

NWX-DISEASE CONTROL & PREVENTI

Moderator: Dale Babcock

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11:00 am CT

Coordinator: Welcome, and thank you all for standing by. At this time, I would like to inform all participants, you will be on a listen-only mode, until the question and answer session. If you would like to ask a question, please press Star 1 on your touch tone phone.

I would also like to inform all parties that today's conference call is being recorded. If you have any objections, you may disconnect at this time. I would now like to turn the call over to Dr. Andrew Kroger. Thank you, sir. You may begin.

Dr. Andrew Kroger: Thank you very much. And welcome to Current Issues in Immunization, a CDC NetConference. I'm Andrew Kroger, a medical officer in the Immunization Services Division of the National Center for Immunization and Respiratory Diseases, or NCIRD at the CDC.

And I will be moderator for today's session. We're happy to bring you the latest immunization updates to your office computer or conference room.

To participate in today's program, you need a telephone connection and a separate Internet connection.

The learning objectives for this session are: one; describe an emerging immunization issue; two, list a recent immunization recommendation made by the Advisory Committee on Immunization Practices, or ACIP; three, locate resources relevant to current immunization practice; and four, obtain, assess and apply patient information to determine the need for immunization.

So today is March 16, 2016 and we have two topics for today's NetConference. First, Dr. Candice Robinson, a medical officer with the Immunization Services Division of NCIRD at CDC, will present an update on the 2016 child/adolescent immunization schedule.

Then, Dr. David Kim, a medical epidemiologist, also in the Immunization Services Division of NCIRD at CDC, will discuss the 2016 adult immunization schedule. And a question and answer session will then follow.

Please make a note of the following information. If you have technical difficulties, please dial Star 0 on your telephone. If you would like to ask a question, please press Star 1.

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Before beginning the first presentation, we offer this pre-conference, content-based polling question. Which of the following statements about the 9-valent human papillomavirus vaccine, or 9vHPV is true?

The choices are: 9vHPV can be used for males and females; 9vHPV is given in a two-dose series; 9vHPV is contraindicated for young adults with immunocompromising conditions; or all of the above. So take ten more seconds to answer.

Okay. I will reveal the results of this question at the end of our presentations. So now, I would like to turn the presentation over to Dr. Robinson. You may begin.

Dr. Candice Robinson: Thank you, Dr. Kroger. I will begin by discussing some of the immunization recommendation MMWR articles published in 2015. These articles inform the major changes to the 2016 child and adolescent immunization schedule.

I'll discuss two meningococcal B publications, as well as HPV and hepatitis B publications. In June of 2015, recommendations for the use of serogroup B meningococcal, or MenB vaccine, in persons at increased risk of serogroup B meningococcal disease were published.

It is recommended that persons aged 10 years and older, at increased risk for disease, receive the MenB series. These persons include persons with persistent complement component deficiencies. This includes persons with

inherited or chronic deficiencies in C3, C5-9, properdin, Factor D, Factor H, or those taking Soliris (eculizumab).

Persons with anatomic or functional asplenia, including persons with sickle cell disease, microbiologists routinely exposed to isolates of *Neisseria meningitidis*, and persons identified as at increased risk because of a serogroup B meningococcal disease outbreak.

In October, recommendations for the use of MenB vaccines in adolescents and young adults not at high-risk were published. A MenB vaccine series may be administered to adolescents and young adults age 16 through 23 years, to provide short-term protection against most strains of serogroup B meningococcal disease.

The preferred age for MenB vaccination is 16 to 18 years. This is a Category B recommendation, meaning that vaccination is subject to individual clinical decision making.

For both MenB recommendations, either MenB vaccine may be administered, either a three-dose series of MenB-FHbp, Trumenba, or two-dose series of MenB-4C, Bexsero.

An important note regarding the MenB vaccines, the two vaccines are not interchangeable, meaning that patients should receive a full series of either Trumenba or Bexsero to complete the vaccine series. We will discuss this further shortly.

Nine-valent HPV vaccine was approved by the Food and Drug Administration in December of 2014. Recommendations for their use were published in the MMWR in March of 2015.

This vaccine targets HPV types 6, 11, 16 and 18, the types targeted by the quadrivalent HPV vaccine, Gardasil, as well as five additional types: HPV types 31, 33, 45, 52 and 58.

Nine-valent, quadrivalent, or bivalent HPV vaccine can be used for routine vaccination of females age 11 or 12 years of age, and females through 26 years who have not been vaccinated previously, or who have not completed the three-dose series.

Nine-valent, or quadrivalent HPV vaccine can be used for routine vaccination of males age 11 through 12, and males through 21 years who have not been vaccinated previously, or who have not completed the three-dose series.

The ACIP recommends that either 9-valent HPV or quadrivalent HPV vaccine be administered for men who have sex with men, and immunocompromised persons, including those with HIV through age 26 years, if not previously vaccinated.

In October 2015, CDC published an update that recommends a shortened interval for post-vaccination serologic testing of infants born to hepatitis B-infected mothers.

This update recommends that post-vaccination serologic testing be performed at 9 to 12 months. Previous recommendation for testing was 9 through 18 months. For most infants born to hepatitis B positive mothers, post-vaccination testing at 9 to 12 months provides opportunity for testing at two well child visits, either the 9 month or the 12 month well child visit.

An additional benefit of the shortened interval for post-vaccination serologic testing is a reduction in the period during which non-responders are at risk for transmission from close contacts with HepB infection.

Earlier post-vaccination serologic testing enables prompt revaccination of those infants needing revaccination with a three-dose hepatitis B vaccine series. A shortened interval may also increase adherence with recommendations for timely completion of post-vaccination serologic testing, and can serve public health resources involved in providing case management services.

Additionally, in light of lowered measured anti-hepatitis B surface antigen levels, but continued protection with increasing time following vaccination, post-vaccination serologic testing occurring at increasing intervals may result in misclassification of some infants as nonresponders, and therefore, lead to unnecessary revaccination.

Because nonresponding infants receive a second three-dose hepatitis vaccine series, followed by retesting soon after completion of that series, this shortened test interval reduces the likelihood of misclassification as a non-responder, and therefore, would reduce the need for unnecessary revaccination.

Now, I will discuss the changes to the 2016 schedule. Figure 1 changes for the 2016 schedule include the following. A purple bar, which represents the range of recommended ages for certain high-risk groups, has been added to the Hib line, and extends from 5 years through 18 years.

It should be noted that this is not a new recommendation. This bar was added to correspond with text in the footnotes and published recommendations for

administration of Hib in this age group for unvaccinated persons with certain high-risk conditions.

The Tdap line has been moved down in the table, given the desire to have the vaccines routinely recommended by age groups aligned from the earliest age, the hepatitis B vaccine, to older ages, Tdap, HPV and meningococcal vaccines generally given in adolescence.

In the HPV line, a purple bar has been added from age 9 to 10 years for children at high risk, due to history of sexual abuse. This is in line with currently published HPV guidelines. Additional information has been added to the footnotes, which we will discuss later.

HPV nomenclature was changed to reflect the new HPV nomenclature format. For example, HPV4 is now referred to as four-valent HPV (4vHPV). A row for meningococcal B vaccine has been added to the schedule, with both a purple denoting high-risk vaccination beginning at age 10 years, and a blue bar beginning at 16 years, denoting non high-risk groups that may receive this vaccine.

The blue bar is appropriate here, given the recommended ages for permissive use of MenB vaccine is between 16 and 18 years. A blue bar has also been added to the key, to represent the range of recommended ages for non-high risk groups that may receive the vaccines, subject to individual clinical decision making.

The pneumococcal polysaccharide bar has been moved to the bottom of the figure, since this vaccine is not routinely recommended for all children in adolescence. In the 2015 schedule, this purple-green split bar within the hep A line was represented in the key below Figure 1.

However, since each color is already present in the key, this bar has been removed from the key in the 2016 figure. There's a minor change for Figure 2, the catch-up schedule. In the Tdap line, the dose 2 to dose 3 column, we added Tdap or Td to the list of possible previous vaccines.

For the footnote changes, first you will notice that the order of the footnotes has been changed to correspond to the new vaccine order discussed in Figure 1. The HepB footnote was changed to include the previously discussed CDC-recommended post-vaccination testing interval. A link is also provided to the MMWR, with this update.

Footnote 3, the DTaP vaccine footnote, has been revised to add Quadracel to the minimum age exception line. We clarified the instructions regarding the administration of an inadvertent dose of DTaP.

The notes now read, if the fourth dose of DTaP was administered at least four months, but less than six months, after the third dose of DTaP, it need not be repeated. We use the description of an inadvertent dose to indicate that this shortened interval between doses should not be used prospectively. However, the dose can be counted as valid after the fact.

Footnote 6, inactivated polio. In response to questions from providers, we added guidance for IPV use in patients who have, previously, only received oral polio vaccine and did not receive any doses after their fourth birthday.

The addition reads, if only OPV were administered, and all doses were given prior to 4 years of age, one dose of IPV should be given at 4 years or older, at least four weeks after the last oral polio vaccine dose. This is consistent with guidance provided by the subject matter experts.

Within the influenza footnote, the MMWR links were updated, to direct readers to the 2015-2016 influenza recommendations. For the 2016-2017 season, providers should follow guidelines in the 2016 ACIP recommendations which will be published later this year.

For meningococcal vaccine, the MenB vaccines have been added to the heading. A new clinical discretion section has been added with instructions for MenB administration that read, young adults age 16 through 23 years - preferred range is 16 through 18 years may be vaccinated with either a two-dose series of Bexsero, or a three-dose series of Trumenba vaccine, to provide short term protection against most strains of serogroup B meningococcal disease.

The two MenB vaccines are not interchangeable. The same vaccine product must be used for all doses. This means that if a child has received one dose of Bexsero and one dose of Trumenba, the series is not complete.

Likewise, if the child has received one dose of Bexsero and two doses of Trumenba, the series is not complete. The series is only considered complete when either two doses of Bexsero or three doses of Trumenba have been administered.

Within the high-risk category section, we have added the meningococcal B vaccine. In addition, the text reads, persons 10 years or older who have not received a complete series, administer a two-dose series of Bexsero at least one month apart, or a three-dose series of Trumenba, with the second dose at least two months after the first, and the third at least six months after the first.

The two MenB vaccines are not interchangeable. In addition, we added text to describe who is included in the category, children with persistent complement component deficiency.

HPV vaccination recommendations now include the 9-valent HPV vaccine, in addition to the bivalent and quadrivalent HPV vaccines. The footnote also contains a nomenclature change previously discussed.

We clarified the intervals for the third vaccine dose by restricting the sentence, without adding or deleting any of the words previously found in the 2015 schedule. It now reads, administer the third dose 16 weeks after the second, minimum interval of 12 weeks, and 24 weeks after the first dose.

We also added text regarding HPV vaccine use in high-risk children to correspond with the purple bar added, that we discussed earlier. It reads, administer HPV vaccination beginning at age 9 years to children and youth with any history of sexual abuse or assault who have not initiated or completed the three-dose series. I will now turn the presentation back over to Dr. Kroger.

Dr. Andrew Kroger: Thank you very much, Candice. I'd now like to turn the mic over to Dr. Kim. David?

Dr. David Kim: Thank you, Andrew. For the next 15 to 20 minutes, I will present updates in the 2016 adult immunization schedule. I realize that I'm speaking to a crowd of immunization experts, practitioners and advocates, so all the more reason that I appreciate having this forum to discuss adult immunization.

Some of what I will cover was discussed by Dr. Robinson a minute ago. So, for those topics, this presentation will be a good review. First, the necessary disclaimer and disclosure.

The ACIP adult immunization schedule is updated annually, and represents the current approved ACIP policy. ACIP meetings, during which ACIP policies are made, take place three times a year, and is open to the public.

Within the ACIP, the adult immunization workgroup, made up of clinical, scientific, and public subject matter experts, convenes year round to review and update the adult immunization schedule.

These updates are also approved by the American College of Physicians, the American Academy of Family Physicians, the American College of Obstetricians and Gynecologists, and the American College of Nurse-Midwives.

The adult immunization schedule is published in the Annals of Internal Medicine in early February, and the schedule's availability on the ACIP Web site is announced in CDC's Morbidity and Mortality Weekly Report, MMWR, at the same time in February.

The ACIP adult immunization workgroup collaborates closely with other professional organizations, such as the American Pharmacists Association, the American Nurses Association, and the American College of Physician Assistants, to get the schedule disseminated widely.

In 2015, four ACIP policy notes on adult immunization were published in the MMWR. In March 2015, the ACIP added the new 9-valent human papillomavirus vaccine for use among young men and women.

In June and October of 2015, the ACIP published the recommended uses for the new serogroup B meningococcal, MenB, vaccine. Both of these vaccines were described by Dr. Robinson in the preceding presentation on the 2016 child and adolescent immunization schedule.

In September 2015, the ACIP simplified the interval between the 13-valent pneumococcal conjugate vaccine, PCV13, and the 23-valent pneumococcal polysaccharide vaccine, PPSV23, for non-immunocompromised adults. I will cover this new recommendation in more detail in a moment.

So, let's review the changes in the pneumococcal vaccination first. The big change is the change in PCV13-to-PPSV23 interval from 6 to 12 months to at least one year for non-immunocompromised adults 65 years old or older.

Note that the PCV13-to-PPSV23 interval is now the same as PPSV23-to-PCV13 interval, which is, obviously, convenient. Before the change, when the PCV13-to-PPSV23 interval was 6 to 12 months, the adult immunization schedule was not in concert with Medicare coverage that was in effect in early 2015.

Later there was a change in Medicare coverage for adults 65 or older, who received a second, different pneumococcal vaccine a year after the first pneumococcal vaccine. So, with the change, the adult immunization schedule became aligned with Medicare, and ensured the PCV13 and PPSV23, for adults 65 or older, are covered by Medicare.

Please note that, for adults 19 or older with immunocompromising conditions, anatomical or functional asplenia, CSF leak, or a cochlear implant, PCV13-to-PPSV23 interval remains at least 8 weeks. That has not changed.

In the 2016 adult immunization schedule, two errata were corrected. First, “adults age 19 or older, with immunocompromising conditions,” for whom pneumococcal vaccines are recommended, replaced the language, “adults age 19 through 64 years with immunocompromising conditions.”

The second correction was the removal of the recommendation for adults who reside in nursing homes or long term care facilities to receive PPSV23. The recommendation is that they should be assessed for the need for the pneumococcal vaccination.

Adults 19 through 64 who smoke cigarettes are at a higher risk for pneumococcal disease, and should receive PPSV23. Next is a change in recommendation for meningococcal vaccination.

Dr. Robinson covered this material in some detail, so I will just highlight the main points. With the introduction of the new MenB vaccines, MenB-4C, or Bexsero, or MenB-FHbp, or Trumenba, there are now two rows for meningococcal vaccination on the adult schedule, one for the conjugate MenACWY and polysaccharide MPSV4 vaccines, and one for MenB vaccines.

There are no changes for MenACWY or MPSV4 recommendations. MenB vaccination is recommended for adults with anatomical or functional asplenia, microbiologists who work with *Neisseria meningitidis*, and persons at risk because of outbreaks of *Neisseria meningitidis*.

MenB vaccination is not recommended for travelers who travel to areas where *Neisseria meningitidis* is endemic, such as the hajj, because pneumococcal diseases in these settings are not caused by serogroup B.

Unlike MenACWY, there is currently no recommendation for MenB revaccination. New in 2016 is a Category B recommendation for use of MenB vaccines for adults 16 through 23 years of age. The preferred age group is 16 through 18.

Category B recommendation is also known as permissive recommendation. That is, it is subject to individual clinical decision making. So, persons who want the vaccine may receive the vaccines upon consultation with his or her health care provider.

Young adults in this age may be vaccinated with MenB vaccine to gain short term protection against most strains of MenB strains. Here is some additional information on meningococcal vaccination that is new for 2016.

HIV infection is not an indication for routine vaccination with MenACWY or MenB vaccine. MenB vaccine may be administered at the same time as MenACWY vaccine, but one should be kind, and inject them at different anatomic sites.

The two available MenB vaccines, the two-dose series of MenB-4C or the three-dose of MenB-FHbp, are not interchangeable, as mentioned by Dr. Robinson earlier. The same vaccine should be used to complete the series.

Basic precautions and contraindications for MenB vaccine have been added to the update.

As Dr. Robinson mentioned, the 9-valent HPV vaccine has been added to the schedule for young women through age 26, and young men through age 23.

The 9-valent HPV vaccine is one of three vaccines, bivalent and quadrivalent being the other two, available for young women. The quadrivalent HPV and the 9-valent HPV vaccines are recommended for young men.

Young men through age 26 who have sex with men are also recommended to receive the three-dose HPV vaccination series. Immunocompromising conditions, including HIV infection regardless of CD4 count, are indications for young men and women through age 26 to receive the three-dose series of HPV vaccine.

I'd like to bring your attention to one other thing. This is not a major change. It is a clarification in the footnotes. In the 2016 adult immunization schedule, footnotes on influenza vaccination, the language on vaccinating persons with egg allergies was clarified to read, "Persons age 18 or older with egg allergy of any severity, may receive the recombinant influenza vaccine, RIV, because it does not contain any egg protein."

"Persons with hives-only allergy to eggs may receive the inactivated influenza vaccine, IIV, with additional safety measures."

The adult immunization schedule is made up of two figures, accompanying footnotes, and a table of precautions and contraindications.

This is Figure 1 of the 2016 adult immunization schedule. The first column lists vaccines routinely recommended for adults 19 or older. The top row lists age groups for which these vaccines are recommended.

As we always say, the figure is meant to be used with accompanying footnotes, which contain important additional information. The text within the yellow and purple indication bars in the 2016 schedule have been simplified.

As before, yellow bars indicate vaccines recommended for all adults in the group, and purple bars represent vaccines recommended if another risk or indication such as a medical condition is present.

So these are the three vaccines with changes in 2016: HPV, pneumococcal, and meningococcal vaccines. The text within yellow and purple indication bars have been modified to describe the reasons for a different dosing regimen.

As before, yellow bars indicate vaccines recommended for all adults in the group, and the purple bars represent vaccines recommended if another risk or indication is present.

This is Figure 2 of the adult immunization schedule. As in Figure 1, vaccines are listed in the first column, and the rest of the columns describe medical or other indications for these vaccines. There are no major changes in this figure, other than what was mentioned in the previous slide.

This is Page 2 of the footnotes. You'll be relieved to hear that I won't go into the exact word changes in the footnotes, but I do want to mention that there are four sections in the footnotes that contain changes.

Predictably, they are influenza, HPV, pneumococcal, and meningococcal vaccination sections. So, we're going to take the adult immunization schedule out for a test drive now.

So, I would like to present a case to you. Earl Lee Riser is a 20 year old college sophomore who commutes from home, with a history of type 1

diabetes for four years. He had an emergency splenectomy after a motor vehicle accident at age 12.

He's being seen for the first time as an adult. He's still a momma's boy, but he's an adult, by age, for immunization purposes. He is an MSM. He picked up smoking since he started college. He parties occasionally, and works part time as a patient transporter at a local hospital.

Earl Lee hasn't seen a doctor since he last saw his pediatrician three years ago for his pre-college exam. And his only medication is insulin. Earl Lee says that his shots were up to date as of three years ago, except for HPV vaccine, which was refused by his parents.

He hasn't gotten any more shots since then. So you check the state's immunization registry, and conclude that the record for Earl Lee is, indeed, complete. The most recent entry for Earl Lee was inactivated influenza, and MenACWY vaccines at age 17.

His last tetanus-containing vaccine was Tdap at age 12. Being the adult immunization champion that you are, you talk to Earl Lee about vaccines he needs as an adult. The question is, what does that conversation sound like?

We can take a look at Figure 2, to see what Earl Lee needs by medical and other indications. Across the top, the green boxes identify the indications for which Earl Lee should get certain vaccines as an adult.

Those conditions are MSM, asplenia, diabetes, and health care personnel. You tell him that he needs an influenza vaccine every year. Everybody six months or older should get the flu vaccine every year.

Even though it's been less than ten years since he received Td, you tell Earl Lee that he needs Tdap. He needs Tdap only once as an adult. He'll need a Td booster once every ten years after he gets a Tdap.

As a child, Earl Lee had two doses of varicella vaccine, as documented in his state's IIS. So, he has evidence of immunity to varicella, which is recommended for him, because he's got multiple reasons for it, him being an MSM, health care worker, asplenic, and diabetic.

Earl Lee should receive a three-dose series of the quadrivalent HPV, or the 9-valent HPV vaccine, because he's a male age 13 through 21 years. Actually, as an MSM, Earl Lee should get vaccinated through age 26. Note that males 22 through 26 may be vaccinated in general.

He'll need his zoster vaccine when he turns 60.

Adults born in 1957 or later should have documentation for at least one MMR. Health care workers should have documentation for two doses of MMR. Per IIS documentation, Earl Lee received his MMR at age 12 months and 4 years. So he's good.

Earl Lee needs PCV13, because of his asplenia, and PPSV23 because he is asplenic, diabetic, and a smoker.

The recommendation is that he needs both pneumococcal vaccines. PCV13 should be given first. So you tell him that he needs PCV13 today, and that he'll need PPSV23 at least 8 weeks from now.

Only one dose of PCV13 is indicated per adult. Because of his anatomic asplenia, Earl Lee should receive a dose of PPSV23, 8 weeks after PCV13, as

I mentioned earlier. That dose of PPSV23 would also satisfy the requirement for PPSV23 indicated for diabetics and smokers.

For his asplenia, Earl Lee needs a second dose of PPSV23 at least five years from the first dose of PPSV23. As a side note, when Earl Lee turns 65, he'll need a third dose of PPSV23. Adults age 65 or older need PCV13 and PPSV23. Since Earl Lee will be getting his PCV13 today, when he turns 65 he'll need another dose of PPSV23.

Earl Lee's IIS records show that he received two doses of hepatitis A vaccine, and three doses of hepatitis B vaccine as a child. Had he not, he should receive both vaccines because he's an MSM.

He should receive hepatitis B vaccine, also, because he's diabetic and a health care worker. Do note, that for diabetics, the recommendation is to routinely administer hepatitis B vaccine if younger than age 60. If 60 or older, assess for hepatitis B risk, and administer the vaccine if the risk warrants it.

Earl Lee received two doses of MenACWY as a child, and his last dose was at age 17. Because of his asplenia, he's due for revaccination every five years. Earl Lee needs a dose of MenACWY this year, and every five years after this year.

New in 2016, because of his asplenia, he, really, should receive either a two-dose series MenB-4C, or a three-dose series of MenB-FHbp vaccine. There is no need to revaccinate with MenB.

Also new in 2016, young adults age 16 through 23 years, the preferred group is 16 through 18 years, as mentioned earlier, may be vaccinated with MenB series. Lastly, because of his asplenia, Earl Lee should receive a dose of Hib.

The recently published the National Health Interview Survey for 2014, the results on adult immunization coverage rates in the United States continue to show that adults are not vaccinated like they should.

Influenza vaccination for adults remained stagnant at about 43%. Pneumococcal vaccination coverage among those 19 to 64 with high-risk conditions has been around 20% from 2012 to 2014, and that really hasn't changed.

Among those age 64 or older, it remains stuck at about 60%. And Tdap coverage for adults was approximately 20% in 2014. Hepatitis B for diabetics under 60 was only 24%.

So, in general, we're not making as much progress on adult immunization as we would like to see. To address the low immunization coverage rates among adults, the National Vaccine Advisory Committee, or NVAC, revised the standards for adult immunization practice in 2014.

The adult immunization practice standards state that all health care providers, even those who don't administer vaccines to their adult patients, have a role and responsibility to ensure that their patients are up to date on vaccines.

It calls for action for health care providers to assess immunization status for all patients at every clinical encounter, strongly recommend that their patients receive the vaccines they need, either administer needed vaccines to their patients or refer them to a provider who can provide vaccination services, and document vaccines received by patients in state vaccine registries or IIS.

Indeed, there is a myriad of barriers to improving adult vaccination, but these barriers are also opportunities. First, adults may simply not be aware that there are vaccines recommended for them.

Then, health care providers have an opportunity to not only increase their awareness for vaccines for adults, but assess their need for vaccines and recommend the vaccines they need. Studies have shown that most patients will accept vaccines if they are recommended by their health care provider.

Health care providers are too busy, and have competing priorities to cover vaccination with their adult patients. Yes, providers are busy, and providers are accountable for many other patient care activities.

However, providers do believe that vaccines are important for their adult patients. There are many tools to help the busy health care provider implement procedures at the workplace to efficiently assess and ensure that their adult patients are up to date on their vaccines.

Sure, but not all health care providers stock all vaccines that their patients might need. Yes, providers need to decide if they want to stock vaccines or not. However, even if they don't stock vaccines, access to vaccines is increasing with more pharmacies and other providers, such as occupational health clinics, providing vaccination services.

If a health care provider does not stock vaccines, a list of alternate locations can be maintained to refer patients. Web based resources, such as HealthMap Vaccine Finder, are also available.

Adults frequently see multiple health care providers for multiple problems, and therefore, record keeping is very difficult to manage. Yes. Immunization

records are particularly difficult to manage, because there are multiple places where vaccines can be administered.

It is a real problem. However, most states have immunization information systems that include adult records. Pharmacies have, particularly, been diligent about submitting adult vaccination records to vaccine registries. So providers can get in touch with their state immunization program coordinators to access their state's vaccine registries.

With the Affordable Care Act, most health care insurances cover vaccines for adults. Insurance coverage for vaccines for adults to this degree is unprecedented. Unfortunately, adult patients may not be aware that of their vaccination benefits.

So now is the opportunity to get the newly insured adults, and those who are unaware of their vaccination benefits, to get caught up on their vaccines. Here's a list of some health resources on adult immunization that may become handy to you.

And that brings us to the end of this presentation on the adult immunization updates for 2016. Thank you so much for the work you're doing to promote adult immunization. And I'm happy to answer your questions.

Dr. Andrew Kroger: Thank you very much, David. Before we move on to the question and answer session, I would like to share the results of the first polling question I read.

Remember, the question was, which of the following statements about the 9-valent HPV vaccine, 9vHPV, is true? And the correct answer was the first one. 9vHPV can be used for males and females.

And I believe the results are shown to you. And you can see that 80% of you answered correctly. So that's wonderful. The 9-valent HPV vaccine is, currently, a three-dose series.

And, actually, immunocompromising conditions for some ages groups are, actually, a risk-based indication to receive the vaccine, and not a contraindication. So, that first answer is the correct answer.

Here's a second polling question. Serogroup B meningococcal, or MenB, vaccine series should be administered to, the choices are: persons 10 years or older who are at increased risk because of a serogroup B meningococcal disease outbreak.

The second choice is: persons 10 years or older with anatomical or functional asplenia or persistent complement component deficiencies. The third choice is: young adults 16 through 23 years of age who want the vaccine. (ED: The final choice is: all of the above) So, take another ten seconds to answer this question.

Okay. Time is up. The correct answer to this question is, actually, the last. All of the above. And I will show you the results. And it looks like 79% of you, an overwhelming majority, did get the correct answer.

All of these conditions are reasons that you can administer the meningococcal B vaccine series, whether high risk, or at the individual clinician decision for persons who want the vaccine. So, very good.

So now, we'll move on to the next segment. And while the queue fills with your question and answers, I'll give you some additional information. If you

do have a question, dial Star 1 to get into the queue for the operator. Be sure that your question is related to today's content.

While we wait for the queue to fill, I'm going to give you some additional information. First, a recast and copy of the slide set will be available on the Web page, www.cdc.gov/vaccines/ed/ciinc. These will be available the week of March 28, 2016.

For continuing education credit, please go to www2a.cdc.gov/tceonline. The course number for this program is E as in Edward, C as in Cat, 2064-031616. Note that 031616 is today's date, and that this course number is specific to today's course.

You'll need this course number when completing the CE requirements. You will also need the verification code, which is 16-schedules, "1", "6", "dash" "S" -"C"- "H"- "E"- "D"- "U"- "L"- "E"- "S". This verification code also applies to today's program only.

CE credit for the program expires April 18, 2016. I am going to repeat this information at the end of the question and answer period as well. So, now, I'll turn it over to our operator so that our participants may ask questions.

Operator, are there any questions in the queue?

Coordinator: Thank you. The first question comes from (XXXXXX). You may ask your question.

(XXXXXXX): Hi. Good morning, Dr. Kroger. Can you please explain to, we're from the Department of Public Health Immunization Program. The nurses hear about

the fourth Td dose for a person 7 years of age or older who's not fully immunized.

Dr. Andrew Kroger: Dr. Robinson?

Dr. Candice Robinson: Yes, for persons who are 7 years or older who are not fully immunized against pertussis, there is a recommendation to provide those patients with dose of Tdap vaccine.

Now, this is an off-label ACIP recommendation. The ACIP Committee recognized that the DTaP vaccines are for administration up to 6 years of age, and then, Tdap is FDA approved for those starting 10 years of age.

Well, that left this group of children between 7 and 10, who may be not completely protected against pertussis, with no approved vaccine. So the ACIP made a recommendation to provide Tdap to that population if they are not completely immunized against pertussis.

Dr. Andrew Kroger: And I'll add a couple comments to follow on that. If someone does not have a complete pertussis series, it's possible that they might be catching up on the other antigens as well, the tetanus and diphtheria.

And a lot of the total number of doses in the series is going to be determined by: not only how many doses you had previously, but the ages at which those doses are received. And so that's why, sometimes, it could be, you know, a fourth dose, even if you're starting - not starting, I must say. (ED: "even if you've administered doses previously")

But if you have one dose before the seventh birthday, (ED: "and it was also given before the first birthday") you could, conceivably, need another three

doses of a tetanus toxoid-containing vaccine after the seventh birthday, for a total of four doses, to make sure that you have that adequate coverage with both the pertussis and the tetanus and diphtheria antigens as well. So, does that answer your question?

(XXXXXXXXX): Yes. So, what if they start after 7?

Dr. Andrew Kroger: Well, if they're unvaccinated, then it's a three-dose series. So if they have not received any doses of a tetanus-containing vaccine prior to the seventh birthday, it's three doses to catch up, to be caught up with your tetanus series.

Dr. Candice Robinson: I need to add to that. The three doses, preferably, the first dose should be a Tdap, followed by two doses of Td, to follow up on that.

Dr. Andrew Kroger: Thank you very much for that question. We'll take the next question in the queue.

Coordinator: (XXXXXX), you may ask your question.

(XXXXXXXXX): Thank you. And thank you for having this session. One barrier to properly immunizing adults, is the absence of a durable record of their vaccines. And the Immunization Information System is the way to do that.

But one barrier to that, is that in New York State, the permission of the adult is required to submit that data, making a somewhat complex system. Are there any states in the country where adult permission is not required? And secondly, are there any states in the country where adult submission is mandated, as it is for kids in New York State?

Dr. David Kim: Thank you very much for that question. New York is somewhat of an exception, in that it is opt in as opposed to opt out for adult immunization records to be entered in the registry.

So, for most states, most jurisdictions have opt out provision. And so, New York State is at a severe disadvantage, that you need to have the adult permission to have the vaccination records be entered into the state's registry.

So, yes, I think this answers your question in that New York State is at a disadvantage. But, we are at CDC are fully cognizant of that. And so, there's, I think, a significant amount of work that New York State has to do, more than most other jurisdictions, to get adult vaccination records.

(XXXXXXXX): And secondly, are any states mandating adult submissions?

Dr. David Kim: Yes, there are many states where adult immunization records are required, particularly for pharmacists. And this has been a significant movement over the past several years.

The health care providers, meaning physicians in this instance, the requirement for physicians to enter records varies. Pharmacists are driving the legislature at various states to have adult immunization records be completed in the registries.

So, yes. There are states where there's a legislative requirement. And we are in the process of compiling these processes at the health departments, so that we can answer questions, such as yours, better in the future.

(XXXXXXXX): Thank you.

Dr. Andrew Kroger: Thank you very much, David. We'll take the next question in the queue.

Coordinator: (XXXXXX), you may ask your question.

(XXXXXX): Hi. We had a question of whether PCV13 in adults is a one-time dose.

Dr. David Kim: Thank you so much for that question. PCV13 is a one-time dose per adult, per lifetime.

(XXXXXX): Okay.

Dr. David Kim: Whereas, PPSV23, additional shots of, doses of PPSV23 are required, based on health indications.

(XXXXXX): Okay.

Dr. Andrew Kroger: Thank you. We'll take the next question in the queue.

Coordinator: (XXXXXX), you may ask your question.

(XXXXXXXX): Thank you. I'm an infection preventionist at hospital, and we struggle, offering the pneumococcal vaccine to our patients, because they never seem to know what they've had, and how many doses. And now, with addition of the 13, we struggle with trying to figure out where they are in the series. Do you have any recommendations for hospital nurses?

Dr. David Kim: Thanks for that question. We at CDC, those of us working on adult immunization, and those of us, also, working on pneumococcal vaccine recommendations, are well aware.

And we have heard this from multiple sources. That pneumococcal vaccination recommendations are difficult. And we acknowledge that. And so, the ACIP, as well as subject matter experts at CDC, are working diligently to try to make that recommendation as simple as possible.

And the most recent recommendation change, the PCV13 to PPSV23 interval change, is a step in the right direction towards that. Even with that, we realize that given the patient's age, health condition, occupation and other age and medical conditions, that there are many complicating factors.

And CDC has produced additional education and training material, available for use by health care providers. And there are multiple resources out there. The Pharmacy Association and Immunization Action Coalition, as well as other professional organizations, also have education and training material available.

But the place to start would be the CDC pneumococcal recommendation worksheet.

(XXXXXXX): Good. Thank you.

Dr. Andrew Kroger: Thank you. We'll take the next question.

Coordinator: (XXXXXXX), you may ask your question.

(XXXXXXX): (XXXXXXX), from Monterey County Health Department. Just curious as to why they're recommending the hepatitis B vaccine for diabetics.

Dr. Andrew Kroger: Yes. David?

Dr. David Kim: This has been published in the MMWR. And the recommendations for diabetics to receive hepatitis B vaccination is based on their repeated exposure, possible exposure, to hepatitis B vaccine, given the treatment regimen. And the fact that their immune system has been affected by the diabetic disease.

Now those studies also show that persons, the distinction between persons who are younger than age 60 and those 60 and older, where the persons age 60 and older with diabetes are recommended to be assessed for risk for hepatitis B infection, compared to those younger than 60, who are recommended to receive hepatitis B vaccine, is based on the epidemiological studies that place those who are younger than 60 at a higher risk for hepatitis B infection.

(XXXXXXX): Thank you.

Dr. Andrew Kroger: Thank you. I think we have time for one more question, if there's one in the queue.

Coordinator: Thank you. (XXXXXXXXXX), you may ask your question.

(XXXXXXX): Hello?

Dr. Andrew Kroger: Hello. Yes, we can hear you.

(XXXXXXXXXX): My question is, if an adolescent finished vaccination in HPV4, or just started vaccination in HPV4, and parents want additional protection which HPV9 gives, what is recommendation for such kids? And if there any difference between male and female adolescents.

Dr. Candice Robinson: Sure. I'll answer that question. So, first of all, if a child has begun the series with quadrivalent HPV vaccine, they can finish the series with either quadrivalent or 9-valent HPV vaccine. And that's for both males, and for females.

Currently, if they have completed a quadrivalent series, there is no recommendation to administer 9-valent HPV vaccine after they have completed the quadrivalent vaccine series. So, currently, that is not the recommendation. And that is the same for both males and for females as well.

(XXXXXXXXXX): Okay. Thank you.

Dr. Candice Robinson: Yes. But they can finish with either.

(XXXXXXXXXX): Okay, because most of protection with HPV9 offer multiple protection against cervical cancer. So, for female.

Dr. Candice Robinson: Yes. It does cover those five additional strains, which cause about 11% of cervical cancers in females. However, the data regarding administration of a single dose of 9-valent HPV in addition to a completed series of quadrivalent vaccine, there hasn't been data to support that additional dose of 9-valent HPV vaccine is recommended at this time.

(XXXXXXXXXX): Yes. Thank you so much.

Dr. Candice Robinson: You're welcome.

Dr. Andrew Kroger: Thank you very much for everyone for all of your questions. In the interest of time, we're going to move on to some closing continue education credit

information. So, for CE credits, please go to www2a.cdc.gov/tceonline. The course number is E as in Edward, C as in Cat, 2064031616.

The verification code is 16-schedules, “16 dash” “S”-“C”-“H”-“E”-“D”-“U”-“L”-“E”-“S”. And CE credit expires April 18, 2016. Again, please note the course number and verification codes apply to today’s program only.

For help with the online system, which is available from 8:00 am to 4:00 pm Eastern Time, please dial 1-800-41TRAIN. This corresponds to the number 1-800-418-7246. Or you can email ce@cdc.gov.

You can email immunization questions to us, if you did not get to ask them today, at nipinfo@cdc.gov, and we will try to respond to those as quickly as possible. You can also call in immunization questions to 1-800-CDCINFO. Info. That corresponds to 1-800-232-4636.

This is available from 8:00 am to 8:00 pm Eastern Time, Monday through Friday. Additional resources that you can use include the Pink Book. The Web site for the Pink Book is there at www.cdc.gov/vaccines/pubs/pinkbook/index.html.

It is available online. Or you can purchase a hard copy, if you go to this Web site. There is another link for the Public Health Foundation Learning Resource Center, where you can purchase a hard copy book.

Our CDC home page is cdc.gov/vaccines/default.htm. We have a resource guide for health care personnel, entitled CDC Immunization Resources for You and Your Patients, listed at www.cdc.gov/vaccines/ed/downloads/imz-resources.pdf.

Follow us on Twitter for immunization news, information and resources for private and public health care personnel. And that's @cdcizlearn on Twitter. With that, I would like to thank everyone for joining us today, with very special thanks to our subject matter experts, Dr. Candice Robinson, and Dr. David Kim.

Thank you very much from Atlanta, and have a great day. Good bye.

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