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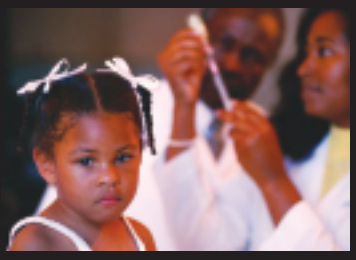

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Reducing Perinatal Transmission in NJ:
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CDC Revises Recommendations for HIV Testing of Pregnant Women and Their Infants

Carolyn Burr, EdD, RN

IN the Revised Recommendation for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings released September 22, 2006, the Centers for Disease Control and Prevention (CDC) builds on and expands its previous recommendation for HIV testing of pregnant women and their infants. As in previous recommendations, CDC recommends universal HIV screening of all pregnant women, but they now advise simplifying the process by using an "opt-out" approach. In New Jersey, regulations require that all pregnant women receive counseling and be offered a voluntary HIV test. With this strategy, a pregnant woman is notified that an HIV test is part of the routine prenatal testing and will be done unless she declines. The recommendations emphasize that HIV testing should always be voluntary and that no woman should be tested without her knowledge. Each woman should be provided with oral or written information that explains HIV infection, describes interventions to decrease the risk of perinatal transmission, and discusses the meaning of both positive and negative test results. She should be offered both the opportunity to ask questions and to decline testing. The CDC recommends that no other process for written documentation of informed consent be required beyond that used for other routine prenatal tests. The CDC has acknowledged in previous documents that a number of states, including New Jersey, have legal mandates requiring written informed consent or declination for HIV testing in pregnancy, but the CDC urges that legislators reconsider these regulations.

If a woman declines HIV testing during pregnancy, the guidelines encourage providers to discuss the reasons she has declined and offer HIV testing again at subsequent visits.

Previous guidelines had recommended third trimester HIV testing for all pregnant women at high risk for acquiring HIV, but these guidelines go further and recommend third trimester testing for all pregnant women in jurisdictions with elevated HIV or AIDS incidence. New Jersey is named as one of those jurisdictions. Third trimester testing is also recommended for pregnant women receiving care in healthcare facilities where prenatal screening identified one HIV-infected woman per 1000 women screened and for any woman with signs and symptoms of acute HIV infection.

HIV testing should be done as early as possible in pregnancy to allow for the greatest opportunity for management of HIV infection for the mother's health and to prevent perinatal HIV transmission. Confirmatory testing should be done, whenever possible, before decisions are made regarding reproductive options, antiretroviral therapy, C-section or other interventions.

These guidelines now recommend that all women in labor whose HIV status in pregnancy is not documented in their medical record have a rapid HIV test performed during labor. Identifying an HIV positive woman in labor still provides an opportunity to intervene with antiretroviral prophylaxis during labor and delivery and to the newborn, which significantly decreases the infant's risk of being infected with HIV. It also provides an important opportunity to engage the woman in care for herself. Initiation of antiretroviral prophylaxis is recommended based on the preliminary positive rapid test result without waiting for the results of confirmatory testing.

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CONTINUING EDUCATION INFORMATION

REDUCING VERTICAL HIV TRANSMISSION IN NEW JERSEY

Release Date: October 1, 2006
Expiration Date: October 31, 2008
Course Code: 09HC01 - DE01

Sponsorship

Sponsored by the University of Medicine & Dentistry of New Jersey (UMDNJ), UMDNJ-Center for Continuing & Outreach Education. This activity is supported by an educational grant from NJDHSS Division of HIV/AIDS Services through a MOA titled "Education and Training for Physicians and other Healthcare Professionals in the Diagnosis and Treatment of HIV/AIDS."

Target Audience:

This activity is designed for physicians and nurses, and for other health care professionals in New Jersey who are involved in the care of women and infants, and persons with HIV/AIDS.

Statement of Need

On September 22, 2006, the CCD issued Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings. "The objectives of these recommendations are to increase HIV screening of patients, including pregnant women, in health-care settings; foster earlier detection of HIV infection; identify and counsel persons with unrecognized HIV infection and link them to clinical and prevention services; and further reduce perinatal transmission of HIV in the United States. These revised recommendations update previous recommendations for HIV testing in health-care settings and for screening of pregnant women." http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm

New Jersey instituted a successful public health intervention to reduce the risk of vertical HIV transmission. The number of infants born with HIV infection dropped from 91 in 1993 to 6 in 2005. This is an indication of the effectiveness of intervention during pregnancy, labor and delivery. However, as New Jersey has a high prevalence of HIV disease, there is continued risk of perinatal transmission and there are missed cases due to lack of knowledge of effective screening and treatment protocols among health care providers. As of December 31, 2005, 32,885 persons were living with HIV disease in the state. New Jersey ranks fifth in the country in cumulative reported AIDS cases, and third in the country in cumulative reported pediatric AIDS cases. Of 1,315 pediatric HIV/AIDS cases in New Jersey, 1,229 (93%) are a result of perinatal transmission.

The risk of vertical HIV transmission with no antiretroviral treatment is 25%. With counseling and testing and highly active antiretroviral therapy starting in the second trimester, the risk of transmission can be reduced to 1%-2%.

The goal of this paper is to explain the rationale for expanded perinatal HIV testing including re-testing in the third trimester, based on the epidemiology of mother-to-child HIV transmission in New Jersey, and the established best practices of HIV counseling and medical management of HIV infected pregnant women.

Learning Objectives

Upon the completion of this activity, participants should be able to:

1. Explain the rationale for pre-conceptual counseling of women with HIV infection.
2. Understand the role of short course antiretroviral therapy in reducing the risk of perinatal HIV transmission.
3. Describe the role of HIV counseling and rapid HIV testing for women who present in labor with unknown HIV status.
4. Summarize new guidelines for HIV counseling and testing in pregnancy.

Method of Instruction

Participants should read the learning objectives and review the activity in its entirety. After reviewing the material, complete the self-assessment test consisting of a series of multiple-choice questions.

Upon completing this activity as designed and achieving a passing score of 70% or more on the self-assessment test, participants will receive a credit letter and the test answer key four (4) weeks after receipt of the self-assessment test, registration, and evaluation materials. Estimated time to complete this activity as designed is 1 hour.

Accreditation

Physicians: UMDNJ-Center for Continuing and Outreach Education is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. UMDNJ-Center for Continuing and Outreach Education designates this educational activity for a maximum of 1 AMA PRA Category 1 credit™. Physician's should claim credit commensurate with the extent of their participation.

Nurses: UMDNJ-Center for Continuing Education and Outreach Education is an approved provider of continuing nursing education by the New Jersey State Nurses Association, Provider Number P173-10/06-09. NJSNA is accredited by the American Nurses Credentialing Center's Commission on Accreditation.

This activity is awarded 1.0 contact hours.

UMDNJ-Center for Continuing and Outreach Education is an approved provider of continuing education by the California Board of Registered Nursing, Provider Number CEP 13780.

Review: This activity was reviewed for relevance, accuracy of content, balance of presentation, and time required for participation by CME Academic Advisor Patricia Kloser, MD, MPH, and pilot-tested for time required for participation by Field Testers Bonnie Abedini, BSN, MS; Mary C. Krug, RN, MSN, APN-C; and Debbie Y. Mohammed, MS, APRN-BC, ACRN.

Faculty

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Carolyn Burr EdD, RN, is Senior Education Specialist, François Xavier Bagnoud (FXB) Center at UMDNJ.
Elaine Gross, RN, MS, is Nurse Educator, FXB Center and Clinical Assistant Professor, UMDNJ School of Nursing.
Case report: **Sunanda Gaur, MD,** is Professor of Pediatrics, Robert Wood Johnson Medical School (RWJMS) and Director, Robert Wood Johnson Medical Center (RWJMC) AIDS Program. **Manuel Jimenez, MD,** is a medical student at RWJMS; **Anna Petrova, MD, PhD,** is a Faculty Research Associate, RWJMS; and **Roseann Marone, RN, BSN, MPH,** is the Program Coordinator, RWJMC AIDS Program and Clinical Instructor-Pediatrics, RWJMS.

Disclosure

In accordance with the disclosure policies of UMDNJ and to conform with ACCME and FDA guidelines, individuals in a position to control the content of this activity are required to disclose to the activity participants: 1) the existence of any financial interest or other relationships with proprietary entities producing health care goods or services, with the exemption of non-profit or government organizations and non-health care related companies, within the past 12 months; and 2) the identification of a commercial product/device that is unlabeled for use or an investigational use of a product/ device not yet approved.

Faculty Disclosure Declarations

Patricia Kloser, MD, MPH (Field Tester and Activity Director) has the following financial relationships to disclose: Speaker's Bureau: GlaxoSmithKline, Roche; Consultant: Gilead, Boehringer Ingleheim. The following have no financial relationships to disclose: faculty: Sindy M. Paul, MD, MPH, Linda Dimasi, MPA, Helene Cross, PhD, Rose Marie Martin, MPH, Carolyn Burr, EdD, RN, Elaine Gross, RN, MS, Sunanda Gaur, MD, Manuel Jimenez, MD, Anna Petrova, MD, PhD, and Roseann Marone, RN, BSN, MPH, and field testers: Bonnie Abedini, BSN, MS, Mary C. Krug, RN, MSN, APN-C, and Debbie Y. Mohammed, MS, APRN-BC, ACRN.

Off-Label Usage Disclosure

This activity does not contain information of commercial products/devices that are unlabeled for use or investigational uses of products not yet approved.

Disclaimer

The views expressed in this activity are those of the faculty. It should not be inferred or assumed that they are expressing the views of NJDHSS-Division of HIV/AIDS Services, UMDNJ, or any manufacturer of pharmaceuticals. It should be noted that the recommendations made herein, with regard to the use of therapeutic agents, varying disease stats, and assessments of risk, are based upon a combination of clinical trials, current guidelines, and the clinical practice experience of the participating panelists. The drug selection and dosage information presented in this activity are believed to be accurate. However, participants are urged to consult the full prescribing information on any agent(s) presented in this activity for recommended dosage, indications, contraindications, warnings, precautions, and adverse effects before prescribing any medication. This is particularly important when a drug is new or infrequently prescribed.

REDUCING VERTICAL HIV TRANSMISSION IN NEW JERSEY

Sindy M. Paul, MD, MPH; Linda Dimasi, MPA; Rose Marie Martin, MPH; Carolyn Burr, EdD, RN; Elaine Gross, RN, MS; Helene Cross, PhD
Case Report: Sunanda Gaur, MD, et al

LEARNING OBJECTIVES:

Upon completion of this learning activity, the reader should be able to:

1. *Explain the rationale for pre-conceptual counseling of women with HIV infection.*
2. *Understand the role of short course antiretroviral therapy in reducing the risk of perinatal HIV transmission.*
3. *Describe the role of HIV counseling and rapid HIV testing for women who present in labor with unknown HIV status.*
4. *Summarize new guidelines for HIV counseling and testing in pregnancy.*

Introduction

Reducing the risk of vertical HIV transmission has been a successful public health intervention in New Jersey. New Jersey has a high prevalence of HIV disease. Through December 31, 2005, 32,885 persons were living with HIV disease in the state. New Jersey ranks fifth in the country in cumulative reported AIDS cases, and third in the country in cumulative reported pediatric AIDS cases. Of 1,315 pediatric HIV/AIDS cases in New Jersey, 1,229 (93%) are a result of perinatal transmission. The number of infants born with HIV infection each year has dropped from 91 in 1993 to 6 in 2005.[1] This is an indication of the effectiveness of intervention during pregnancy, labor and delivery.

The risk of vertical HIV transmission with no antiretroviral treatment is 25%.[2] With counseling and testing and highly active antiretroviral therapy starting in the second trimester, the risk of transmission can be reduced to 1%-2%.[3]

This paper describes the epidemiology of mother-to-child HIV transmission in New Jersey, HIV counseling, and medical management of HIV infected pregnant women. It also explains the rationale for repeat HIV testing in the third trimester, which is recommended by NJDHSS (New Jersey Department of Health and Senior Services) and ACOG (American College of Obstetricians and Gynecologists), and is part of the 2006 CDC recommendations for increasing HIV testing in pregnancy for all women in high-prevalence areas including New Jersey.[2]

Epidemiology of Vertical HIV Transmission in New Jersey

Perinatal exposure to HIV disease and cases of pediatric HIV/AIDS are required by law to be reported to the New Jersey Department of Health and Senior Services (NJDHSS), Division of HIV/AIDS Services (DHAS). NJDHSS, DHAS extensively evaluates all facets of prevention efforts to reduce the risk of mother-to-child HIV transmission. These evaluations indicate that over 90% of providers offer HIV testing; over 90% of patients accept testing, 91% of patients are diagnosed prior to labor and 4% are diagnosed at labor and delivery. Twenty to 25% of HIV-infected pregnant women do not receive prenatal care or have two or fewer prenatal visits. If the mother's HIV status is not documented on the medical record available in the labor and delivery area, the delivery team will not know the mother's HIV status and will not know to provide antiretroviral agents to the mother and the newborn. Antiretroviral use in pregnancy and labor and delivery has increased from 8.3% in 1993 to

(Continued on next page)

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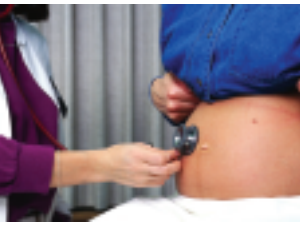
Case Report:
Sunanda Gaur, MD, is Professor of Pediatrics, Robert Wood Johnson Medical School (RWJMS) and Director, Robert Wood Johnson Medical Center (RWJMC) AIDS Program. Manuel Jimenez, MD, is a medical student at RWJMS; Anna Petrova, MD, PhD, is a Faculty Research Associate, RWJMS; and Roseann Marone, RN, BSN, MPH, is the Program Coordinator, RWJMC AIDS Program and Clinical Instructor-Pediatrics, RWJMS.



91% in 2004. As the use of antiretroviral agents increased, the perinatal transmission rate in New Jersey has decreased from 21% in 1991 to 2% in 2004.[1]

The major missed opportunity in the maximal reduction of vertical HIV transmission in New Jersey is women who present in labor with the delivery team unaware of their HIV status. In New Jersey, regulations require that all pregnant women receive counseling and be offered a voluntary HIV test.[4] Ideally, all pregnant women should be offered HIV testing during an initial prenatal visit to allow for timely initiation of treatment to reduce the chance of vertical transmission. However, a particular area of concern is women who present in labor with unknown HIV status, that is, the HIV test results are not documented on the medical record. These women may not have been offered HIV counseling and testing during pregnancy, may have opted not to have an HIV test during pregnancy, or may not have received prenatal care. Clinical trial data have shown that antiretroviral medications, even when started during labor and delivery and continued in the neonatal period, can reduce mother-to-child HIV transmission by up to fifty percent compared to the risk if no antiretroviral is given.[3,5,6]

Preconception Counseling

The U.S. Public Health Service Perinatal Working Group Guidelines contain a section on preconception counseling of women with HIV infection. Many women with HIV infection know their diagnosis at the time they become pregnant, and are often already on antiretroviral therapy. The guidelines recommend that, where desired, a woman be offered an effective method of contraception until she reaches an optimal health status for pregnancy. Prior to pregnancy, she should receive education and counseling about the risks of perinatal transmission, strategies to reduce those risks, and the potential effects of HIV and its treatment on the pregnancy, including the role of antiretroviral therapy in maximally reducing viral load and optimizing immune function. Initiation or modification of her antiretroviral therapy prior to conception can avoid agents with potential toxicity for the fetus (such as efavirenz or hydroxyurea) while choosing agents effective in reducing transmission and achieving a stable, maximally suppressed maternal viral load. Preconception counseling also provides the opportunity to evaluate the woman's overall health including her risk for opportunistic infections and any needed prophylaxis, her nutritional status, screening for maternal psychological or substance abuse problems. The standard preconception evaluation should also be offered. She should be specifically counseled about assistive reproductive technologies that both prevent HIV exposure of an uninfected partner and protect her against reinfection with resistant or more virulent strains of HIV.[3]

HIV Counseling and Testing for Pregnant Women

The US Public Health Service, Centers for Disease Control and Prevention, (CDC) the American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Pediatrics (AAP and most recently, the U.S. Preventive Services Task Force recommend screening for HIV infection for all pregnant women.[7-9] In New Jersey, HIV counseling is mandated with voluntary testing for all pregnant women. (Chapter 174, P.L. 1995). In addition, because of the high HIV prevalence in women of childbearing age in New Jersey, repeat HIV testing for pregnant women in the third trimester is also recommended by CDC, NJDHSS, and ACOG.[2 10]

The majority of pregnant women choose to have an HIV test when their provider strongly recommends testing.[11] The best approach is to say in a respectful, matter-of-fact, and non judgmental manner: "I recommend that all my patients have an HIV test because it is important for their health and for their babies." A provider should explore a woman's reasons for declining testing and offer it again, particularly before 36 weeks gestation.

Providing HIV Results/ Post-Test Counseling

Results should always be given in person. HIV test results, whether negative or positive, should be clearly documented in the patient's chart and in the summary sent to the delivery hospital.

If the HIV screening test is negative, a woman can be informed simply that her HIV test was negative; she does not have HIV, but the test may not show recent infection. All women should be advised about retesting in the third trimester (before the 36th week). Women with known risk factors can be offered/ referred for risk-reduction counseling.

Counseling about the HIV screening test does not need to be onerous, and should include the following information[2]:

- HIV is the virus that causes AIDS. It is transmitted through unprotected sex, or through sharing of needles through injection drug use.
- A pregnant woman who has HIV can pass the virus to her baby before or during birth or by breastfeeding.
- Women, especially, may not know they are at risk.
- HIV is treatable. Treatment can prolong a woman's life and prevent transmission to her baby during pregnancy and birth.
- Experts recommend that all pregnant women be tested for HIV.
- If a woman is HIV-positive, she can get treatment immediately. If she is HIV-negative, she can learn ways to prevent getting the infection in the future.
- A woman has the right to refuse testing and will not be denied care if she does so.

Using the New Jersey state consent or declination form for HIV testing in pregnancy is a simple way to document this content as well as the woman's decision.

If the HIV test is positive, counseling a pregnant woman with a positive HIV test is stressful for both the patient and the provider. A woman should be informed that her HIV test was positive, which means she has HIV infection, even though she may feel well and have no symptoms. The discussion should emphasize that treatment is available for her own health and to reduce the risk of transmission to her baby. Linking the woman to HIV clinical care, counseling, support, and prevention services is of primary importance. The clinician should inform the woman that positive HIV results are reportable in New Jersey and will be shared with the physician caring for her infant, stressing that this information is otherwise kept confidential.

Antiretroviral Drugs

The Guidelines also update recommendations for the use of antiretroviral (ARV) drugs to reduce perinatal HIV transmission. The guidelines recommend that the 3-part zidovudine (ZDV) regimen, alone or in combination with other antiretroviral agents, should be discussed with and offered to all pregnant women with HIV infection beginning after the first trimester. The 3-part ZDV regimen is provided in Table 1.

Since a lower viral load is associated with a reduced risk of perinatal HIV transmission, the combination of ZDV with additional ARV drugs is the recommended treatment for infected women with an HIV RNA copy levels over 1,000 or whose clinical, virological, or immunological status requires it. Combination therapy should be considered for women with HIV RNA level less than 1000 copies. A woman with HIV who is already receiving ARV whose pregnancy is identified after the first trimester should continue treatment and ZDV should be a component of the treatment regimen whenever possible. ZDV is recommended during the intrapartum and newborn periods regardless of the mother's earlier treatment. The addition of other ARV drugs, such as nevirapine, at the time of delivery for women with less than optimal viral suppression has not been shown to provide additional protection against perinatal transmission and is not recommended by the Guidelines.[3]

Short course therapy for women in labor who have had no prior therapy is described in Table 2, Scenario 3, "Women in labor who have had no prior therapy." Infants born to mothers who have received no ARV during pregnancy or intrapartum should receive 6 weeks of neonatal ZDV initiated as soon as possible after delivery – preferably within 6-12 hours of birth. These four scenarios are described in more detail in Table 2 (see page 6). A comparison of the intrapartum/post-partum regimens for women in labor who have not had prior ARV (Scenario 3) is provided in Table 3 (see page 7).[3]

The Guidelines recently updated the recommendation regarding resistance testing and now recommend resistance testing for all pregnant women not currently receiving antiretrovirals before the initiation of therapy for treatment or prophylaxis. Resistance testing is also recommended for pregnant women on ARVs who have virologic failure with detectable HIV RNA levels or who fail to reach optimal viral suppression. Intravenous ZDV during labor and for the newborn is still recommended for women with documented ZDV resistance or whose regimen does not include ZDV.

(Continued on next page)

TABLE 1. Pediatric AIDS Clinical Trials Group (PACTG) 076 Zidovudine (ZDV) Regimen[3]

Time of Zidovudine (ZDV) Administration	Regimen
Antepartum (Pregnancy)	Oral administration of 100 mg ZDV five times daily, initiated at 14 to 34 weeks' gestation and continued throughout the pregnancy **Note:** Oral ZDV administered as 200 mg three times daily or 300 mg twice daily is currently used in general clinical practice and is an acceptable alternative regimen to 100 mg orally five times daily.
Intrapartum (Labor and Delivery)	During labor, intravenous administration of ZDV in a one-hour initial dose of 2 mg/kg body weight, followed by a continuous infusion of 1 mg/kg body weight/hour until delivery.
Postpartum (After Birth)	Oral administration of ZDV to the newborn (ZDV syrup at 2 mg/kg body weight/dose every 6 hours) for the first 6 weeks of life, beginning at 8 to 12 hours after birth. **Note:** Intravenous dosage for full-term infants who cannot tolerate oral intake is 1.5 mg/kg body weight intravenously every 6 hours. ZDV dosing for infants <35 weeks gestation at birth is 1.5 mg/kg/dose intravenously, or 2.0 mg/kg/dose orally, every 12 hours, advancing to every 8 hours at 2 weeks of age if >30 weeks gestation at birth or at 4 weeks of age if <30 weeks gestation at birth.

TABLE 2. Clinical Scenarios and Recommendations for the Use of Antiretroviral Drugs to Reduce Perinatal Human Immunodeficiency Virus Type 1 (HIV-1) Transmission[3]

SCENARIO #1

HIV-1-infected pregnant women who have not received prior antiretroviral therapy.

- Pregnant women with HIV-1 infection must receive standard clinical, immunologic, and virologic evaluation. Recommendations for initiation and choice of antiretroviral therapy should be based on the same parameters used for persons who are not pregnant, although the known and unknown risks and benefits of such therapy during pregnancy must be considered and discussed.
- The three-part ZDV chemoprophylaxis regimen, initiated after the first trimester, is recommended for all pregnant women with HIV-1 infection regardless of antenatal HIV RNA copy number to reduce the risk for perinatal transmission.
- The combination of ZDV chemoprophylaxis with additional antiretroviral drugs for treatment of HIV-1 infection is recommended for infected women whose clinical, immunologic or virologic status requires treatment or who have HIV-1 RNA over 1,000 copies/mL regardless of clinical or immunologic status, and can be considered for women with HIV-1 RNA < 1,000 copies/mL.
- Women who are in the first trimester of pregnancy may consider delaying initiation of therapy until after 10-12 weeks' gestation.

SCENARIO #2

HIV-1-infected women receiving antiretroviral therapy during the current pregnancy.

- HIV-1 infected women receiving antiretroviral therapy, whose pregnancy is identified after the first trimester, should continue therapy. ZDV should be a component of the antenatal antiretroviral treatment regimen after the first trimester whenever possible, although this may not always be feasible.
- For women receiving antiretroviral therapy, whose pregnancy is recognized during the first trimester: the woman should be counseled regarding the benefits and potential risks of antiretroviral administration during this period, and continuation of therapy should be considered. If therapy is discontinued during the first trimester, all drugs should be stopped and reintroduced simultaneously to avoid the development of drug resistance.
- Regardless of the antepartum antiretroviral regimen, ZDV administration is recommended during the intrapartum period and for the newborn.

SCENARIO #3

HIV-1-infected women in labor who have had no prior therapy.

- Several effective regimens are available (Table 3). These include:
  1. Intrapartum intravenous ZDV followed by six weeks of ZDV for the newborn;
  2. Oral ZDV and 3TC during labor, followed by one week of oral ZDV-3TC for the newborn;
  3. A single dose nevirapine at the onset of labor followed by a single dose of nevirapine for the newborn at age 48 hours; and
  4. The single-dose maternal/infant nevirapine regimen combined with intrapartum intravenous ZDV and six week ZDV for the newborn.
- If single-dose nevirapine is given to the mother, alone or in combination with ZDV, consideration should be given to adding maternal ZDV/3TC starting as soon as possible (intrapartum or immediately postpartum) and continuing for 3 to 7 days, which may reduce development of nevirapine resistance.

In the immediate postpartum period, the woman should have appropriate assessments (e.g., CD4+ count and HIV-1 RNA copy number) to determine whether antiretroviral therapy is recommended for her own health.

SCENARIO #4

Infants born to mothers who have received no antiretroviral therapy during pregnancy or intrapartum.

- The six-week neonatal ZDV component of the ZDV chemoprophylactic regimen should be discussed with the mother and offered for the newborn.
- Some clinicians may choose to use ZDV in combination with other antiretroviral drugs, particularly if the mother is known or suspected to have ZDV-resistant virus. However, the efficacy of this approach for prevention of transmission has not been proven in clinical trials, and appropriate dosing regimens for neonates are incompletely defined for many drugs.
- In the immediate postpartum period, the woman should undergo appropriate assessments (e.g., CD4+ count and HIV-1 RNA copy number) to determine if antiretroviral therapy is required for her own health. The infant should undergo early diagnostic testing so that if HIV-infected, treatment can be initiated as soon as possible.

Note: Discussion of treatment options and recommendations should be noncoercive, and the final decision regarding the use of antiretroviral drugs is the responsibility of the woman. A decision to not accept treatment with ZDV or other drugs should not result in punitive action or denial of care. Use of ZDV should not be denied to a woman who wishes to minimize exposure of the fetus to other antiretroviral drugs and who therefore chooses to receive only ZDV during pregnancy to reduce the risk for perinatal transmission.

TABLE 3. Comparison of Intrapartum/Postpartum Regimens for HIV-1-Infected Women in Labor Who Have Had No Prior Antiretroviral Therapy (Scenario #3)[3]

Drug Regimen	Source of Evidence	Material Regimen	Infant Postpartum	Date on Transmission	Advantages	Disadvantages
ZDV	Epidemiologic Data, U.S,: Compared to no ZDV Treatment	2 mg/kg intravenous bolus, followed by continuous infusion of 1 mg/kg/hr until delivery	2 mg/kg orally every six hours for six weeks	Transmission 10% with ZDV compared to 27% with no ZDV treatment, a 62% reduction (95% CI, 19- 82%)	Has been standard recommendations	Requires intravenous administration and availability of ZDV intravenous formulation. Adherence to six week infant regimen Reversible, mild anemia with 6 week infant ZDV regimen
ZDV/3TC	Clinical Trial, Africa; Compared to Placebo	ZDV 600 mg orally at onset of labor, followed by 300 mg orally every 3 hours until delivery AND 3TC 150 mg orally at onset of labor, followed by 150 mg orally every 12 hours until delivery	ZDV 4 mg/kg orally every 12 hours AND 3TC 2mg/kg orally every 12 hours for seven days	Transmission at 6 weeks 9% with ZDV-3TC vs. 15% with placebo, a 42% reduction	Oral regimen Adherence Easier than 6 weeks of ZDV	Requires administration of two drugs
Nevirapine	Clinical Trial, Africa; Compared to oral ZDV given intrapartum and for one week to the infant	Single 200 mg oral dose at onset of labor Consider adding intrapartum ZDV/3TC and 3-7 days of ZDV/3TC postpartum to reduce nevirapine resistance	Single 2 mg/kg oral dose at age 48-72 hrs**	Transmission at 6 weeks 12% with nevirapine compared to 21% with ZDV, a 47% reduction (95% CI*, 20-64%)	Inexpensive Oral regimen Simple, easy to administer Can give directly observed treatment	Unknown efficacy if mother has nevirapine-resistant virus Nevirapine resistance mutations have been detected postpartum in some women and in infants who became infected despite prophylaxis
ZDV-Nevirapine	Theoretical	ZDV 2 mg/kg intravenous bolus, followed by continuous Infusion of 1 mg/kg/hr until delivery AND Nevirapine single 200 mg oral dose at onset of labor Consider adding intrapartum ZDV/3TC and 3-7 days of ZDV/3TC postpartum to reduce nevirapine resistance	ZDV 2 mg/kg orally every 6 hours for 6 weeks AND Nevirapine single 2 mg/kg oral dose at age 48-72 hours**	No data	Potential benefit if maternal virus is resistant to either nevirapine or ZDV Synergistic inhibition of HIV replication with combination in vitro	Requires intravenous administration and availability of ZDV intravenous formulation

ZDV zidovudine; CI, confidence interval; 3TC, lamivudine

* ZDV dosing for infants <35 weeks gestation at birth is 1.5 mg/kg/dose intravenously, or 2.0 mg/kg/dose orally, every 12 hours, advancing to every 8 hours at 2 weeks of age if >30 weeks gestation at birth or at 4 weeks of age if <30 weeks gestation at birth [121].

**If the mother received nevirapine less than one hour prior to delivery, the infant should be given 2mg/kg oral nevirapine as soon as possible after birth and again at 48–72 hours [243].

In New Jersey, HIV counseling is mandated with voluntary testing for all pregnant women. (Chapter 174, P.L. 1995). In addition, because of the high HIV prevalence in women of childbearing age in New Jersey, repeat HIV testing for pregnant women in the third trimester is also recommended by CDC, NJDHSS, and ACOG.

Women in Labor with Unknown HIV Status

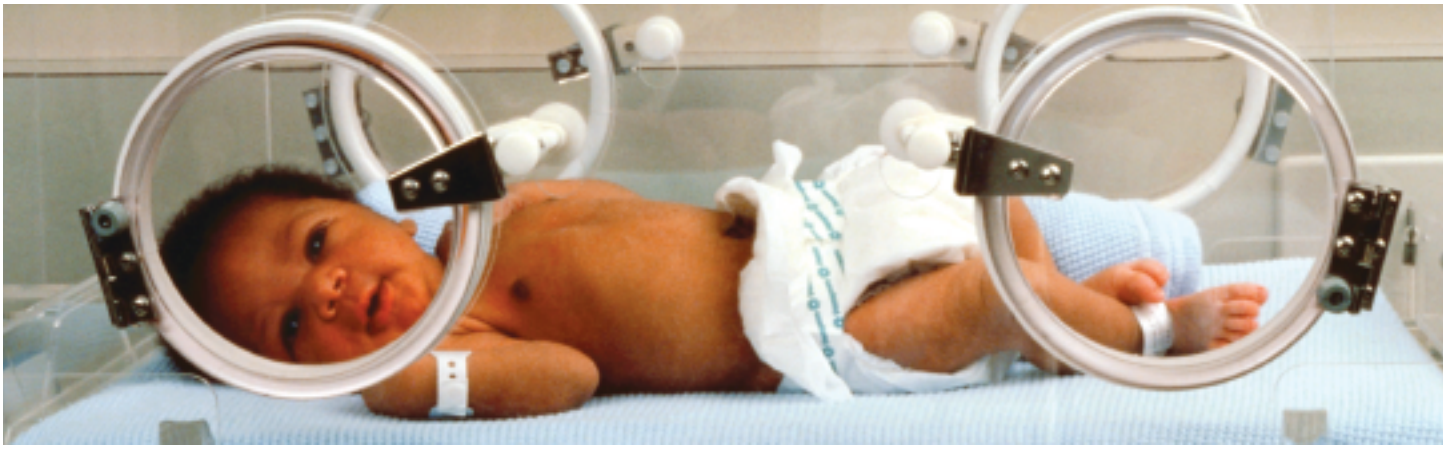
Women who present in labor with unknown HIV status represent the major missed opportunity to the maximal reduction of vertical HIV transmission in New Jersey. The key to maximal perinatal HIV risk reduction for these women is rapid HIV testing and initiation of short course therapy. The CDC-sponsored Mother-Infant Rapid Intervention at Delivery (MIRIAD) study showed that offering voluntary HIV testing during labor is feasible in obstetrical settings. In addition, point-of-care rapid HIV testing has been shown to provide results faster than sending specimens to the hospital laboratory for rapid HIV testing.[12] Rapid HIV testing is recommended for women in labor whose HIV status is unknown.[13] The NJDHSS has established a standard of care in which women who present in labor with unknown HIV status should receive counseling, be offered voluntary rapid HIV testing, and, if a preliminary positive rapid HIV test result is obtained, be offered short course ARV therapy. Both mother and infant should be referred to physicians with experience and expertise treating HIV disease for follow-up care.[14]

Mode of Delivery

A significant number of newborns become infected during labor and delivery. Although the exact mechanism of transmission is unknown, it may occur through transplacental microtransfusion of blood during uterine contractions or by exposure to the virus in the cervicovaginal secretions during delivery.[15] A cesarean delivery prior to the onset of labor and before the rupture of membranes reduces the risk of vertical HIV transmission for women whose HIV RNA viral load exceeds 1,000 copies per milliliter. The American College of Obstetrics and Gynecology recommends a scheduled, elective caesarian section at 38 weeks of completed gestation for women whose viral load exceeds 1,000 copies per milliliter. Viral load monitoring is recommended every three months or following changes in ARV therapy. The most recent viral load results should be used to determine the mode of delivery. For women whose viral load is less than 1,000 copies per milliliter, the risk of cesarean delivery outweighs the potential benefits.[17]

Summary

Reduction of perinatal HIV transmission represents a major public health accomplishment in New Jersey. However, cases continue to occur. The risk of vertical HIV transmission can be reduced through universal HIV counseling in pregnancy, routine testing, ARV for women with HIV for their own health and to reduce the risk of perinatal transmission, and appropriate obstetrical care. Even if a woman initially presents in labor, the risk of vertical transmission can be significantly reduced through rapid HIV testing and short course ARV therapy.



REDUCING VERTICAL HIV TRANSMISSION IN NEW JERSEY

REFERENCES

1. New Jersey Department of Health and Senior Services. New Jersey HIV/AIDS Report – December 31, 2005. http://www.state.nj.us/health/aids/qtr0306.pdf

2. Centers for Disease Control and Prevention. Revised guidelines for HIV counseling, testing and referral and revised recommendations for HIV screening of pregnant women. *MMWR* Recomm Rep. 2001;50:1-86. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5019a1.htm and http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5019a2.htm

3. Public Health Service Task Force Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV-1 Transmission in the United States – November 17, 2005. http://aidsinfo.nih.gov/ContentFiles/PerinatalGL.pdf

4. Paul S, Burr C, DiFerdinando G. Updated recommendations for reducing vertical HIV transmission. *New Jersey Medicine.* 2003;100(Suppl):27-31.

5. Wade NA, Birkhead GS, Warren BL et al. Abbreviated regimen of zidovudine prophylaxis and perinatal transmission of the human immunodeficiency virus. *N Engl J Med.* 1998;339:1409-1414.

6. Guay LA, Musoke P, Fleming T, et al. Intrapartum and neonatal single-dose nevirapine compared with zidovudine for prevention of mother-to-child transmission of HIV-1 in Kampala, Uganda: HIVNET 012 Randomized Trial. *Lancet.* 1999;354:795-802.

7. Centers for Disease Control and Prevention. Rapid point-of-care testing for HIV-1 during labor and delivery – Chicago, Illinois, 2002. *MMWR.* 2003;52:866-868. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5236a4.htm

8. American Academy of Pediatrics. Human immunodeficiency virus screening: Joint statement of the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists. *Pediatrics.* 1999;104,128.

9. Chou R, Smits AK, Huffman LH, Fu R, Korthuis PT; Prenatal screening for HIV: a review of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2005 Jul 5;143(1):38-54. Abstract available at: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=15998754&query_hl=1&itool=pubmed_docsum

10. American College of Obstetricians and Gynecologists. Prenatal and perinatal human immunodeficiency virus testing: expanded recommendations. ACOG Committee Opinion No. 304. *Obstet Gynecol.* 2004;104:1119-1124.

11. Anderson JE, Koenig LJ, Lampe MA, Wright R, Leiss J, Saul. Achieving universal HIV screening in prenatal care in the United States: provider persistence pays off. *AIDS Patient Care STDS.* 2005;9:247-52.

12. Royce RA, Walter EB, Fernandez MI, Wilson TE, Ickovics JR, Simonds RJ; Perinatal Guidelines Evaluation Project. Barriers to universal prenatal HIV testing in 4 US locations in 1997. *Am J Public Health.* 2001;92:727-733. Abstract at: http://www.ajph.org/cgi/content/abstract/91/5/727

13. Centers for Disease Control & Prevention. Advancing HIV prevention: new strategies for a changing epidemic – United States, 2003. *MMWR.* 2003;52:329-332. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5215a1.htm

14. Centers for Disease Control and Prevention. Rapid HIV Antibody Testing During Labor and Delivery for Women of Unknown HIV Status: A Practical Guide and Model. 2004. http://www.cdc.gov/hiv/rapid_testing/materials/Labor&DeliveryRapidTesting.pdf

15. New Jersey Department of Health and Senior Services. Standard of Care for Women Who Present in Labor with Unknown HIV Status. www.state.nj.us/health/aids/stdcare.pdf

16. American College of Obstetrics and Gynecology Committee on Obstetric Practice. Committee Opinion: Schedule Cesarean Delivery and the Prevention of Vertical HIV Transmission. Number 234, May 2000.

17. Minkoff, H. (2003). Human immunodeficiency virus infection in pregnancy. *Obstet Gynecol.* 101;4:797-810.

MMWR: MMWR Morbidity and Mortality Weekly Report

See Case Report on following pages.

Case Report: Preventable Mother-to-Child Transmission

Sunanda Gaur, MD; Manuel Jimenez, MD; Anna Petrova, MD, PhD; Roseann Marone, RN, BSN, MPH

INTRODUCTION

In response to early intervention, the risk of mother-to-child HIV transmission can be reduced from approximately 25% to 2%.[1] Although not optimal, abbreviated courses of antiretroviral therapy can also significantly reduce vertical transmission.[2,3] Despite these advances the CDC estimates that between 280 and 370 perinatally-infected infants are born each year in the United States. Many of these cases represent missed opportunities for early intervention and prevention of HIV transmission.

We report a case of mother to child transmission that may have been prevented if a repeat HIV test was administered in the third trimester of gestation.

Case

An 8 month old girl presented to an community institution with a one day history of shortness of breath, congestion, cough and a maximum temperature of 100 degrees Fahrenheit measured at home. The patient had a respiratory rate greater than 80 respirations per minute with retractions. She also appeared cyanotic. Chest x-ray revealed diffuse interstitial infiltrates bilaterally. At this time, the patient was transferred to the Bristol-Myers Squibb Children's Hospital at Robert Wood Johnson University Hospital and was admitted to the pediatric intensive care unit.

The patient was the 8 lb. 8 oz. product of an uncomplicated 38 week gestation and was delivered by natural spontaneous vaginal delivery. The mother is a 25 year old G3 P3 Hispanic woman. Prenatal labs included rubella immune, hepatitis B negative, and GBS negative.

The mother tested negative for HIV during her first trimester. The patient has two siblings who were the products of two previous and separate relationships. The mother reported that she was HIV negative during both of these pregnancies and had been in a monogamous relationship with the patient's father for the previous two years. He had no known HIV risk behaviors, however, his HIV status was unknown. The mother denied IV drug use.

The patient's past medical history was significant for three hospitalizations at another institution at three months of age for bronchiolitis, again at five months of age for bronchiolitis, and at six months of age for pneumonia. Medications included inhaled budesonide twice daily and Albuterol every six hours. There were no known drug or food allergies at the time of hospitalization.

On physical examination, the patient was afebrile with a respiratory rate of 80 breaths per minute and 98% O2 saturation on 100% non re-breather, heart rate was 148 beats per minute. The patient weighed 6 kg, which was below the third percentile for her age. The patient appeared to be in moderate respiratory distress. Respiratory exam revealed supraclavicular and subcoastal retractions with decreased air entry especially at the right base and diffuse crackles bilaterally on auscultation. Cardiovascular exam was significant for tachycardia. Extremities were well perfused with capillary refill under 2 seconds. Neurologically, the patient had poor head control, mildly decreased tone of all four extremities and was unable to sit independently.

Laboratory values included white blood cell count 9500 wbc/mL, neutrophils 40%, lymphs 45%, Chest x-ray revealed diffuse interstitial infiltrates bilaterally.

The patient was intubated and started on ceftriaxone 200 mg IV every 12 hours, azithromycin 80 mg every 24 hours and trimethoprim/sulfamethoxazole 30 mg every 6 hours. The infectious disease service was consulted to rule out immunodeficiency. The workup included silver stain of the sputum, which was positive for *pneumocystis jiroveci pneumonia*. The mother was counseled and encouraged to undergo rapid HIV testing, which was reactive and confirmed with a Western Blot. Subsequently an HIV viral load was sent for the patient, which was 750,000 copies/mL. The patient was started on a 21 day course of methylprednisolone sodium succinate and trimethoprim/sulfamethoxazole. She was diagnosed with AIDS and started on zidovudine 62 mg three times daily, lamivudine 33 mg twice daily and nelfinavir 500 mg twice daily. The patient was stabilized, extubated after 20 days and was discharged for rehabilitation. The patient is currently followed as an outpatient.

Discussion

Although mother-to-child transmission of HIV could theoretically be eliminated in resource-rich settings, women infected with HIV continue to be missed for early intervention.[1] Lack of HIV testing has been shown to be highly associated with mother-to-child HIV transmission.[2] In 1995, the United States Public Health Service recommended universal counseling and voluntary HIV testing for all pregnant women.[3] In 2001, the US Public Health Service revised its guidelines empha-

sizing the importance of early detection of HIV and increasing accessibility of testing.[4] The American College of Obstetrics and Gynecology (ACOG), CDC, and NJDHSS have recognized the utility of repeat third trimester testing and the rapid HIV test at labor and delivery as strategies that could potentially further reduce the rate of mother-to-child HIV transmission.[5] ACOG recommends a repeat offer of HIV testing in the third trimester to women in areas with high HIV prevalence among women of child bearing age defined as 0.5 % or greater, women known to be at high risk for HIV infection, and women who declined testing earlier. In high risk areas a second voluntary universal HIV test in the third trimester could result in a net savings to society.[6]

Among the other states in the union, New Jersey ranks fifth in cumulative AIDS cases, third in pediatric AIDS cases, and has the largest proportion of women living with AIDS.[7] Nationally, the estimated rate for adults and adolescents living with HIV infection is 136.7 per 100,000 population, the rate for AIDS equals 168.8 per 100,000 population.[8] Meanwhile, in New Jersey, the rate for adults and adolescents living with HIV and AIDS are estimated at 208.5 per 100,000 population and 241.7 per 100,000 population respectively. The HIV prevalence among childbearing women in New Jersey was 0.2% in 2003.[9] However, significant variability exists when race/ethnicity and county of residence are taken into account, with several pockets of much higher prevalence.

The above case represents a patient whose mother had no identifiable HIV risk factors. The mother tested negative early in pregnancy and went on to transmit HIV to her child. This case could have been prevented if repeat testing had been offered in the third trimester, however according to ACOG guidelines it was not indicated. Although New Jersey is in fact a high prevalence area,[12] the prevalence of HIV among child-bearing women in New Jersey falls beneath the 0.5% threshold for repeat third trimester HIV testing as per the 2004 ACOG recommendation. This case argues for the new CDC recommendation for administration of routine third trimester testing in all high prevalence areas. Although mother to child transmission of HIV has been significantly reduced, a rate of zero transmission can only be achieved through constructive discussion of the remaining cases.

Continuing Education Section continues on next page.

REFERENCES – CASE REPORT

1. Fowler MG, Garcia P, Hanson C, Sansom S. Progress in preventing perinatal HIV transmission in the United States [conference summary]. *Emerg Infect Dis* [serial on the Internet]. 2004 Nov [9/29/06]. Available at http://www.cdc.gov/ncidod/EID/vol10no11/04-0622_02.htm. Accessed December 1, 2006.

2. Wade NA, Birkhead GS, Warren BL, et al. Abbreviated regimens of zidovudine prophylaxis and perinatal transmission of the human immunodeficiency virus. *N Engl J Med.* 1998;339:1409-1414.

3. Guay LA, Musoke P, Fleming T, et al. Intrapartum and neonatal single-dose nevirapine compared with zidovudine for prevention of mother-to-child transmission of HIV-1 in Kampala, Uganda: HIVNET 012 randomized trial. *Lancet.* 1999;354:795-802.

4. Thorne C; Newell M-L. Prevention of mother-to-child transmission of HIV infection. *Curr Opin Infect Dis.* June 2004;17:247-252.

5. Peters V, Liu KL, Dominguez K, et al. Missed opportunities for perinatal HIV prevention among HIV exposed infants born 1996-2000, Pediatric Spectrum of HIV Disease Cohort. *Pediatrics.* 2003;111:1186-1191.

6. US Public Health Service recommendations for human immunodeficiency virus counseling and voluntary testing for pregnant women. *MMWR* Recomm Rep. 1995;45:1-15.

7. CDC.Revised guidelines for HIV counseling, testing, and referral and revised recommendations for HIV screening of pregnant women. *MMWR* Recomm Rep. 2001;50:1-10.

8. ACOG committee opinion number 304, November 2004. Prenatal and perinatal human immunodeficiency virus testing: expanded recommendations. *Obstet Gynecol.* 2004 Nov;104(5 Pt 1):1119-24.

9. Sansom SL, Jamieson DJ, Farnham P et al. Human immunodeficiency virus retesting during pregnancy: costs and effectiveness in preventing perinatal transmission. *Obstet Gynecol.* 2003;102:782-90.

10. New Jersey Department of Health and Senior Services – Division of HIV/AIDS Services. HIV/AIDS Epidemiological Profile for the State of New Jersey 2004. Available at http://www.state.nj.us/health/aids/documents/epi2004.pdf.

11. CDC.HIV/AIDS Surveillance Report, 2004. Vol. 16. Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2005:19. Available at: http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2004report/pdf/2004SurveillanceReport.pdf

12. Centers for Disease Control and Prevention. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR* Recomm Rep. 2006;55:1-17. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm or http://www.cdc.gov/mmwr/pdf/rr/rr5514.pdf

MMWR: MMWR Morbidity and Mortality Weekly Report

SELF-ASSESSMENT TEST

REDUCING VERTICAL HIV TRANSMISSION IN NEW JERSEY

Self-Assessment Test

Questions refer to the content of the article and the notes that follow. To receive CME/CEU credit: complete exam, registration, and evaluation forms on-line at http://ccoe.umdnj.edu/online/AIDSLine/index.htm or fill in the forms on the next two (2) pages, and mail or fax to UMDNJ-CCOE (see next page).

1. Counseling for women with HIV infection to reduce the risk of vertical HIV transmission should begin at which of the following times?

A. Pre-conceptual
B. First trimester
C. Second trimester
D. Third trimester

2 Ideally, antiretroviral therapy to reduce the risk of vertical HIV transmission should start at which of the following gestational ages?

A. First trimester
B. Second trimester
C. Third trimester
D. Labor/delivery

3. Which of the following antiretroviral agents is recommended as part of the regiment to reduce the risk of vertical HIV transmission, whenever possible?

A. Efavirenz
B. Lamivudine
C. Zidovudine
D. Nevirapine

4. Which of the following is recommended for women who present in labor with unknown HIV status?

A. HIV counseling
B. HIV rapid testing
C. Short course therapy if HIV test is positive
D. All of the above

5. New Jersey law on HIV counseling and testing of pregnant women:

A. Mandates HIV counseling and testing
B. Mandates universal HIV testing
C. Requires HIV counseling for all pregnant women and voluntary testing
D. Recommends HIV counseling and voluntary testing

6. The New Jersey statewide standard of care recommends that HIV counseling and voluntary rapid/expedited testing be offered to:

A. Women with no record of prenatal care
B. Women who present in labor with unknown or undocumented HIV status
C. Women who refused HIV testing during their prenatal care
D. All of the above

7. Nevirapine monotherapy to reduce perinatal HIV transmission, compared to other regimens, is:

A. Less likely to cause resistance.
B. More difficult to administer than ZDV, the standard intervention.
C. Not recommended as monotherapy.
D. All of above.

8. The most common "missed opportunities" in reducing vertical HIV transmission reported recently in New Jersey have been when an HIV+ infant is born to a woman who:

A. Did not receive prenatal care prior to delivery, or had only one or two visits
B. Did not receive antiretroviral medication during labor and delivery
C. Did not have HIV counseling and testing offered to her during pregnancy
D. Presents in labor with unknown HIV status

9. HIV counseling and testing for pregnant women is most effective when the prenatal care provider:

A. Makes it clear that testing is available for all patients who request it.
B. Strongly recommends HIV testing with repeat testing in 3rd trimester for all prenatal patients.
C. Screens to identify high-risk patients such as IV drug users or women with multiple sex partners.
D. Offers referrals to separate HIV counseling and testing sites.

10. Which of the following is considered appropriate therapy for HIV-1 infected women in labor?

A. Intrapartum intravenous ZDV followed by six weeks of ZDV for the newborn.
B. Single-dose maternal/ infant Efavirenz at the onset of labor followed by a single dose of Efavirenz for the newborn at age 48 hours
C. Intravenous ZDV for 3-7 days.
D. Oral ZDV five times daily for six week.

CE Activity Code 09HC01 - DE01

CONTINUING EDUCATION REGISTRATION

REDUCING VERTICAL HIV TRANSMISSION IN NEW JERSEY

Registration Form

CCOE
Center for Continuing & Outreach Education

In order to obtain continuing education credit, participants are required to:

(1) Read the learning objectives, and review the activity, and complete the self-assessment.

(2) Complete this registration form and the activity evaluation form on the next page, and record your test answers below.

(3) Send the registration and evaluation forms to: UMDNJ-Center for Continuing and Outreach Education
• VIA MAIL: PO Box 1709, Newark, NJ 07101-1709 • VIA FAX: (973) 972-7128

(4) Retain a copy of your test answers. Your answer sheet will be graded and if you achieve a passing score of 70% or more, a credit letter awarding 1 AMA/PRA category 1 credit™ or 1.0 continuing education units, and the test answer key will be mailed to you within four (4) weeks.

Individuals who fail to attain a passing score will be notified and offered the opportunity to complete the activity again. This activity will be posted online at http://ccoe.umdnj.edu/catalog/aids

Please note: CE credit letters and long-term credit retention information will only be issued upon receipt of completed evaluation form.

SELF-ASSESSMENT TEST Circle the best answer for each question:	**1.** A B C D	**3.** A B C D	**5.** A B C D	**7.** A B C D	***9.*** A B C D
	2. A B C D	**4.** A B C D	**6.** A B C D	**8.** A B C D	**10.** A B C D

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Nurses: I attest that I have completed the activity as designed and am claiming [up to 1.2 hours] ___ continuing education contact hours for nurses from the NJSNA.

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General: I attest that I have completed the activity as designed and am claiming [up to 0.1 credit] ___ Continuing Education Units (CEUs).

Signature _____ Date _____

Release date: October 1, 2006 **Expiration date:** Credit for this activity will be provided through October 31, 2008.

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CONTINUING EDUCATION EVALUATION

REDUCING VERTICAL HIV TRANSMISSION IN NEW JERSEY

Activity Evaluation Form

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The planning and execution of useful and educationally sound continuing education activities are guided in large part by input from participants. To assist us in evaluating the effectiveness of this activity and to make recommendations for future educational offerings, please take a few moments to complete this evaluation form. Your response will help ensure hat future programs are informative and meet the educational needs of all participants.

Please note: CE credit letters and long-term credit retention information will only be issued upon receipt of completed evaluation form.

PROGRAM OBJECTIVES: Having completed this activity, are you better able to:		**Strongly Agree**				**Strongly Disagree**
Objective 1:	Explain the rationale for pre-conceptual counseling of women with HIV infection.	5	4	3	2	1
Objective 2:	Understand the role of short course antiretroviral therapy in reducing the risk of perinatal HIV transmission	5	4	3	2	1
Objective 3:	Describe the role of HIV counseling and rapid HIV testing for women who present in labor with unknown HIV status.	5	4	3	2	1
Objective 4:	Summarize new guidelines for HIV counseling and testing in pregnancy.	5	4	3	2	1

OVERALL EVALUATION:	**Strongly Agree**				**Strongly Disagree**
The information presented increased my awareness/understanding of the subject.	5	4	3	2	1
The information presented will influence how I practice.	5	4	3	2	1
The information presented will help me improve patient care.	5	4	3	2	1
The faculty demonstrated current knowledge of the subject.	5	4	3	2	1
The program was educationally sound and scientifically balanced.	5	4	3	2	1
The program avoided commercial bias or influence.	5	4	3	2	1
Overall, the program met my expectations.	5	4	3	2	1
I would recommend this program to my colleagues.	5	4	3	2	1

If you anticipate changing one or more aspects of your practice as a result of your participation in this activity, please provide us with a brief description of how you plan to do so.

Please provide any additional comments pertaining to this activity (positives and negatives) and suggestions for improvement. Please list any topics that you would like to be addressed in future educational activities:

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Immunization for HIV-Infected Children and Adolescents

Sindy M. Paul, MD, MPH; Matthew Aibel; Linda Berezny, RN; Colin T. Campbell, DVM, CPM; Nancy M. Borsuk, RN, MPH; Christina G. Tan, MD

The Centers for Disease Control and Prevention (CDC) has recognized primary prevention through vaccines as one of the most important public health advances of the twentieth century.[1] Vaccines have modified the common causes of death. One of the most notable achievements of immunizations was the eradication of smallpox. In the late eighteenth century, Edward Jenner noted that dairy workers who contracted cowpox never acquired smallpox. Jenner vaccinated a boy with cowpox and then, six weeks later, with smallpox. The boy never acquired smallpox. Jenner published his findings in 1798, and this form of vaccination quickly gained popularity. Further refinement of the smallpox vaccine and implementation of its use worldwide resulted in the last case of natural smallpox occurring in 1977.[2]

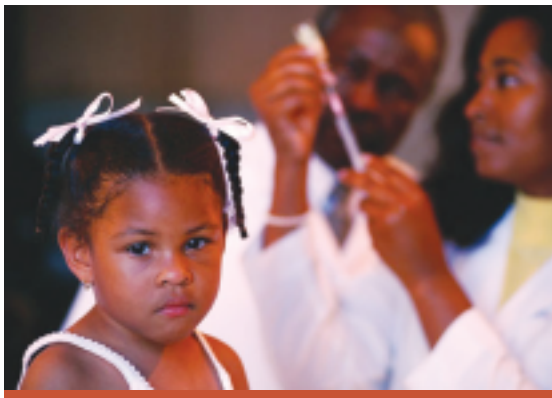
Although the protection that immunizations provide is important for all patients, it is particularly critical in patients with immunocompromising illnesses, such as HIV/AIDS. In the care of HIV-infected patients, immunizations are an opportunity to prevent serious and potentially life threatening diseases.

In recommending immunizations to HIV-infected patients, it is important to remember the following general principles. First, humoral and cellular responses to antigens are inversely correlated with the patient's CD4 count. Because of this, single-dose vaccines should be given as soon as the patient's HIV status is identified. In cases in which the patient's HIV status is identified late in the course of the disease, and immunocompromise is already present (CD4 count is less than 200 cells/uL), consideration should be given to treating the patient with highly active antiretroviral therapy (HAART). In the event that the patient will be treated with HAART, it may be prudent to delay the administration of one-time immunizations until after immune reconstitution has occurred. Secondly, in general, for HIV-infected people, live virus vaccines are usually contraindicated, and inactivated vaccines are not. Finally, it is important for the clinician to avoid checking patients' viral load for one month after the administration of immunizations because they may cause a transient rise in these viral load numbers.[3,4]

The immunization schedule for HIV-infected persons, in all age groups, differs from those who are not infected with HIV. Because New Jersey is a high prevalence state, ranking fifth in the country in reported adult and adolescent AIDS cases, third in the country in reported pediatric AIDS cases, and having 32,885 persons living with HIV/AIDS disease, many New Jersey physicians treat HIV-infected patients.[5]

Pediatric immunizations are a vital part of preventing the serious sequelae of many childhood infectious diseases. Since HIV-infected children are immunocompromised, it is important for the physicians caring for these children to provide them with appropriate immunizations according to the schedule recommended by the CDC's Advisory Committee on Immunization Practices (ACIP).[6] This paper provides recommendations on immunizations and alternatives for primary infectious disease prevention for children and adolescents infected with HIV.

(Continued on next page)



- Diptheria, Tetanus, Acellular Pertussis
- *Haemophilus Influenzae B*
- Hepatitis A
- Hepatitis B
- Human Papilloma Virus
- Influenza
- Mumps, Measles, Rubella
- *Neisseria Meningitides*
- Poliovirus
- Rabies
- Rotavirus
- *Streptococcus Pneumoniae*
- Travel Vaccines
- Varicella

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Note: This article includes both original material and text reprinted from the CDC and APIC immunization guidelines published in the MMWR, as noted in references.

Diphtheria, Tetanus, Acellular Pertussis

Vaccination against tetanus and diphtheria has markedly reduced the number of cases and deaths from tetanus and diphtheria in the United States in all age groups. From 1997 through spring 2005, three vaccine formulations against tetanus and diphtheria were recommended for use in the United States: pediatric DTaP routinely for children aged <7 years, pediatric diphtheria and tetanus toxoids vaccine (DT) for children aged <7 years with contraindications or precautions for pertussis components, and adult tetanus and diphtheria toxoids vaccine (Td) routinely for persons aged >7 years. All HIV-infected infants and children should receive the diphtheria, tetanus toxoid, acellular pertussis (DTaP) vaccine. Ideally, this series should be given at 2, 4, and 6 months of age, with a fourth dose at 15-18 months. However, if it seems unlikely that the child will be brought back at this time, the fourth dose can be given as early as 12 months, provided that six months have elapsed since the third dose. A final dose of DTaP is given at 4-6 years of age. [8]

In spring 2005, two tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine (Tdap) products were licensed in the United States for use in adolescents. The pertussis antigen composition of the adolescent Tdap formulations is similar to pediatric DTaP, but some of the pertussis antigens are reduced in quantity.

BOOSTRIX®, Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis Vaccine, Adsorbed (Tdap) was approved by the FDA on May 3, 2005 for active booster immunization against tetanus, diphtheria, and pertussis as a single dose in persons aged 10-18 years. BOOSTRIX® consists of the same tetanus toxoid, diphtheria toxoid, and three pertussis antigens (inactivated pertussis toxin [PT], formaldehyde-treated filamentous hemagglutinin [FHA] and pertactin [69 kiloDalton outer membrane protein] [PRN]), as those in INFANRIX® (pediatric DTaP). However, BOOSTRIX® is formulated with reduced quantities of these antigens. It is available two ways, as a pre-filled disposable syringe without a needle and a single dose vial. BOOSTRIX® contains no thimerosal or other preservative. It is recommended by ACIP for adolescents (Tdap adolescent preparation).[7]

ADACEL™, Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis Vaccine, Adsorbed (Tdap) was licensed on June 10, 2005, for active booster immunization against tetanus, diphtheria, and pertussis as a single dose in persons aged 11-64 years. ADACEL™ contains the same tetanus toxoid, diphtheria toxoid, and five pertussis antigens as those in DAPTACEL® (pediatric DTaP). However, ADACEL™ is formulated with reduced quantities of diphtheria toxoid and detoxified PT. ADACEL™ does not contain thimerosal. It is available in single dose vials that are latex-free.[7]

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The following ACIP recommendations for use of Tdap and Td among adolescents aged 11-18 years and include routine Tdap vaccination were published in May 2006.

1) Adolescents aged 11-18 years should receive a single dose of Tdap instead of Td for booster immunization against tetanus, diphtheria, and pertussis if they have completed the recommended childhood DTP/DTaP vaccination series and have not received Td or Tdap. The preferred age for Tdap vaccination is 11-12 years; routinely administering Tdap to young adolescents will reduce the morbidity associated with pertussis in adolescents.[7]

2) Adolescents aged 11-18 years who received Td, but not Tdap, are encouraged to receive a single dose of Tdap to provide protection against pertussis if they have completed the recommended childhood DTP/DTaP vaccination series. An interval of at least 5 years between Td and Tdap is encouraged to reduce the risk for local and systemic reactions after Tdap vaccination. However, an interval less than 5 years between Td and Tdap can be used. The benefit of using Tdap at a shorter interval to protect against pertussis generally outweighs the risk for local and systemic reactions after vaccination in settings with increased risk for pertussis or its complications.[7]

3) Vaccine providers should administer Tdap and tetravalent meningococcal conjugate vaccine ([MCV4] Menactra®) (which both contain diphtheria toxoid) to adolescents aged 11-18 years during the same visit if both vaccines are indicated and available.[7] *(See page 24 for updated FDA information on Menactra®.)*

A single dose of either Tdap product (BOOSTRIX® or ADACEL™) can be administered to adolescents regardless of the type or manufacturer of pediatric DTP/DTaP used for childhood vaccination.

Immunosuppression, including persons with HIV is not a contraindication or precaution for Tdap or Td. However, the immunogenicity of Tdap in persons with immunosuppression has not been studied and could be suboptimal.[7]

Haemophilus influenzae B vaccine

As a result of the use of the *Haemophilus influenzae* B (Hib) vaccine series starting in 1990, the incidence of invasive HiB disease has decreased from 100 per 100,000 to 0.3 in 1996 for children under the age of 5 years.[9] Three single antigen Hib conjugate vaccines and two combination vaccine products are available in the United States. Hib vaccine series (both conjugate and combination) is indicated for all HIV-infected infants and children.[10]

The series is routinely begun at 2 months of age because young infants are at increased risk for Hib infection. A second dose of vaccine is given two months later (4 months of age), a third dose is given two months after that (6 months of age) and a fourth dose is given at 12-15 months of age. Combination vaccines (PedvaxHIB® and COMVAX®) are to be administered at 2 and 4 months of age with a booster at 12-15 months of age. DTaP-Hib combination products should not be used for primary immunization of infants at ages 2, 4, and 6 months but they may be used as boosters, fourth dose only, after any Hib vaccine. If DTaP-Hib combination is administered as one or more doses of the primary series at 2, 4, or 6 months, the Hib doses should be disregarded, and the child should be re-vaccinated as age-appropriate for Hib.[6]

Rifampin chemoprophylaxis for household contacts is not indicated if all contacts 12-48 months of age are fully vaccinated and when contacts 12 months of age have completed their primary series of Hib immunization.[11]

Hepatitis A

Inactivated hepatitis A vaccines were licensed by the FDA during 1995-1996, thereby transforming hepatitis A into a common disease that was vaccine-preventable. Since 1996, and particularly since ACIP's 1999 recommedations for routine vaccination of children living in areas with consistently elevated hepatitis A rates, national hepatitis A rates have declined sharply. In May 2006, the ACIP issued its recommendation for the routine vaccination of children in the United States.[12]

Hepatitis A vaccine comes in three formulations: HAVRIX®, VAQTA®, and the combination vaccine Twinrix® (containing both HAV and HBV antigens). All three are inactivated vaccines. However, Twinrix® is licensed for use in persons aged >18 years. HAVRIX® and VAQTA® are licensed for use in persons >12 months.[13] Both vaccinations require two 0.5-mL doses, one to be administered at 12 months, and then a second 6 to 12 months after the first.[12] The immunization schedule for each vaccine is provided in the Tables 1 and 2 below.

Hepatitis A vaccine, using a standard dose and schedule, is immunogenic for children with HIV infection. Those with higher CD4 counts (>300 cells/mm3) respond nearly as well as persons who are not immunocompromised. Protective levels of antibody developed after vaccination in 100% of 32 HIV-infected children. Lower CD4 cell count at the time of vaccination, but not the CD4 cell count nadir, was associated with lack of response, suggesting that immunologic reconstitution with highly active antiretroviral therapy might restore the ability to respond to vaccination.[12]

As with all vaccines, hepatitis A vaccine should not be administered to persons with a history of a severe allergic reaction to a previous dose of hepatitis A vaccine or to a vaccine component.[12] Postvaccination serologic testing is not indicated because of the high rate of vaccine response among adults and children.[12]

If an unvaccinated child is exposed to hepatitis A, immune globulin (IG) at a dose of 0.02ml/kg should be given intramuscularly within two weeks following the exposure. Note that IG can interfere with response to other live, attenuated vaccines such as MMR and varicella vaccines.[12]

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TABLE 1
Licensed Dosages of VAQTA®*

Vaccine recipient's age	Dose (U)¶	Vol. (mL)	No. doses	Schedule (mos) §
12 mos to 18 yrs	25	0.5	2	0, 6-18
≥ 19 yrs	50	1.0	2	0, 6-18

* Hepatitis A vaccine, inactivated, Merck & Co., Inc. (Whitehouse Station, NJ).
¶ Units.
§ 0 months represents timing of initial dose; subsequent numbers represent months after the initial dose.

TABLE 2
Licensed Dosages of HAVRIX®*

Vaccine recipient's age	Dose (U)_	Vol. (mL)	No. doses	Schedule (mos) §
12 mos to 18 yrs	720	0.5	2	0, 6-12
≥ 19 yrs	1,440	1.0	2	0, 6-12

* Hepatitis A vaccine, inactivated, GlaxoSmithKline (Rixensart, Belgium)
¶ Enzyme-linked immunoassay units.
§ 0 months represents timing of initial dose; subsequent numbers represent months after the initial dose.

Table 1 and Table 2 are adapted from CDC. 2006.[12]

Hepatitis B

Hepatitis B vaccination is the most effective measure to prevent hepatitis B virus (HBV) infection and its consequences. Recommendations for hepatitis B vaccination have evolved into a comprehensive strategy to eliminate HBV transmission in the United States, including a primary focus on universal vaccination of infants to prevent early childhood HBV infection and to eventually protect adolescents, and adults from infection. In addition, the comprehensive strategy includes routine screening of all pregnant women for hepatitis B surface antigen (HBsAg) and postexposure immunoprophylaxis of infants born to HBsAg-positive women, vaccination of children and adolescents who were not previously vaccinated, and vaccination of unvaccinated adults at increased risk for infection. The following three tables and box illustrate the immunization recommendations for children/adolescents, newborn infants by maternal HBsAg status, and for pre-term infants less than 2,000 grams.[14]

Human Papilloma Virus

The FDA recently licensed Gardasil.® The vaccine protects against four human papilloma virus (HPV) types. These types of HPV together cause 70% of cervical cancers and 90% of genital warts. Gardasil® is the first vaccine developed to prevent cervical cancer and other diseases in females caused by certain types of genital HPV. However, because the vaccine does not protect against all types of HPV, it will not prevent all cases of cervical cancer or genital warts. It is estimated that about 30% of cervical cancers will not be prevented by the vaccine.[15]

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TABLE 3
Recommended Doses of Currently Licensed Formulations of Hepatitis B Vaccine By Age Group and Vaccine Type

	SINGLE-ANTIGEN VACCINE				COMBINATION VACCINE					
	Recombivax HB		Engerix-B		Comvax*		Pediarix†		Twinrix§	
Age group	Dose (µg)¶	Volume (mL)	Dose (µg)¶	Volume (mL)	Dose (µg)¶	Volume (mL)	Dose (µg)¶	Volume (mL)	Dose (µg)¶	Volume (µg)¶
Infants (<1 yr)	5	0.5	10	0.5	5	0.5	0	0.5	NA**	NA
Children (1-10 yrs)	5	0.5	10	0.5	5*	0.5	10†	0.5	NA	NA
Adolescents										
11-15 yrs	10††	1.0	NA	NA	NA	NA	NA	NA	NA	NA
11-19 yrs	5	0.5	10	0.5	NA	NA	NA	NA	NA	NA
Adults (>20 yrs)	10	1.0	20	1.0	NA	NA	NA	NA	20	1.0
Hemodialysis patients and other immunocompromised persons										
<20 yrs§§	5	0.5	10	0.5	NA	NA	NA	NA	NA	NA
>20 yrs	40¶¶	1.0	40***	2.0	NA	NA	NA	NA	NA	NA

* Combined hepatitis B-Haemophilus influenzae type b conjugate vaccine. This vaccine cannot be administered at birth, before age 6 weeks, or after age 71 months.

† Combined hepatitis B-diphtheria, tetanus, and acellular pertussis-inactivated poliovirus vaccine. This vaccine cannot be administered at birth, before age 6 weeks, or at age >7 years.

§ Combined hepatitis A and hepatitis B vaccine. This vaccine is recommended for persons aged >18 years who are at increased risk for both hepatitis B virus and hepatitis A virus infections.

¶ Recombinant hepatitis B surface antigen protein dose.

** Not applicable.

†† Adult formulation administered on a 2-dose schedule.

§§ Higher doses might be more immunogenic, but no specific recommendations have been made.

¶¶ Dialysis formulation administered on a 3-dose schedule at age 0, 1, and 6 months.

*** Two 1.0-mL doses administered at one site, on a 4-dose schedule at age 0, 1, 2, and 6 months.

Adapted from CDC. 2005.[14]

In June 2006, the ACIP voted to recommend the HPV vaccine for 11-12 year-old girls, and can be given to girls as young as 9. The vaccine is also recommended for 13-26 year-old girls/women who have not yet received or completed the vaccine series. Because the vaccine is most effective in girls/women who have not yet acquired any of the four HPV types covered by the vaccine, ideally, females should get the vaccine before they are sexually active.[15] Females who are immunocompromised can receive quadravalent HPV vaccine.[16]

The vaccine dose of 0.5ml intramuscularly is given through a series of three shots over a six-month period. The second and third doses should be given 2 and 6 months (respectively) after the first dose.[15,16]

The length of vaccine protection (immunity) is currently unknown because the vaccine is newly introduced. Studies to date have followed women for five years and found that women are still protected.[15]

TABLE 4
Hepatitis B Vaccine Schedules
For Newborn Infants, By Maternal Hepatitis B Surface Antigen (HBsAg) Status*

Maternal HBsAg status	Single-antigen vaccine		Single antigen +combination vaccine	
	Dose	Age	Dose	Age
Positive	1† HBIG§ 2 3¶	Birth (<12 hrs) Birth (<12 hrs) 1–2 mos 6 mos	1† HBIG§ 2 3 4¶	Birth (<12 hrs) Birth (<12 hrs) 2 mos 4 mos 6 mos (Pediarix) or 12–15 mos (Comvax)
Unknown**	1† 2 3¶	Birth (<12 hrs) 1–2 mos 6 mos	1† 2 3 4¶	Birth (<12 hrs) 2 mos 4 mos 6 mos (Pediarix) or 12–15 mos (Comvax)
Negative	1†,††	Birth (before discharge)	1†,††	Birth (before discharge)
	2 3¶	1–2 mos 6–18 mos	2 3 4¶	2 mos 4 mos 6 mos (Pediarix) or 12–15 mos (Comvax)

* See Table 5 for vaccine schedules for preterm infants weighing <2,000 g.

† Recombivax HB or Engerix-B should be used for the birth dose.
Comvax and Pediarix cannot be administered at birth or before age 6 weeks.

§ Hepatitis B immune globulin (0.5 mL) administered intramuscularly in a separate site from vaccine.

¶ The final dose in the vaccine series should not be administered before age 24 weeks (164 days).

** Mothers should have blood drawn and tested for HBsAg as soon as possible after admission for delivery;
if the mother is found to be HBsAg positive, the infant should receive HBIG as soon as possible but no later than age 7 days.

†† On a case-by-case basis and only in rare circumstances, the first dose may be delayed until after hospital discharge for an infant who weighs >2,000 g and whose mother is HBsAg negative, but only if a physician's order to withhold the birth dose and a copy of the mother's original HBsAg-negative laboratory report are documented in the infant's medical record.

Adapted from CDC. 2005.[14]

Summary of Hepatitis B Vaccination Recommendations for Infants, Children, and Adolescents[14]

➤ **Maternal hepatitis B surface antigen (HBsAg) testing**

• All pregnant women should be tested routinely for HBsAg.

➤ **Vaccination of infants**

At birth

- Infants born to mothers who are HBsAg positive should receive hepatitis B vaccine and hepatitis B immune globulin (HBIG) <12 hours of birth.
- Infants born to mothers whose HBsAg status is unknown should receive hepatitis B vaccine <12 hours of birth. The mother should have blood drawn as soon as possible to determine her HBsAg status; if she is HBsAg positive, the infant should receive HBIG as soon as possible (no later than age 1 week).
- Full-term infants who are medically stable and weigh >2,000 g born to HBsAg-negative mothers should receive single-antigen hepatitis B vaccine before hospital discharge.
- Preterm infants weighing <2,000 g born to HBsAg negative mothers should receive the first dose of vaccine 1 month after birth or at hospital discharge.

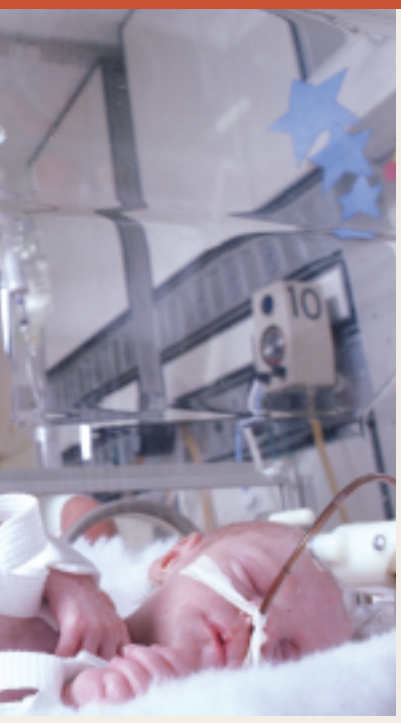
After the birth dose

- All infants should complete the hepatitis B vaccine series with either single-antigen vaccine or combination vaccine, according to a recommended vaccination schedule (see Tables 3 and 4).
- Infants born to HBsAg-positive mothers should be tested for HBsAg and antibody to HBsAg after completion of the hepatitis B vaccine series at age 9–18 months.

➤ **Vaccination of children and adolescents**

• All unvaccinated children and adolescents aged <19 years should receive the hepatitis B vaccine series.

TABLE 5. Hepatitis B immunization Management of Preterm Infants Weighing <2,000 g, by Maternal Hepatitis B Surface Antigen (HBsAg) Status



Maternal HBsAg status	Recommendation
Positive	• HBIG* + hepatitis B vaccine (<12 hrs of birth) • Continue vaccine series beginning at age 1–2 mos according to recommended schedule for infants born to HBsAg-positive mothers (see Table 3). • Do not count birth dose as part of the vaccine series. • Test for HBsAg and antibody to HBsAg after completion of the vaccine series at age 9–18 mos (i.e., next well-child visit).
Unknown	• HBIG + hepatitis B vaccine (<12 hrs of birth) • Test mother for HBsAg. • Continue vaccine series beginning at age 1–2 mos according to recommended schedule based on the mother's HBsAg result (see Table 3). • Do not count birth dose as part of the vaccine series.
Negative	• Delay first dose of hepatitis B vaccine until age 1 mo or hospital discharge. • Complete the vaccine series (see Table 3).

*Hepatitis B immune globulin.

Adapted from CDC. 2005.[14]

Influenza

In the United States, the primary option for reducing the effect of influenza is through annual vaccination. The inactivated influenza vaccines are proven to help people living with HIV/AIDS. However, studies suggest that the vaccine produces acceptable levels of antibody titers only in HIV/AIDS patients with high CD4+ T-lymphocyte cell counts. Inactivated influenza vaccines are highly effective in preventing symptomatic, laboratory-confirmed influenza virus infection among HIV-infected persons with a mean of 400 CD4+ T-lymphocyte cells/mm.[3] A nonrandomized study among HIV-infected persons determined that influenza vaccination was most effective among persons with >100 CD4+ cells and among those with <30,000 viral copies of HIV type-1/mL. Among persons who have low CD4+ T-lymphocyte cell counts, inactivated influenza vaccine might not induce protective antibody titers and a second dose of the vaccine does not improve results.[17]

Changes in the 2006 influenza vaccine recommendations by the Advisory Committee on Immunization Practices (ACIP) include the recommendation that healthy children aged 24-59 months vaccinated against influenza using inactivated vaccine. The ACIP emphasizes that all children aged 6 months to <9 years who have not been previously vaccinated at any time with either live, attenuated influenza vaccine (LAIV) or trivalent inactivated influenza vaccine (TIV) should receive 2 doses of vaccine. Those children aged 6 months to <9 years who receive TIV should have a booster dose of TIV administered >1 month after the initial dose, before the onset of influenza season, if possible. Those children aged 5 to <9 years who receive LAIV should have a second dose of LAIV 6 to 10 weeks after the initial dose, before the influenza season, if possible. If a child aged 6 months to <9 years received influenza vaccine for the first time during a previous season, but did not receive a second dose of vaccine within the same season, only 1 dose of vaccine should be administered this season.[17]

Patients and physicians alike should be aware that, due to the unpredictable demand schedule for the vaccine, it is recommended that any HIV/AIDS patient be vaccinated as soon as possible. Because the flu season starts in October, the vaccine may be made available as early as September, and any child in need of two doses should receive them both before the full onset of influenza season.[17]

A new product called FluMist® is available. It is a flu vaccine in the form of a nasal spray. HIV/AIDS patients should be warned that the CDC does not recommend use of FluMist® or any other "live" vaccine to treat or prevent influenza for any immunocompromised individual. While the CDC deems contact with a FluMist® user for HIV/AIDS patients acceptable, the packaging of FluMist® includes a warning that reads, "FluMist® recipients should avoid close contact with immunocompromised individuals.[18]

Mumps, Measles, Rubella

There are some important exceptions to the use of vaccinations in HIV-infected patients. The CDC's ACIP[19] recommends the measles, mumps, and rubella (MMR) vaccine for all asymptomatic HIV-infected patients who do not have evidence of severe immunosuppression. A first dose is recommended at ages 12-15 months and a second dose at ages 4-6 years. Two doses of MMR are recommended for students attending colleges and other post-high school institutions.[19]

This vaccine is not recommended for HIV-infected patients with evidence of severe immunocompromise for several reasons. First, there has been a recorded case of progressive measles pneumonitis occurring in an AIDS patient that was severely immunocompromised at the time of vaccine administration. Secondly, evidence indicates a diminished antibody response to measles vaccine among severely immunocompromised HIV-infected people and people who are immunocompromised from other etiologies. This suggests that the vaccine may not provide protection. Lastly, the incidence in this country of measles is presently very low.[19]

There are some important exceptions to the use of vaccinations in HIV-infected patients. The CDC's ACIP[19] recommends the measles, mumps, and rubella (MMR) vaccine for all asymptomatic HIV-infected patients who do not have evidence of severe immunosuppression.

Severely immunocompromised patients and other symptomatic HIV-infected patients who are exposed to measles should receive immune globulin (IG) prophylaxis, regardless of vaccination status, because they may not be protected by the vaccine. Additionally, healthy susceptible close contacts of severely immunocompromised persons should also be vaccinated or given IG. IG can be given to prevent or modify measles in a susceptible person within 6 days of exposure; the recommended dose for immunocompromised children is 0.5 mL/kg (maximum dose is 15 mL). For patients who regularly receive intravenous immune globulin (IGIV) therapy, a standard dose of

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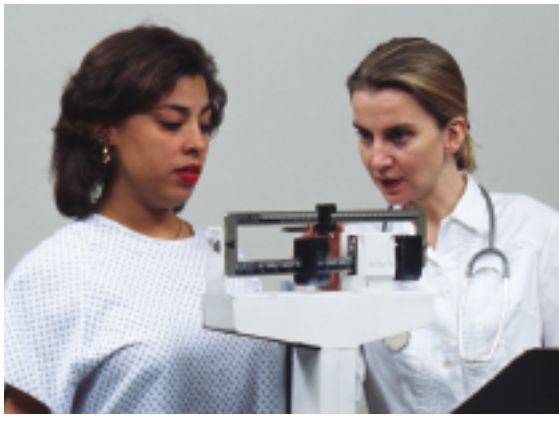

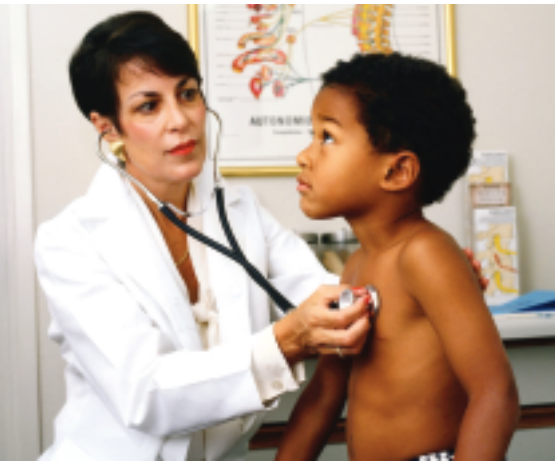

100-400 mg/kg should be sufficient to prevent measles infection after exposures occurring within three weeks of receiving IGIV. For patients exposed to measles longer than three weeks, an additional dose should be considered after they receive a standard IGIV dose.[19]

Neisseria meningitides

With the control of *Haemophilus influenzae* type B infections, *Neisseria meningitides* has become the leading cause of bacterial meningitis in children and young adults in this country. Between 1994 and 1998, approximately two-thirds of cases among people aged 18-23 years were caused by serogroups C, Y, or W135 and, therefore, were potentially preventable with the available vaccine. Even though children under the age of 2 years have the highest risk for sporadic disease, the current vaccines are ineffective in this age group. Since college students, particularly those living in dormitories or residence halls, are at a higher risk for meningococcal disease than those of the same age who are not attending college, the ACIP has recommended that students and parents be educated about the risk of disease and about the vaccine. This will allow them to make individualized, informed decisions regarding vaccinations.

In the past year, the ACIP has recommended a newly licensed vaccine commonly known as Menactra®, and more formally as MCV4. Menactra® has proven in trials to be more effective, and longer lasting than the formally recommended vaccine, MPSV4 or Menomune®.[21] ACIP recommends routine vaccination with Menactra® of young adolescents (defined as persons aged 11-12 years) at the preadolescent health-care visit, and to unvaccinated adolescents at high school entry (age 15 years).[22]

Patients with human immunodeficiency virus (HIV) are likely at increased risk for meningococcal disease.[23] Although the efficacy of MCV4 among HIV-infected patients is unknown, HIV-infected patients may elect vaccination. For persons aged 11-55 years who have been previously vaccinated with Menomune®, revaccination with Menactra® is not indicated unless vaccination occurred 3-5 years previously and the person still remains at increased risk for meningococcal disease.

Lastly, because both Menactra® and Menomune® are inactivated vaccines, they may be administered to persons who are immunosuppressed as a result of disease or medications; however, response to the vaccine might be less than optimal.[23] Thus there is no real guarantee about the efficacy of either vaccine for HIV/AIDS patients. *(See page 24 for updated FDA information on Menactra®.)*

Poliovirus

All children, including those infected with HIV, should receive the poliovirus vaccine. However, only inactivated poliovirus vaccine (IPV) should be used. Oral poliovirus vaccine (OPV) should not be administered to any patients, as its use has been associated with all of the indigenous cases reported in the United States since 1979. OPV is no longer available for use in the United States. All children should receive four doses of IPV at ages 2, 4, and 6-18 months and 4-6 years.[24]

Rabies

Rabies is enzootic in the New Jersey raccoon population, including the urban areas in the state. The disease can be transmitted to humans from wild animals, particularly raccoons, foxes, skunks, groundhogs, bats, and unvaccinated domestic animals.

It is recommended that all persons who are at risk for acquiring rabies from animal contact (e.g., veterinarians, veterinary technicians, animal control officers, shelter workers, persons working closely with wildlife, persons preparing rabies specimens) should consider receiving rabies pre-exposure immunization. Pre-exposure immunization consists of the administration of human rabies vaccine intramuscularly on days 0, 7, and 21 or 28. Immunosuppressed persons who handle animals through these occupations or activities should receive rabies pre-exposure immunization and practice caution when handling animals to prevent animal bites and scratches.

Persons potentially exposed to rabies (e.g., bitten by animals that cannot be observed or tested for rabies) should receive post-exposure prophylaxis (PEP) including local wound care, human rabies immunoglobulin (RIG) 20 IU/kg body weight, and the first of five doses of rabies vaccine administered over 28 days. As much as possible of the full dose of PEP should be

With the control of *Haemophilus influenzae* type B infections, *Neisseria meningitides* has become the leading cause of bacterial meningitis in children and young adults in this country. Between 1994 and 1998, approximately two-thirds of cases among people aged 18-23 years were caused by serogroups C, Y, or W135 and, therefore, were potentially preventable with the available vaccine.

infiltrated into and around the wound(s), and the remainder should be administered intramuscularly at an anatomical site distant from the vaccine.[25,26] Immunosuppressed persons should get a titer one week after completion of the PEP to determine adequate antibody levels; a booster shot may be indicated if antibody titers are not acceptable.

For further information, the New Jersey Department of Health and Senior Services' (NJDHSS) "Guide to Postexposure Rabies Treatment for the Healthcare Professional" is available at the NJDHSS website: www.state.nj.us/health/cd/pxrabies.htm. Representatives of the NJDHSS Infectious and Zoonotic Diseases Program are available to assist physicians in making treatment decisions. They can be reached by calling (609) 588-3121 or (609) 588-7500 between 8 AM and 5 PM on workdays and (609) 392-2020 during holidays, weekends and off-hours.

Rotavirus

Rotavirus is the most common cause of severe gastroenteritis in infants and young children worldwide. Fortunately, it results in relatively few childhood deaths in the United States (approximately 20-60 deaths per year among children aged <5 years). However, nearly every child in the United States is infected with rotavirus by age 5 years, and the majority will have gastroenteritis. Rotavirus gastroeneteritis results in approximately 410,000 physician visits, 205,000-272,000 emergency department (ED) visits, and 55,000-70,000 hospitalizations each year and direct and indirect costs of approximately $1 billion annually in the United States. In February 2006, the FDA licensed RotaTeq® for use in the United States. This is a live, oral, human-bovine reassortant rotavirus vaccine. No safety or efficacy data are available for the administration of rotavirus vaccine to infants who are potentially immunocompromised, including infants with primary and acquired immunodeficiency states, including HIV/AIDS or other clinical manifestations of infection with HIV. According to the ACIP, data are insufficient from the clinical trials to support administration of rotavirus vaccine to infants with indeterminant HIV status who are born to mothers with HIV/AIDS.[27]

Streptococcus pneumoniae

Streptococcus pneumoniae (pneumococcus) is a leading cause of pneumonia and meningitis in the United States. It disproportionately affects young children. A 7-valent pneumococcal conjugate vaccine (PCV7) was licensed in the United States in 2000 and recommended by the ACIP for routine use in children aged <5 years.[28]

Routine use of PCV7 in young children has reduced the incidence of vaccine type (VT) and overall invasive pneumococcal disease (IPD) in children and adults. These reductions have increased since 2001. The most substantial decline in the rate of VT disease has been in the target population of children aged <5 years. Data from 2003 also demonstrate statistically significant reductions in the rates of both VT IPD and total IPD for children aged 5-17 years. Importantly, the indirect benefits of PCV7 (i.e., cases prevented in unvaccinated persons) exceeded the direct protective benefits among immunized children, with more than twice as many cases of VT IPD prevented indirectly as directly in 2003. The indirect effects of PCV7 are believed to be caused by decreased nasopharyngeal carriage of VT strains among immunized children, which results in decreased transmission to nonimmunized children.[28]

PCV7 should be administered to all HIV-infected infants and children. Ideally, the series should begin at 2 months of age. This initial dose should be followed by two more doses at two-month intervals, and the fourth dose should be given between the ages of 12 and 15 months. Infants who are born prematurely should receive PCV7 at the recommended chronological age concurrent with other routine vaccinations.[29]

Previously unvaccinated children aged 24-59 months at high risk for pneumococcal infection (including HIV-infected children)

(Continued on next page)

ACIP has previously recommended that varicella vaccine should not be administered to children or adolescents with AIDS-associated immunosuppression or other clinical manifestations of HIV infection. However, ACIP now recommends that some HIV-infected children may now be considered for vaccination. This new recommendation is based on limited data from a clinical trial.

should receive PCV7 in the following schedule: two doses of PCV7 administered two months apart followed by the 23-valent pneumococcal polysaccharide vaccine (PPV23), given at least two months after the second dose of PCV7. PCV7 can be given simultaneously with other routine vaccinations as long as it is given in a separate syringe at a different site.[29]

HIV-infected children who have completed the PCV7 vaccination series before age 2 years should receive one dose of PPV23 at age 2 years, as long as at least two months have elapsed since the last dose of PCV7.[29]

Travel

Since travel-related vaccination recommendations are updated frequently, information about these vaccinations should be obtained by contacting the NJDHSS Vaccine Preventable Disease Program at (609) 588-7512 (business hours) or the Centers for Disease Control and Prevention at www.cdc.gov/travel/vaccinate.htm.

Varicella

ACIP has previously recommended that varicella vaccine should not be administered to children or adolescents with AIDS-associated immunosuppression or other clinical manifestations of HIV infection. However, ACIP now recommends that some HIV-infected children may now be considered for vaccination. This new recommendation is based on limited data from a clinical trial in which two doses of varicella vaccine were administered to 41 asymptomatic or mildly symptomatic HIV-infected children (CDC class N1 or A1, age-specific CD4+ T-lymphocyte percentage of greater than or equal to 25%). This clinical trial showed that the vaccine was immunogenic and effective. Because HIV-infected children are at increased risk for morbidity from varicella and herpes zoster (i.e., shingles) compared with healthy children, ACIP recommends that, after weighing potential risks and benefits, varicella vaccine should be considered for asymptomatic or mildly symptomatic HIV-infected children in CDC class N1 or A1 with age-specific CD4+ T-lymphocyte percentages of greater than or equal to 25%. Eligible children should receive two doses of varicella vaccine with a 3-month interval between doses. Because persons with impaired cellular immunity are potentially at greater risk for complications after vaccination with a live vaccine, these vaccinees should be encouraged to return for evaluation if they experience a post-vaccination varicella-like rash. The use of varicella vaccine in other HIV-infected children is being investigated further.[30]

Conclusion

Immunizations are the cornerstone of primary prevention of infectious diseases. The impact of HIV on the immune system requires modification of the usual vaccine schedule for patients with HIV/AIDS. However, vaccine contraindication does not preclude primary prevention.[30]

Additional information on immunization guidelines is available through the CDC website:
MMWR references:
http://www.cdc.gov/mmwr

National Immunization Program:
http://www.cdc.gov/nip

Note: The Food and Drug Administration (FDA) issued an advisory statement on Menactra® on 10/23/2006:

FDA and CDC updated an October 2005 alert to consumers and health care providers regarding reports of Guillain Barre Syndrome (GBS) following administration of Meningococcal Conjugate Vaccine A, C, Y, and W135, manufactured by Sanofi Pasteur. To date a total of 15 confirmed cases of GBS among individuals 11-19 years of age occurring within six weeks of vaccination with Menactra have been reported to the Vaccine Adverse Event Reporting System (VAERS). Two additional cases have been confirmed in persons 20 years of age and older. All individuals are reported to be recovering or have recovered… At this time, CDC and FDA cannot determine with certainty whether Menactra does increase the risk of GBS in persons who receive the vaccine and, if so, to what degree. At the present time, there are no changes in recommendations for vaccination and individuals should continue to follow their doctors' recommendations.

http://www.fda.gov/medwatch/safety/2006/safety06.htm#Menactra

IMMUNIZATION FOR HIV-INFECTED CHILDREN AND ADOLESCENTS

Credit can be obtained online @ www.umdnj.edu/ccoe/aids [course code 09HC01]

REFERENCES

1. Centers for Disease Control and Prevention. Ten great achievements in public health-United States, 1900-1999. *MMWR.* 48(1999):241-243.
2. Sutcliffe J and Duin N. *A History of Medicine.* (Barnes & Noble, New York, 1992): 40, 212.
3. Kovacs J and Masur H. Prophylaxis against opportunistic infections with human immunodeficiency virus infection. *NEJM.* 2000;342:1416-1429.
4. Bartlett J and Gallant J. Medical Management of HIV. In *Disease Prevention: Prophylactic Antimicrobial Agents and Vaccines.* Available at: www.hopkins-aids.edu.
5. New Jersey Department of Health and Senior Services, New Jersey HIV/AIDS Report – December 31, 2005. Available at: http://www.state.nj.us/health/aids/aidsqtr.htm.
6. Centers for Disease Control and Prevention. Recommended childhood and adolescent immunization schedule-United States, 2006. *MMWR.* 2006;54, (52): Q1-Q4.
7. Centers for Disease Control and Prevention. Preventing tetanus, diphtheria, and pertussis among adolescents: use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccines. Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR.* 2006;55:1-34.
8. Centers for Disease Control and Prevention. Use of diphtheria toxoid-tetanus toxoid-acellular pertussis vaccine as a five-dose series. *MMWR* Recomm Rep. 2000;49:1-8.
9. Centers for Disease Control and Prevention. Progress toward elimination of *haemophilus influenze* Type B invasive disease among infants and children-United States, 1998-2000. *MMWR.* 2002: 51:234-7.
10. Centers for Disease Control and Prevention. Recommendations for use of haemophilus B conjugate vaccine and a combined diphtheria, tetanus, pertussis, and haemophilus B vaccine: recommendations of the Advisory Committee on Immunization Practices. *MMWR* Recomm Rep.1993;42:1-12.
11. Pickering LK, Baker CJ, Long SS, McMillan JA, eds. *Red Book: 2006 Report of the Committee on Infectious Diseases.* 27th ed. Elk Grove Village, IL: American Academy of Pediatrics: 2006:313.
12. Centers for Disease Control and Prevention. *Epidemiology and Prevention of Vaccine-Preventable Disease.* Atkinson W, Hamborsky J, McIntyre L, Wolfe S., eds. 9th ed. Washington, D.C.: Public Health Foundation, 2006.
13. Centers for Disease Control and Prevention. Prevention of hepatitis A through active or passive immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* Recomm Rep. 2006; 55:1-20. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5507a1.htm
14. Centers for Disease Control and Prevention. A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States: recommendations to the Advisory Committee on Immunization Practices (ACIP). *MMWR* Recomm Rep. 2005;54:1-29. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5416a1.htm
15. Centers for Disease Control and Prevention. HPV Vaccine Questions and Answers. Available at: http://www.cdc.gov/std/hpv/STDFact-HPV-vaccine.htm
16. Centers for Disease Control and Prevention. ACIP Provisional Recommendations for the Use of Quadravalent HPV Vaccine. Available at: www.cdc.gov/nip/recs/provisional_recs/hpv.pdf
17. Centers for Disease Control and Prevention. Prevention and control of influenza: ACIP Recommendations. *MMWR* Recomm Rep. 2006;55:1-42. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5510a1.htm
18. Centers for Disease Control and Prevention. Questions and answers: The nasal-spray flu vaccine (live attenuated influenza vaccine (LAIV). Available at: http://www.cdc.gov/flu/about/qa/nasalspray.htm
19. Centers for Disease Control and Prevention. Measles, mumps, and rubella – vaccine use and strategies for elimination of measles, rubella and congenital rubella syndrome and mumps: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* Recomm Rep. 1998;47:1-51.
20. Pickering LK, Baker CJ, Long SS, McMillan JA, eds. *Red Book: 2006 Report of the Committee on Infectious Diseases.* 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006:443-444.
21. Centers for Disease Control and Prevention. Meningococcal Disease and Meningococcal Vaccines Fact Sheet (April 2005). Available at: http:///www.cdc.gov/nip/vaccine/mening/mening_fs.htm
22. Centers for Disease Control and Prevention. *Epidemiology and Prevention of Vaccine-Preventable Diseases.* Atkinson W, Hamborsky J, McIntyre L, Wolfe S, eds. 9th ed. Washington, DC: Public Health Foundation, 2006.
23. Centers for Disease Control and Prevention. Prevention and control of meningococcal disease: recommendations of the Advisory Committee on Immunization Practices. *MMWR* Recomm Rep. 2005;54:1-21. Available at: http://www.cdc.gov/mmwr/PDF/rr/rr5407.pdf
24. Centers for Disease Control and Prevention. Poliomyelitis prevention in the United States: updated recommendations of the Advisory Committee on Immunization Practices. *MMWR* Recomm Rep. 2000;49:1-22.
25. Centers for Disease Control and Prevention. Human rabies prevention in the United States. *MMWR* Recomm Rep.1999;48:19-30.
26. Centers for Disease Control and Prevention. Compendium of animal rabies prevention and control. *MMWR* Recomm Rep. 2001;50:1-9.
27. Centers for Disease Control and Prevention. Prevention of rotavirus gastroenteritis among infants and children: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* Recomm Rep. 2006;55:1-13.
28. Centers for Disease Control and Prevention. Direct and indirect effects of routine vaccination of children with 7-valent pneumococcal conjugate vaccine on incidence of invasive pneumococcal disease-United States, 1998-2003. *MMWR.* 2005;54:893-897.
29. Centers for Disease Control and Prevention. Preventing pneumococcal disease among infants and young children: recommendations of the Advisory Committee on Immunization Practices. *MMWR* Recomm Rep. 2000;49:1-38.
30. Centers for Disease Control and Prevention. ACIP Provisional Recommendations for Prevention of Varicella. Available at: http://www.cdc.gov/nip/vaccine/varicella/varicella_acip_recs_prov_June_2006.pdf

MMWR: MMWR Morbidity and Mortality Weekly Report

Report from the Ryan White Training and Technical Assistance Grantee Meeting 2006

NEW JERSEY AIDSLine December 2006

Roseann Marone, RN, BSN, MPH

At the Ryan White Care Act Training and Technical Assistance Grantee Meeting in August 2006, care providers from around the country who are funded through all of the Ryan White Titles met together to discuss the "big picture" including common challenges and ideas about how to improve care. I was one of several members of the New Jersey HIV Family-Centered Care (Title IV) Network who attended this meeting. The Network meets often to discuss how the seven Regional HIV Family-Centered Care Centers can improve perinatal and pediatric HIV care, and prevention of perinatal HIV transmission.

The All-Titles Grantee Meeting provided opportunities for providers to learn about research and its application to care, from treatment protocols to improving communication and involvement of patients in their own care. The "Health Literacy And Cultural Competency Institute" provided an overview of the link between health literacy and health disparities affecting people living with HIV/AIDS, utilizing clinical examples relevant to the patient populations seen in New Jersey. The take home message was clear: health care providers must improve the quality of our interactions with patients to ensure health literacy. The presenter noted that illiteracy may carry shame similar to that of incest, and that one in every five persons is functionally illiterate. In our efforts with HIV-positive pregnant women we often wonder – "are they getting the health care information they need?" and how can we ensure that they understand it. Patients may know the basic facts, but my key concern has become whether they truly understand the effects of HIV/AIDS on their bodies, and their treatment regimens. This session was especially relevant to the special needs of perinatally infected children and youth, who have higher rates of neurocognitive impairments and learning disabilities, which can make communication more difficult.

Roseann Marone, RN, BSN, MPH, is the Program Coordinator, Robert Wood Johnson AIDS Program and a Clinical Instructor-Pediatrics at Robert Wood Johnson Medical School. She has been involved in caring for pregnant HIV-positive women and their children since 1990,

Several models of care presented at the meeting described expanded nursing roles. In the Chronic Disease Self-Management Model, patients attended groups in which health care professionals provided health care information for discussion, followed by brief individual visits with physicians on an as-needed basis. Nurses played a larger role in this model, including intake, review of systems and discharge teaching for each patient. The RWJAP has been considering this approach for supported housing residents, based on reports of successful use in managing other chronic illnesses.

Dr. Donna Futterman led the team from the Albert Einstein College of Medicine-Montefiore Medical Center in facilitating an interactive workshop for feedback on their draft curriculum for a "Web-Based Program On Clinical Care And Cultural Competence Best Practices For HIV+ Youth," sponsored by the AETC National Resource Center. Presenters and participants noted the changes needed for pediatric programs to "grow up" with their patients and address adolescent needs including neuro developmental aspects of HIV/AIDS in perinatally-infected youth. Again, it was highlighted that the "aging-up population" has cognitive limitations and behavioral challenges that require special services.

A workshop on "HIV Disclosure: A Protocol to Facilitate HIV Disclosure in Families of HIV and Youth and Children" was presented by the Lower New York Consortium for Families With HIV. They offered a practical approach to the myriad of needs for families, including facing difficulties of disclosure for both biological mothers and caregivers.

The Global Institute on Twinning Projects focuses on matching programs US and overseas programs. The Institute presented on the practical and clinical aspects of providing care overseas, including concerns of HIV-positive pregnant women and clinical challenges of providing short-course treatment during labor and delivery. It was an eye-opener to hear about the challenges in developing countries compared to the practices in the USA. International reports described innovative approaches to care in settings with limited physician resources.

The All-Titles Grantee Meeting provided many lively discussions, some new ideas and challenges, and will inspire some re-evaluation of "best practices" in New Jersey's Family Centered Care Network providers, as they re-commit to reducing disparities in outcomes for families living with HIV/AIDS.

- **Ryan White Technical Assistance** Resources, Guidance, Education, and Training (TARGET) Center: http://careacttarget.org

- **New Jersey HIV Family-Centered Care (Title IV) Network Website:** http://www.state.nj.us/health/fhs/hivcare/index.shtml

GUIDELINES AND STATISTICS

New Jersey Department of Health & Senior Services
Division of HIV/AIDS Services (DHAS)
www.state.nj.us/health/aids/aidsprv
NJ HIV/AIDS Semi-annual Newsletter (statistical report); policies, and guidelines for HIV/AIDS care and services in New Jersey
New Jersey rapid testing site: www.state.nj.us/health/aids/rapidtesting

New Jersey AIDS/STD Hotline: (800) 624-2377
• 24-hour professionally-staffed service
• Consultation, testing referrals, free materials

US Dept. of Health & Human Services
www.aidsinfo.nih.gov • 1-800-HIV-0440 (1-800-448-0440)
HIV/AIDS treatment guidelines; prevention, treatment, and research.
National Institutes of Health-sponsored searchable clinical trials database: http://clinicaltrials.gov

CDC National Prevention Information Network (NPIN)
HIV, STD, and TB news, funding, materials, conference and satellite broadcast announcements.
http://www.cdcnpin.org

Centers for Disease Control (CDC) – Division of HIV/AIDS Prevention
HIV/AIDS research, surveillance reports, funding announcements, research and reporting software, epidemiology slide sets
http://www.cdc.gov/hiv/hivinfo.htm#WWW
Rapid Testing: http://www.cdc.gov/hiv/rapid_testing
MMWR [Morbidity and Mortality Weekly reports]:
http://www.cdc.gov/hiv/pubs/mmwr.htm

FDA MedWatch
Updated reports on medication interactions and warnings:
1-800-FDA-1088; Subscribe to e-bulletin:
http://www.fda.gov/medwatch/elist.htm

National HIV/AIDS Clinicians' Consultation Center
http://www.ucsf.edu/hivcntr
Consultation on antiretroviral therapy, drug resistance, opportunistic infection prophylaxis and treatment, laboratory evaluation; occupational exposure, perinatal intervention.
Warmline: 800-933-3413
National Clinicians' Post-Exposure Prophylaxis Hotline
(PEPline): 888-448-4911 (888-HIV-4911)
National Perinatal HIV Consultation and Referral Service:
888-448-8765 (888-HIV-8765)

TRAINING

University of Medicine & Dentistry of NJ
Center for Continuing and Outreach Education
Division of AIDS Education
www.umdnj.edu/ccoe/aids
Conferences, training for HIV/AIDS health and social service professionals.

Free online CME/CE – topics include:
• HIV and Hepatitis C Virus Co-Infection
• Rapid Diagnostic Testing for HIV (updated 6/06)
• Recommendations to Reduce Occupational HIV Transmission
• Treatment of Tuberculosis in Patients Infected with HIV
• Hepatitis B and HIV Co-Infection
• Beyond HIV: Lesbian, Gay Bisexual and Transgender (LGBT) Health

NY/NJ AIDS EDUCATION AND TRAINING CENTERS (AETC)
New York/New Jersey regional training calendar, resource directory, clinician support tools and references including training slide sets, wall charts. http://www.nynjaetc.org

AIDS Education and Training Centers (AETC)
National Resource Center www.aids-etc.org
HIV treatment guidelines, training materials/curricula, evaluation tools, Daily HIV/AIDS Treatment News; clinical resources including PDA tools

STD/HIV Prevention Training Centers (PTC)
Medical: www.nyc.gov/html/doh/html/std/ptc.shtml
Behavioral: www.urmc.rochester.edu/chbt

Title X Family Planning Regional Training Center (RTC)
[DHHS/OPA funded]: training www.cicatelli.org/titlex/home

Northeast Addiction Technology Transfer Center (NEATTC)
Addiction training, treatment news: http://www.neattc.org

FREE Training for New Jersey Physicians, Nurses, PAs, Dentists and Pharmacists in the Clinical Management of HIV+ Patients

HIV Clinical Preceptorship Programs

- Individualized training for 1-2 medical, nursing, dentistry or pharmacy professional participants at a time
- 4-8 hours including lecture and observation of patient care by a NY/NJ AETC faculty clinician
- UMDNJ-affiliated training sites throughout NJ or faculty will come to your facility on a day when you have a minimum of four HIV+ patients scheduled to receive care.

HIV Clinical Case Consultation Programs

- Combines a 50-minute lecture and discussion of 4-5 HIV patient cases, which are provided by the participants from their own practices
- Two-hour session including dinner or lunch
- 3-8 health care providers participate in each session

(Continuing Education Credits may be arranged for any of these programs, which are funded through the NY/NJ AIDS Education and Training Center.)

NY/NJ AIDS EDUCATION AND TRAINING CENTER

TO SCHEDULE
THIS CLINICAL TRAINING, CONTACT:
David Rosen, MSW, LCSW, C-ASWCM
Interim Director
Division of AIDS Education at UMDNJ-CCOE
(973) 972-7729 or rosendv@umdnj.edu

SAVE THE DATE – FRIDAY, MARCH 23, 2007

REDUCING PERINATAL HIV TRANSMISSION IN NEW JERSEY

Friday, March 23, 2007 • 8:00 a.m. to 3:30 p.m.
New Jersey Hospital Association Conference Center • Princeton, NJ

This conference is free to participants, thanks to the sponsorship of the New Jersey Department of Health and Senior Services, Division of HIV/AIDS Services.

• New Jersey healthcare professionals are invited to submit abstracts for poster presentations. Deadline extended to January 19, 2007. Full conference information will be available in January.

NEW JERSEY DEPARTMENT OF HEALTH AND SENIOR SERVICES

FOR FURTHER INFORMATION CONTACT:
Aura Caicedo at caicedac@umdnj.edu or 973-972-8802

UMDNJ-CCOE Course Code: 07HL08
Online: http://ccoe.umdnj.edu/catalog/aids/index.htm#2006

CCOE Center for Continuing & Outreach Education UMDNJ — Division of AIDS Education

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