallei)* (7)
- Mumps
- Pertussis
- ☣ Q fever *(Coxiella burnetti)*
- Rabies (human)
- Rubella (includes congenital)
- *Staphylococcus aureus*, vancomycin-resistant or intermediate (VRSA/VISA) (7)
- Syphilis, primary or secondary (lesion or rash)
- Syphilis, congenital
- Trichinosis
- Tuberculosis (7)
- ☣ Tularemia
- Typhoid fever *(Salmonella typhi)* (7)
- ☣ Typhus fever, epidemic *(Rickettsia prowazekii)*
- Vibrio - all types, including *V. cholerae* O1 & O139

Report Within 7 Days

- AIDS (2)
- Campylobacteriosis
- Chancroid
- Chlamydia trachomatis, genital site (L)
- Creutzfeldt-Jakob Disease (Age < 55 years)
- Cryptosporidiosis
- Cyclosporiasis
- Ehrlichiosis / Anaplasmosis
- Giardiasis
- Gonorrhea
- Hepatitis B, chronic
- Hepatitis B Surface Antigen+ (HBsAg+) w/ each pregnancy
- Hepatitis C, D, E
- HIV-1 or HIV-2 infection (2)
- HIV CD4 co receptor (L)
- HIV CD4 T-lymphocyte count/percentage - all results (L) (2)
- HIV viral load - all results (L) (2)
- HIV HLA-B5701 (L)
- HIV subtype, genotype, and phenotype (L)
- Influenza
  - Deaths, all ages (11)
  - Hospitalizations (aggregate totals) (11)
  - Lab-confirmed cases (RT-PCR, culture, DFA, IFA)
  - Positive rapid flu tests (aggregate totals)
- Lead tests, all (age < 6) (L)
- Lead poisoning (5)
- Legionellosis (7)
- Leprosy (Hansen's Disease)
- Leptospirosis
- Listeriosis (7)
- Lyme disease
- Lymphogranuloma venereum
- Malaria
- M… …ecific (8)
- …sticide poisoning
- ☣ Psittacosis
- Rabies post-exposure prophylaxis (PEP) recommended (12)
- …ky Mountain Spotted Fever (RMSF)
- Salmonellosis (7)
- Shigellosis (7)
- *Staphylococcus aureus* - Methicillin Resistant (MRSA) Bloodstream infections (L)
- Streptococcus group A, invasive disease (4)
- Streptococcus group B, age < 90 days
- *Streptococcus pneumoniae*, invasive, (4) (include antibiotic resistance patterns) (3)
- Syphilis, latent or tertiary or positive serologic test
- …anus
- …c Shock (specify staph. or strep.)
- …cella (outbreaks and individual cases resulting in death or hospitalization) (6)
- Yersiniosis

☣ Potential Agent of Bioterrorism. (L) Only labs are required to report. For notes 1-12, see complete list of reportable diseases at: www.scdhec.gov/health/disease/docs/reportable_conditions.pdf.

New Reportable Condition: Rabies post-exposure prophylaxis (PEP) recommended (12).

Footnote 12 reads: Rabies post exposure prophylaxis should be reported when a physician recommends it.

Ask Epi: Perspectives on Effectiveness of Influenza Vaccines

Eric R. Brenner, MD, Medical Epidemiologist
Division of Acute Disease Epidemiology

Question: What is known about effectiveness of vaccines against the current pandemic H1N1 influenza strain, and more generally, what is the effectiveness of influenza vaccines and what kind of protection can society really expect from them?

Answer: Issues relating to *vaccine effectiveness* are more commonly discussed in specialized epidemiology journals and the like. Nonetheless, because of the attention focused on pandemic H1N1 influenza since it emerged last April, there has been unusual, though quite natural, interest this year relating to the "effectiveness" of influenza vaccines. In reply to your question, we therefore present here:

i) a short introduction to vaccine effectiveness calculations;
ii) examples of factors that can affect influenza vaccine effectiveness; and
iii) brief perspectives regarding the benefits of influenza vaccination for individual vaccinees as well as for society.

1. Calculating Vaccine Effectiveness. Both the scientific literature and the lay press speak about *vaccine effectiveness* (VE) by means of numbers, usually expressed as a percent. Thus, a basic question about effectiveness might ask: ***"What does it actually mean when we say a vaccine is 75% (or 85% or even 95%) effective?"*** Someone considering the question for the first time might propose as a first reply something like, *"That means the vaccine works 75% of the time."* A somewhat more sophisticated answer might be something along these lines: *"The vaccine can reduce the risk of getting influenza by 75%,"* and this wording could certainly serve as a useful explanation for patients. Both of these intuitive answers are on the right track in an informal way, but we will present here the more formal way in which VE is typically quantified in epidemiological studies.

Many standard references[1,2] express VE through the following formula:

$$VE = 1 - \frac{ARV}{ARU}$$

Where:
ARU = attack rate in the unvaccinated
ARV = attack rate in the vaccinated

Actually (see the worked example below) this calculation of VE will yield a decimal fraction such as. "0.85" which would be fine, except that since VE is more commonly expressed as a percent it is customary to indicate that the result shown above is to be multiplied by 100 so that VE will be expressed as a percent – in this case 85% -- rather than as a decimal. Thus, to convert the decimal to a percent, we add to the formula shown above a final multiplication by 100 so that we have:

$$VE = 1 - \frac{ARV}{ARU} x100$$

Either way, this formula is helpful conceptually because it shows that a formal calculation of VE requires information about the occurrence of disease not only among vaccinated persons, but also among the unvaccinated!

The way the formula works in practice can best be explained by working through an illustrative example, which summarizes influenza season events for a hypothetical cohort of 2000 persons, where:

V+ indicates vaccinated persons	**D+** indicates disease (influenza) occurred
V- indicates unvaccinated persons	**D-** indicates disease (influenza) did not occur

For example, starting with:

	D+	D-	
V+	50		1000

This shows that 50 of the 1000 vaccinated persons in the cohort developed influenza during the flu season. The "attack rate" among these vaccinated (ARV) individuals is calculated as follows:

$$ARV = \frac{50}{1000} = 0.05$$

We then consider what happened to the other 1000 persons in the cohort who did not receive influenza vaccine.

V-	200		1000

This shows that 200 of the 1000 unvaccinated persons in the cohort developed influenza during the flu season. The "attack rate" among the unvaccinated (ARV) can then also be calculated:

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Ask Epi: Perspectives on Efficacy of Influenza Vaccines

(Continued from page 7)

$$ARV = \frac{200}{1000} = 0.20$$

Then, for conceptual clarity, and to use the typical layout commonly used in many epidemiologic studies, we can summarize the experience of both the vaccinated and the unvaccinated in a 2x2 table:

	D+	D-			
V+	50		1000		ARV = 0.05
V-	200		1000		ARU = 0.20
			2000		

Then, applying the VE formula:

$$VE = 1 - \frac{ARV}{ARU} x100 = (1 - \frac{0.05}{0.20}) x100 = (1 - 0.25) x100 = 0.75 x100 = 75\%$$

Note: In this example, the calculation did not require use of the numbers in two cells of the right hand column of the 2x2 table. These numbers would easily have been available by subtraction (e.g., 1000-50 = 950), but are not shown here because they are not used in the VE calculation.

This result can be interpreted several ways. First, we can see that the vaccinated, though they were not totally protected from influenza during the flu season, did have a much lower risk of developing influenza than the unvaccinated. In prose, the numerical line of reasoning might run as follows: "*If the group of 1000 vaccinees had NOT received vaccine, their attack rate would also have been 0.20 (since their risk would then have been identical to that of the unvaccinated), and, accordingly the group would thus have had 200 cases. But, through the benefits of vaccine, the group only experienced 50 cases; and this reduction, from 200 to 50 cases, indeed corresponds to a reduction of 75%*.

Alternatively, this same reduction in cases due to vaccination could be displayed graphically (see figure opposite).

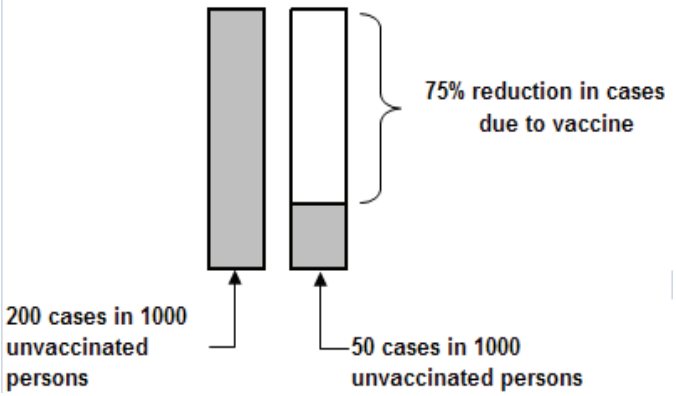
The numerical reasoning and the graphical display are of course equivalent, and just offer complementary explanations of the concept of vaccine effectiveness. Either way, the main point is that vaccine effectiveness is studied and calculated not based solely on what happens to vaccinated persons, but also based on what happens to unvaccinated persons in the same population. In effect then, the concept of VE provides a way to compare the difference between what happens to the two groups. Though VE studies actually come in several *flavors*, even the more "sophisticated" vaccine effectiveness study designs can be understood as variants of the basic approach outlined above.

Note: In observational studies, vaccine effectiveness is typically assessed through either prospective or retrospective cohort studies using very much the type of reasoning and calculation shown above, or through case-control studies[3], though other variant study designs such as the "screening method" [4,5] or "case-cohort" methods[6] are also used. In experimental settings, VE (in that context referred to as "vaccine effectiveness") is assessed through randomized-control trials (RCTs) [7, 8, 9].

2. Effectiveness of Influenza Vaccines. The current USPHS Advisory Committee on Immunization Practice (ACIP) statement on seasonal influenza vaccines[10] contains four pages of summary information about influenza VE trials conducted in recent decades in which VE has been found to range from 20% to 91% (mean of values listed: 60%). At first glance, such a broad range of VE estimates is disconcerting. However, on closer reading, it turns out that much of this variability (see Table 1) depends on a series of factors which, when considered individually or in combination, can quite understandably affect VE.

Thus VE would naturally be expected to be high when vaccinees were healthy young adults, when the year's vaccine virus strains closely matched circulating virus, and where the outcome measured was laboratory confirmed influenza. On the other hand, we would reasonably expect VE to be lower when given to a group of elderly

Figure: Graphical illustration of the concept of vaccine effectiveness



(Continued on page 9)

Ask Epi: Perspectives on Efficacy of Influenza Vaccines

Table 1: Examples of Factors that can variably affect observed effectiveness of influenza virus vaccines*

Factor affecting VE	Column A Tendency towards higher VE	Column B Tendency toward lower VE
1) *Antigenic Fit* between vaccine virus and circulating virus	Good fit	Less good fit
2) Outcome measured in the VE study	Death, hospitalization or pneumonia due to laboratory-proven influenza	Doctor's visits, episodes of ILI
3) Age of vaccinees	Older children, young adults	Very young children and older adults
4) Health status of vaccinees	Generally healthy	Underlying immunologic or chronic disease
5) # doses previously received**	2 doses	1 dose

* The table summarizes relationships between factors and VE which generally but not invariably hold. For example, in some studies some of these (and other) factors push VE results one way while others push them in the opposite direction.

** This applies to children <9 years of age and explains the recommendation that "…children aged 6 months–8 years who have not received vaccination against influenza previously should receive 2 doses of vaccine the first year they are vaccinated." [10] (Note this age group applies to seasonal influenza vaccines, two doses of the H1N1 vaccine are recommended for children through age 9.[11]

(Continued from page 8)

persons with underlying chronic and or immunologic conditions, in a year when there was a poor fit between vaccine virus and circulating strains, and where the outcome measured was occurrence of influenza-like illness (ILI) which of course may be due to viruses other than influenza.

Nonetheless, overall vaccine effectiveness in a given year will be some type of mix or *average* of higher and lower VEs, and it is easy to see that *overall vaccine effectiveness* in a population might be of the order of 70% rather than 90%+ as may be expected with certain other vaccines (e.g., measles vaccine.)

3. Potential impact of influenza vaccines. Influenza can affect a large proportion of the population in any given year, up to 10-20% or more. Therefore, even an influenza vaccine of somewhat modest VE, when applied to such a large number of potential cases, may prevent many more US deaths each year than could a vaccine against another disease such as measles, even though measles VE is in fact higher than influenza VE. Table 2 (page 10) illustrates this line of reasoning with some sample numbers and calculations and comparing the impacts of influenza and measles vaccination on mortality.

4. Summary. While it is true that the effectiveness of influenza vaccine for certain individuals (e.g., the very elderly and/or persons with certain underlying conditions / see Table 1) should not be overestimated, conversely, the potential beneficial impact of influenza vaccines for society as a whole should not be underestimated. Further, when considering these issues, the "indirect benefits" of influenza vaccine should also be considered. That is, vaccinated persons not only benefit from a reduction of their own risk of developing influenza, but as a group they will also be less likely to infect their close contacts in various settings such as work, school, and home. Reducing transmission in these settings offers beneficial impact respectively: (i) for *continuity of business operations*; (ii) for prevention of large-scale school absenteeism and consequent risk of school closures; and (iii) for protection of vulnerable infants.

Epidemiologic studies to evaluate formally the effectiveness of this year's H1N1 vaccine are just now in progress and results may not be available for several weeks or months. Nonetheless, there is every reason to expect that VE for this year's H1N1 vaccine will be similar to what has been observed for many years for routine seasonal influenza vaccines. Thus, whether viewed from the individual or from the broader societal perspective, the value of influenza vaccination remains high and needs to be strongly recommended to our patients and to the public.

(Continued on page 10)

Ask Epi: Perspectives on Efficacy of Influenza Vaccines

Table 2: Schematic Perspective on the Value of Influenza Vaccination*

Consideration	Measles Vaccine	Influenza Vaccine
Vaccine effectiveness	1 dose: ~90% 2 doses: ~95%	~ 70% (~50-90% depending on many factors such as those shown in Table 1)
US Cases per year if no vaccine	~4,000,000 (1 birth cohort)	~30,000,000 (e.g., if 10% of USA population would get influenza)
Case fatality rate	~1/1000	~1/1000
Fatalities per year if no vaccine	~4,000	~40,000
Annual fatalities potentially averted with very high vaccine coverage: assuming only "direct" protection	~ 3,800	~28,000
Annual fatalities potentially averted with high vaccine coverage: taking into account also "indirect" population benefits of vaccination ("herd -immunity")	~4,000	~ 32,000
Purpose of vaccine from individual perspective	Provides high level of protection against measles	Provides good level of protection against influenza
Purpose of vaccination from a societal perspective	Key tool which (except for importations) has allowed for elimination of measles from the USA	Mitigation of impact of influenza: e.g., decrease in morbidity, mortality, school and work days lost, and impact on the health-care system.

* Numbers shown are illustrative, and especially for influenza illustrate expected orders of magnitude. For influenza, expected numbers of cases and deaths would depend on infectiousness and virulence of circulating strains, vaccine coverage, vaccine effectiveness and other factors.

(Continued from page 9)

References:

1. Orenstein WA, Bernier RH, Dondero TJ, Hinman AR, et al. Field evaluation of vaccine effectiveness. Bull World Health Organ. 1985;63(6):1055-68.
2. Orenstein WA, Bernier RH, Hinman AR. Assessing vaccine effectiveness in the field. Further observations. Epidemiol Rev. 1988;10:212-41.
3. Comstock GW. Evaluating vaccination effectiveness and vaccine effectiveness by means of case-control studies. Epidemiol Rev. 1994;16(1):77-89.
4. Farrington CP. Estimation of vaccine effectiveness using the screening method. Int J Epidemiol. 1993 Aug;22(4):742-6.
5. Mary-Krause M, Mary JY, Valleron AJ. Conditions of validation and use of the screening method for vaccine effectiveness evaluation. Rev Epidemiol Sante Publique. 1993;41(2):155-60.
6. CDC. Effectiveness of 2008–09 Trivalent Influenza Vaccine Against 2009 Pandemic Influenza A (H1N1) — [A Case-Cohort Study]. United States, May–June 2009. MMWR November 13, 2009 / Vol. 58 / No. 44
7. Rhorer J, Ambrose CS, Dickinson S et al. J. Effectiveness of live attenuated influenza vaccine in children: A meta-analysis of nine randomized clinical trials. Vaccine. 2009 Feb 11;27(7):1101-10.
8. Beran J, Vesikari T, Wertzova et al. Effectiveness of inactivated split-virus influenza vaccine against culture-confirmed influenza in healthy adults: a prospective, randomized, placebo-controlled trial. J Infect Dis. 2009 Dec 15;200(12):1861-9.
9. Lemaitre M, Meret T, Rothan-Tondeur. Effect of influenza vaccination of nursing home staff on mortality of residents: a cluster-randomized trial. J Am Geriatr Soc. 2009 Sep;57(9):1580-6. Epub 2009 Aug 4.
10. CDC ACIP. Prevention and Control of Seasonal Influenza with Vaccines. MMWR July 31, 2009 / Vol. 58 / No. RR-8.
11. CDC. (2009, October 2). Vaccine Information Statement: 09 H1N1 Inactivated Influenza Vaccine. Retrieved from http://www.cdc.gov/vaccines/pubs/vis/downloads/vis-inact-h1n1.pdf

Are you using LAIV in Your Practice?

(Continued from page 1)

Beginning December 10, 2009, DHEC expanded the recommended groups for H1N1 LAIV to all healthy, non-pregnant persons ages 2 through 49 years, whether or not they are in one of the H1N1 vaccine target groups (Box 2). This will not apply to the inactivated injectable H1N1 vaccines. **Please order (if you are providing the H1N1 vaccine in your practice) or recommend (if you are not providing the H1N1 vaccine in your practice) the H1N1 LAIV to the appropriate patients in your practice**. If you are interested in becoming an H1N1 vaccine provider, please contact the DHEC Immunization Division at 800-277-4687 or immunize@dhec.sc.gov.

Using LAIV in your practice would allow more of your patients to be protected from influenza.

The H1N1 LAIV received full FDA approval on September 15, 2009[3]. **It is not experimental, it has been tested, no short cuts were made to achieve FDA approval, and it is not being used under an emergency status**. The vaccine does not contain adjuvants and is made in exactly the same way and using the same facilities as the seasonal LAIV. H1N1 LAIV is as safe as the injectable vaccine and works well in children and adults[1]. Common side effects of the H1N1 LAIV include runny nose, headache, sore throat, cough, and wheezing.

The H1N1 LAIV contains a live virus that has been weakened. It does not cause influenza in either vaccine recipients or the close contacts of those who have received the vaccine[1]. In a randomized trial, the LAIV virus was found in the nose of only 1 out of 99 children who were childcare center contacts of children vaccinated with LAIV. However, that one child had only URI symptoms and did not develop fever or influenza[4].

(Continued on page 12)

Box 1. Contraindications and Precautions for LAIV Administration

LAIV is approved for use in healthy people 2-49 years of age who are not pregnant.

The effectiveness or safety of LAIV is not known for the following groups and they **should not receive LAIV:**

- Persons who have chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, neurological/neuromuscular, hematological or metabolic disorders (including diabetes), immunosuppression (including immunosuppression caused by medications or by HIV)
- Children 2-4 years of age with wheezing in the past 12 months
- Children or adolescents receiving aspirin or other salicylate therapy
- Pregnant women
- People who have a severe allergy to chicken eggs or who are allergic to any LAIV components
- Persons < 2 years or those ≥50 years

The following are precautions to receiving LAIV:

- Guillain-Barré Syndrome (GBS) within 6 weeks following a previous dose of an influenza vaccine
- Moderate or severe illness with or without fever
- Healthcare providers and others with close contact to certain severely immunosuppressed persons [A,B] should either not receive LAIV or avoid contact with such persons for 7 days after receiving LAIV

Footnotes for Box 1:

A. Immunosuppressed patients who require care in a protective environment (typically defined as a specialized patient-care area with a positive airflow relative to the corridor, high-efficiency particulate air filtration, and frequent air changes), e.g., patients with hematopoietic stem cell transplants.

B. Transmission of the LAIV virus from a recently vaccinated person causing influenza in a contact has not occurred. The reason for avoiding LAIV among healthcare providers (and other close contacts) of certain severely immunocompromised persons is the theoretical risk that the LAIV virus might be transmissible to severely immunosuppressed persons, and cause influenza.

Are you using LAIV in Your Practice?

Box 2: Initial Target Groups for H1N1 Vaccine Administration

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 child care 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.

(Continued from page 11)

H1N1 LAIV can be used to vaccinate healthcare providers. The only precaution to vaccinating healthcare providers with LAIV is for those who care for *certain* severely immunosuppressed patients who are in protective environments (Box 1, footnote A). Otherwise, H1N1 LAIV can be given to any other group of healthcare providers including those who care for pregnant women, neonatal intensive care unit patients, other groups of patients with lesser degrees of immunosuppression (e.g., persons with diabetes, persons with asthma who take corticosteroids, persons who have recently received chemotherapy or radiation but who are not being cared for in a protective environment as previously defined, or persons infected with HIV), and persons in all other groups at high risk for influenza[1].

DHEC encourages providers to take advantage of the available supply of H1N1 LAIV. This vaccine is safe to use for many healthcare providers and their patients and is an effective way to prevent influenza, without the pain of an injection.

Recommended website:

http://www.cdc.gov/h1n1flu/vaccination/vaccine_safety_qa.htm

The H1N1 vaccine is not experimental, it has been tested, no short cuts were made to achieve FDA approval, and it is not being used under an emergency status

References:

1. Centers for Disease Control and Prevention. Prevention and control of seasonal influenza with vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2009. *Morbidity and Mortality Weekly Report, 58*, RR-8. Retrieved from http://www.cdc.gov/mmwr/PDF/rr/rr5808.pdf
2. SC DHEC Flu Watch Report, week ending December 5, 2009. Retrieved from http://www.scdhec.gov/health/disease/acute/docs/200948SCFluWatch.pdf
3. September 15, 2009 Approval Letter: Influenza A (H1N1) 2009 Monovalent Vaccine (MedImmune LLC). Retrieved from http://www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm182429.htm
4. Vesikari T, Karvonen A, Korhonen T, Edelman K, et al. A Randomized, Double-Blind Study of the Safety, Transmissibility and Phenotypic and Genotypic Stability of Cold-Adapted Influenza Virus Vaccine. *Pediatric Infectious Diseases Journal. 2006;25*:590-595.
5. Centers for Disease Control and Prevention. Use of influenza A (H1N1) 2009 monovalent vaccine: Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2009. *Morbidity and Mortality Weekly Report, 58*, RR-10. Retrieved from http://www.cdc.gov/mmwr/PDF/rr/rr5810.pdf

Image Source: www.shotnurse.com

Syndromic Surveillance in South Carolina

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What is syndromic surveillance?

Syndromic surveillance is the systematic, ongoing collection, collation, analysis, and interpretation, in real-time, of existing health data essential for the planning, implementation, and evaluation of public health practice and emergency response. The term "syndromic" applies to surveillance using health-related data that precede a diagnosis. Analysis of these data sources may signal sufficient probability of a case or an outbreak to warrant further public health response.

There are several data sources that are used for syndromic surveillance, which many be categorized into clinical and non-clinical. Clinical data sources include emergency department patient visits, laboratory testing orders, 911 calls, and ambulance dispatch. Unlike traditional surveillance, syndromic surveillance does not use actual diagnoses. For example, symptoms (patient chief complaints) are used for clinical data and presumed symptoms for some non-clinical data (e.g., "sick" or "not sick" for absentee data).

The purpose of syndromic surveillance is to detect outbreaks, whether natural or man-made, earlier. This earlier detection allows for a timelier public health response than would be possible with traditional surveillance. Syndromic surveillance also provides situational awareness during large-scale outbreaks of public health significance. Syndromic surveillance can also be used to monitor sentinel events that may fall under the radar of more traditional surveillance systems.

South Carolina *Aberration Alerting Network (SCAAN)*

The South Carolina Aberration Alerting Network (SCAAN) is a unified syndromic surveillance system for South Carolina that includes data streams from SC hospital emergency department chief-complaint and admissions data, Poison Control Center call data, over-the-counter (OTC) pharmaceutical sales surveillance, and the Center for Disease Control and Prevention (CDC) BioSense biosurveillance system.

For this issue of *Epi Notes*, there will be a focus on the SC hospital emergency department syndromic surveillance. More information on the other segments within the SCAAN system will be available in future issues of Epi-Notes.

SC Hospital Emergency Department Syndromic Surveillance

Data Acquisition

Syndromic surveillance begins with the acquisition of chief complaint data from participating emergency departments. Currently, the Medical University of South Carolina (MUSC), Greenville Hospital System, Self-Regional Healthcare, Roper, St. Francis, and Kershaw Health are sending daily feeds of their emergency department patient chief complaints to DHEC. Several other hospital facilities, such as Laurens County Health Care System, Conway Medical Center, Grand Strand Regional Medical Center, AnMed, Oconee Medical Center, and McLeod Health Systems are all close to "going live" with the SCAAN system.

These daily patient chief complaints are gathered from existing patient information systems and are electronically transferred via a simple and secure file interface to a central state server. This operation generally requires no personnel time after the process for generating and transferring the data file has been established. The daily feeds are received the following morning by DHEC and contain information from the previous day. The chief complaint data are then classified into pre-determined syndromes. Hospital-specific syndromic reports (pdf format) are sent back daily to each hospital and their infection preventionists.

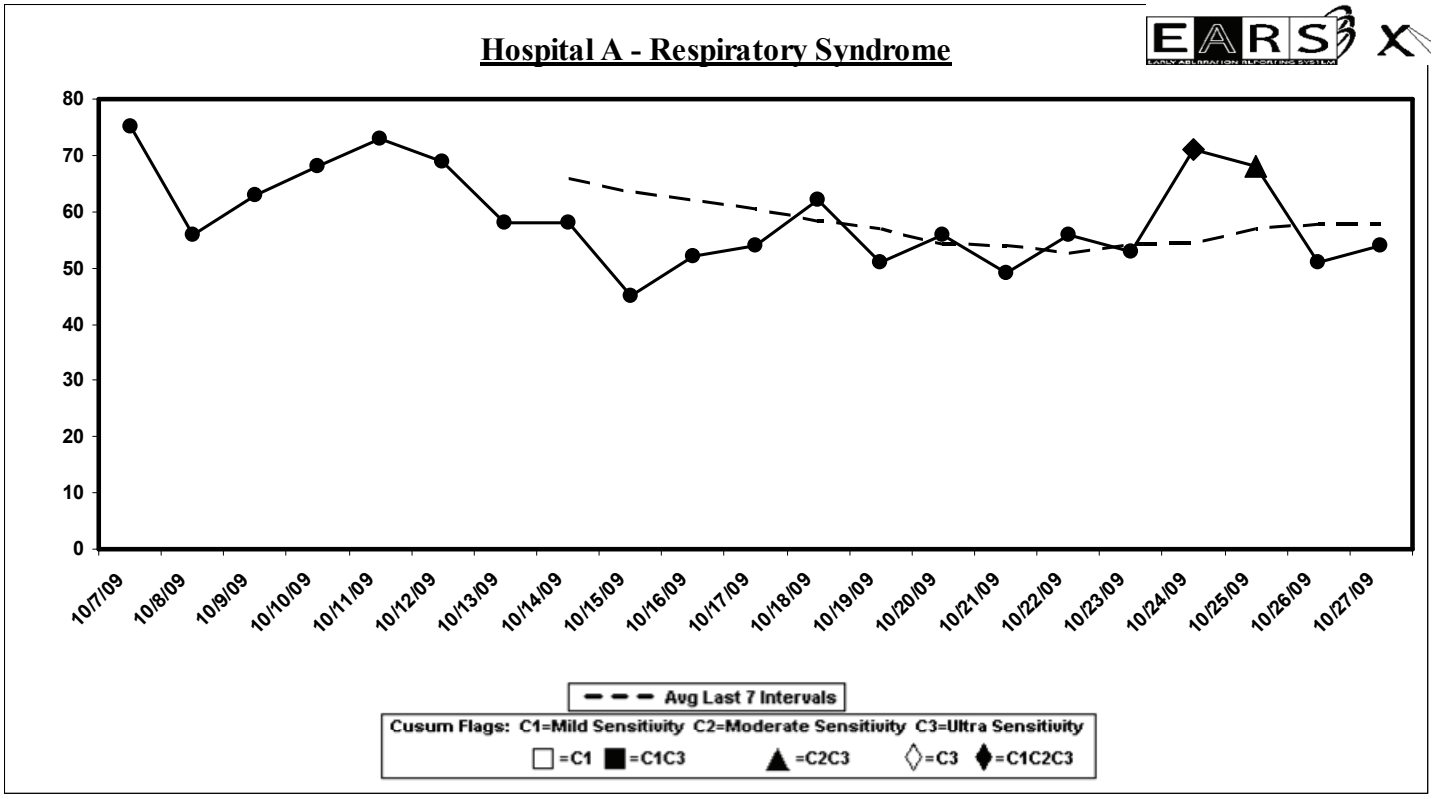
Data Analyses & Interpretation

Early Aberration Reporting System (EARS) methods were developed by the CDC to analyze real-time public health surveillance data without needing historical data. EARS uses a running baseline consisting of the average number of counts for a syndrome from a previous 7-day period and compares current syndrome counts with that previous average; it performs analysis via cumulative sum (CUSUM) methods. For more information on EARS analysis, go to http://www.bt.cdc.gov/surveillance/ears/

Following is a graphical output from the EARS software of the "Respiratory" syndrome category using data from one of our current healthcare providers. During this one-month period, aberrations from the running CUSUM indicated days requiring further investigation. Some examples of patient chief complaints that were included

(Continued on page 14)

Syndromic Surveillance in South Carolina



(Continued from page 13)

in developing the "Respiratory" syndrome category are "difficulty breathing", "chest cold", "pneumonia", "respiratory difficulty", "gasping", "pulmonary", etc. The C1C2C3 flag (diamond-shaped) indicated a sharp increase in the number of emergency room visits due to a respiratory-like illness for that hospital on that day.

Syndromic surveillance occurs prior to diagnosis, therefore, a close working relationship between the data provider and public health for interpretation of aberrations is required. Based upon both local "domain knowledge" (i.e., the healthcare facility) and broader public health awareness of broader issues (i.e., Regional or statewide outbreaks, increased national surveillance) collaboration is paramount.

For example, if multiple aberrations ("flags") occur on multiple days, Public Health would contact the infection preventionist of the healthcare facility providing the data. Together they would work to determine, via casual inquiries or formal investigations, if these flags indicate a real event or a false-positive signal. With additional experience and modifications, the number of false-positive flags will decrease. However, the close working relationship between the healthcare system and public health will always need to be maintained. These relationships are the key to surveillance, both traditional and syndromic.

As with any surveillance system, one must be cognizant of limitations. Questions regarding completeness of data, representativeness, flexibility, etc. are factors to be considered with any surveillance system. Hospital-based chief-complaint data analysis is another "arrow in the quiver" of ways to monitor and respond to events of public health significance. In subsequent issues, we will discuss other non-traditional sources of data.

Getting Started

SC DHEC will provide software free of charge, and will also provide support and assistance in implementing the transfer and analysis of syndromic data. For more information regarding syndromic surveillance in South Carolina and how you can participate, please feel free to contact Himal Dhotre (dhotrehc@dhec.sc.gov) or Dan Drociuk (drociukd@dhec.sc.gov).

Reference

Buehler JW, Berkelman RL, Hartley DM, Peters CJ. *Emerg Infect Dis 2003*; 9 (10):1197-1204)

Year-to-Date Summary of Reportable Conditions ǂ
January 1, 2009 to December 11, 2009

Reportable Condition	Confirmed	Probable	Total
Animal Bites – PEP recommended*	339	**	339
Aseptic Meningitis	78	0	78
Brucellosis	2	0	2
Campylobacter enteriditis	252	3	255
Cryptosporidiosis	57	2	59
Cyclosporiasis	1	0	1
Dengue fever	0	1	1
Ehrlichiosis, chaffeensis	0	3	3
Ehrlichiosis, ewingii	1	0	1
Giardiasis	97	0	97
Haemophilius influenza, invasive	71	0	71
Hemolytic uremic syndrome, post-diarrheal	2	0	2
Hepatitis A, acute	58	0	58
Hepatitis B, acute	50	3	53
Hepatitis B, chronic	118	472	590
Hepatitis C, acute	1	1	2
Hepatitis C, chronic or past	3312	7	3319
Influenza, human isolates (not novel H1N1)	373	0	373
Influenza, Novel Influenza A Virus Infections (H1N1)	1913	23	1936
Legionellosis	14	1	15
Listeriosis	12	0	12
Lyme disease	17	14	31
Malaria	5	0	5
Meningococcal disease (Neisseria meningitidis)	10	1	11
Mumps	2	0	2
Pertussis	210	21	231
Psittacosis	0	1	1
Rocky Mountain Spotted Fever	3	15	18
Salmonellosis	1118	9	1127
Shiga toxin-producing Escherichia coli (STEC)	20	2	22
Shigellosis	116	2	22
Streptococcus group A, invasive disease	72	0	72
Streptococcus group B, age <90 days	41	0	41
Streptococcus pneumoniae, invasive	438	0	438
Varicella (only outbreak associated or hospitalized cases are reportable)	109	14	123
Vibrio infections (non-cholera)	12	1	13
West Nile Fever	1	2	3
Yersiniosis	8	0	8

ǂ To save space, several conditions with zero reported cases in 2009 were omitted from this list.

** Animal bites with PEP recommended: Bat-62; Cat-71; Dog-105; Farm Animal-19; Fox-10; Raccoon-47; Wild-10; Other-15.*

*** 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.

THE EPI NOTES NEWSLETTER IS AVAILABLE ONLINE AT
www.scdhec.gov/health/disease/index.htm.

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