

Leadership Education for Adolescent Health (LEAH)
State Adolescent Health Coordinators (SAHC)
Tele conference Series
Session two

Untangling Potential Adolescent Health Controversies

Thursday, October 19, 2006
2:00 pm to 3:30 pm Eastern Time

Presenters

Erica Monasterio, MSN, RN, FNP, University of California, San Francisco
Mary Ott, MD, Indiana University Medical Center

Moderator

Mary Doyle, Konopka Institute, University of Minnesota

Introduction

Today's topic is Untangling Potential Adolescent Health Controversies, and we will be focusing on HPV, the vaccine for Human Papilloma virus, Emergency Contraception, Plan B in particular, and a brief update on the current CDC recommendations on Chlamydia and HIV testing.

I have a few little housekeeping details. We will be sending you an evaluation by e-mail next week and I'm going to request that if the State Adolescent Health Coordinators have invited extra participants, they forward the evaluation on to them. We have a very good registration for the call today; 17 states are represented. I am delighted that so many people are able to be with us.

Let me tell you a little bit about our presenters today. They are Erica Monasterio from the University of California at San Francisco, and Mary Ott from Indiana University Medical Center. And I've got to say that these two presenters have just been wonderful to work with. They have shared current information from their respective LEAH teams, they share a keen interest in these topics and are experts on these topics as well, and I think you'll really enjoy their presentations.

In terms of the call process, first Erica will present for 20 minutes and then we'll have a 5-minute period of time for specific questions regarding her presentation. Then Mary will present for 20 minutes, and then will have another 5-minute period of time for questions regarding her presentation, then we will have a half hour for a real conversation and discussion around the issues.

I am just delighted everyone can be here today and I'm going to hand the phone over to you, Erica.

Erica Monasterio's Presentation

I just want to say how pleased I am to be able to present to this group today. You are central people in the care of adolescents all over the country and I hope that some of the things that I present today will help in terms of setting priorities and advocacy plans in your state.

Now although the title of the talk on the agenda is Plan B, Plan B is the proprietary name for a branded emergency contraception. There are actually a number of approaches to emergency

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contraception, so although we will be focusing on Plan B, I want to start by sort of moving into an overview of emergency contraception available in the United States.

First, for a definition, when we are talking about emergency contraception, we are talking about any device or drug that is used as an emergency procedure to prevent pregnancy following unprotected or under-protected intercourse. And in a little while I'll talk about what might be considered under-protected.

The methods that are currently available in the United States are using combined oral contraception, using a copper IUD, and then Plan B or the progestin-only prepackaged ECP. A word about IUD's, IUDs have had a very poor reputation in the adolescent health world because of the history with the Delcon Shield, but an IUD can be a very appropriate choice for an adolescent and you might think of using an IUD in a low-risk young woman who has already had a child, and wants to use an IUD as they method, but has had unprotected intercourse in the last 72 hours. And that is the beginning and end of what I am going to say about it today.

On the next slide, I'm sorry I haven't been cuing you for advancing through slides, I'll try to do that in the future, but this is the one with the blue and yellow words and there is a little chart that says "The Yuzpe Regimen". So this how using regular combination oral contraception is referred to when used as emergency contraception. And from looking at this chart you can see that there are various formulations and various approaches to using different brands of oral contraceptive. Now because of the dosages of particularly of the Levonorgestrel or Norgestimate in the contraceptive that is why the number of pills vary so widely. Although this is sort of the original approach to emergency contraception through hormonal means, there are some disadvantages to using this approach. One disadvantage is just clearly that the dosage recommended can be somewhat confusing. Secondly, because of the estrogen component, the side effect profile is not as favorable as it is with a progestin-only contraceptive. There is about twice the rate of nausea and vomiting when you use combination pills vs. progestin-only. So those are some reasons that you might not, and the third reason is that the efficacy, how effective this approach is in preventing pregnancy. It is actually slightly lower than the progestin-only contraceptive; or emergency contraceptive.

On the other hand, in states or communities where access to pre-packaged emergency contraception Plan B may be limited, this is a very important option to keep in mind. And again this is about the end of what I am going to say about the combination oral contraceptives; but there is plenty of information available and here is the dosage regimen if you need to access it.

And then finally we come to Plan B. Plan B again is the brand name for the Levonorgestrel-only pill. It is packaged as emergency contraception and it was recently approved for over-the-counter purchase by women 18 and older.

So that is sort of the range of options and now we'll take a look at why EC is important for adolescents.

On your next slide you see a graphic representation of trends in sexual activity. And as you can see things kind of trend up and trend down and the younger age group, the 9th graders, the 10th

graders are less sexually active than the 11th and 12th graders; but many young people as you can see from this graph even in the last time data was collected in 2003, are sexually active.

Now we have seen on your next slide a significant decline in the 15-17 year olds, which is a very favorable thing to have happen, but if you go to the next slide you'll see that even with this decline, by the age of 18 over half of youth are sexually experienced. So you put this package together and looking at the next slide you see that we have young men and young women who are capable of conception, sexually active, unmarried and not intending to have a birth, for a very significant period of time, so if you look across this graph you will see capable of conceiving between 12 and 14 years of age; initiating intercourse between 16 and 17 ½; getting married at 25 or 26 and having their first birth somewhere between 26 and 28 years old. So that leaves a big chunk of time when young people are at high risk for unprotected sex.

Looking at the next slide you can see that young people are doing generally a real good job, the majority of teens who are sexually active use contraception the first time they have sex, the majority of sexually active teens use contraception the last time they had sex. But there still are a significant number of young people who are not using contraception consistently and when they are not using contraception, they have about a 90% chance of becoming pregnant within a year, just based on fertility data.

And this next slide you will see reflects those numbers. A very significant number of teens under the age of 18 become pregnant annually, almost 300,000 youth, the vast majority of these pregnancies are unintended, and then you see the outcomes for those pregnancies.

So, I think we have made a good case for the fact that there is risk here, and that this may be one approach, not the only approach, but certainly one approach to reducing the numbers of unintended pregnancies. So now let's move on to how emergency contraception works.

Emergency contraception works by preventing pregnancy and never by disrupting an implanted pregnancy. And so the issue of whether this is causing abortions or is an abortifacient is clearly not the mechanism of action of emergency contraception pills. There are two different ways in which EC can work. One is when taken before ovulation it disrupts the normal development of the follicle. So as the follicle is developing and emerging to the surface of the ovary, the development and maturation of the follicle is inhibited by exposure to the hormones in emergency contraception pills. It also blocks the LH surge which is the hormonal message to the body to ovulate and thereby it inhibits ovulation and it may also create a deficient luteal or ovulatory phase.

Theoretically it may have a contraceptive effect by thickening the cervical mucus and preventing sperm from passing up into the uterus, but there is no clinical data to actually support that, that's just a theory.

Looking at the next slide of mechanism of action you can see that if emergency contraception is taken after ovulation, it has little effect on ovarian hormonal production and limited effect on the maturation of the endometrium which is lining of the uterus where a pregnancy would implant. The mechanism of action after ovulation is mainly at the level of the fallopian tubes, so it affects

tubal transport of sperm up the tubes toward the ova, and ova down the tubes towards the sperm. Again, it works not post-conception, but prior to conception and after ovulation.

So hopefully that explains why we can feel confident in saying this is not a medication that is causing an abortion, even if your definition is conception as the beginning of life, this is not having its impact after conception.

When we talk about why one might want to use emergency contraception and looking at the indications on the next slide, you can see the most obvious one is after unprotected intercourse. And this could be willing or unwilling; this could be after sexual assault, or rape, a coercive event, but also after under-protected intercourse. So you can have a young person or an adult woman who is an effective contraceptive who has an accident; a condom that breaks or slips off, a diaphragm that slips out of place, they might be taking birth control pills but missing them, or taking them inconsistently or had gone away for the weekend and missed two pills, so after missing over two pills. If they are taking the mini-pill or progestin contraception it would be after missing one pill. For the young woman who uses Depo-Provera, greater than 14 weeks after her last Depo shot, if she uses the patch and the patch has been off for greater than 24 hours, if she uses the ring and the ring has been expelled or removed for greater than three hours, or if she uses vaginal spermicide alone which is not a higher effective approach to pregnancy prevention; these are all situations where EC could be indicated.

There are very few contraindications to Progestin-only EC and you'll see them on the next slide. Clearly, pregnancy is a contraindication, it is not something that we have any reason to give in pregnancy; however, it does not disrupt an established pregnancy and has not been found to be teratogenic in terms of causing birth defects. Obviously as with any other medication hypersensitivity to any component and that would primarily be the vehicle in the pill, the dye or whatever the inert ingredients are. In the presence of undiagnosed abnormal vaginal bleeding until the reason for the bleeding can be determined.

It is important that we all understand how to use emergency contraception appropriately. And the key message here is that one wants to use it as soon as possible after unprotected or under-protected intercourse. That said it does have an impact on pregnancy rates up to five days, or 120 hours after the event. Although the package insert reflects 72 hours, or three days, research shows effectiveness for up to five days. Again, although the package insert instructs the patient to take the first pill as soon as possible, followed by the second pill in 12 hours, they are packaged that way with big arrows saying take this one now, take this one 12 hours later; you can actually take both pills at once with no impact on efficacy, and this may be much more convenient for the young woman who, for example, has unprotected intercourse at 3:30 am and takes her first pill at 4 o'clock in the afternoon and then probably is going to have problems waking up at 4 o'clock in the morning to take the second pill.

Another important piece of information for young woman using emergency contraception is that their next period is not going to be as expected. It could come earlier, that is the most likely. It could come later and it may be heavier.

Young woman should be instructed to return for pregnancy testing if they do not have a period within three weeks, and, of course, the need to discuss what's appropriate in terms of STI screening and an effective contraceptive plan if they do not have one.

This next slide just shows efficacy over time, so on the axis with the percents that is the percent of pregnancy or the pregnancy rate, and going across the bottom are hours from the unprotected intercourse to the initiation of emergency contraception. So you can see again this study was done up to 72 hours, so time does make a difference. That "Y" axis does make a difference.

Emergency contraception, like all medications has side effects. Nausea and vomiting is one of them, although significantly less with progestin-only; with the combination birth control pill as EC you see a rate somewhere between 25 and 30% of women getting nauseated and vomiting. With Plan B it is less than half of that. Some women experience breast tenderness, again more common with the combination than Progestin-only. All women will probably have some menstrual disturbance as I mentioned earlier. And again, more commonly with combination than Progestin-only but possible with both, are headache, mood changes, and fatigue.

So the next thing we are going to move to are the arguments against or concerns about making EC available to adolescents. The first one I want to address is the concern that making EC available is going to increase sexual risk behaviors. And we have very good data published in peer-reviewed journals to say that EC is not associated with increased risk taking behaviors among teens in particular. And that the only thing you do by expanding access is make EC more accessible, make it possible for young woman to choose to use the product.

Looking at the next slide, a study by Tina Raine that looked at specific risky behaviors; the data shows that access to EC does not result in inappropriate use of it, in other words in using EC as a primary form of contraception. It does not result in an increased number of sexual partners. It does not result in an increase in frequency of unprotected intercourse. And it does not result in an increase in the frequency of sexually transmitted infections.

Another concern is whether accessing EC would interrupt regular care, and this is particularly a concern in states where there is pharmacy access so a woman doesn't actually have to go to a physician, nurse practitioner, or clinic to get EC, she can go to the pharmacy. And what this research found was that young women who have easier access are no more likely to use EC repeatedly than women who have to go a clinic or health care provider. And that a request for EC can actually be the bridge to care if counseling is done effectively and appropriately.

And finally there is the concern that this is somehow giving a mixed message when we are trying to encourage young people to postpone sexual intercourse, we are also making available a method to prevent pregnancy after the fact. The National Campaign to Prevent Teen Pregnancy did a large survey of adults and youth about whether this was a contradictory method, and the findings of that survey were that 68% of adults and 77% of teens think that making EC more widely and easily available is actually consistent with a strong message to teens that abstinence from sex is their best option by far. And removing barriers to access ensures that teens who are sexually active, who do have sex, and looking at the data that I presented earlier it is clear that by the age of 18 the majority of young people have had sex; or who have sex when they did not

want to or did not plan to, as well as those who are having contraceptive accidents or problems are able to actually avoid an unintended pregnancy.

Providers have a very essential role in access. First of all, we need to be talking to all youth regardless of their current sexual activity or current method of contraception, or gender. We need to be talking to young men as well as young women about EC and how to access it. We need to be assessing for current risk; if we ask, we often find that we are sitting in the room with a young person who needs EC now, although they may not have been aware of it. And, we need to really consider offering access through a prescription or information about pharmacy access along with a list of local pharmacies where EC can be obtained for every young person who we interact with.

Clinics play a very significant role, 2.2 million sexually active minors need publicly supported contraceptive services, and about 900,000 minors annually avail themselves of these publicly funded services. About 40% of young people who need services are currently being served in clinics. And so the issue of whether there is coverage through Title X programs in each of your states is a very important issue in terms of a large number of adolescents who need these services.

Going to the next slide what you see is a map and this map is from a website that you have listed in your resources under number 3: additional resources useful websites. If you get a chance, click second one, the Pharmacy Access Program. The color here directly relates to pharmacy access, but if you actually pull this up and click on your individual state, you will see, it kind of covers the waterfront in terms of EC. It includes what's coming up in the Legislature, any access issues, if there are laws that exclude or exempt pharmacies or programs from providing EC, etc. So it is impossible to cover all the states, but this is a great source of information that you can just click on and look at. And you can see that there is a wide range of approaches in the states. You also have in your packet the state policies from the Alan Guttmacher Institute and if you look at one of the pages there, the second page I believe, you'll see a chart that shows emergency contraceptive policies and you can see that there is a huge range from Arkansas being probably the most legislatively restrictive state to where there are actually state laws that allow refusal to dispense by pharmacies and pharmacists, and exclusion from the contraceptive coverage mandate of EC in the State of Arkansas, to states like Indiana where the state law excludes EC from the Medicaid or publicly-funded family planning expansion implicitly, in Texas it is explicitly excluded. All the way to states like California, Massachusetts, New Mexico and Washington where there are laws that mandate emergency rooms to provide information and dispense EC and where there are pharmacy access laws. Now each state, for example Hawaii has a pharmacy access law which is quite different from the California pharmacy access law in terms of who can actually do the prescribing. And so again if you click on your state and then go to the links in your state you will see the details.

So finally on the last slide I just want to point out some of the access issues to consider. One really important access issue for adolescents is the issue of state funding of EC and each state is quite unique in how they choose to spend their public funding and some states actually even exclude coverage of EC. Not only do we have issues with state coverage funding, but we also have issues of coverage within health plans and managed care health plans. Then there are the

issues of pharmacy access, and again we have a range from states who have pharmacy access to states who have very favorable environments where there are laws coming up, to states that have unfavorable environments where there are laws to make it impossible.

The issue of pharmacy and pharmacist refusal to supply is a really important issue, and it is important that you be very aware of this on the local level, as well as on the state level because different communities are going to have different issues about access depending on what pharmacies are there.

If you really want to put on your advocacy hat, you know we have been going through this struggle in terms of access to over-the-counter status, the FDA has now approved 18 and over for over-the-counter status; but you do have to have adequate identification so for example a woman who is undocumented who may not have adequate ID would not be able to access in this way. And there is really no data sociological or physiological to say that women under the age of 18 are somehow at risk for being able to access through over-the-counter mechanism.

And then with any reproductive health issue and with EC as well, the issues of protecting minor consent and confidentiality and finally remembering that parents are the first resource for many young people, particularly when they are in a stressful situation, they are the first sexuality educators of their children and are often who the adolescent turns to when they have had a contraceptive accident or have been sexually assaulted and by educating and engaging parents to see that this is really a way of supporting their young people to avoid unplanned pregnancies we can really have an impact on access.

And so at this point I am ready to take questions.

Thanks Erica.

Questions/discussion re: Erica Monasterio's presentation (Edited for brevity)

Has there been any research on other Progestin's that can be used for EC?

- You know, if the whole family, the Levonorgestrel, Norgestimate, etc. are all closely related and when the "Yuzpe" method is utilized some of those pills they have looked at are pills that are Norgestimate rather than Levonorgestrel. But Levonorgestrel has been studied the most, the efficacy is good, the side effects profile is low, and as far as I am aware in the U.S. that is the way we have gone.

The concern now is the cost for Plan B. As a prescription many of our delegates are able to afford that and with the over-the-counter status the retail price will be quite expensive and people may not be able to afford that.

It is a big issue, as you are probably aware, many drug companies do cut deals with states or counties around access, but I think that in looking at cost it is really important not to compare it to the cost of for example the deal you might get from Ortho on oral

contraceptive pills, but the cost of an unintended pregnancy, including both the medical costs and the social costs of unintended pregnancies and of teen pregnancies in general, particularly unintended and unsupported teen pregnancies. So I think it is a lot an issue of how you frame it, but certainly at this point pharmacy access and over-the-counter access can be barriers in themselves for young people because of cost.

I have two questions. The first one is, how does EC affect tubal transfer from ova, it is part of the mechanisms for action that you talked about earlier?

- It is the actual movement of the cilia; you know the fallopian tubes are lined with these little finger-like projections that kind of wave in the fluid and move the ova down the fallopian tube, and it actually has an impact perhaps by the same mechanism as is theoretically positive for making cervical mucous thicker, it makes the cilia move more slowly.

Okay and the second question is, and this may vary state by state, but can males obtain emergency contraception?

- That is a great question. Certainly males can obtain emergency contraception but I don't know, certainly not through pharmacy access. In terms of over-the-counter purchase, I don't actually know the answer to that question and it is a great question. But not through pharmacy access because pharmacy access, I mean they could pay for it, but the pharmacist needs to have contact with the individual who is requesting the method and the method is indicated for females only. And so, but I don't know about, you know because there is this age restriction but I don't believe there is a gender restriction of purchasing EC, just an age restriction of being 18 or older.

I had a question about, after the use of emergency contraception is there a protective factor during the remainder of the menstrual cycle or do they need to repeat emergency contraception if there is another episode of unprotected sex prior to their menstrual cycle?

- Looking at the mechanism of action again theoretically I don't think that anyone has actually looked at this you know in terms of looking at pregnancies that might have occurred after emergency contraception. Because the primary mechanism of action is interrupting ovulation, then for the balance of that cycle it is highly unlikely, although not impossible that a woman would ovulate a second time. Many providers will try and make a specific decision about what you know is the risk here, if the woman started her period three days ago and had unprotected intercourse what is her risk for pregnancy and should she be getting EC? On the other hand, the anxiety factors are very high and most young women who are requesting EC are going to feel more comfortable if they actually get the EC even if their risk of pregnancy because of where they are in their menstrual cycle is relatively low. So you know, theoretically is someone took EC very early in their cycle, too early to interrupt the luteal phase, and then went ahead and later in the cycle had unprotected sex again, it might be indicated a second time in that cycle. In many years of providing this method, I have not run into that situation. Most young women who use EC are highly motivated to also engage in more effective contraceptive methods. The other

thing you'll run into is that some states with the idea of cost containment limit the number of times that you can provide state-funded emergency contraception to an individual. So you might use up all their access in one month.

I had a question. I wanted to ask if EC keeps the fertilized egg from implanting, because that is a question that always comes up.

- Right and again reviewing the mechanism of action, the place that might have an impact would be in terms of whether it impacts on the maturation of the endometrium because if you don't have a receptive developed endometrium you are not going to have implantation and it is unlikely. The primary mechanism of action again, in an established pregnancy where the egg has already implanted, the fertilized egg has been implanted in the endometrium; it does not interrupt that pregnancy. The primary mechanism of action is interrupting the whole ovulatory phase and so it is prior to conception. And then again there are some theoretical ideas that it may have limited impact on the endometrium but, again, more likely that it is keeping the ovum from getting down to the sperm and the sperm from getting up to the ova in the required time period for conception.

Thank you so much Erica. I think we should cut questions off now temporarily and let Mary do her presentation. And then we can discuss some of these issues further if people would like to in our discussion period.

Mary Ott's presentation

I want to thank everyone for coming and everyone should have a PowerPoint presentation in front of them and I will say next slide as we go through.

In the first part of this talk we are going to cover HPV, HPV vaccine, ACIP recommendations, and vaccine acceptability and message framing. Then I am going to briefly touch on new and upcoming recommendations from the CDC about HIV testing and Chlamydia screening in males.

Next slide: Genital HPV infection has a variety of clinical manifestations ranging from asymptomatic infection which is most common to warts and cervical abnormalities and then onto cervical cancer. HPV is found in over 99% of cervical cancers, it is the cause of cervical cancer. The top photo shows some pretty typical looking genital warts, the bottom photo is a cervix with invasive cancer.

Next slide: HPV infection is incredibly common, almost everyone gets it. Studies have documented that between 46 and 82% of sexually active adolescents and young adults have been HPV infected or are HPV infected at the time of the study. The graph on your right demonstrates time to HPV infection among college females who are HPV negative at the start of the study. As you can see, 60% acquired HPV within three years of enrollment in the study. So this is a very common infection, a very prevalent infection. Most HPV clears. In the same group of college students there was a 12-month HPV regression rate of 61% and a 36-month regression rate of 91% for the top eight HPV subtypes.

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Next slide: Now this sequence of slides shows the natural history of HPV infection. The top line shows what's happening at the cervix. A normal cervix becomes HPV infected; over 90% of those HPV infections clear. The lower row represents findings on path testing. HPV-infected cervix may have a normal pap smear or may show cytologic abnormalities like low-grade or high-grade squamous intraepithelial lesions or LSIL and HSIL.

Next slide: A small percentage of these HPV infections persist. Over time this persistence can lead to severe dysplasia. Note that even the dysplastic cervixes have some regression of HPV infection. A dysplastic cervix will also show cytologic abnormalities on pap testing.

Next slide: HPV may then invade causing cervical cancer. To recap, many if not most get HPV infection, almost all of these clear, the small percentage that persist may lead to severe dysplasia and ultimately cancer. Pap testing demonstrates cytologic abnormalities due to HPV infection and doesn't necessarily imply severe dysplasia or cancer.

Next slide: Adolescents appear to be uniquely susceptible to HPV. First is biology, the normal adolescent cervix pictured at the right has columnar and metaplastic epithelium external to the oss of the cervical opening. This is commonly referred to as a transition zone, the red area and leads to increased susceptibility to HPV infection. Adults do not have columnar epithelium external to the cervical oss. Second, the nature of adolescent relationships and the onset of sexual behavior put them at risk. Adolescence is a time of learning relationship skills and trying out new things. Any coitus is a risk factor, young women with one life-time partner have demonstrated rates of HPV infection of 21%, and adolescents tend to have shorter relationships than adults, leading to more exposures over time. A new partner could increase the risk of HPV as much as 10-fold. Finally, adolescents have higher rates of other STIs and these co-infections are risk factors for HPV.

Next slide: For HPV more than 100 sub-types exist with approximately 40 of these causing genital diseases. The diagram at the right shows the HPV family tree. These types have been divided into low risk which cause genital warts and LSIL, and high risk which are associated with LSIL, HSIL and cervical cancer. Types 6 and 11 cause 90% of genital warts, and types 16 and 18 are responsible for 70% of cervical cancers.

Next slide: There is very limited data on HPV in males. It is estimated at 29 to 48% of sexually active adolescent males are infected, most are asymptomatic; however, HPV can lead to genital warts or penile or anal cancer. Hence the discussions you hear about anal pap smears among high-risk men.

Next slide: Currently paps are recommended three years after the onset of sex, or at 21 years of age. In thinking back to the natural history side, this is because of people who get infected most regress, and the people we want to catch are the persistors.

I'd like to briefly discuss condom use because it has received a lot of press with respect to HPV infection. First, it is clear that condoms prevent cervical cancer. The area of controversy is whether condoms reduce or prevent the initial HPV infection, and here the data are mixed. A

meta analysis of studies conducted up to 2002 showed no overall effect of condoms on HPV positivity. These studies were primarily cross-sectional and many were not initially designed to evaluate HPV. However, there have been two recent, well-designed, longitudinal studies among adolescents which have shown condoms to be protective against HPV infection. The public health message here needs to be that condoms help, and should be used.

Next slide: Moving onto the HPV vaccine, there is one vaccine on the market and one under review. These are prophylactic vaccines which mean that they prevent the initial infection but don't prevent progression of disease once the person has been infected with an oncogenic subtype. The quadravalent, the vaccine currently on the market, protects against viral subtypes causing 70% of cancer and 90% of warts. The vaccines are made up of VLPs, or virus-like particles, they consist of capsid proteins only and no DNA and the important thing to know is that they carry no infections or oncogenic risk. The VLPs induced antibody response that prevents incident infection.

Next slide: The quadravalent vaccine is 100% effective in preventing moderate to severe dysplasia, has been shown to be 90% effective in preventing persistent HPVs. Looking back to the diagram of the natural history of HPVs, these are precursors to cancer. Note again that the vaccine provides no protection against subtypes acquired prior to vaccination. Immune response as measured by geometric mean antibody titers effects is greater with a quadravalent vaccine than with natural infection. These antibody titers are also greater in younger adolescents compared to older adolescents with 9 to 15 year olds achieving and maintaining a higher GMT than 18 to 26 year olds. This immune response is then maintained for up to 4 ½ years and it is not yet clear if people will ultimately need a booster.

Next slide: This slide summarizes the recommendation from the Advisory Committee on Immunization Practices. First, routine vaccination is recommended for 11 to 12 year old females. This can start as early as nine years. Second, catch-up vaccinations are recommended for 13 to 26 year olds. The vaccine should be administered in three doses at baseline, two months, and six months.

Next slide: Why does it make sense to immunize younger adolescents? First the 11 to 12 year old visit can be used as an immunization platform, or a well visit in which families expect vaccines. Eleven to 12-year-olds will also be receiving the Tdap or new tetanus booster, and Minactra, the meningitis vaccine. Second, younger adolescents see a doctor more and are more likely to access care. Third, going back to our data on immune response to the vaccine; younger ages have been shown to have a greater immune response and that response persists at least four years. Finally, vaccination has to occur prior to sexual debut.

Next slide: There are key issues remaining with respect to vaccination. First, there is no change in preventive or screening behaviors, including pap smears. The vaccine prevents against only two of the subtypes that cause cervical cancer, and more research is needed to assess the impact of the vaccine on screening strategies. Second, there is not consensus on whether men should be vaccinated. The safety is established and men clearly have a role in the development of cancer. Some data suggests that vaccinating men may be a cost-effective way to reduce cervical cancer

in areas with low HPV immunization rates in females. Research with adolescent males is in progress.

Next slide: I'd like to now turn to vaccine acceptance. Despite the benefits of vaccination, vaccine availability does not automatically translate into vaccine acceptance. They are perceived as actual barriers on the level of systems, health care providers, adolescents and parents.

Next slide: System issues include payment, lack of a pre-teen immunization visit, and the need for mandates to expand the coverage.

Next slide: The first two of these barriers have been addressed; ACIP recommendations have been adopted by most private and public payers, the Society for Adolescent Medicine and the Academy of Pediatrics are recommending making the 11 to 12 year old visit a vaccine platform. And the one major barrier is the issue of mandates. It is clear from experience without our vaccines that universal age-specific mandates are the most effective way to achieve high levels of vaccination and are generally more effective than risk-based strategies. This is particularly true when health care professionals potentially can play an important role educating from the inside.

Next slide: This slide captures the discomfort that many clinicians feel about discussions of HPV infection and the recommendation for the vaccine.

Next slide: Will health care providers be willing to recommend HPV and other STI vaccines? Potential barriers include lack of HPV knowledge, concerns about parental reactions, and discomfort with discussions about sex.

Next slide: Fortunately, for most health care providers, these are surmountable. Research among pediatricians, family practitioners, and nurse practitioners describes mostly positive attitudes towards the HPV vaccine. Providers express a relative preference for vaccinating older teens and girls; an endorsement of a professional organization like the AAP was important. And finally, there was a relative preference for combined warts and cancer vaccines. Predictors of intention to vaccinate included higher HPV knowledge, fewer perceived barriers to immunization in general, and more adolescence in one's practice. These data suggest that it might be possible to intervene at the level of the provider, addressing HPV knowledge and perceived barriers, and also that it might make sense to target education to providers with fewer adolescents in their practices.

Next slide: Adolescents are more of a theoretical problem than an actual problem. Research suggests that adolescents have a mostly positive attitude to STI vaccines, and that predictors of intention to receive the vaccine include parent's viewpoint and health care provider's recommendations, also note that many teens and parents visit desire shared decision-making around STI vaccination as opposed to routine vaccination like tetanus.

Next slide: Moving on, will parents be willing to have their children receive HPV and other STI vaccines? The two potential barriers specific to HPV include lack of knowledge about HPV and worries that vaccination is equivalent to condoning sex.

Next slide: Across vaccine accepted studies we see a moderate to high interest in HPV and other STI vaccines among parents. Parents in these studies tended to focus on the effectiveness of the vaccine and the severity of the exception; i.e., does it cause death like cervical cancer. Parents were less interested in the source of the infection, whether it is sexually transmitted versus transmitted via respiratory droplets. When framing messages for HPV vaccines it will be important to focus on this. Parents are more interested in the fact that the HPV vaccine is highly effective and prevents a deadly disease than the fact that it is an STI. Among parents intention to vaccinate against an STI was related to older age of the child, parental history of STI, worry about child's vulnerability to STI, and lower concerns about the vaccine leading to unsafe sex.

Next slide: So what about those parents who are concerned that the vaccine will lead to unsafe sex? This slide captures the debate about this concern.

Next slide: Well, does it? First, there is no data to support the idea that the HPV vaccine leads to unsafe sex. Second, it vastly underestimates parental, peer and romantic partner influences on adolescent decisions to have sex. Behavioral research clearly shows that family culture around sexuality and dating, peer influences, and the quality and characteristics of romantic partners are more important determinants of sexual behaviors. The idea that the HPV vaccine leads to unsafe sex implies that the threat of HPV infection is a major reason adolescents delay intercourse, which is not data-supported. Finally, for most parents, the moral decision is to protect their children from cancer.

Next slide: So in summary, elements of an HPV message might include that HPV is highly prevalent and often clear if it becomes undetectable. Cervical cancer occurs in only a small number of HPV infections, but it is deadly. HPV vaccine is safe and highly effective. It has no oncogenic or infectious risk. And it offers an opportunity to protect adolescents as they become adults. Finally, the vaccine does not eliminate the need for routine cervical cancer screening or behavioral prevention strategies such as abstinence, condom use, and eliminating the number of sexual partners.

So from a public health perspective, potential roles for the adolescent health coordinator include advocating for universal age-based mandates, educating providers, and enlisting the assistance of state and national professional organizations, and we are thinking about parental reframing as protecting the adolescent from a potential deadly disease.

I'm going to refocus a little bit and briefly touch on newer screening recommendations from the CDC. First the CDC is now recommending universal HIV screening for all sexually active 13 to 69 year olds in all health care settings when the prevalence is greater than 1 to 1000. Sexually active adolescents should be automatically screened unless they actively opt out. Recent consent and behavior counseling are no longer required, but the CDC does recommend continuing to explain the meaning of the task. High risk persons should be screened yearly, but there are no specific recommendations for continued screening of low-risk persons other than new sexual relationships or at a clinician's discretion.

Next slide: Why universal testing? First, in populations for which the prevalence of undiagnosed HIV is greater than .1%, HIV screening is as cost effective as other established screening

programs, like screening for hypertension. This is because of the substantial survival advantage resulting from early diagnosis of HIV when therapy can be initiated before immune compromise occurs. Second, over 50% of HIV-positive adolescents do not know of their HIV status. Third, traditional risk factors don't work as well with adolescents, particularly females, in predicting HIV infection and therefore risk factor based screening approaches are less effective. Why drop the written consent behavioral counseling requirements? It seems like the main reasons are cost and time. The CDC also states that it is unclear if behavioral counseling is ineffective in this area.

Next slide: For the adolescent health coordinators areas that will need special attention for teens include getting prevalence data for adolescent populations, developing procedures to maintain confidentiality, providing for referral and care for newly diagnosed HIV-positive adolescents and finally working on how to best handle the counseling piece. And I think it is not clear.

Next slide: And my last thing I would like to touch on are the recommendations for male Chlamydia screening which are in process at the CDC. The actual recommendations are not yet available, but there are things that we know the data support. The first is the use of nucleic acid amplification tests (NAAT), (LE high false (-)) *screen has an unacceptably high false negative rate*. The second is routine screening in high prevalence venues and populations, such as Job Corps, juvenile justice facilities and STI clinics. Third, routine screening and prevalence is over four to five percent; and recall that 5% of adolescents in the nationally-representative sample in Add Health were infected, so this benchmark is effectively already reached for teens. And finally, to repeat screening three months after a positive because while treatment failures are rare, reinfections are common.

Next slide: This slide has acknowledgements and I'm open for questions now.

Questions/discussion re: Mary Orr's presentation (Edited for brevity)

Do you know what the CDC is recommending for the male Chlamydia screens, what age-range?

- Thirteen years old

Regarding the HPV subtypes, would you say, if somebody has genital warts does that mean they are less likely to have the high-risk types that cause cancer, or are they still at risk of the types that lead to cancer? Could they have a multiple, different subtypes at the same time?

- You get one subtype at a time, so each subtype is a different infection. Someone with genital warts can also be infected or get infected with another subtype. Being infected with one subtype doesn't give you immunity against other subtypes. And it may be a marker for higher risk behaviors such as having one STI making you at high risk for another STI. I think we can't know if people with genital warts may or may not have a high-risk subtype leading to cancer; they are still candidates for the vaccine. And they may or may not have abnormal pap smears.

General Discussion (Edited for brevity)

This is Becky Raymond from New York State; I have a question going back to the HPV vaccine. One of your slides talks about younger adolescents, and you talk about vaccinating them prior to sexual debut. What is the efficacy data showing for sexually active adolescents?

- It is not sexual activity per se that would make the vaccine not work; it is a question with subtype that is covered in the vaccine. I think all of the kids in the trials were HPV negative and sexually active. The issue in getting kids before their sexual debut is that it is an incredibly prevalent infection. Young women with one partner had rates of HPV of 20% so you don't have to do a lot to get infected. And we want to catch people when we are sure that they are not infected.

Okay, so, you are still recommending that young women who are sexually active be vaccinated up through their mid-20s, is that correct?

- That's right. Even young women with abnormal paps can be vaccinated because their paps may be abnormal from a subtype that is not covered in the vaccine or they may not have been exposed to one of the vaccine-covered subtypes. So even if you have been infected with one subtype you still should get the vaccine because the vaccine provides protection against four different subtypes.
- So that is the long answer, the short answer is vaccinate everybody up to 26, all women up to 26.

Thank you.

What is going on with HMOs being willing to cover this vaccine?

- I can answer for California, which is basically they are taking their cue from the Vaccines for Children so it is covered by public funding and once the ACIP recommendations came out then Vaccines for Children is covering it in California; everybody else is kind of falling in line.
And I would have to say it is a state-by-state, organization-by-organization decision but across the country in general they follow the ACIP recommendations which will be published next month. For example, in Indiana, our Blue Cross organization is covering the vaccine.

This is Claude Gilmore, Wisconsin; the CDC guidelines have they been published yet?

- The Guidelines for HIV screening have been published. The Guidelines for male Chlamydia screening are not yet published and will likely not come out until after the first of the year.

But the HPV guidelines are out, correct?

- Recommendations for HPV vaccine are, but the MMWR that they are coming out in comes out next month. They are available on the CDC website, and they are technically considered provisional guidelines for HPV vaccine until the MMWR comes out that has the information. But it is just a matter of time; the MMWR coming out and the recommendations are available on the CDC website.

So next month is what they are shooting for?

- Yes, next month is when it the recommendations should be officially published.

This is Ertha from the District of Columbia. I'm interested in the communities in which you worked with the males 9 to 15. Where there actual vaccinations given? What was the response both from parents and from the schools?

- Are you requesting information regarding the HPV vaccine?

It was the age group that I had an interest in as far as starting as young as nine. What was the response that you had from parents and also from schools?

- These vaccine studies were done on 9-year-olds, but they were not community-based vaccination trials. These were trials where people were recruited through medical centers for safety and efficacy studies, so they were families that were interested in participating in clinical trials. We can't abstract parental opinions because the only parents that volunteer for these trials are parents that are interested in protecting their children against cancer. We can't take the information from the trials and say this is what a community response is going to be.
So the parent data on vaccine acceptance, for these parents it was a study where they were asking hypothetically if your child received an STI vaccine or an HPV vaccine, how would you feel. And in these studies, even with younger parents, parents focused on efficacy of the vaccine and severity of the infection and were less interested in the source of infection. Parents with older children were clearly more interested in the vaccine and had a higher intention to vaccinate, as well as parents who either had a personal history of STI or worried about their children's vulnerability to STI.

Do you know if the District of Columbia was one of the states?

- I don't actually know. To determine where the data was collected, we could either look in the package insert, or we could look at some of the data from the company that sponsored the trials for that specific vaccine.

Do you have a concern about the acceptability of the vaccine to the community, Ertha?

Just wondering, nine years old is pretty young, and you know that would involve elementary school kids and we sometimes have difficulty at the high school level with some issues; I was just wondering what information should be made available from communities in which some of

the participants in the trials were located so that that might give us some education of how we might proceed working with the community on this. For people who are professionals, people within the medical field or health practitioners it is one issue, it is another when you start working with parents and people in some of the communities.

- This is Erica. You know another model that you might want to look at is Hepatitis B vaccination because Hepatitis B is essentially its preventing liver cancer to vaccinate against Hepatitis B; and it is essentially a sexually transmitted infection other than perinatal transmission from mother to baby. Primarily we are looking at a sexually transmitted infection, or tattooing blood born, but primarily sexually transmitted and you know the push started with vaccinating middle schoolers and it is now integrated into the initial vaccinations at birth, 2 months, etc. So, that is someplace where we actually have the practice. Now granted that Hepatitis B is not exclusively known as a sexually transmitted infection, but it is essentially the same issue.

What would your recommendations for framing it be then Erica? Would you say to frame it as a health issue versus a sexually related health prevention sort of thing?

- It is cancer prevention, I mean that is how we have always addressed it with Hepatitis B as well, is that you know this is a preventable form of cancer. And again, if you look at acceptability that is something that parents want to prevent. Now that's not to say you know, lie about the illness that you are preventing, but it is sort of how you approach it. If you approach HPV vaccination as you know this is how we are going to prevent your child from getting genital warts, you know as a mother of an 8-year-old I can say I'm not really thinking of my daughter getting genital warts at the moment. On the other hand, when it is presented as this is a way that we can prevent your daughter from getting cervical cancer, I wouldn't care at what point it was given as long as it was safe and prevented something I felt was worth preventing.

I'm curious, have there been issues with Hepatitis B in the District of Columbia or in other areas, related to it preventing a sexually transmitted infection?

- No problems, not to my knowledge. I think as you said, it was presented with the mindset that it was preventing liver problems, not an STI.
- And I think with this one, the acceptability data suggests that parents really responded to the idea of preventing something severe and life-threatening like cancer, so you could frame it certainly as a cancer prevention vaccine for young women. And I think that would be consistent with data on acceptability of parents of teens and allow you to skirt around a little bit the idea of an STI vaccine.

Moving back to emergency contraception, have any of the states experienced a lot of difficulty with access on a state-level?

This is Claude with Wisconsin, I think that we in our State have the family planning waiver and other things, but I think it has caused some challenges as people are trying to sort out the difference between participating in the waiver and what it does and what EC does. And we are trying to clarify that we have an EC hotline and those kinds of things, but I think part of it is maybe a marketing issue regarding the issue what is of acceptable for conservative versus liberal folks and so there have been some challenges. I'm sure other states are expressing that as well. Or maybe we might be unique in Wisconsin.

In New York State you know obviously there have been many challenges regarding EC and the plus side of it is that there has been so much attention to it that they have been leaving adolescent health alone. So, you know, my department has benefited but for our family planning program it has been involved in every legislative request.

- But in terms of the map presented, I was looking at specific states, because New York is considered to have an unfavorable or hostile environment towards pharmacy access, and so clicking on New York there is just an incredible amount of legislative activity going on around EC and access to EC with New York City being different as I am sure in many ways from the rest of the state. But it is a very, very active issue.

Yes it is, and like I said it has been such an active issue that it really has completely taken all the focus off of adolescent health. So in the meantime, you know, we have a family planning methods program and we have you know, pretty easy access to family planning services for adolescents in the state, because of the amount of attention it has been directed to this. So part of us benefit, but certainly my counterparts don't.

I have two questions for Erica. Like New York we are very large, we have a whole separate family planning program, so my information is very old. But I do have to go back and ask about something, and that is the fact that IUDs are listed as an appropriate for low-risk women and I guess this comes back from years and years of working in Maternal and Child Health and all the years of seeing ectopic pregnancies and infertility from tubal infections and related Pelvic Inflammatory Disease (PID). Are IUDs really currently being readily used on adolescents?

- I think you will see answers to that issue all over the map. But when you look, there are certainly among IUDs for contraception advocates like Hatcher, Stewart, Grimes and that whole world of contraceptive technology that they publish annually, etc. There has been a lot of work to kind of dispel this pervasive attitude and I'm probably of your same generation, because you know the generation of the Delcon Shield where really it was a method that was heavily pushed for college-aged women and had a horrendous reproductive health repercussions. But, it was very particular to that particular IUD and when we look at the current IUDs that are on the market the major problem for adolescents or anyone with a small uterus, or anyone who hasn't had a baby, is expulsion. And the other issues really don't hold up in the data in terms of risk of upper tract infections, PID, etc., obviously you don't want to insert an IUD through an infected cervix or into an infected uterus, and certainly you don't want to be thinking about IUDs for clients who have recurrent sexually transmitted infections regardless of their age. But the biggest risk for having a child in adolescence is having had a child in adolescence.

And I think we are really missing the boat, by not thinking about IUDs as an option for young women who have had a baby and have a mutually magnanimous relationship or believe they have and don't have a sexually transmitted disease history where you are really concerned about their particular risk. We are really impairing their ability to contracept when we don't look at some of these longer-term, well-tolerated methods.

I appreciate that, I also have to let you know that the day I become a grandmother I also won't be able to let my grandchild sleep on their back. It is hard for us to change, I know. I have seen such a long history of negative outcomes associated with IUD use, but again, when your work at an in-vitro fertilization program that is what you are going to see, so you know, I will have to read more about this and try to change my thinking Erica, thank you.

I have a question about Erica the regimen with the oral contraceptive. Are the young girls already on the pill? If not, how are they accessing this option?

- Well it started with that's what we had. Okay, so it was available and you could just prescribe a pack of oral contraceptives with the instructions to take it in a particular way as an EC. Now with the availability of a designated product with a good side effect profile and high efficacy, really the rationale would be related to where there are areas of restricted access. So, for a pharmacist in a state where there is a law that says that this pharmacist has the right to refuse to dispense EC, and maybe it the only pharmacy in town and maybe that pharmacist makes the choice not to dispense EC because that pharmacist believes that it is causing an abortion, but he/she does dispense regular combination oral contraceptives because of their definition of beginning of life, etc. If the pharmacist is okay with that, but not with the other, then it is a viable option. But it is more of those kinds of cases. Or someone who has a pack of pills they have not started yet because they are waiting for their period and then we get into all the quick start stuff and that's not what we are talking about today, but many prescribers will still say you know you have to wait for your period, and wait for the five days, or wait for the first day, or whatever; that they may be sitting on a pack of birth control pills that hasn't been used, had unprotected intercourse, or had a condom breakage or whatever and so they have the pills at home and it maybe it is the most financially viable option in terms of timing or the first thing they can get and use. So those are situations where you still might use the combination oral contraceptives rather than Plan B. Does that answer your question?

Yes.

Do any of the State Adolescent Health Coordinators have ideas for utilizing this information for their practice in their state? Could we share any of those?

Well I will share this with partners here in family planning; but we are little concerned about resources being drawn to EC. We really think that family planning and signing the people up on the waiver and getting adolescents who are sexually active connected to service is the key and we don't want EC to be the issue that doesn't allow us to be successful with family planning. We are trying to figure out our strategy on how we can better market what we do.

LEAH/SAHC Tele conference Series, Session two

Untangling Potential Adolescent Health Controversies

October 19, 2006

So kind of moving people back to the making healthy decisions and making safe choices for contraception if necessary, is that what you are thinking?

Yes, and also the waiver we have allows us to sign people up for insurance so they can, access services. For those who are Medicaid eligible, age 15 to 44 our waiver allows us to help them access birth control, we can get them connected with a provider. We have been pushing it as a way to get people to service who don't necessarily have a provider.

What state is that?

Wisconsin.

So you are dealing with the part, and I'm not sure it was Mary or Erica who mentioned this, that only 40% of adolescents who probably could use healthcare services are accessing those healthcare services; you are trying to expand that percentage.

Correct. And we are basically trying to make services available and track success, especially in a large urban area where our numbers are extremely high and access is low because of a whole range of issues.

Okay, that sounds very interesting Claude, thank you.

In New York State because we are a large state and we tend to be very fragmented so we are actually convening a workgroup among all the people who are participating in programming that relates to adolescent sexual health. So in other words to get the Bureau of STD, Family Planning, the HIV prevention agency, our adolescent health people together so that we can really try to address the fact that we have some very rapidly changing activities within all those areas. And I think also because we have seen the pregnancy rates come down so dramatically in our state, we are also living with a little bit of a concern that on the public policy platform we are not going to be receiving as much attention as we had in the past. So now we are looking at trying to address not just pregnancy prevention but adolescent health in a more comprehensive way.

So you are really doing some kind of systems unification to really focus on some of these other broader issues in terms of reproductive health?

Yes, definitely. Because we are really working, I mean I think that in our state we are really working very hard to really open up access for adolescents to family planning services and I think that we are pretty far along with family planning, but we have other areas that we really need to be working on.

Could you name a few of those other areas, Christine?

You know I think we have concerns about the STD data, that the 15-19 year olds and then 20-24 year olds absolutely dwarf any other age group. I mean I think it is our biggest concern and then what goes along with that are worries that this is a marker for what is happening with HIV, we

don't just know it yet. It hasn't been long enough; the HIV rates in this population could also be increasing.

That is also reflected in Wisconsin in our STD rate. We recently looked at data from our largest urban area, Milwaukee and the 15-19 numbers are up, but the 20-24 the data is absolutely staggering.

- Yes, yes, we were told in the beginning when we started Chlamydia screening that we would see it level out very quickly, and that is not what we have seen, in certain populations is still going up higher and I think that one of our concerns is that we put so much effort in bringing down our pregnancy rates, but we really aren't looking at coordinating our services. Basically we are not really looking just to prevent pregnancy; we are really looking to improve sexual health outcomes for adolescents.

How long ago did you initiate Chlamydia screening?

2001.

Wow, and it is still going up? You are still finding higher numbers? That is really amazing and very kind of discouraging.

Well we just have a couple minutes left in the call does anyone else have anything that they would like to add?

- This is Erica again, and there was just one thing I wanted to clarify, Mary about the HIV recommendations. Because by my read of what the CDC just put out actually advocates universal screening age 13-69, but it does not say for sexually active youth, it says universal screening age 13-69 and I don't know if I'm missing something?

No you are right, it does not say sexually active youth, it just says universal screening age 13-69.

Okay, because this is something we are really you know, of course this is going to be interesting in terms of implementation, particularly because many states have laws around specific consent, there are issues of insurance coverage, etc. etc., but it is pretty radical recommendation considering how the approaches have been in the past, it will be a large shift, so it will be interesting over time to see what is happening in each state and how this is being accommodated or not.

Radical with adolescents because of issues of consent and the reality and the fact that we don't do a lot of blood work on adolescents, so it will be this big invasive thing and all the implications about sexual behavior that come with it.

Regarding HPV implementation, who is it going to be, will there be a big effort toward the family practitioners, pediatricians, on this vaccine? I mean this is a pretty significant change. I'm a little concerned about how that process is going to work.

It is a good question. Some of the professional organizations have stepped forward. The Society for Adolescent Medicine has partnered with some other organizations to try and get information and educational programs out there so you are seeing more and more CME's for physicians, nurse practitioners going on in the area of HPV vaccine, but it is sort of going on, on sort of at the level of individual practice organizations. It is coming at a time when there has been a flurry of new immunizations for teenagers, so in a way that is good, we can take advantage of this new group of immunizations that are going to happen at 11 to 12 years of age as being the new tetanus booster, the new Tdap. So I think being able to couple the HPV vaccine with these immunizations means that you can say to parents and you can market and say there are three new immunizations for 11 to 12 year olds, these are what they are will make it more acceptable to parents. It's this idea of the 11 to 12 year old visit becoming an immunization visit, like the 4-year-old visit before kids start kindergarten.

That makes a lot of sense, it will make it a lot more efficient and easy for the providers also, and so they will probably have greater acceptance in use.

I just want to thank Erica Montestero and Mary Ott our presenters today, they did a wonderful job. I also appreciate the adolescent health coordinators input and questions. I have really enjoyed this conversation and I hope the rest of you have too. Thank you for attending, and again thanks presenters and maybe we can do little claps over the phone or something.