vol. XXVIII, no. 2
April/May/June 2007

The Iowa PERINATAL Letter

Plans to Implement a Statewide Integrated Screening Program in Iowa

A recent American College of Obstetricians and Gynecologists Practice Bulletin (1) has spurred renewed interest in offering patients more recently developed options to screen for fetal chromosome abnormalities. These options include first trimester screening and integrating results from the first trimester with those obtained in the second trimester. This issue of the IPL will focus on integrated screening as a means to lower

continued on page 6

HIV Testing in Pregnancy

In September 2006, the Centers for Disease Control and Prevention (CDC) released *Revised Recommendations for HIV Testing of Adults Adolescents, and Pregnant Women in Health-Care Settings*. These new recommendations, which replace the CDC's 1993 *Recommendations for HIV Testing Services for Inpatients and Outpatients in Acute-Care Hospital Settings*, advise routine HIV screening of adults, adolescents, and pregnant women in health-care settings in the United States. The CDC also recommends reducing barriers to HIV testing.

In these revised *Recommendations*, the CDC is rec-

continued on page 7

This letter is funded by the Iowa Department of Public Health, Bureau of Family Services, and is cosponsored by The University of Iowa Carver College of Medicine, Iowa City, Iowa.

Statewide Perinatal Care Program
Department of Pediatrics
200 Hawkins Drive
Iowa City, IA 52242-1083

The Iowa PERINATAL Letter

Plans to Implement a Statewide Integrated Screening Program in Iowa

continued from page 5

the false positive rate (FPR) while maintaining a high detection rate (DR) for Down syndrome.

Two prospective studies have validated the efficacy of integrated screening. One study, conducted in the UK and Europe, carries the acronym SURUSS (Serum, Urine and Ultrasound Screening Study) (2) and the other study, conducted in the US, is known as the FASTER (First and Second Trimester Evaluation of Risk) trial (3). Both of these studies combined first trimester screening, consisting of one ultrasound parameter [measurement of the nuchal translucency thickness (NT)] and measurement of one serum marker [pregnancy associated plasma protein A (PAPP-A)] with the currently available quadruple marker screen (inhibin A, hCG, estriol and AFP).

An integrated screening proposal has been approved by the Center for Congenital and Inherited Disorders Advisory Committee (formerly the Birth Defects Institute Advisory Committee), a body with diverse membership under the auspices of the State Health Department. The primary advantage of integrated screening, as stated, is the significantly lower FPR of this screening compared with other existing screening options. This means that fewer amniocenteses will be performed, thus subjecting fewer pregnancies to the risk of loss (though quite low) secondary to invasive testing. Figure 1 depicts the decreased FPR of integrated screening as compared to other screening options currently available.

Factors which have influenced the decision of the above referenced Advisory Committee to approve integrated screening include the decreasing percentage of women who are electing to undergo amniocentesis in the state, suggesting they would favor a lower FPR. From approximately 1993 to the present, our patient referral base to the Prenatal Diagnosis Clinic at University Hospitals has been relatively stable. In 1993, 1032 amniocenteses were performed. In 2006, this figure had dropped to 463. Many women opt to forego invasive testing if their ultrasound is apparently normal or if their risk based on either maternal age or serum screening is perceived to be sufficiently reduced to avoid an amniocentesis. As a consequence, testing is becoming more targeted. In 1993, 1 in 80 procedures revealed a Down syndrome fetus; in 2006, this figure was 1 in 27. Another factor influencing the decision to provide integrated screening in Iowa is the high proportion of women electing to continue their pregnancies if a Down syndrome fetus is detected relative to other regions of the country. For these women, earlier testing becomes a less compelling issue. For those desiring earlier testing, a first trimester screen consisting of PAPP-A, hCG and NT is an option. One of the criticisms of fully integrated screening is that women will have to wait until the second trimester to receive a risk. An alternative is a paradigm called contingent screening. Women at the highest risk based on first trimester screening would be notified and could undergo testing at that time, even by chorionic villus sampling if they chose. Women at lowest risk would not proceed to a second trimester screen. The majority of women with an intermediate risk would complete the integrated screen by obtaining the quadruple marker test. The arguments against contingent screening, and in favor of the fully integrated test, are the higher FPR for a fixed DR and confusion which can arise when two separate risk figures are provided, one in the first trimester and one in the second trimester, as opposed to a single integrated risk. Another criticism of fully integrated screening is that patients may be unwilling to wait for the integrated test result, preferring to initially know the result of their first screen. However, data from Maine, a state with a largely rural population, showed that patients were accepting of the wait required for an integrated result (4).

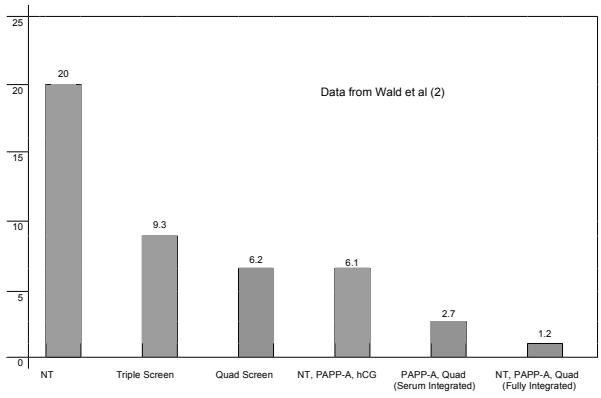

Figure 1. Variation in False Positive Rates for a Fixed 85% Down Syndrome Detection Rate. This graph shows the FPR on the vertical axis for a fixed DR of 85%. The measurement of NT alone is associated with an unacceptably high FPR. The current optimal screening in the second trimester, the Quad screen, has the same FPR and DR as the optimal first trimester screen (NT, PAPP-A, hCG). If a woman elects integrated screening but does not have access to an NT measurement or this measurement is available but cannot be obtained for technical reasons, the Serum Integrated Screen with PAPP-A in the first trimester and the Quad screen in the second trimester will still significantly decrease the FPR. The optimal test is the Fully Integrated Screen with NT measurement in the first trimester (1.2% FPR).

Prior to implementing state-wide integrated screening, several tasks remain. The University Hygienic Laboratory is establishing medians for the first trimes-

ter serum markers (PAPP-A and hCG) from well-dated 10 to 14 week pregnancies. The Laboratory is also installing software to calculate the risk when screening information from the first trimester is combined with data from the second trimester. In addition to the laboratory aspects of integrated screening, a major focus will be on education. Included in this effort will be establishment of a website with links to critical components of the program, development of a CD, preparation of pamphlets for use in provider offices and formal presentations at local sites.

First trimester screening is optimally performed at 11 weeks, or as close as practicable. A crown-rump length measurement also increases screening accuracy, and this will become a requirement of the testing protocol. Though it will not be possible for all women to undergo NT measurement, if it is performed the sonographer will be required to have taken one of the courses which certify competence in this measurement. These courses are provided in North America through the Society for Maternal-Fetal Medicine. If a woman elects to undergo first trimester screening as opposed to integrated screening, she should be offered a serum AFP in the second trimester to screen for fetal neural tube defects.

We anticipate that the new program will begin late summer 2007, and expect integrated screening will be smoothly incorporated into existing practices. However, questions will inevitably arise. We welcome your questions, concerns and comments. These can be directed to Roger Williamson, MD, at roger-williamson@uiowa.edu, phone number 319-356-4119 or fax number 319-353-6759. Questions can also be directed to Stanley Grant, Nurse Genetic Counselor, or Karen Brewer, Genetic Counselor at 319-356-3561.

—*Roger Williamson, MD*
Professor
Obstetrics and Gynecology

References

1. ACOG Practice Bulletin #77: Screening for fetal chromosome abnormalities. *Obstet Gynecol* 109:217, 2007.
2. Wald NJ, Rodeck C, Hackshaw AK, et al. First and second trimester antenatal screening for Down's syndrome: the results of the Serum, Urine and Ultrasound Screening Study (SURUSS). *J Med Screen* 10:56, 2003.
3. Malone FD, Canick JA, Ball RH, et al. First-trimester or second-trimester screening, or both, for Down's syndrome. *N Engl J Med* 353:2001, 2005.
4. Palonaki GE, Kloza EM, Haddow JE, et al. Patient and health professional acceptance of integrated serum screening for Down syndrome. *Semin Perinatol* 29:247, 2005.

HIV Testing in Pregnancy

continued from page 5

ommending universal opt-out testing for pregnant women and their infants. Universal opt-out screening recommendations include the following:

- All pregnant women in the United States should be screened for HIV infection.
- Screening should occur after the patient is notified that
  (a) HIV screening is recommended for all pregnant patients; and
  (b) she will receive an HIV test as part of the routine panel of prenatal blood tests, unless she declines (i.e., opt-out screening).
- HIV testing should be voluntary and free of coercion.
- No additional process or written documentation of informed consent should be required for HIV tests beyond that for other routine prenatal tests. If a patient declines an HIV test, this decision should be documented in the medical record.

Since 1994, the United States Public Health Service has recommended universal, voluntary testing of pregnant women. The decrease in mother-to-child (perinatal) HIV transmission is a public health achievement in HIV prevention in the United States. Nationally, the number of infants infected with HIV through perinatal transmission has decreased from 1,650 during the early- to mid-1990s to fewer than 240 in 2002. This decline is attributed to multiple interventions, including routine, voluntary HIV testing of pregnant women, the use of rapid HIV tests at delivery for women of unknown HIV status, and the use of antiretroviral therapy by HIV-infected women during pregnancy and by infants after birth. The decrease in pediatric AIDS and HIV cases likely resulted primarily from increased identification of infected mothers and exposed infants and timely intervention to prevent perinatal HIV transmission. The need for pregnant women to know their HIV status was recognized early in the epidemic as a key step to preventing perinatal transmission. To continue reducing mother-to-child transmission, more women should be tested for HIV infection during pregnancy. Between 2000 and 2005, 46 infants were born to HIV-positive mothers in Iowa. Of these 46 infants, three became infected with HIV.

The Iowa Department of Public Health (IDPH) Barriers to Prenatal Care survey provides data on the proportion of women who receive an HIV test during pregnancy. This survey was given to each woman that gave birth to a child in an Iowa hospital. Postpartum women are asked to complete this survey prior to discharge from the hospital. The two prenatal HIV questions in the survey are:

1. "Were you offered testing for HIV/AIDS during your pregnancy?"
2. "Were you tested for HIV/AIDS during your pregnancy?"

Data from the survey are analyzed by the University of Northern Iowa's Center for Social and Behavioral Research. In 2005, just under 20,000 mothers were surveyed. The survey indicates that about 69 percent of women recalled being offered HIV testing. Women 25 years of age or younger were more likely to recall being offered testing. Younger women were also more likely to report having taken the test (89 percent).

The IDPH is working toward incorporating key components of the CDC's recommendations into *Iowa Code Chapter 141A*. A departmental committee has been formed to accomplish this task and has reviewed the above guidelines issued by the CDC. The committee's changes to 141A on perinatal opt-out testing and consent are outlined below.

141A.4 TESTING AND EDUCATION

Pregnant Women

a. All pregnant women shall be tested for HIV infection as part of the routine panel of prenatal tests.
b. A pregnant woman shall be notified that HIV screening is recommended for all prenatal patients and that she will receive an HIV test as part of the routine panel of prenatal tests unless the woman objects (opt-out).
c. If a pregnant woman declines testing, this decision should be documented in the medical record.
d. Information about HIV prevention, risk reduction, and treatment opportunities to reduce the possible transmission of HIV to a fetus shall be made available to all pregnant women.

141A.6 HIV-RELATED CONDITIONS—CONSENT, TESTING, AND REPORTING

If a person signs a general consent form for the performance of medical tests or procedures, the signing of an additional consent form for the specific purpose of consenting to an HIV-related test is not required during the time in which the general consent form is in effect. If a person has not signed a general consent form for the performance of medical tests and procedures or the consent form is no longer in effect, a health care provider shall obtain oral or written consent prior to performing an HIV-related test. If an individual is unable to provide consent, the individual's legal guardian may provide consent. If the individual's legal guardian cannot be located or is unavailable, a health care provider may authorize the test when the test results are necessary for diagnostic purposes to provide appropriate urgent medical care.

The committee would like to receive your comments on the recommended changes to 141A.

1. Are you comfortable with IDPH adopting an opt-out approach to testing of pregnant women?
2. Would this approach, if implemented, cause significant changes in policy or practice for you?
3. Would this approach create costs for the patients that would not be reimbursed through usual sources (e.g., Medicaid, private insurance, etc.)? Please explain what those costs would be.

Please provide any other comments that you would like the IDPH to consider. Feel free to direct this inquiry to others who may have expertise in this area. Please direct your written responses to:

Randy Mayer
HIV/AIDS/Hepatitis Program Manager
Iowa Department of Public Health
Lucas State Office Building
321 East 12th
Des Moines, IA 50319-0075
rmayer@idph.state.ia.us

64529/7-07 Printed by UI Printing Department