



CATTARAUGUS COUNTY BOARD OF HEALTH

Public Health

Prevent. Promote. Protect.

Established 1923

1 Leo Moss Drive, Olean, NY 14760, Tel. (716) 373-8050, Fax (716) 701-3737

Andrew Klaczynski, MD, President

Joseph Bohan, MD, Vice-President

Giles Hamlin, MD

Joseph Eade

Sondra Fox, RN

Richard Haberer

James Lapey

Georgina Paul, FNP

James Snyder

MINUTES

March 6, 2013

The 813th meeting of the Cattaraugus County Board of Health was held at St. Bonaventure Clubhouse Restaurant, Route 417, Allegany, New York on March 6, 2013.

The following members were present:

Andrew Klaczynski, MD

James Lapey

Joseph Bohan, MD

Sondra Fox, RN

Giles Hamlin, MD

Richard Haberer

Joseph Eade

Also present were:

Kevin D. Watkins, MD, MPH, Public Health Director

Kathleen Ellis, Administrative Officer

Paula Stockman, County Legislator

Linda Edstrom, County Legislator

Howard Van Rensselaer, County Legislator

Carl Edwards, County Legislator

Thomas Brady, County Attorney

Gilbert Witte, MD, Medical Director

Eric Wohlers, Environmental Health Director

Raymond Jordan, Sr. Sanitarian

Susan Andrews, Director of Patient Services

David Porter, Hearing Officer

Rick Miller, Olean Times Herald

The meeting was called to order by Dr. Klaczynski. The roll was called and a quorum declared. Mr. Eade made a motion to approve the minutes of the February 13, 2013 Board of Health meeting. It was seconded by Mr. Lapey and unanimously approved.

Mr. Lapey and Mrs. Fox nominated Dr. Andrew Klaczynski as President and Dr. Joseph Bohan as Vice-President of the Board of Health for 2013. Mr. Eade made a motion to accept nominations for President and Vice-President as stated. Mrs. Fox seconded the motion and it was unanimously approved.

Director's Report: Dr. Watkins reported that between 10/1/12 and 2/23/13 there have been about 10,227 laboratory confirmed influenza associated hospitalizations reported. This rate is about 36.7 per 1,000 of the population nation-wide. The most affected groups are those 65 years of age and older and they account for more than 51% of the reported cases. Among all hospitalizations 85.2% were associated with Influenza A and 14% with Influenza B; the subtype information included 97% attributed to the H3N2 Influenza A; 2.5% was attributed to the H1N1. The most commonly reported underlying medical conditions among hospitalized adults were cardio-vascular disease, metabolic disorders such as diabetes, obesity and chronic lung disease. The most commonly reported underlying medical conditions in hospitalized children were asthma, neurological disorders, chronic lung disease and immune suppression. There were a total of 81 influenza-associated pediatric deaths nation-wide during the 2012-2013 flu season. As of 2/23/13 the influenza activity level in New York State (NYS) was categorized as still widespread. Laboratory confirmed influenza was reported in 44 counties throughout NYS. There have been 1,232 reported cases of hospitalizations during this time period, but this is a 15% decrease over last week.

Dr. Watkins went on to say that the number of patients that have actually been diagnosed with laboratory confirmed influenza was 180 in NYS and this is a 40% decrease over last week. There have been 9 influenza associated pediatric deaths within NYS. Cattaraugus County has had 90 confirmed cases by the State Laboratory this season with no influenza-associated deaths. Influenza is on the decline with a decreased number of emergency room admissions for respiratory fever complaints. There has been a decreased number of school absenteeism for influenza like illnesses also. We continue to be vigilant and watch for any cases of respiratory illness and high fever admissions to our local emergency room.

However, the interim adjusted estimates of the 2012-2013 seasonal influenza vaccine effectiveness was released on 2/22/13 by the Centers for Disease Control (CDC) and Prevention. The study was placed in the weekly morbidity and mortality reports which were distributed to the Board. Dr. Watkins briefly went over Table 2 in order to summarize the entire report (See attachment).

In summarizing the study, basically the influenza vaccine is never 100% effective but this season's vaccine overall effectiveness was only about 56% and for those 65 years of age and older the vaccine was about 27% effective against the 3 strains of influenza viruses. If we were to break down the influenza viruses by types, influenza A (H3N2) only, the vaccine effectiveness appeared to be less effective, the study showed that the vaccine overall effectiveness for this type was only 47% and for those 65 years of age and older the vaccine was only 9% effective. Influenza B, the vaccine effectiveness was 67% overall and for those 65 years of age and older the vaccine was also 67% effective.

Dr. Watkins commented that it appears from this study, if you were 65 years of age and older, and you got the influenza vaccine, and were exposed to the influenza virus this year, you would hope to have been exposed to the influenza B virus, based on the data shown in this study. Nevertheless, even with this recent revelation about how effective this year's vaccine has been, we still continue to encourage those who are 6 months of age and older to get the vaccine as it is our number one line of defense. Dr. Witte commented that the statistics in the study look at out-patient visits and earlier studies suggest that the vaccine was much more effective at reducing hospitalization in the elderly so it may be that the 9% number is actually a better number in terms of cutting down on more severe

cases and reducing admissions into the hospital. Dr. Witte added that the study doesn't specify whether the elderly received the more potent flu vaccine or not. The FDA has not concluded that it is more effective in the elderly. He stated that he administers the high dose vaccine to everyone over the age of 65 in his office and would like to see a study proving whether there is a difference or not. Dr. Watkins stated that the preliminary data for seniors is less than definitive and is based on fewer than 300 people scattered among five states (Washington, Wisconsin, Michigan, Pennsylvania and Texas). The anti-viral medication is the second line of defense against influenza and should be used for treatment for suspected influenza in certain patients that are in a high risk group, including those that are 65 years old and older regardless of the vaccination status. Dr. Witte commented that these statistics only show confirmed cases and there are a lot of people who had the flu but were not tested.

Dr. Watkins stated that the Health Department is working with the NYS Department of Health Regional Office in Buffalo to systematically review all of our blood borne test results that are associated with the insulin pen issue at Olean General Hospital. At this time, there is no evidence of any blood borne disease outbreak of any kind from our review. Recent preliminary results continue to come in, but the confirmatory tests are still pending. At last count, there have been over 750 patients who have been tested and that's a very conservative number. We have seen no cluster of these blood borne pathogens during our review. We were contacted by Attorney, John Elmore, from a Buffalo law firm requesting a public meeting with other officials regarding Hepatitis and HIV and we determined that such a meeting was not warranted at this particular time.

Dr. Watkins also reported that the home care agency continues to watch and wait for decisions by the State public health and health planning council committee on codes, regulations and legislation because they have lifted the moratorium on the expansion of certified home health agencies. A year ago Dr. Watkins informed the Board about the State lifting their moratorium on permitting the expansion of new certified home health agencies within our area and how concerned we were that this may have a negative impact on our overall projected revenue if this moratorium was lifted. The Visiting Nurses Association (VNA) in Buffalo received permission to expand as a certified home health agency in Cattaraugus County. That certification process has now been completed with the state and we should expect to see their presence in our area within the next year, if not sooner. There are five other agencies that have applied for a certificate of need to become certified home health agencies within our county and the process on which they are going to be reviewed by the planning commission is still under review.

Dr. Watkins notified the Board that the Silver Fox restaurant in Ellicottville, NY has requested permission to hold an event to promote smoking and tobacco use at their establishment on March 7, 2013. Under the Article 1399q of the Clean Indoor Air Act it states that smoking restrictions are inapplicable to certain venues which includes enclosed rooms in food service establishments, bars, catering halls, convention halls, hotel and motel conference rooms, and other such similar facilities during the time such enclosed areas or rooms are being used exclusively for functions where the public is invited for the primary purpose of promoting and sampling tobacco products, and the service of the food and drink is incidental to such purpose, provided that the sponsor or organizer gives notice in promotional material or advertisements that smoking will not be restricted, and prominently posts notice at the entrance of the facility and has provided notice of such function to the appropriate enforcement officer, as defined in subdivision one of section 1399t of this article, at least two weeks prior to such function. The enforcement officer shall keep a record of all tobacco

sampling events, and such record shall be made available for public inspection. No such facility shall permit smoking under this subdivision for more than two days in any calendar year.

Nursing Division Report: Mrs. Andrews reported that for the week ending 3/2/13 in Cattaraugus County there were four laboratory confirmed Influenza A and eight Influenza B cases.

Last month there were ten Chlamydia cases reported and an episode of Gonorrhea in a town in the County. We are not finding any correlation as of yet, but all have been treated and their partners have been encouraged to come in.

There was a Strep A (Invasive Streptococcus A) patient in the hospital, which is an infection that results in a type of toxic shock and the rapid destruction of muscle. This individual is recovering.

Mrs. Andrews also reported that a suspect Lyme disease case is being investigated.

Hepatitis C has been the second most prevalent communicable disease in Cattaraugus County and has been that way for quite some time.

The nurses have conducted two Assessment, Feedback, Incentives and eXchange (AFIX) visits this year and have two more planned for this month. This involves visiting providers to assess their immunization practices and work with them to try to improve immunization rates. Mrs. Andrews and Mrs. Williams will be attending the NYS Immunization conference at the end of the month in Albany.

So far this year there have been three post-exposure rabies treatments administered; the most recent because of an exposure to a cat.

Mrs. Andrews stated that the Family Planning Clinic is hoping to increase the number of clients with the extended hours mentioned last month.

There is one new child with an elevated lead level. The nurse who does the finger sticks for the lead testing in the WIC clinic also indentified another but because it is a finger stick it does need a confirmatory test. Testing has occurred mostly at the WIC clinic in Olean but later this year they will go to Gowanda, Delevan and other sites.

The Home Care numbers are the same as they were last year at this time. Clinical rotations were recently concluded in Home Care with Jamestown Community College and Alfred University nursing students.

Environmental Health Division: Mr. Wohlers reported that staff training is continuing with one session left on public bathing facilities. At this time of year notices are sent to children's camps because of the time involved for them to submit the various plans necessary to operate every year. Mr. Jordan has a meeting tomorrow with one of the local municipalities that operates a summer pool. A children's camp has submitted plans to be approved for their pool facility.

There has been no news from the State on the status of the draft revisions of the County Sanitary Code.

There have been news reports again, about the State issuing permits for the horizontal gas wells and hydraulic fracturing. Everything is on hold waiting for the State Health Commissioner to release their health assessment review of high volume hydraulic fracturing. The Department of Environmental Conservation (DEC) is still going through comments and their revised regulations in the Supplemental Generic Environmental Impact Statement. When we hear more we will let the Board know.

Mr. Porter reported the following enforcement cases for Board action:

DOCKET 12-060

JOSEPH NOTTINGHAM & BRANDY WADSWORTH, 121 Hall Street, Randolph

Violations: CCSC, Article II, Part 17.1.1 Respondents accepted title to a property without the required inspections of the wastewater treatment system being conducted. Notice of Hearing offering a \$50 civil compromise was served by the Sheriff's Department on 1/12/13.

Administrative Hearing:

Public Health Sanitarian: Michael Hastings appeared for CCHD and was sworn.

Respondents: Failed to appear.

Enf. 1 was read and affirmed to be correct by Mr. Hastings and identified as People's Exhibit

#1. Mr. Hastings gave the following testimony:

- Real Property Transfer report (RP-527-INS), identified as P. Ex. #2 indicates that Respondents took possession of a house at 121 Hall Street, Randolph, NY on 6/29/12.
- On 10/18/12 a letter was sent to Respondents (P. Ex. #3) explaining their responsibility to submit an application and fee to have the waste water system on the premises tested.
- A second letter to Respondents dated 11/8/12 (P. Ex. #4) was sent stating that CCHD has not received the evidence of inspection or the completion of the application and required fee within the 10 day period as outlined in the first letter. Letter further stated that failure to comply would result in administrative enforcement proceedings.
- P. Ex. #5a and #5b are copies of proof of service that Respondents were served Notice of Hearing by the Cattaraugus County Sheriff's Department.

Hearing Officer finding: Respondent is in violation of CCSC, Article II, Part 17.1.1 – Accepted title to property without the required inspections of the waste water system being conducted.

Recommendation: \$100 fine to be received on or before 3/31/13 and a \$10 per diem fine for every day after that date that fine, application and fee are not received.

Dr. Bohan made a motion to accept the Hearing Officer's recommendation; it was seconded by Mr. Eade and unanimously approved.

Board Ordered: \$100 fine to be received on or before 3/31/13 and a \$10 per diem fine for every day after that date that fine, application and fee are not received.

DOCKET 13-001**BRANDY OAKES-HACKETT, 3819 Killbuck Road, Killbuck**

Violations: CCSC, Article II, Part 25.2.8 Respondent's failed to submit the required rabies confinement form and vaccination certificate for her dog within 10 days of the conclusion of the confinement period following a biting incident. Notice of Hearing offering a \$75 civil compromise was mailed on 1/15/13. It was received and signed for by Brandy J. Oakes-Hackett on (no date on card).

Administrative Hearing:

Public Health Sanitarian: Eli Rust appeared for CCHD and was sworn.

Respondent: Failed to appear.

Enf. 1 was read and affirmed to be correct by Mr. Rust and identified as People's Exhibit #1.

Mr. Rust gave the following testimony:

- Biting incident was reported on 11/19/12 by the Cattaraugus County Sheriff's Dept. (P. Ex. #2). Respondent's 10 yr. old son was the victim.
- Letter dated 11/20/12 (P. Ex. #3) was sent to Respondent explaining her obligations and compliance dates. There was no response from Respondent.
- On 11/28/12 Mr. Rust visited Respondent's home to personally see the dog.
- On 12/18/12 Mr. Rust mailed a flyer announcing a free rabies clinic.
- Respondent was notified of the administrative hearing.

Hearing Officer finding: Respondent is in violation of CCSC, Article II, Part 25.2.8 – Failure to submit the required rabies confinement form and vaccination certificate for her dog within 10 days of the biting incident.

Recommendation: \$150 fine to be received on or before 3/31/13. If payment is not received and the dog is not vaccinated by 3/31/13, a \$10 per diem fine will be levied.

Mr. Lapey made a motion to accept the Hearing Officer's recommendation; it was seconded by Dr. Bohan and unanimously approved.

Board Ordered: \$100 fine to be received on or before 3/31/13 and a \$10 per diem fine for every day after that date that fine, application and fee are not received.

William Hollamby, Docket #12-051 – Dr. Watkins read a Notice of Appeal at the last meeting that stated that that his ex-wife, Taphatha Hollamby is responsible for the properties. Dr. Bohan made a motion to postpone any action on this enforcement case until Ms. Taphatha Hollamby is served a Notice of Violation. It was seconded by Mrs. Fox and unanimously approved. Ms. Hollamby received the notice and returned the signed stipulation agreeing to connect both properties at 1722 and 1726 Butler Avenue, Olean, NY to the available public sanitary sewer system. Mr. Eade made a motion to accept Mr. Hollamby's appeal and not hold him responsible for the properties mentioned above. It was seconded by Dr. Bohan and unanimously approved.

Mr. Haberer asked if the Board should change any policies because Section 308 of the Public Health Law states that the Board of Health shall fix the compensation of the local health officer and in reality, the County Legislature sets the salary for the Public Health Director. Dr. Watkins stated that it is the responsibility of the Board to hire the director and set the compensation, but the legislature has control of the budget. Mr. Brady stated that the legislature has budgetary control and if the Board sets the salary and the budget does not support the salary, that salary will not be paid. As a matter of practice, Mr. Brady believes that the legislature sets the salary. Mr. Brady will look into whether any Board of Health policies should be changed to coincide with State policies.

There being no further business to discuss, Mr. Eade made a motion to adjourn. It was seconded by Mr. Lapey and carried to adjourn.

Respectfully submitted,

Handwritten signature of Kevin D. Watkins, M.D. in cursive script.

Kevin D. Watkins, M.D., M.P.H.
Secretary

KDW/km

Interim Adjusted Estimates of Seasonal Influenza Vaccine Effectiveness — United States, February 2013

Early influenza activity during the 2012–13 season (1) enabled estimation of the unadjusted effectiveness of the seasonal influenza vaccine (2). This report presents updated adjusted estimates based on 2,697 children and adults enrolled in the U.S. Influenza Vaccine Effectiveness (Flu VE) Network during December 3, 2012–January 19, 2013. During this period, overall vaccine effectiveness (VE) (adjusted for age, site, race/ethnicity, self-rated health, and days from illness onset to enrollment) against influenza A and B virus infections associated with medically attended acute respiratory illness was 56%, similar to the earlier interim estimate (62%) (2). VE was estimated as 47% against influenza A (H3N2) virus infections and 67% against B virus infections. When stratified by age group, the point estimates for VE against influenza A (H3N2) and B infections were largely consistent across age groups, with the exception that lower VE against influenza A (H3N2) was observed among adults aged ≥ 65 years. These adjusted VE estimates indicate that vaccination with the 2012–13 influenza season vaccine reduced the risk for outpatient medical visits resulting from influenza by approximately one half to two thirds for most persons, although VE was lower and not statistically significant among older adults. Antiviral medications should be used as recommended for treatment of suspected influenza in certain patients, including those aged ≥ 65 years, regardless of their influenza vaccination status.

Details of the VE network design, sites, and enrollment procedures have been described previously (2,3). In this report, patients aged ≥ 6 months seeking outpatient medical care for an acute respiratory illness with cough, within 7 days of illness onset, were enrolled at five study sites.* Consenting participants completed an enrollment interview. Nasal and oropharyngeal swabs were combined and tested using CDC's real-time reverse transcription–polymerase chain reaction (rRT-PCR) protocol. Participants were considered vaccinated if they had received ≥ 1 dose of any seasonal influenza vaccine ≥ 14 days before illness onset, according to medical records

* The five network sites and the dates enrollment began were as follows: Group Health Cooperative (Seattle, Washington) (December 26, 2012); the Marshfield Clinic Research Foundation (Marshfield, Wisconsin) (December 17, 2012); the University of Michigan School of Public Health, partnered with the University of Michigan Health System (Ann Arbor, Michigan) (December 17, 2012) and the Henry Ford Health System (Detroit, Michigan) (January 2, 2013); the University of Pittsburgh Schools of the Health Sciences, partnered with the University of Pittsburgh Medical Center (Pittsburgh, Pennsylvania) (December 3, 2012); and Scott and White Healthcare (Temple, Texas) (December 9, 2012).

and registries (at Texas, Washington, and Wisconsin sites) or self-report (at Michigan and Pennsylvania sites).

Of the 2,697 children and adults enrolled during December 3, 2012–January 19, 2013, a total of 1,115 (41%) tested positive for influenza virus by rRT-PCR (Figure). The proportion of patients with influenza differed by study site, sex, age group, race/ethnicity, self-rated health status, and interval from illness onset to enrollment (Table 1). The proportion vaccinated ranged from 36% to 54% across sites and also differed by sex, age group, race/ethnicity, and self-rated health status (Table 1).

Among the patients with influenza, 32% had been administered the 2012–13 seasonal influenza vaccine, compared with 50% of the influenza-negative controls (Table 2). For all persons with medically attended acute respiratory illness, the overall VE (adjusted for age group, study site, race/ethnicity, self-rated health status, and days from illness onset to enrollment) against influenza A and B virus infections was 56% (95% confidence interval [CI] = 47%–63%) (Table 2). Significant VE against influenza A and B viruses was observed among persons in all age groups, except for adults aged ≥ 65 years.

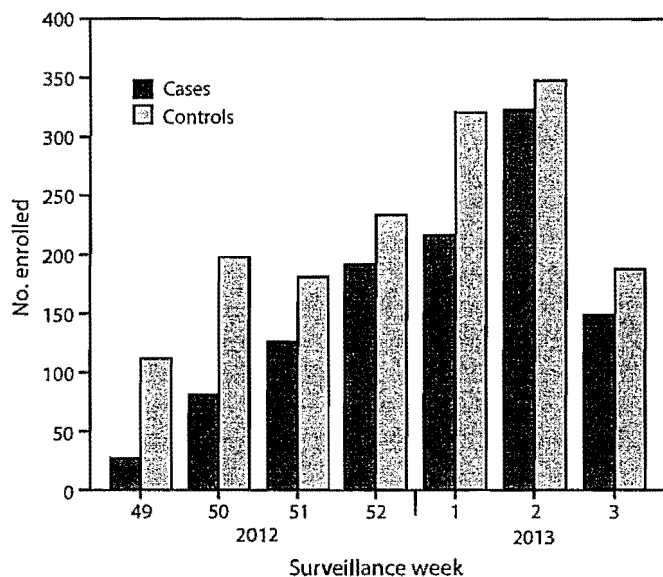
Among the 751 infections with influenza A viruses, 560 (75%) had been subtyped; 546 (98%) of the infections were caused by influenza A (H3N2) viruses (Table 1). The adjusted VE for all ages against influenza A (H3N2) virus infection was 47% (CI = 35%–58%) (Table 2). The adjusted, age-stratified VE point estimates were 58% for persons aged 6 months–17 years, 46% for persons aged 18–49 years, 50% for persons aged 50–64 years, and 9% for persons aged ≥ 65 years (Table 2).

A total of 366 (33%) of the 1,115 cases had infections caused by influenza B viruses (Table 1). The adjusted VE estimate for all ages against influenza B was 67% (51%–78%) (Table 2). The adjusted VE point estimates against influenza B ranged from 64% to 75% across age groups.

Reported by

Lisa Jackson, MD, Michael L. Jackson, PhD, C. Hallie Phillips, MEd, Joyce Benoit, Group Health Research Institute, Seattle, Washington. Edward A. Belongia, MD, Deanna Cole, Sarah Kopitzke, MS, Tamara A. Kronenwetter Koepel, Huong Q. McLean, PhD, Jennifer K. Meece, PhD, Sandra K. Strey, Maria E. Sundaram, MSPH, Mary Vandermause, Marshfield Clinic Research Foundation, Marshfield, Wisconsin. Manjusha Gaglani, MBBS, Juhee Song, PhD, Lydia Clipper, Dean Kjar, MS, Anne Robertson, Kempapura Murthy, MPH, Melinda Dunnahoo, Stephanie Oliver,

FIGURE. Numbers of influenza-positive cases and influenza-negative controls, by surveillance week of illness onset — U.S. Influenza Vaccine Effectiveness Network, United States, December 3, 2012–January 19, 2013



* Week 3 includes only patients with completed laboratory tests and thus does not reflect all enrolled patients during that week across study sites.

MS, Monica Weir, Hope Gonzales, Martha Zayed, Teresa Ponder, JoAnn Nichols, Michael Reis, MD, Cathleen Rivera, MD, David Morgan, MD, Pedro Piedra, MD, Vasanthi Avadhanula, PhD, Scott and White Healthcare, Temple, and Baylor College of Medicine, Houston, Texas. Arnold S. Monto, MD, Suzanne E. Ohmit, DrPH, Joshua G. Petrie, MPH, Emileigh Johnson, Rachel T. Cross, MPH, Casey Martens, Marcus Zervos, MD, Lois Lamerato, PhD, Mary Ann Aubuchon, Gregory G. Wolff, MPH, Univ of Michigan, Ann Arbor, and Henry Ford Health System, Detroit, Michigan. Heather Eng, Mary Patricia Nowalk, PhD, Stephen R. Wisniewski, PhD, Richard K. Zimmerman, MD, Charles R. Rinaldo, Jr, MD, Arlene Bullotta, Joe Suyama, MD, Evelyn Reis, MD, Donald B. Middleton, MD, Rachel Hess, MD, Jonathan M. Raviotta, MPH, Univ of Pittsburgh Schools of the Health Sciences and Univ of Pittsburgh Medical Center, Pittsburgh, Pennsylvania. Mark G. Thompson, PhD, Alicia M. Fry, MD, Swathi N. Thaker, PhD, Jill Ferdinands, PhD, Po-Yung Cheng, PhD, Sarah Spencer, PhD, Erin Burns, MA, LaShondra Berman, MS, Wendy Sessions, MPH, Angie Foust, MS, Joseph Bresee, MD, Nancy Cox, PhD, Influenza Div, CDC. **Corresponding contributor:** Mark G. Thompson, isq8@cdc.gov, 404-639-0814.

Editorial Note

These updated and age-adjusted VE estimates for the 2012–13 influenza vaccine confirm moderate effectiveness in preventing outpatient medical visits caused by circulating

influenza viruses, similar to earlier unadjusted estimates in the United States (2) and to recent interim estimates from Canada and Europe (4,5). Overall, influenza vaccination reduced the risk for medical visits resulting from influenza A and B by 56%, from influenza A (H3N2) by 47%, and from influenza B by 67%. The preventive benefits against influenza B were consistent across age groups. The adjusted VE estimates against influenza A (H3N2) viruses also were largely consistent (46%–58%) for persons aged 6 months–64 years, but the estimate was not significant among persons aged ≥ 65 years. These VE estimates are not final; an increased sample size and adjustment for additional potential confounders (such as chronic medical conditions and functional status) at the end of the season could change these estimates.

Confirmation of the protective benefits of the 2012–13 influenza vaccine among persons aged 6 months–64 years offers further support for the public health benefit of annual seasonal influenza vaccination and supports the expansion of vaccination, particularly among younger age groups. The nonsignificant adjusted VE of 9% against A (H3N2) among persons aged ≥ 65 years is similar to the estimate in a recent interim report from Europe (6) and reinforces the need for continued advances in influenza vaccines, especially to increase protective benefits for older adults.

One possible explanation for these findings is that some older adults did not mount an effective immune response to the influenza A (H3N2) component of this season's vaccine. Nonetheless, this finding should not discourage future vaccination by persons aged ≥ 65 years, who are at greater risk for more severe cases and complications from influenza. Influenza vaccines remain the best preventive tool available, and VE is known to vary by virus type/subtype, age group, season, host immunity, and the outcome measured (7). This study observed a VE point estimate against influenza B (67%) that was much higher than the 9% VE estimate against A (H3N2) among older adults, although the precision of estimates was limited by the small sample. Although some previous studies have shown influenza vaccine benefits for older adults, others have failed to demonstrate statistically significant benefits against specific influenza types or subtypes (7). Variability among studies and across seasons and age groups is to be expected and should not change recommendations for annual vaccination. It is also important to note that the VE estimates in this report are limited to the prevention of outpatient medical visits, rather than more severe illness outcomes, such as hospitalization or death. A previous multiseason study found that the influenza vaccine reduced the risk for influenza-associated hospitalizations among older adults by 61% (CI = 18%–82%) (8). A full evaluation of the VE for older adults this season must await consideration of additional data and outcomes.

TABLE 1. Selected characteristics for enrolled patients with medically attended acute respiratory illness, by influenza test result status and seasonal influenza vaccination status — U.S. Influenza Vaccine Effectiveness Network,* United States, December 3, 2012–January 19, 2013

| Characteristic | Test result status | | | | p-value† | Vaccination status | | |
|---|--------------------|--------------|--------------------|--------------|------------------|--------------------|-------------|------------------|
| | Influenza-negative | | Influenza-positive | | | Vaccinated‡ | | p-value† |
| | No. | (%) | No. | (%) | | No./Total | (%) | |
| Overall | 1,582 | (100) | 1,115 | (100) | | 1,160/2,697 | (43) | |
| Study site | | | | | <0.001 | | | <0.001 |
| Michigan | 257 | (16) | 138 | (12) | | 168/395 | (43) | |
| Pennsylvania | 360 | (23) | 208 | (18) | | 251/568 | (44) | |
| Texas | 452 | (29) | 251 | (23) | | 254/703 | (36) | |
| Washington | 173 | (11) | 90 | (8) | | 142/263 | (54) | |
| Wisconsin | 340 | (22) | 428 | (39) | | 345/768 | (44) | |
| Sex | | | | | 0.358 | | | 0.006 |
| Male | 629 | (40) | 463 | (42) | | 435/1,092 | (40) | |
| Female | 953 | (60) | 652 | (58) | | 725/1,605 | (45) | |
| Age group (yrs) | | | | | <0.001 | | | <0.001 |
| 6 mos–8 | 379 | (24) | 261 | (23) | | 275/640 | (43) | |
| 9–17 | 186 | (12) | 202 | (18) | | 118/388 | (30) | |
| 18–49 | 604 | (38) | 353 | (32) | | 356/957 | (37) | |
| 50–64 | 248 | (16) | 174 | (16) | | 206/422 | (49) | |
| ≥65 | 165 | (10) | 125 | (11) | | 205/290 | (71) | |
| Race/Ethnicity‡ | | | | | 0.006 | | | 0.012 |
| White | 1,191 | (75) | 885 | (80) | | 922/2076 | (44) | |
| Hispanic | 154 | (10) | 94 | (8) | | 88/248 | (36) | |
| Black | 137 | (9) | 60 | (5) | | 72/197 | (37) | |
| Other race | 100 | (6) | 76 | (7) | | 78/176 | (44) | |
| Self-rated health status | | | | | <0.001 | | | <0.001 |
| Fair or poor | 138 | (9) | 68 | (6) | | 104/206 | (50) | |
| Good | 405 | (26) | 236 | (21) | | 297/641 | (46) | |
| Very good | 557 | (35) | 378 | (34) | | 424/935 | (45) | |
| Excellent | 482 | (30) | 433 | (39) | | 335/915 | (37) | |
| Illness onset to enrollment (days) | | | | | <0.001 | | | 0.061 |
| <3 | 544 | (34) | 504 | (45) | | 441/1,048 | (42) | |
| 3–4 | 653 | (41) | 410 | (37) | | 442/1,063 | (42) | |
| 5–7 | 385 | (24) | 201 | (18) | | 277/586 | (47) | |
| Influenza test result | | | | | | | | |
| Negative | 1,582 | (100) | — | — | | 793/1,582 | (50) | |
| Influenza B positive** | — | — | 366 | (33) | | 90/366 | (25) | |
| Influenza A positive** | — | — | 751 | (67) | | 277/751 | (37) | |
| A (H1N1)pdm | — | — | 14 | (2) | | 2/14 | (14) | |
| A (H3N2) | — | — | 546 | (73) | | 211/546 | (39) | |
| A subtype pending | — | — | 191 | (15) | | 64/191 | (34) | |

Abbreviation: rRT-PCR = real-time reverse transcription–polymerase chain reaction.

* The five network sites and the dates enrollment began were as follows: Group Health Cooperative (Seattle, Washington) (December 26, 2012); the Marshfield Clinic Research Foundation (Marshfield, Wisconsin) (December 17, 2012); the University of Michigan School of Public Health, partnered with the University of Michigan Health System (Ann Arbor, Michigan) (December 17, 2012) and the Henry Ford Health System (Detroit, Michigan) (January 2, 2013); the University of Pittsburgh Schools of the Health Sciences, partnered with the University of Pittsburgh Medical Center (Pittsburgh, Pennsylvania) (December 3, 2012); and Scott and White Healthcare (Temple, Texas) (December 9, 2012).

† Chi-square testing was used to assess differences between persons with influenza-negative and influenza-positive test results and in the distribution of enrolled patient and illness characteristics and also to assess differences between groups in the percentage vaccinated.

‡ Defined as having received ≥1 dose of vaccine ≥14 days before illness onset. To date, 92% of influenza vaccines administered to participants have been inactivated. A total of 40 participants who received the vaccine ≤13 days before illness onset were excluded from the study sample because of uncertain immunization status.

§ Enrollees were categorized into one of four mutually exclusive racial/ethnic populations: white, black, other race, and Hispanic. Persons identified as Hispanic might be of any race. Persons identified as white, black, or other race are non-Hispanic. The overall prevalences calculated included data from all racial/ethnic groups, not just the three included in this analysis.

** Two case-patients had coinfections with influenza A and B, making the sum 1,117, or two greater than the total number of influenza positives.

Clinicians should maintain a high index of suspicion for influenza infection among persons with acute respiratory illness while influenza activity is ongoing. Early antiviral treatment can reduce influenza-associated illness severity and

complications (9); this season, antiviral treatment of elderly adults is especially important.† CDC recommends initiating

† A CDC influenza update for geriatricians and other clinicians caring for persons aged ≥65 years is available at <http://www.cdc.gov/flu/professionals/2012-2013-guidance-geriatricians.htm>.

TABLE 2. Number and percentage receiving 2012–13 seasonal trivalent influenza vaccine among 2,697 outpatients with acute respiratory illness and cough, by influenza test result status, age group, and vaccine effectiveness* against all influenza A and B and against virus types A (H3N2) and B — U.S. Influenza Vaccine Effectiveness Network,† United States, December 3, 2012–January 19, 2013

| Influenza type/Age group | Influenza-positive | | Influenza-negative | | Vaccine effectiveness | | | |
|--------------------------------|--------------------------|------|--------------------------|------|-----------------------|--------------|------|-------------|
| | No. vaccinated/ Total | (%) | No. vaccinated/ Total | (%) | Unadjusted | Adjusted | | |
| | | | | | (%) | (95% CI) | (%) | (95% CI) |
| Influenza A and B | | | | | | | | |
| Overall | 367/1,115 | (33) | 793/1,582 | (50) | (51) | (43–58) | (56) | (47–63) |
| Age group (yrs) | | | | | | | | |
| 6 mos–17 | 118/463 | (26) | 275/565 | (49) | (64) | (53–72) | (64) | (51–73) |
| 18–49 | 100/353 | (28) | 256/604 | (42) | (46) | (29–60) | (52) | (38–79) |
| 50–64 | 63/174 | (36) | 143/248 | (58) | (58) | (38–72) | (63) | (43–76) |
| ≥65 | 86/125 | (69) | 119/165 | (72) | (15) | (–42 to 49) | (27) | (–31 to 59) |
| Influenza A (H3N2) only | | | | | | | | |
| Overall | 211/544 | (39) | 793/1,582 | (50) | (37) | (23–48) | (47) | (35–58) |
| Age group (yrs) | | | | | | | | |
| 6 mos–17 | 52/179 | (29) | 275/565 | (49) | (57) | (38–70) | (58) | (38–71) |
| 18–49 | 53/183 | (29) | 256/604 | (42) | (45) | (21–61) | (46) | (20–63) |
| 50–64 | 41/96 | (43) | 143/248 | (58) | (45) | (12–66) | (50) | (15–71) |
| ≥65 | 65/86 | (76) | 119/165 | (72) | (–20) | (–118 to 34) | (9) | (–84 to 55) |
| Influenza B only | | | | | | | | |
| Overall | 90/364 | (25) | 793/1,582 | (47) | (67) | (58–77) | (67) | (51–78) |
| Age group (yrs) | | | | | | | | |
| 6 mos–17 | 59/230 | (26) | 275/565 | (49) | (64) | (49–74) | (64) | (46–75) |
| 18–49 | 17/79 | (22) | 256/604 | (42) | (63) | (35–79) | (68) | (40–83) |
| 50–64 | 8/40 | (20) | 143/248 | (58) | (82) | (59–92) | (75) | (39–90) |
| ≥65 | 6/15 | (40) | 119/165 | (72) | (74) | (24–91) | (67) | (–10 to 90) |

Abbreviation: CI = confidence interval.

* Vaccine effectiveness was estimated as $100\% \times (1 - \text{odds ratio} [\text{ratio of odds of being vaccinated among outpatients with influenza-positive test results to the odds of being vaccinated among outpatients with influenza-negative test results}])$; odds ratios were estimated using logistic regression.

† The five network sites and the dates enrollment began were as follows: Group Health Cooperative (Seattle, Washington) (December 26, 2012); the Marshfield Clinic Research Foundation (Marshfield, Wisconsin) (December 17, 2012); the University of Michigan School of Public Health, partnered with the University of Michigan Health System (Ann Arbor, Michigan) (December 17, 2012) and the Henry Ford Health System (Detroit, Michigan) (January 2, 2013); the University of Pittsburgh Schools of the Health Sciences, partnered with the University of Pittsburgh Medical Center (Pittsburgh, Pennsylvania) (December 3, 2012), and Scott and White Healthcare (Temple, Texas) (December 9, 2012).

antiviral medications for patients with suspected influenza, regardless of their influenza vaccination status, if they are aged ≥65 years, or hospitalized, or have progressive or complicated illness, or otherwise are at higher risk for complications from influenza.[§] Antiviral treatment can be initiated empirically, preferably within 48 hours after illness onset, and should not be delayed pending confirmatory diagnostic testing nor be dependent upon tests with limited sensitivity (e.g., negative rapid tests). Among hospitalized patients, treatment should be initiated on admission; several studies suggest effectiveness of antiviral treatment even when initiated ≥48 hours after illness onset (9).

The findings in this report are subject to at least four limitations. First, the observational study design has greater potential for confounding and bias relative to randomized clinical trials. Second, although these midseason VE estimates were adjusted for potential confounders identified in previous studies (3),

additional factors will be considered in final end-of-season estimates, including health-care-seeking behavior, differences in functional status, and severity of illness, which could influence VE estimates, especially for older adults. Third, no adjustment was made for chronic medical conditions, because of a lack of medical record data for interim analyses; however, VE estimates were adjusted for self-rated health, which is associated with chronic illness and mortality risk (10). Finally, the immunization status of young children (which requires vaccine histories) and vaccine product information (e.g., inactivated compared with live attenuated) also were unavailable for this interim analysis. End-of-season VE estimates could change as additional patient data become available or if circulating viruses or population immunity change over the remainder of the season.

Although imperfect, influenza vaccines remain the best tool currently available for preventing illness from influenza. This report highlights the value of both increasing the use of

[§] Guidance for clinicians on antiviral use is available at <http://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm>.

What is already known on this topic?

Annual vaccination is the mainstay of influenza prevention, but overall effectiveness of the influenza vaccine is moderate and varies by year, virus type, and population subgroup. Early unadjusted interim estimates of overall vaccine effectiveness (VE) for the 2012–13 season indicated the vaccine was 62% effective among all ages at preventing medically attended, laboratory-confirmed influenza A and B virus infections.

What is added by this report?

This report provides updated and adjusted VE estimates for the 2012–13 influenza season based on data from 2,697 children and adults with acute respiratory illness enrolled in the U.S. Influenza Vaccine Effectiveness (Flu VE) Network during December 3, 2012–January 19, 2013. The overall VE (adjusted for age group, study site, race/ethnicity, self-rated health status, and days from illness onset to enrollment) for all ages at preventing medically attended influenza A and B virus infections was 56% (95% confidence interval = 47%–63%); VE was estimated at 47% against influenza A (H3N2) virus infections and 67% against influenza B virus infections. VE against influenza A (H3N2) was lower and not statistically significant among adults aged ≥65 years.

What are the implications for public health practice?

The 2012–13 seasonal influenza vaccine provides substantial protection for the population overall, which underscores the public health value of vaccination. Nonetheless, some vaccinated persons have become ill with influenza this season, especially among persons aged ≥65 years. Antiviral medications are an important second line of defense against influenza and should be used promptly, as recommended, for treatment of suspected influenza in certain patients in high-risk groups, including those aged ≥65 years, regardless of their vaccination status.

influenza vaccines, especially among children and young adults, and continuing efforts to develop more effective vaccines and vaccination strategies. Antiviral medications are important for the treatment and control of influenza and should be used as recommended, regardless of patient vaccination status.

Acknowledgments

Erika Kiniry, MPH, Group Health Research Institute, Seattle, Washington. Elizabeth Armagost, Marilyn Bruger, Yvonne Cerné, Anne Edwards, Krista Galpin, William Gillaspie, Jeri Groskinsky, Holly Hamel, Deborah Hilgemann, Deb Johnson, Tara Johnson, Diane Kohnhorst, Madalyn Minervini, Suelyn Murray, Emily Novicki, Maisie Pettinger, Becky Pilsner, DeeAnn Polacek, Theresa Pritzl, Kristina Reisner, Gerri River, Jacklyn Salzwedel, Scott Sandberg, Teresa Schultz, Patrick Stockwell, Jennifer Anderson, Donna David, Phillip Bertz, Lynn Ivacic, Elisha Stefanski, Wayne Frome, Carol Beyer, Ruth Mueller, Bobbi Bradley, MPH, Laurel Verhagen, Marshfield Clinic Research Foundation, Marshfield, Wisconsin. Latoya Allen, Sheila Bracey, Ronald Brand, Ashley

Buys, Mary Kate Cartmill, Brianna Costello, Hillary Craddock, Allison Dalgleish, Cyrus Farahani, Lora Girata, Heloise Glenn, Anne Kaniclides, Allison Keshishian, Mark Kolar, Nancy Lasceski, Ryan Malosh, MPH, Paula Miller, Molly Oberdoerster, Oanh Kim Pham, Marisa Richard, Elizabeth Vickers, Univ of Michigan, Ann Arbor, and Henry Ford Health System, Detroit, Michigan. Alan Aspinall, MD, Luis Duran, MPH, Edward Garofolo, MD, Richard Hoffmaster, MD, Philip Iozzi, MD, Thomas Lynch, MD, Krissy Moehling, MPH, Nicolle Nestler, MPH, Edmund M. Ricci, PhD, Sandra Sauereisen, MD, Gregory Smith, MD, Michael Susick, MPH, Leonard Urbanski, MD, Donald S. Burke, MD, Univ of Pittsburgh Schools of the Health Sciences and Univ of Pittsburgh Medical Center, Pittsburgh, Pennsylvania. Jerome Tokars, MD, Emily Eisenberg, Lisa Grohskopf, MD, Douglas Jordan, David Shay, MD, Jessie Clippard, MPH, Influenza Div; Jane Seward, MBBS, Div of Viral Diseases, David Swerdlow, MD, Office of the Director, National Center for Immunization and Respiratory Disease; Sonja S. Hutchins, MD, Office of Minority Health and Health Equity, CDC.

References

1. CDC. Fluview. 2012–2013 influenza season week 3 ending January 19, 2013. Atlanta, GA: US Department of Health and Human Services, CDC; 2013. Available at <http://www.cdc.gov/flu/weekly/weeklyarchives2012-2013/weekly03.htm>.
2. CDC. Early estimates of seasonal influenza vaccine effectiveness—United States, January 2013. *MMWR* 2013;62:32–5.
3. Treanor J, Talbot HK, Ohmit SE, et al. Effectiveness of seasonal influenza vaccines in the United States during a season with circulation of all three vaccine strains. *Clin Infect Dis* 2012;55:951–9.
4. McMenamin J, Andrews N, Robertson C, et al. Effectiveness of seasonal 2012/13 vaccine in preventing laboratory-confirmed influenza infection in primary care in the United Kingdom: mid-season analysis 2012/13. *Euro Surveill* 2013;18(5).
5. Skowronski DM, Janjua NZ, De Serres G, et al. Interim estimates of influenza vaccine effectiveness in 2012/13 from Canada's sentinel surveillance network, January 2013. *Euro Surveill* 2013;18(5).
6. Bragstad K, Emborg HD, Kølsen Fischer T, et al. Low vaccine effectiveness against influenza A (H3N2) virus among elderly people in Denmark in 2012/13—a rapid epidemiological and virological assessment. *Euro Surveill* 2013;18(6).
7. Osterholm MT, Kelley NS, Sommer A, Belongia EA. Efficacy and effectiveness of influenza vaccines: a systematic review and meta-analysis. *Lancet Infect Dis* 2012;12:36–44.
8. Talbot HK, Griffin MR, Chen Q, Zhu Y, Williams JV, Edwards KM. Effectiveness of seasonal vaccine in preventing confirmed influenza-associated hospitalizations in community dwelling older adults. *J Infect Dis* 2011;203:500–8.
9. CDC. Antiviral agents for the treatment and chemoprophylaxis of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2011;60(No. RR-1).
10. Singh-Manoux A, Martikainen P, Ferrie J, Zins M, Marmot M, Goldberg M. What does self rated health measure? Results from the British Whitehall II and French Gazel cohort studies. *J Epidemiol Community Health* 2006;60:364–72.