PRAMS PERSPECTIVES

A Pregnancy Risk Assessment Monitoring System Report November 2009

HIV/AIDS Testing Among Pregnant Women in Utah

There are an estimated 1.1 million adults and adolescents living with HIV in the United States. It is expected that more than 200,000 of these individuals have not been diagnosed.[1] Furthermore, researchers estimate that there are 56,300 new HIV infections in the U.S. annually.[2] Approximately 25% of the people living with HIV in the U.S. are female.[3]

In Utah, a total of 3,465 HIV/AIDS cases have been reported since surveillance began in 1983 (AIDS) and 1989 (HIV). Of those, 438 have been female (13% of total cases). The two most common causes of HIV infection among Utah women are heterosexual contact followed by intravenous drug use. Of the newly reported HIV/AIDS cases among Utah female residents in 2008 (22 cases), 59% were white, 23% were Hispanic, 14% were Black, and 5% were Asian/Pacific Islander. The majority of these new female cases (77%) were of childbearing age. In Utah, there are a total of 198 known HIV/AIDS infected women of childbearing age (15-44).[4]

In 2008, 10 HIV positive women in Utah delivered a live infant. There were an additional 10 HIV-positive pregnant women identified at the time of reporting. To date, there have been 28 reported cases of HIV mother-to-child transmission in Utah.[4]

While Utah has a very low incidence of perinatal HIV/AIDS transmission, according to a recent Morbidity and Mortality Weekly Report (MMWR), "[e]very perinatal HIV transmission is a sentinel health event, signaling either a missed opportunity for prevention or, more rarely, a failure of interventions to prevent perinatal transmission. When these infections occur, they underscore the need for improved strategies to ensure that all pregnant women undergo HIV testing and, if found to be HIV positive, receive proper interventions to reduce their transmission risk and safeguard their health and the health of their infants."[5]

What is PRAMS?

Data in this newsletter were provided by the Utah Pregnancy Risk Assessment Monitoring System (PRAMS). PRAMS is an ongoing, population-based risk factor surveillance system designed to identify and monitor selected maternal experiences that occur before and during pregnancy, as well as experiences of the child's early infancy. Each month, a sample of approximately 200 women, two to four months postpartum, is selected. The sample is stratified based on maternal education and infant birth weight so that inferences and comparisons about these groups can be determined. The results are weighted for sample design and non-response.

PRAMS is intended to help answer questions birth certificate data alone cannot answer. Data will be used to provide important information that can guide policy and other efforts to improve care and outcomes for pregnant women and infants in Utah. Women were asked questions about prenatal care, breastfeeding, smoking and alcohol use, physical abuse, and early infant care.

The PRAMS data reported here represent all live births to Utah residents from 2004-2007. A total of 9,461 mothers were selected to participate in the project and 7,726 mothers responded for an unweighted response rate of 81.7%. Survey results were weighted for non-response so that analyses could be generalized to the entire population of Utah women delivering live births.

Perinatal HIV transmission in the U.S. peaked in 1992, when approximately 2,000 babies became HIV infected. Drastic public health measures have contributed to reducing the number of babies infected with HIV through perinatal transmission to about 200 annually.[6] Without antiretroviral therapy, vertical transmission is about 25%.[7]

The risk of perinatal transmission can be reduced to 2% or less by giving antiretroviral drugs to the mother during pregnancy and labor and delivery, administering treatment to the infant within hours of birth, and performing an elective cesarean delivery for women who have viral loads more than 1,000 copies per milliliter.[8]

Thorne, et al found that, among the HIV positive childbearing women in their study, the vast majority (73%) received their initial diagnosis during pregnancy or at delivery.[9] Had their provider failed to screen them, they may have had a substantially increased risk of perinatal transmission.

Fowler, et al. reports that one of the remaining challenges in perinatal HIV prevention efforts in the U.S. is that many providers continue to offer HIV testing to only those pregnant women who they think are high-risk, despite the recommendations by multiple organizations to provide universal screening with an opt-out approach.[6] A potential barrier to offering universal HIV testing may be the fear of offending patients. Podhurst, et al. studied women's opinions about routine HIV testing during pregnancy, using the opt-out approach. Of the 853 respondents, approximately 90% of them supported routine HIV testing in prenatal care and reported feeling comfortable with being tested for HIV.[10]

In 2006, women who recently delivered a live infant in 24 U.S. states and were surveyed by PRAMS were asked, "At any time during your most recent pregnancy or delivery, did you have a test for HIV?" The percentage of women who said "yes" ranged from 86.8% (New York) to 38.9% (Utah).[11]

Methodology

This report includes PRAMS data from 2004-2007. PRAMS respondents include Utah women who delivered a live-born infant. Respondents were asked the following questions in reference to their most recent pregnancy:

During any of your prenatal care visits, did a doctor, nurse, or other health care worker ask you if you wanted to be tested for HIV (the virus that causes AIDS)?

At any time during your most recent pregnancy or delivery, did you have a test for HIV (the virus that causes AIDS)? Women who answered No or Don't Know to this question were asked—

Were you offered an HIV test during your most recent pregnancy or delivery? Women who answered Yes to this question were asked—

Did you turn down the HIV test? Women who answered Yes to this question were asked—

Why did you turn down the HIV test (check all that apply)?

I did not think I was at risk for HIV
I did not want people to think I was at risk for HIV
I was afraid of getting the result
I was tested before this pregnancy, and did not think I needed to be tested again
Other—Please tell us:_____

We used chi-squared tests to determine significant demographic markers among women who reported not being tested for HIV, being asked if they wanted to be tested, and among those who declined the test after being offered. Demographic variables included maternal age, education, race, ethnicity, marital status, prenatal care payer, delivery payer, and prenatal care location.

Results

During 2004-2007, 49.8% of PRAMS respondents reported being asked during any prenatal care visit if they wanted to be tested for HIV. There was an inverse relationship between being asked about HIV testing and age, with older women less likely to report being asked by their health care provider if they wanted to be tested. As well, lower rates of HIV testing inquiry were found among women who were more educated, white, non-Hispanic, married, had private insurance, and received prenatal care at a private doctor's office, compared to their respective stratum groups. (See Table 1)

Nearly 39% of respondents reported being tested for HIV during their pregnancy or at delivery. Approximately 12% of women reported not knowing whether they were tested (data not shown). The demographic markers of women who report lower rates of HIV testing are very similar to the pattern shown in Table 1. (See Table 2)

Among women who were not tested for HIV during pregnancy (including those who reported not knowing whether they were tested), nearly 75% of them were not offered an HIV test. Among the women who were offered a test (25.2%), approximately 83% declined the test. (See Figure 1)

The majority of women (79.3%) who declined being tested for HIV during pregnancy did so because they did not think they were at risk. The second most commonly reported reason for turning down the test was because of being previously tested, and thinking that they did not need to be tested again. (See Figure 2)

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Table 1

Percentage of Women Who Reported Being Asked by a Doctor, Nurse or Other Health Care Worker During Any Prenatal Care Visit if They Wanted to Be Tested for HIV/AIDS by Selected Characteristics, Utah PRAMS 2004-2007

	Estimate	95% Confidence Interval	Estimated Population	P Value
Total	49.8%	± 1.3%	100,008	
Maternal Age				<.0001
≤ 17	68.4%	± 6.1%	2,554	
18-19	66.7%	± 5.0%	5,567	
20-24	52.2%	± 2.4%	30,322	
25-29	48.1%	± 2.3%	33,888	
30-34	47.7%	± 3.0%	20,010	
35-39	43.3%	± 4.9%	6,573	
40+	37.2%	± 10.4%	1,090	
Maternal Education				<.0001
< High School	66.5%	± 2.2%	17,441	
High School	53.8%	± 2.1%	32,508	
Some College	46.8%	± 2.9%	25,111	
College Graduate	40.3%	± 2.7%	22,798	
Maternal Race				<.05
White	49.4%	± 1.3%	94,079	
Other Than White	57.5%	± 6.0%	5,161	
Hispanic				<.0001
Yes	64.4%	± 2.8%	18,951	
No	47.3%	± 1.5%	80,578	
Married				<.0001
Yes	46.3%	± 1.5%	76,972	
No	66.5%	± 2.7%	23,036	
Prenatal Care Payer				<.0001
Private/Group Insurance	44.6%	± 1.7%	54,977	
Medicaid	58.2%	± 2.4%	30,944	
Other/Self pay	58.3%	± 3.4%	13,766	
Delivery Payer				<.0001
Private/Group Insurance	44.6%	± 1.8%	54,614	
Medicaid	59.9%	± 2.0%	40,742	
Other/Self pay	44.7%	± 5.9%	4,190	
PNC Location				<.0001
Hospital Clinic	59.4%	± 3.1%	19,609	
Health Department Clinic	61.6%	± 6.2%	3,855	
Private Dr. office or HMO Clinic	45.4%	± 1.6%	61,512	
Community Health Clinic	64.2%	± 4.1%	9,413	
Other	45.6%	± 6.5%	3,409	

Table 2

The Percentage of Women Who Reported Being Tested for HIV/AIDS at Any Time During Prenatal Care or at Delivery, by Selected Characteristics, Utah PRAMS 2004-2007

	Estimate	95% Confidence Interval	Estimated Population	P Value
Total	38.8%	± 1.2%	79,084	
Maternal Age				<.0001
≤ 17	60.3%	± 6.4%	2,297	
18-19	54.4%	± 5.2%	4,748	
20-24	41.8%	± 2.3%	24,675	
25-29	35.9%	± 2.1%	25,704	
30-34	36.9%	± 2.9%	15,689	
35-39	32.9%	± 4.6 %	5,013	
40+	31.6%	± 9.8%	957	
Maternal Education				<.0001
< High School	57.2%	± 2.3%	15,344	
High School	44.4%	± 2.1%	27,275	
Some College	34.0%	± 2.7%	18,578	
College Graduate	27.9%	± 2.5%	15,874	
Maternal Race				<.01
White	38.2%	± 1.3%	73,884	
Other Than White	48.4%	± 5.9%	4,501	
Hispanic				<.0001
Yes	56.6%	± 2.8%	17,153	
No	35.6%	± 1.4%	61,451	
Married				<.0001
Yes	34.3%	± 1.4%	57,689	
No	60.1%	± 2.7%	21,394	
Prenatal Care Payer				<.0001
Private/Group Insurance	34.0%	± 1.6%	41,923	
Medicaid	47.7%	± 2.4%	25,401	
Other/Self pay	43.3%	± 3.3%	10,340	
Delivery Payer				<.0001
Private/Group Insurance	33.8%	± 1.6%	41,707	
Medicaid	48.6%	± 2.0%	33,734	
Other/Self pay	31.2%	± 5.2%	3,131	
PNC Location				<.0001
Hospital Clinic	49.4%	± 3.1%	16,293	
Health Department Clinic	50.1%	± 6.2%	3,135	
Private Dr. office or HMO Clinic	34.4%	± 1.6%	46,747	
Community Health Clinic	49.6%	± 4.2%	7,214	
Other	33.9%	± 5.9%	2,614	

Figure 1

An Algorithm Illustrating the Percentage of Women Reporting Their HIV Testing Status During Pregnancy/Delivery and Responses to Follow-up Questions, Utah PRAMS, 2004-2007

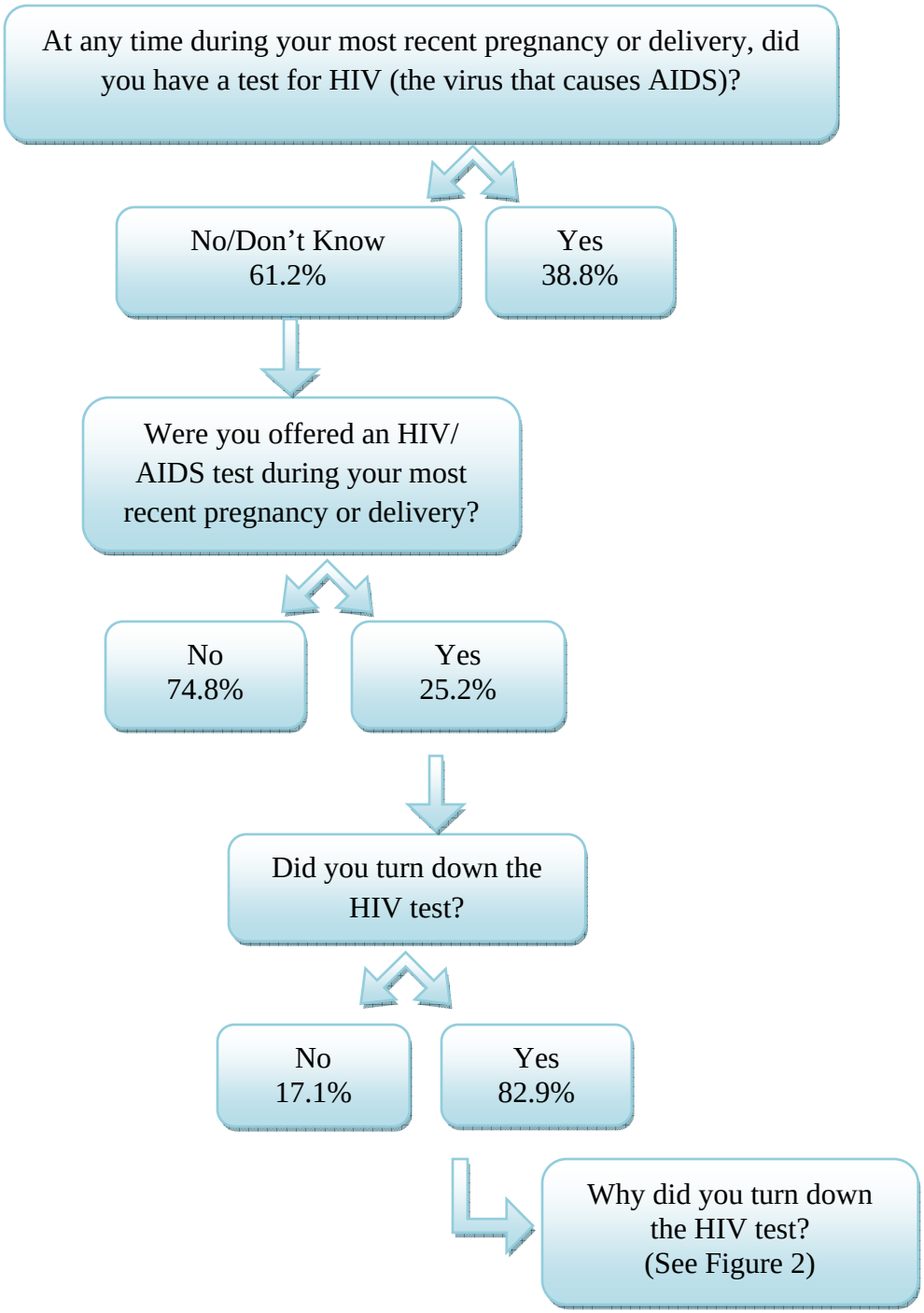
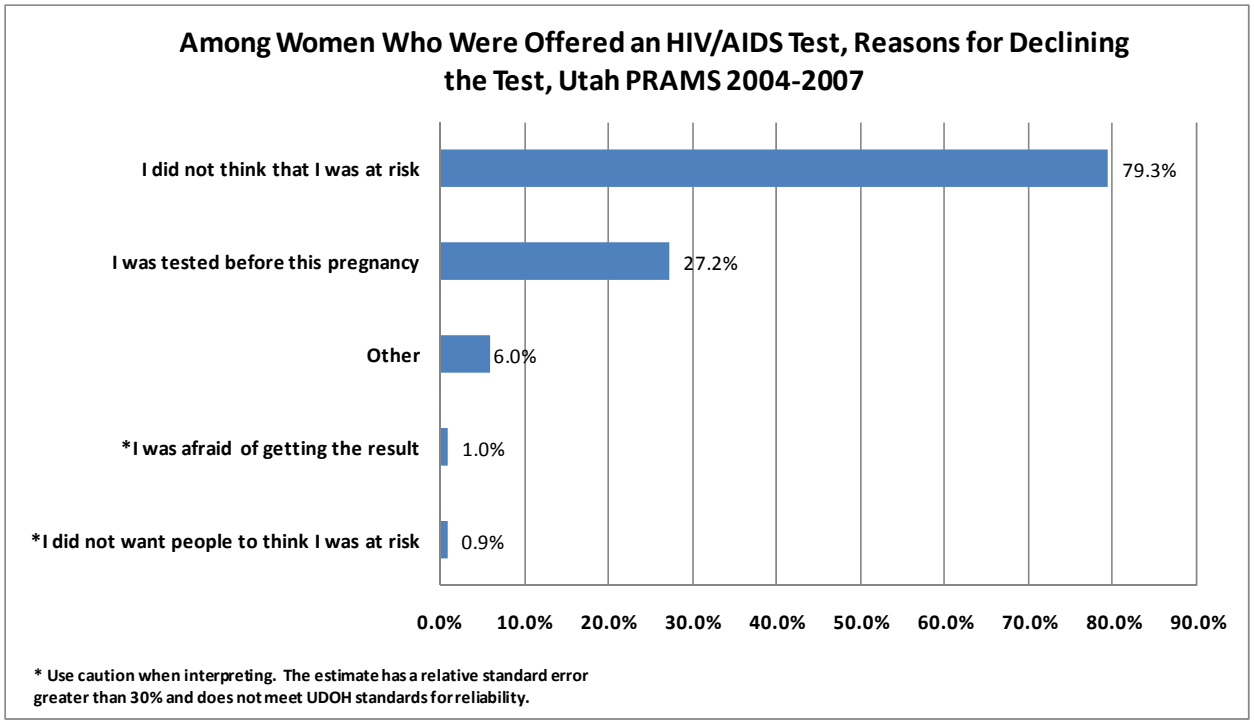


Figure 2



Discussion/Recommendations

Overall, Utah has a low HIV screening rate among the general population, with 25.2% of all adults reporting ever being tested.[12] This is considerably lower than the national rate of 36.6%.[13] Pregnant women in Utah are more likely to be screened during pregnancy than the general population, however, tremendous improvement is still needed.

The Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics (AAP), and the American College of Obstetricians and Gynecologists (ACOG) recommend that all pregnant women be tested for HIV/AIDS as a part of the routine panel of blood tests offered during prenatal care, unless the patient declines the test (opt-out approach).[5,14,15] Research shows that the opt-out approach yields substantially greater testing rates than the opt-in approach and reduces the need for lengthy informed consent while still providing the patient with an opportunity to decline the test.[16] It is important to note that women should never be unaware that an HIV test is being done,[5] which is why the 12% of PRAMS respondents who indicated not knowing whether they were tested for HIV is of concern.

ACOG also recommends that high-risk women and women who decline initial HIV testing be offered it again in the third trimester. If a patient declines a test, providers should take some time to discuss why the test was declined, and if possible, provide counseling and education regarding the importance of testing. A rapid HIV test can be performed on women who present to labor and delivery with an unknown HIV status.[5,15]

The reduction of perinatal HIV transmission has been a great success in the United States. Nonetheless, Fowler, et al encourage us to not take the achievement for granted, otherwise the gains may very well be short-lived. Rather, great efforts to prevent perinatal HIV transmission ought to be maintained and strengthened.[6] Recommendations for universal, opt-out screening should be supported and implemented for all pregnant women and also be adopted as a routine part of preconception care.[17] Women who learn they are HIV positive before pregnancy will have the advantage of making better-informed decisions about their health as well as reproductive options.[6]

Consistently throughout this analysis, Utah women who were younger, less educated, non-white, Hispanic, unmarried, who did not have private insurance, and did not receive care at a private doctor's office were more likely to be offered an HIV test and to be tested. These data suggest that Utah providers are not routinely offering HIV testing to all women but rather are using demographic groups to perceive risk. Approaching HIV testing in this manner may perpetuate social stigmas regarding those who receive HIV testing. Royce, et al found that when women feel their health care provider strongly recommends HIV testing, they are more willing to be tested.[18] Further, an observational study by Gamazina, et al found that providers who received training aimed at addressing stigma issues relating to HIV testing and how to counsel patients about the importance of preventing mother-to-child transmission provided consistently higher quality counseling compared to providers who did not receive the training.[19]

Utah's HIV rates are much lower than national rates; however, there is concern that the rates of other sexually transmitted infections (STIs) are increasing in Utah's population, namely chlamydia and gonorrhea. It is reasonable to consider that these increasing STI rates may foreshadow future HIV infection trends in Utah. It is imperative that health care providers adhere to current HIV testing recommendations so as to prevent future perinatal HIV transmission.

Resources

The Utah Department of Health and the Utah AIDS Foundation offer HIV Counseling and Testing Workshops. Attendees learn how to provide HIV prevention counseling and testing. They also learn how to appropriately inform patients about a positive HIV test result, gather partner information, and refer patients to resources. For more information visit: http://health.utah.gov/cdc/hiv_testing.htm#workshops.

The CDC has launched the One Test Two Lives campaign to ensure that all pregnant women are screened for HIV early in their pregnancy. Free educational and resource materials are available at http://www.cdc.gov/hiv/topics/perinatal/1test2lives/.

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The Best Way to Prevent Perinatal HIV Transmission (20)

- Primary prevention of maternal HIV infection
- Preconception HIV screening and access to family planning
- Prenatal screening with antiretroviral treatment throughout pregnancy and delivery for HIV positive women, followed by infant receipt of treatment within hours after birth
- For women with an unknown HIV status, test for HIV during labor and delivery using a rapid test. Use antiretroviral treatment during labor if the rapid test is positive. Do not wait for the results of the confirmatory test. Follow by infant antiretroviral treatment within hours after birth.

References

1. CDC. HIV Prevalence Estimates--United States, 2006. MMWR 2008; 57(39): 1073-1076.
2 Estimation of HIV incidence in the United States. Hall, HI., Song, R., Rhodes, P., et al. 2008;300:520-529, *JAMA.*
3. CDC. HIV/AIDS in the United States. CDC/HIV Facts Updated 2009.
4. Utah Department of Health, Bureau of Communicable Disease Control.
5. Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings. MMWR Recommendations and Reports. September 22, 2008 / 55(RR14);1-17.
6. Fowler, M., Lampe, M., Jamieson, D., Kourtis, A., Rogers, M. Reducing the risk of mother-to-child human immunodeficiency virus transmission: past successes, current progress and challenges, and future directions. *American Journal of Obstetrics & Gynecology.* Supplemental to September 2007.
7. Connor EM, Sperling RS, Gelber R, et al. Reduction of maternal-infant transmission of human immunodeficiency virus type 1 with zidovudine treatment. *New England Journal of Medicine* 1994;331:1173-1180.
8. Cooper ER, Charurat M, Mofenson LM, et al. Combination antiretroviral strategies for the treatment of pregnant HIV-1-infected women and prevention of perinatal HIV-1 transmission. *Journal of Acquired Immune Deficiency Syndromes* 2002;29(5):484-494.).
9. Thorne, C., Semenenko, I., Pilipenko, T., Malyuta, R., and the Ukraine European Collaborative Study Group. Progress in prevention of mother-to-child transmission of HIV infection in Ukraine: results from a birth cohort study. *BMC Infectious Diseases*;2009.
10. Podhurst LS, Storm DS, Dolgonos S. Women's opinions about routine HIV testing during pregnancy: implications for the opt-out approach. *AIDS Patient Care STDs*. 2009 May;23(5):331-337.
11. CPonder online query database on 9/23/09 http://apps.nccd.cdc.gov/cPONDER/default.aspx?page=main.
12. Utah Department of Health, Center for Health Data, Behavioral Risk Factor Surveillance System, 2008 data.
13. (Quickstats) Percentage of Adults > 18 Years Who Had Ever Been For Human Immunodeficiency Virus (HIV), by Age Group and Sex--- National Health Interview Survey, United States, 2007. MMWR Weekly. January 30, 2009 / 58(03);62).
14. American Academy of Pediatrics, American College of Obstetricians and Gynecologist. Joint statement on human immunodeficiency virus screen. ACOG Policy Statement 75. Elk Grove Village (IL): AAP; Washington, DC: ACOG; 1999.
15. Prenatal and perinatal human immunodeficiency virus testing: expanded recommendations. ACOG Committee Opinion No.304. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2004;104:1119-24.
16. HIV testing among pregnant women—United States and Canada, 1998-2001. MMWR Weekly. November 15, 2002;51(45):1013-1016.
17. Centers for Disease Control and Prevention. Recommendations to improve preconception health and health care—United States, MMWR Recommendations and Reports. April 21, 2006/55(RR06);1-23.
18. Royce RA,. Walter EB, Fernandez MI, Wilson TE, Ickovics JR, Simonds RJ. Barriers to universal prenatal HIV testing in 4 US locations in 1997. *Am J Public Health* 2001;91:727-733.
19. Gamazina, K., Mogilevkina, I., Parkhomenko, Z., Bishop, A., Coffey, PS., Brazg, T. Improving quality of prevention of mother-to-child HIV transmission services in Ukraine: a focus on provider communication skills and linkages to community-based non-governmental organizations. *Cent Eur J Public Health*. 2009 Mar;17(1):20-4.
20. Taylor, A., Ruffo, N., Griffith, J., et al. The missing link: documentation of recognized maternal human immunodeficiency virus infection in exposed infant birth records, 24 United States jurisdictions, 1999-2003. *American Journal of Obstetrics & Gynecology*. Supplement to Sep 2007.

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