Update on Influenza Vaccination for Health Care Personnel: Recent Coverage, Recommendations, Reporting, and Resources

Moderator: Loretta Jackson-Brown

Presenters: Anne McIntyre, PhD; Andrew Kroger, MD; Megan Lindley, MPH; Austyn Dukes, BA

Date/Time: November 15, 2011 2:00 pm ET

Coordinator:

Welcome and thank you all for standing by. I'd like to remind the participants that they will be in a listen only mode until today's question and answer session.Today's conference call is being recorded. If you do have any objections please disconnect at this time. And I will be turning the call over now to your first speaker for today, Loretta Jackson-Brown. You may begin.

Loretta Jackson-Brown:

Thank you (Kelly). Good afternoon. I'm Loretta Jackson-Brown, and I'm representing the Clinician Outreach and Communication Activities, COCA, with the Emergency Risk Communications branch at the Centers for Disease Control and Prevention. I'm delighted to welcome you to today's COCA webinar, Update on Influenza Vaccination for Health Care Personnel: Recent Coverage, Recommendations, Reporting, and Resources. We are pleased to have with us today four CDC subject matter experts here to review the latest information related to influenza vaccination for health care personnel.

You may participate in today's presentation by audio only, via webinar, or you may download the slides if you are unable to access the webinar. The PowerPoint slide set and the webinar link can be found on our COCA Web page at emergency.cdc.gov/coca. Click on COCA Calls; the webinar link and slides can be found under Additional Call Information.

At the conclusion of today's session, the participant will be able to; discuss the importance of influenza vaccination in health care personnel; state the influenza vaccination recommendations for health care personnel; identify the three groups of health care personnel covered by the new standardized influenza vaccination quality measure; and categorize vaccination status according to measure specifications; and locate educational promotional resources available for the 2011-2012 influenza season.

In compliance with continuing education requirements, all presenters must disclose any financial or other association with the manufacturers of commercial products, suppliers of commercial services, or commercial supporters as well as any use of unlabeled product or products under investigational use. CDC, our planners and the presenters for this presentation do not have financial or other associations with the manufacturers of commercial products, suppliers of commercial services, or commercial supporters. This presentation does not involve the unlabeled use of a product or products under investigational use. There was no commercial support for this activity.

Our first presenter, Dr. Anne McIntyre, is an Epidemiologist with CDC's National Center for Immunization and Respiratory Diseases Assessment Branch and a former CDC Epidemic Intelligence Service Officer. During the 2009 H1N1 pandemic, she led the influenza division's regional epidemiology team and after the pandemic she led the development and evaluation of new electronic data sources to supplement influenza surveillance.

Our second presenter, Dr. Andrew Kroger, is a Medical Officer with CDC's National Center for Immunization and Respiratory Diseases Education Information and Partnership Branch. A pediatrician, Dr. Kroger presents on topics related to immunization updates and pandemic influenza preparedness. He contributes to the development of new distant learning activities to include the current issues in immunization series net conference. In addition he is lead author for the newest edition of the CDC's General Recommendations on Immunization.

Our third presenter, Megan Lindley, is an Epidemiologist with CDC's National Center for Immunization and Respiratory Diseases. In this role she served as the lead for a 300 facility pilot test to determine feasibility, utility, and barriers to implementation for a standardized measure of health care personnel influenza vaccination coverage. A subject matter expert on measurement of influenza vaccinations of health care personnel, she conducts, presents and publishes research on health care personnel influenza vaccination in measurement of vaccine coverage.

Our final presenter, Austyn Dukes, is a Health Communication Specialist with CDC's National Center for Immunization and Respiratory Diseases Office of Health Communications. She's worked in various capacities on the national influenza vaccine campaign. During the 2009 H1N1 influenza pandemic she functioned as a co-lead for the CDC's 2009 H1N1 influenza Web site and social media efforts. She continues to be the lead for these efforts for the seasonal influenza vaccine campaign.

Following the presentation you will have an opportunity to ask our presenters questions. For audio questions dialing star 1 will put you into the queue for questions. Or you may submit questions throughout the program using the webinar system. Click on the Q&A tab in the upper left hand corner to type a question.

At this time please welcome Dr. McIntyre.

Dr. Anne McIntyre:

Thank you Loretta - good afternoon, today I'm going to review findings of the survey of influenza vaccination coverage among health care personnel or HCP in the United States during the 2010-11 influenza season. First some background for the survey. Annual influenza vaccination is recommended for all HCPs. Andrew will be reviewing these recommendations in detail during the next presentation. But to provide some context for this review, facilities that employ HCPs are strongly encouraged to provide vaccinations to staff in positions where there's the potential for exposure to influenza that can be transmitted to and from the health care personnel. The definition of health care personnel used in this survey are shown here and might vary slightly from definitions used in previously published surveys of vaccination coverage. Influenza vaccination coverage among HCP has increased slowly over the past decade. Before the 2009-10 influenza season, coverage estimates were below 50%. During the 2009-10 season, coverage was estimated to be 62%. The objective of this Internet Panel Survey was to estimate influenza vaccination coverage among HCP for the 2010-11 season and to assess the knowledge, attitudes and behaviors regarding influenza vaccinations. Next I'll summarize the methods used for this survey, published in the MMWR on August 19, 2011 pictured here. To measure self -reported uptake of flu vaccination from August 2010 through mid-April 2011 the CDC conducted a survey using a Web based questionnaire from April 1 through the 27th of 2011 .The total sample consisted of 1931 eligible HCP from three survey panels. The estimates approximate the cumulative proportion of HCP vaccinated in the 2010-11 influenza season. Statistical significance of weighted differences was determined by Wald chi-square tests where P was less than .05. And finally, we assessed factors associated with increased vaccination coverage among HCP in facilities where no employment requirement was reported. The Internet Panel Survey consisted of three online research panels which were combined and weighted to be

geographically and demographically representative of HCP in the United States. Eligible respondents included those who worked in a hospital, ambulatory care, nursing or residential care facilities, home health or other health related settings, or those outside health related settings but who have hands-on care of patients such as firefighters or other first responders.

Now on to the results; here's a breakdown of the three panels contributing to the total weighted survey sample of 1931, from left to right. On Panel 1, 1150 respondents or about 60% of the total sample were self-identified HCP participating in an online research panel. Panel 2, with 534 respondents or about 28% of the sample, was a specialized research panel, primarily made up of physician specialists recruited through the American Medical Association master file. Finally, Panel 3 with 247 respondents or about 13% of the total sample included self-identified HCP samples from a marketing research panel recruited through Web advertising. Overall among the 1931 respondents, vaccination coverage was estimated to be 63.5%.

By age group, coverage among those aged 18 to 29 years and 30 to 44 years was similar, close to about 57%. Among those aged 45 to 59 years coverage was 69%. And the greatest coverage was among those aged 60 years and older at about 74%. Coverage in the 18 to 29 and 30 to 44 year old age groups was significantly different than those for aged 60 and older. By race and ethnicity, coverage among those who identified as White, non-Hispanic was about 67%. Coverage among those identified - identifying as Black, non-Hispanic was about 61%, Hispanic about 58%, Mixed race, non-Hispanic about 39%, and other non-Hispanic about 55%. Here there were no significant differences in coverage estimates. This slide depicts coverage by work setting. Coverage was highest in hospitals at about 71%, followed by long-term care facilities and retail pharmacies at about 64%, ambulatory care and outpatient clinics at about 62%, dentists offices at about 55%, home health care about 54% and other health related work settings at about 47%. Coverage among those working at ambulatory care and outpatient clinics, home health and other settings was significantly different than in hospitals. Oh dear. Thank you. Are we back?

This slide depicts coverage by reported occupation. Coverage was highest among physicians and dentists at about 84%, followed by nurse practitioners and physicians assistants at 83%, nurses at about 70%, nonclinical support staff around 66%, allied health professionals and technicians at about 64%, administrative staff around 57%, assistants and aides at about 56%, and other occupations around 62%. Coverage estimates for nurse practitioners and physicians assistants were similar to physicians and dentists. Coverage among nurses, allied health professionals, technicians, administrative staff, assistants and aides, and other occupations was significantly different than physicians and dentists.

This slide illustrates influenza vaccination coverage by HCP in reported employer - by reported employer requirement. Approximately 13% of HCP reported being required by their employers to be vaccinated for influenza. Among those reporting an employer requirement coverage was 98%, significantly different from the 58% coverage among those who reported no employer requirement. This slide illustrates beliefs regarding flu vaccination by vaccination status. The bars represent the percent of respondents reporting agreement with the positive beliefs about influenza vaccinations listed on the Y axis. The green bar indicates those who are vaccinated and the white bar depicts those who are not vaccinated. Overall we see that those who were vaccinated reported agreeing with the positive beliefs more frequently than those who were not vaccinated. All estimates for those not vaccinated were significantly different from the estimates for those who were vaccinated.

This slide illustrates the percent of HCP vaccinated when employers offered onsite vaccination with no employer requirement. The purple bars represent those reporting the employer incentive listed on the Y axis, the white bars those without the employer incentive. In most cases the coverage was higher when employer incentives were present. But only two were significantly different; vaccination available for more than one day and vaccination available at no cost to the HCP. This slide depicts vaccination coverage among those reporting additional employer incentives but no employer requirement. Again, the purple bars represent those reporting an employer incentive, the white bars those without the employer incentive.

The top graph shows the percent vaccinated when HCP were personally reminded by an employer to get vaccinated. When the employer incentive is to offer vaccination onsite, coverage is significantly higher when HCP are personally reminded by the employer to get vaccinated. When vaccination is not offered onsite, a personal reminder from an employer does not impact the coverage level. The bottom graph shows the percent vaccinated when an employer publicized risks and benefits of vaccination. Regardless of whether the employer offers vaccination onsite or not, an employer publicizing risks and benefits of vaccination did not have a significant impact on coverage levels.

This slide summarizes factors associated with increased vaccination coverage. A multivariable logistic model suggested that two employer incentives were associated with being vaccinated where employers offered vaccination onsite with no employer requirement; a personal reminder to be vaccinated with an odds ratio of 1.6 and 95% confidence interval of 1.1, 2.3; and vaccine availability at no cost and for more than one day with an odds ratio of 2.8 and a 95% confidence interval of 1.7 to 4.5. These two incentives were actually considered as a composite because of near complete overlap. The model was controlled for demographic characteristics and other employer incentives.

So to put this all together; among HCP overall flu vaccination coverage was estimated to be 63.5%, similar to the 2009-10 coverage estimate of 62%. Highest coverage levels were reported in hospitals and by occupation among physicians, dentists, nurse practitioners and physicians assistants. Older HCP reported higher coverage than younger HCP.And where there was an employer requirement for flu vaccination reported coverage was 98.1%, although only 13% reported being subject to such a requirement. Where no employer requirement was reported increased coverage was associated with vaccination offered at work free of charge for more than one day.

This survey was subject to several limitations. The sample might not have been representative of all HCP in the United States. Results are also self-report, there might be a selection bias if participation in the survey correlated with receipt of vaccination or certain beliefs. The definition of HCP might vary from definitions used in other surveys of vaccination coverage. And finally, based on how the questions were asked, results might reflect a select sample of HCP who reported they work in a facility that mandates vaccinations.

In conclusion these results suggest that efforts to educate HCPs should continue and include information about the safety of the vaccine and importance of vaccination to prevent flue for themselves, their friends and families and their patients. This might be particularly important for HCP working in non-hospital settings in occupations with lower coverage. Offering vaccination to HCP at workplaces may increase vaccination coverage among those populations.

Finally, health care facilities should develop a comprehensive influenza vaccination strategy that uses a combination of approaches demonstrated to be effective at increasing vaccination coverage, such as education and accessible vaccination at no cost to the health care personnel....say Thank you to the collaborators on this survey and that concludes my presentation. For further information please visit the Web sites listed here. Thank you. And now I'll turn it over to Andrew.

Andrew Kroger:

Thank you Anne. I am now going to discuss the specific CDC influenza vaccine recommendations for health care personnel, that's one of the things I will be doing. I'm also going to be talking about specific influenza vaccine products so I'll repeat my disclosure that I'm a federal government employee, I have no

financial interest or conflict with the manufacturer of any product named in this presentation. I will not discuss any off label use of any vaccine, and I will not talk about vaccines not licensed by the FDA.

So as an overview, I will describe the influenza vaccine recommendations because truly the health care provider recommendations parallel quite closely with our general adult influenza vaccine recommendation. So I'll go through that, that won't take too long. Then I will list the available products that are available, the vaccine formulations. And then lastly I'm going to discuss some specific adult vaccination issues relevant to influenza vaccine and health care provider vaccination. And I'll talk about health care provider perceptions of influenza vaccination.

So I'd like to show this picture to remind everyone that we recommend influenza vaccination not only to prevent the burden of illness caused by influenza virus, but we vaccinate to prevent the spread of virus from one person to another. As you can see with many respiratory illnesses there is the great potential for spread. And we know with influenza infection and influenza disease specifically that roughly 15 to 20% of the population is infected every year. We know that persons who have chronic diseases are at a higher rate of hospitalization or death if infected with influenza. So in the context of a health care setting influenza vaccination is one of the most important things that a health care provider can do to prevent both infection in themselves as well as transmission to their patients and resulting complications from influenza infection.

So in fact, when talking about influenza vaccination recommendations, we don't really single out particular prioritization groups anymore. Annual influenza vaccination is now recommended for every person in the United States 6 months of age and older. Influenza vaccine is not licensed for children younger than 6 months of age, that's why that group is excluded. But it is recommended for everyone else and annually. And why annually? Well the reason we recommend yearly influenza vaccination is three reasons - threefold. Because -first because our vaccine is targeted to our surveillance efforts, the vaccine contains antigen to those particular strains that we feel are going to circulate throughout the influenza season. This is decided in February, preceding the current influenza season and we know from our surveillance that these strains will continue to circulate for about a year. So this is why we have this schedule where an activated influenza vaccine expires June 30 every year. There's some variability with the live vaccine, but we use as kind of a basic guidance that June 30 is when influenza vaccine expires. We assume different strains are going to be circulating the next year. Strains do change through a process called Drift; didn't happen this past year but it happens fairly regularly. Drift is the process whereby spontaneous mutations cause small changes in the genome of the virus that makes resistance
to - that makes that virus resistant to any natural or vaccine immunity which may have been generated the previous year. It's a relative resistance. A person may have milder illness the next season, but they will still become infected and they can still spread the virus. So because of this process of drift it's important to provide the current seasons' vaccine that protects against the current strains that are circulating.

Lastly, regardless of whether there are changes in the virus -- whether there is any drift -- we know that human antibodies naturally wane. Since the influenza virus has a short incubation period and causes disease very quickly after infection occurs it's important to have a strong antibody response, not only when the season peaks but before the season peaks. So we generally recommend vaccination, start of vaccination, in September through November. Now we know that the season generally peaks later than that, it peaks in February. And so there's often concern about duration of immunity following influenza vaccination. We know that the antibodies do wane. There's no evidence that that occurs any faster in any particular age group. And this has been looked at. So this is why we recommend one dose of influenza vaccine for adults every season. So just keep in mind you need to vaccinate annually, and for adults it's one dose. Additional vaccine doses are really not thought to increase the antibody response significantly. And they've looked at studies of breakthrough infections. I've got the citation on this slide by Skowronski in Journal of Infectious Disease that do not show higher rates in individuals that were vaccinated - higher

rates of breakthrough infection in individuals vaccinated early in the season.

So that - that basically, it's a pretty simple message for health care providers, in terms of what the recommendations are; it's one dose and it's annually. I will now talk a bit about the influenza vaccine presentations and formulations that are available. The strains are the same, the three strains that are in the vaccine are the same as last year's strain -- again, antibodies wane, you need to vaccinate every year. Now what else about the vaccine do you need to know? So four manufacturers produce the inactivated vaccine, which you will see on this table abbreviated TIV, and one manufacturer produces the live attenuated influenza vaccine or LAIV. As far as the dose forms of the different products, they all come in different packages. If you look at the middle column, SDS stands for a single dose syringe, SDV stands for a single dose vial, and MDV stands for a multidose vial. So you see the different dose forms and the Flumist LAIV is available as a nasal spray. I should mention also the live vaccine Flumist is a nasal spray; the inactivated vaccines are administered by injection. Most products either - are intramuscular; one, Fluzone ID is an intradermal administration, this is a new product that is out there that has a micro needle, it has a very, very short needle that - but it is a needle that provides the vaccine dose a little more superficially than an intramuscular dose would. What's most important on this table is the fact that the different formulations are approved by FDA for different age groups. And you should keep track of these differences. In the context of health care provider vaccination in which we presume the vaccinees are adults. There are really practically all of the formulations can be given to adults.

There is a small volume Fluzone that's intended for children younger than 4 years. But for the remainder of the products, adults can receive these vaccines. A few caveats; Fluzone High-Dose is only available for persons 65 years old and older. Note above that, Fluzone ID has an upper limit, so it's only available – or only approved for adults 18 through 64 years of age. And Flumist is specifically recommended for adults younger than 50 years of age, the range is 2 years through 49 years of age and if the adult vaccinee is healthy and not pregnant. And there is plenty of influenza vaccine still out there. By October 31, 2011 we had estimated that 124.9 million doses had been distributed to the providers. And we don't do as well at measuring actual uptake of specific product, but we know that many doses have been sent out. And based on the estimates the manufacturers gave us at the beginning of the season, they still would potentially have 50 million more doses able to be distributed. So there's plenty of vaccine in an ample supply. I have a slide on pregnant health care workers. I talked about pregnancy in the context of LAIV, the live vaccine, and I want to discuss this topic because it's relevant not only to adults generally, but health care workers who may be pregnant. First of all, pregnant health care workers are limited to TIV only. We generally contraindicate live vaccines in pregnancy due to really a theoretical risk only. But we say this for all live vaccines - pregnancy is a contraindication. But the more important message here is that pregnant health care providers definitely need to receive influenza vaccine in the form of TIV. They need to be vaccinated because of the physiologic state of pregnancy, which affects the circulatory, respiratory and immune system, pregnant women have four times the risk of hospitalization as non-pregnant women if they are infected with the virus. We know that they have high risks of complications. This was specifically observed during the 2009 pandemic season and observed in other years as well and is presumed to occur every year, high rates of complications. Really, risks of complications are comparable to non-pregnant women that have high risk medical conditions like chronic lung disease or chronic heart disease. So we recommend influenza vaccination with TIV for pregnant women regardless of trimester. Recent data also suggests that TIV vaccination of pregnant women is protective of the infant after birth. In this case controlled study published in Clinical Infectious Diseases last year, children younger than 6 months of age were followed those that were hospitalized with culture-confirmed influenza, as well as controls. And so they looked at the children hospitalized with respect to the mother's vaccination status. And then they did the same for the group of matched controls. So if you look in the middle row, for cases, 98% of the mothers were not vaccinated in pregnancy, you can see that 98%, whereas in the controls only 80% of the mothers were unvaccinated. So this translates into a vaccine effectiveness of 92%. Vaccination of pregnant women was 92% effective in preventing hospitalization of their infants for influenza in the first 6 months of life.

Now this - the article has been talked about already, the MMWR that was published in 2006 by CDC,

ACIP and Hospital Infection Controlled Practices Advisory Committee, that listed several reasons why health care providers do not receive influenza vaccine. This includes; concerns about vaccine adverse events; the perception of a low personal risk of influenza virus infection -- that's a curious one because as mentioned, 20% of the population is infected every year on average; perceived ineffectiveness of the influenza vaccine; insufficient time or inconvenience; avoidance of all medications; and fear of needles.

The MMWR then highlights specific strategies that facilities can use to address these concerns. And education is the Number 1 concern. I will briefly talk about, one concern is the fear that, "The influenza vaccine gave me the flu," I have to discuss this. A short tangent, but let me go with this. This concern arises for a few reasons; one, we vaccinate during the influenza season, it takes two weeks for the vaccine to work so it is possible to become sick with influenza after receiving the vaccine because you were naturally infected and were late getting the vaccine dose. Or other respiratory pathogens circulate at the same time in the fall winter months. Vaccine would not prevent these infections, but that doesn't stop someone from becoming sick with those infections and they think it might be influenza when it's not. And then lastly, there is truth to the fact that the vaccine is known to be 50 to 70% effective in preventing influenza disease. It does do better at preventing the complications, but as far as preventing the disease, that's what it its -- 50 to 70%, there's some new data. So it is possible to still become infected with influenza after receiving the vaccine, however all of these circumstances are coincidental and the vaccine has nothing to do with causing the illness -- the inactivated vaccine is a subunit split virus vaccine and the live attenuated is attenuated and cannot cause influenza disease. So that's the educational tidbit here. Role models are important: facilities with infectious disease specialists have higher health care personnel vaccination rates; reduction of financial and time barriers: very important making a vaccine available at the worksite and free; monitoring and reporting influenza vaccination levels: the facility - this is a quality control and infection control measure that some facilities do; sign vaccination declination forms.: these are available at the - on the immunization action coalition Web site, also used by several states they - that remind providers that if they choose not to receive the vaccine they pose an infectious risk to their patients via spreading influenza. And then of course legislation and regulation: CDC recognizes that many states have done this in attempt to prove rates.

And you know, as far as improving vaccination coverage, that is what we're trying to do, but also prevent influenza disease. And I want to highlight as well information in the 2006 MMWR that talks about the connection between improving coverage and preventing disease. It's shown that increasing the coverage of health care personnel reduces absenteeism of hospital staff by 22 to 52%, things like lost work days. Also vaccination of hospital staff can prevent influenza mortality. And the data cited in the 2006 MMWR estimates on the order of 42 to 44% in terms of reduction of mortality -- and this is in long-term care facility patients.

My last slide; I'm going to conclude with just a graph that demonstrates an effective strategy to improve coverage. This is a graph that shows health care personnel coverage rates over time at the Virginia Mason Medical Center in Washington State. So these bars represent levels of coverage, percentage of health care workers that are vaccinated. The arrow shows in 2005 where a workplace vaccination requirement was implemented at this facility, raising coverage levels from 30% to 98%, and with a sustained rate thereafter for at least 5 years. So what - you know, what we always look for is, "Does this data translate directly to reductions in disease influence and incidents?" We have definitely seen this in other settings, as I showed on the last slide. So I wanted to just kind of conclude with that, with this demonstration of a strategy. I'll now turn the mic over to Megan who is going to talk about the reporting of vaccination. Megan?

Megan Lindley:

Thanks Andrew. So I am going to be talking about a pilot study of a standardized measure to report health care personnel influenza vaccination and a final rule that was recently published by the Centers for Medicare and Medicaid Services related to that measure. So as a small amount of background, Andrew mentioned that monitoring and reporting influenza vaccination as a quality measure is a good way to raise coverage. However, a 2006 study conducted by CDC showed that there's a real lack of uniformity in the way hospitals in the U.S. measure their vaccination rates among HCP. And that primarily has to do with whether they included employees as well as independent or credentialed practitioners, as well as students or volunteers or any of the many different groups that might be working in a hospital.

And since 2007 the Joint Commission accreditation standards require hospitals and long-term care organizations to annually measure influenza vaccination rates for their staff and licensed independent practitioners, and to report those rates. The National Quality Forum, which is a nonprofit national organization that approves quality measures - health care quality measures, recently issued a time-limited endorsement to a CDC-sponsored standardized measure for reporting health care personnel influenza vaccination rates -- and I'm just going to call that the NQF Measure for the duration of this presentation. And the purpose of that measure was to ensure that health care personnel vaccination rates were both comprehensive within the institutions where they were being measured, and comparable across different institutions -- so to try and eliminate those variations in measurement that I discussed.

The objectives of our pilot: In collaboration with four states and localities we wanted to determine the feasibility of implementing the NQF measure for reporting health care personnel influenza vaccination in a variety of different types of health care institutions; and we also wanted to identify barriers to and facilitators of implementing the measure. So the data collection methods for this pilot project; we used three Web based surveys that were administered throughout the influenza season, we collected characteristics of the institutions and their influenza vaccination programs -- for example, what kind of strategies they used to promote vaccination and to which personnel they provided the vaccine. We asked about their processes for collecting data on vaccination of health care personnel. We asked about their perceived barriers to reporting health care personnel vaccination, specifically using our NQF Measure.

And finally, the main outcome of the study was the aggregate vaccination data and the number of health care personnel working at the institution -- which were the numerator and denominator of their vaccination rate. And I will discuss those a little more in detail on the next slide. So I'm going to go over the specific components of the numerator and denominator because as I said, this is a standardized measure, so we provided some very specific guidelines to the facilities that participated in this pilot. The denominator was meant to consist of all paid and unpaid health care personnel who worked full or part time for at least one day between October 1, 2010 and March 31, 2011 -- so essentially that was our definition of the influenza season for this year. And we asked the facilities to report their denominator in three mutually exclusive groups; we asked them to report employees, which we defined as, any health care personnel, anyone who receives a paycheck from the facility regardless of whether they have patient care duties. If they're paid by the facility directly they are an employee. We asked them to report credentialed non-employees, which is what it sounds like, it's practitioners who are not directly working at the institution but are affiliated and an attending physician at a hospital would be a good example of this category. And then other non-employees was a group that included every other person who was not a credentialed practitioner but did work at the facility. So that could include everybody from students or volunteers or contract workers or construction workers….that was an extremely broad category, which as you will see presented some difficulties for institutions. The numerator also consisted of mutually exclusive categories, and we asked them to report four separate categories; there were personnel who received their influenza vaccination at the health care institution; there were HCP who received the vaccination elsewhere; HCP who were determined to have a medical contraindication to influenza vaccination; and HCP who declined influenza vaccination for non-medical reasons. And the star next to that last reason - excuse me, last

category indicates that that was the only status for which we asked them to actually have documentation. The other ones could be self-reported if that was how the facility was used to collecting that data. So the thing to note here as - is that these four categories of the numerator, this is meant to cover everybody in the hospital - excuse me, everybody in the facility. Your health care personnel should end up in one of these categories. And they're all tracked separately so that you can calculate influenza vaccination coverage. This is just to give you a quick glance at the data collection we used, so you can see how it's laid out with the data collected separately for each of those three groups here -- the employees, credentialed non-employees, and other non-employees. And then you have the denominator data on top, and those four numerator categories on the bottom.

So the results; of the 318 institutions that we recruited for the pilot, 234 of them completed all three of the Web based surveys, which is a cumulative response of 74%. We have 78 acute care hospitals, 16 ambulatory surgery centers, 43 dialysis clinics, 59 long-term care facilities, and 38 physician practices. This slide shows, for each of the three groups, employees in red, credentialed non-employees in yellow, and other non-employees in green. And across the bottom on the X axis for each of the five facility types, the proportion of facilities who said that it was easy or very easy to count health care personnel. So this is a measure of how able they were to provide the denominator data for the measure. And you can see generally, employees - it was pretty easy, over 80% for all facilities. And they had a substantially more difficult time counting their credentialed non-employees and their other non-employees. And again, that's not the vaccination data, that's simply counting and establishing the denominator for those groups. This is the barriers to reporting, and I realize this slide's a little bit complicated to read. Each of the colored bars represents one of the five facility types in the pilot, which is illustrated in the key on the right of the slide. And the proportion of bars shows the proportion of that type of facility that said that the barrier listed on the left hand or the Y axis was "a major barrier to reporting." So when you read down that axis, you can see that it was the time to collect data on those credentialed non-employees and those other non-employees, determining the vaccination status of credentialed non-employees and other non-employees, and determining the status of health care personnel vaccinated outside the institution.

So these were particularly difficult, as you'll see by looking at the green and red bars, for hospitals and ambulatory surgery centers. For some of the barriers the - determining the vaccination status of credentialed and other non-employees - there were also substantial proportion of long-term care facilities, in yellow, that did note that this was a major barrier to them being able to use this measure. This slide, “Difficulty Reporting Denominator”, what that means is as you can see on the left hand side, it was the percent of facilities of each type that were unable to provide a denominator at all -- they could not count this group, they had no way of establishing this number. And so what you see when you look is generally for employees everybody was able to provide a denominator, which is not surprising. And even for the credentialed non-employees and the other non-employees, most facilities were able to count these, even though as you'll recall, they did report that it was more difficult to count them than it was to count the employees. The only group that over 10% of them could not report their non-employees was hospitals, which you'll see in the first column; 13% were unable to report denominator data for both of the non-employee groups. “Difficulty Reporting Numerator”; I'm going to go over this quickly, and it's a somewhat complicated slide. It's a parallel to the slide I just showed you except that down the Y - down the left hand column it shows the percent unable to report each of those four mutually exclusive numerator categories and the range shows the range for employees to non-employees.

So essentially I can tell you that for every single one, the lowest end of the range -- for example the zero under hospitals unable to report health care personnel vaccinated at the institution -- that's employees. And the top of the range for hospitals, it was usually most difficult for credentialed non-employees, for the others it was most difficult for non-employees - other non-employees. But the main message of this slide is when you look down at the contraindicated and non-medical declinations, you can see that in hospitals, ambulatory surgery centers, and long-term care facilities, for some of those non-employee groups over 1/3 were not able to capture that data. So we had to make some changes to our proposed measure based on this feedback that we received from our institutions. And we really wanted to balance the need to have a comprehensive measure that would cover everybody in the facility with feasibility concerns

because an excellent measure that a facility isn't capable of using is not going to produce usable data. So in the denominator we restricted the non-employee groups to very specific types of health care personnel; credentialed non-employees are now only physicians, advanced practice nurses and physician assistants; and the other non-employees is now limited to students, trainees and volunteers.

For the numerator we added a category: “Unknown”. The timeframe, it was very difficult for institutions to track people who might be there for only one day, so now the timeframe was changed to those who worked 30 days or more during the influenza season. And we removed the documentation requirement for declination. So I'll probably skip past this:. this is just showing you the numerator and denominator categories again, with the revisions that I just outlined underlined. And this was proposed to the National Quality Forum by CDC this past June - excuse me, July - for their consideration. So what is the impact of the measure? As I said, we submitted this to the National Quality Forum and we want to request their full endorsement which means that they feel that our pilot data have shown that this measure is usable and scientifically valid. This measure will be very important because it's going to provide a standardized, feasibility-tested measure for HCP vaccination which could be used for voluntary reporting initiatives or in institutions or states that have reporting requirements, such as Virginia Mason, the example Andrew used. And CDC’s National Healthcare Safety Network reporting system is going to use the measure after it's endorsed by NQF in the new module for reporting aggregate health care personnel influenza vaccination.

And finally as I alluded to at the beginning of the presentation, the Centers for Medicare & Medicaid Services’ Hospital Inpatient Quality Reporting Program is a program that requires acute care hospitals to report a set of quality measures or receive decreased annual payment updates. And CMS published a final rule in August 18 of 2011 that included health care personnel influenza vaccination as calculated by this measure in the Hospital IQR program. And that's the first time that health care personnel influenza vaccination has been included in that set of quality measures. The reporting is going to be done through CDC's NHSN system and the requirement will go into effect January 1, 2013. And I'm now going to go ahead and turn the presentation over to Austyn Dukes.

Austyn Dukes:

Thanks Megan. My name is Austyn Dukes and I'll be presenting CDC's Flu Resources for - available for health care personnel. Sorry. In the essence of time I'll try to keep this brief because I know you all will have a few questions. So starting out, during the flu season CDC distributes weekly key points to partners which include the most current information available for the flu season. Along with the weekly key points we include a U.S. and International surveillance report called Flu-View. The 2011-12 key messages document is our overarching communications tool that is currently available in English and soon to be available in Spanish. These messages are designed for specific audiences, including pediatricians, physicians, OB/GYNs, health care workers in health care settings, as well as other topic areas like vaccine safety, vaccine effectiveness and vaccine coverage. Participating on partner calls provides an opportunity for CDC to communicate flu related updates, including vaccine distribution and coverage, flu surveillance, and the resources CDC has available for planners, health professionals and the general public. In regards to education and training, CDC actively participates on various webinars and net conferences. For example, CDC will be hosting a FluVaxView webinar coming up on November 17 at 2:00 pm. An invite has already been shared with many of our partners, however if you would like to receive an invite to this you can email fluinbox@cdc.gov and we'll send that out to you.

Moving down, the following resources you - that I'm talking about after this will be - you can find it on this portal, which is http://www.cdc.gov/flu/professionals . And basically with the interactive coverage data, we called this
FluVaxView, which is the webinar that I just mentioned a few seconds ago. These are interactive coverage reports on national and state level influenza vaccination coverage estimates that use interactive maps, trend lines, bar charts, and data tables. This includes our latest coverage data as well as data from

previous flu seasons. The great thing about FluVaxView is that it's customizable and exportable to your needs – so, if health care personnel wants to use that in their own presentation, they can export that coverage data and put it into their own presentation. Also we are currently underway in developing a series of videos featuring influenza subject matter experts who will address specific questions patients have about influenza. The first video we have underway right now is intended to help physicians address common questions from patients that involve misconceptions about the flu and the flu vaccine. We have a variety of med articles available, some of which include ones for pharmacists, nurses and health care workers.

Also, CDC offers customizable print materials. This year we've added a few new ones - well many new ones, but I would like to mention this about one's for specialists and OB/GYN's which enable physicians to personalize and endorse flu vaccination to their at-risk patients. In a few slides I will provide a couple of screen shots that show you what these look like. We have a number of CDC flu expert commentaries on Medscape, our newest video is the 2011-12 flu vaccination recommendations commentary which highlights changes pertaining to people with egg allergy, child dosing recommendations, and other recommendation updates. CDC is currently working on a CDC flu iPad application which will be available on iTunes for a free download. And this application is segmented by audience, so targeted information will be available specifically for health care personnel. We offer a series of podcasts called the Influenza Round Tables. These address influenza prevention, antiviral drugs and warning signs of seasonal flu. We often use social media to reach various audiences within the general public. However, I do want to mention that Twitter and Facebook are also great tools to reach health care professionals. We provide tweets that health departments and organizations can re-tweet and information on Facebook that others can link to and share. Additionally we have ecards that are available as a reminder for your staff and patients to get vaccinated.

And here you will see an additional online portal on CDC's Web site. It's actually on our Vaccines Web site for health care professionals and providers. This site provides information about all vaccines but it does include specific information about the flu vaccine. So here I'm just providing a couple of screen shots for health care personnel. These are some of the resources, including the FluView, the FluVaxView right in the middle, that will give you kind of an idea of what it looks like when you go into the site.

To your left you'll see one of our ecards, but we have many, many more. There's you know, many CDC Expert Commentaries, these are just two of the very many. And then down to your bottom right you'll see some of our education training. So here's some samples of patient education which you can find all of these on our free resources page on our flu Web site, which is http://cdc.gov/flu/freeresources . And as I mentioned previously, here's two of our newest resources, these will be available in the coming weeks – in the next one to two weeks. We've had a small delay but they will be available online soon for free ordering.

And then I just want to mention that this - on the top left, this material is the customizable patient card for health care professionals. You'll see that there's a place for the patient's name as well as check boxes including the various conditions that place people at high risk of flu-related complications. And basically we just thought that this would be something that the patient could take with them from their doctor's appointment so they understand the importance of flu vaccination and understand why they are at high risk for complications. So finally I'll wrap this up. But if you have any questions about any of the resources that I've presented please email us at fluinbox@cdc.gov. And if you would like any information about the webinar that I told you about earlier we'll be happy to send you that as well. So that wraps up my presentation. And I thank you very much for having me today. And I'll turn it back over to our moderator Loretta.

Loretta Jackson-Brown:

Thank you presenters. We will now open up the lines for the queue question and answer session.

Coordinator:

Thank you. And at this time if you do have questions or comments to please press star followed by 1 on your touchtone phone. Please make sure your line is open and unmuted. You'll be required to prerecord your first and last names. Again that is star 1 on your touchtone phone for any questions or comments. And it'll be a moment for that please.

Loretta Jackson-Brown:

And while we're waiting for the first question through the phone line, I have a question through the webinar system. And this question is for you Dr. Kroger.

Dr. Andrew Kroger: Okay.

Loretta Jackson-Brown:

The question is, "Isn't there a new study that states that for elderly their protection wanes after four months?"

Dr. Andrew Kroger:
The - it's a good question. The study that I spoke about, the Skowronski article suggests a period of six to eight months for waning immunity. Now there may have been a study published since then. I know there was one that was - study that looked at overweight and obesity. I'm unaware of a specific one about the elderly that suggests a four month period. But really - and more studies will come I'm sure. Really what these studies have to do is not only demonstrate that protection wanes but that the risk of disease increases. And what you do with that information is kind of interesting because we simply don't know when influenza season is going to peak -- it's highly variable and that's the problem. And so you know, so you do have to give a dose of vaccine early in the season. But I guess if there's - if there is any data that comes that suggests additional doses that it will be looked at and compiled with the other data that's out there that suggests roughly a six to eight month period. But the data that I'm aware of shows that one dose is necessary for everyone - almost everybody. There are a few children that are being vaccinated for the first time in their lives, those younger than 9 that require two doses, but for everyone else it's one dose that's recommended.

Loretta Jackson-Brown:

Thank you. Operator, do we have any questions on the phone line?

Coordinator:

I do have a question from (Bill Borwegen), your line open.

(Bill Borwegen):

Hi this is (Bill Borwegen), I'm with the Service Employees International Union. Thank you for the excellent presentation. We do a lot in our union, we represent over a million health care workers, to promote vaccination of our health care workers. We've had a lot of good success with comprehensive education programs. Typically we can get over 90% with comprehensive educational programs. Alternatively we have run into situations where employers are not providing comprehensive education and they're - but they're mandating the vaccine as a more efficient way to get vaccination rates up. The problem is, that

you know, the employees don't have a chance to have their concerns, there are myths as you know with particularly with immigrant populations, there's racial elements where there are lower vaccination rates among people of color. And these workers don't have a chance to have their concerns addressed. I've actually been in rooms where workers have been reduced to tears and later have been fired for not getting vaccinated. I was wondering, this question is for the first presenter, "Are you - could you or have you thought about trying to measure the impact of education to promote vaccination rates." Because I notice that there's a lot of information in today's seminar promoting education, but I don't think anybody's tried to measure the quality of education that's being provided. And I think by measuring the quality of education that's being provided it may incentivize employers to provide more high quality education.

Dr. Anne McIntyre:

Hi, thank you so much for your comments (Bill). I think Megan might probably have a better insight on this. Megan, you want to take this?

Megan Lindley:

You know is that - unfortunately I had to step away from the computer that I was at, so now I'm only on the phone. I thought that education was one -- the MMWR that Anne referenced, I thought that education was one of the elements that was addressed. They actually looked at probably ten different elements. But Anne, do you recall is that something that was not included because it wasn't significant in this study?

(Bill Borwegen):

And I guess my only corollary is that you know, under the OSHA blood borne pathogen standard, workers are required to be educated annually about the benefits of the hepatitis B vaccine. And it's really increased vaccination tremendously And we don't have a corollary for the flu vaccine, but I think if we did it would really get us where we need to go based on a, you know, an environment of trust as - versus this punitive environment that we're currently seeing that I think has the potential to have a real backlash on – against vaccination when you take away the element of trust. In fact I - you know, I'm looking at some of these anti-vaccine groups and they're actually using the mandate for health care workers as a fundraising gimmick right now to get people to join their organizations and it's really scary to me as a - somebody who's been doing public health for 30 years to see this kind of backlash that could potentially result from more employers adopting this mandate.

Megan Lindley:

Well (Bill), this is Megan, I think you make a good point because, although I don't have them in front of me,
I believe there definitely are studies that have looked at the impact of education on health care personnel influenza vaccination. But I'm not sure I'm aware of research that really looks at what comprises a high quality education program and how those are implemented. So that's an interesting extra step to take, not just, "What is the impact of the education," but, "What constitutes appropriate education?"

Loretta Jackson-Brown:

And this is Loretta. (Bill) if you would like to email us at coca@cdc.gov, we will be in touch with the presenters and see if we're able to find you some information on that. So that's C-O-C-A@cdc.gov. So thank you.

(Bill Borwegen):

Thank you very much.

Loretta Jackson-Brown:

Okay, operator do we have another question on the phone?

Coordinator:

I'm showing no further questions at this time.

Loretta Jackson-Brown:

Okay. A reminder that you can also submit questions through the webinar system as well, if you look in the upper left hand panel you'll see Q&A, you can drop that tab down and you can submit your question there. We do have another question from the webinar system, this is for either Dr. McIntyre or Megan, and it relates to use of the definition, the term panel and what that definition is.

Megan Lindley:

This is Megan. Anne should correct me if this is technically not correct, but I think the difference between, when you're talking about a panel versus a regular survey sample, the panel has been pre-screened. So you know, in a regular survey you might call a bunch of numbers randomly and when you reach that person you would ask them questions to see if they qualify for your survey. So in this case you would ask, "Are you a health care provider or do you work in a health care facility?" The panel is a group of people that have been pre-identified, in this case as health care personnel. And so rather than having to go out and recruit the sample, there's just sort of this standing panel of people who are qualified to take surveys about health care personnel. So it means it's the group of people to whom the survey was administered, but that's why it's panel and not sample. Does that sound about right Anne?

Dr. Anne McIntyre:

I'm in agreement.

Loretta Jackson-Brown:

Okay thank you. Operator, are there any more questions on the phone line?

Coordinator:

I am showing no further questions.

Loretta Jackson-Brown:

Okay, thank you. On behalf of COCA I would like to thank everyone for joining us today with a special thank you to our presenters, Dr. McIntyre, Dr. Kroger, Megan Lindley and Austyn Dukes. If you have additional questions for today's presenters, please email us at C-O-C-A-@-C-D-C-.-G-O-V. Again, the email address is C-O-C-A-@-C-D-C-.-G-O-V.

The recording of this call and the transcript will be posted to the COCA Web site at emergency.cdc.gov/COCA within the next few days. Free Continuing Education credits are available for this call. Those who participated in today's COCA Conference Call and would like to receive Continuing Education credit should complete the online evaluation by Dec 15, 2011 using course code EC1648. For those who will complete the online evaluation between Dec 16, 2011 and Nov 15, 2012, use course code WD1648. All Continuing Education credits and contact hours for COCA Conference Calls are issued

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Thank you again for being a part of today's COCA webinar. Have a great day.

Coordinator:

Thank you and that concludes today's conference call. You may all disconnect at this time.

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