

MIDIRS Standard Search
P159 - Vaccination during
pregnancy

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##AN20090731-1* Fiore AE; Shay DK;
Broder K; et al Prevention and control of
seasonal influenza with vaccines.
Recommendations of the Advisory
Committee on Immunization Practices
(ACIP), 2009

Centers for Disease Prevention and
Control, vol 58, no RR-8, 31 July 2009, pp
1-52.

This report updates the 2008
recommendations by CDC's Advisory
Committee on Immunization Practices
(ACIP) regarding the use of influenza
vaccine for the prevention and control of
seasonal influenza (CDC. Prevention and
control of influenza: recommendations of the
Advisory Committee on Immunization
Practices [ACIP]. MMWR 2008;57[No. RR-
7]). Information on vaccination issues
related to the recently identified novel
influenza A H1N1 virus will be published
later in 2009. The 2009 seasonal influenza
recommendations include new and updated
information. Highlights of the 2009
recommendations include 1) a
recommendation that annual vaccination be
administered to all children aged 6 months-
18 years for the 2009-10 influenza season;
2) a recommendation that vaccines
containing the 2009-10 trivalent vaccine
virus strains A/Brisbane/59/2007 (H1N1)-
like, A/Brisbane/10/2007 (H3N2)-like, and
B/Brisbane/60/2008-like antigens be used;
and 3) a notice that recommendations for
influenza diagnosis and antiviral use will be
published before the start of the 2009-10
influenza season. Vaccination efforts should
begin as soon as vaccine is available and
continue through the influenza season.

Approximately 83% of the United States
population is specifically recommended for
annual vaccination against seasonal
influenza; however, <40% of the U.S.
population received the 2008-09 influenza
vaccine. These recommendations also
include a summary of safety data for U.S.
licensed influenza vaccines. These
recommendations and other information are
available at CDC's influenza website
(<http://www.cdc.gov/flu>); any updates or

supplements that might be required during
the 2009-10 influenza season also can be
found at this website. Vaccination and
health-care providers should be alert to
announcements of recommendation
updates and should check the CDC
influenza website periodically for additional
information. (454 references) (Author)
Available From:

http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5808a1.htm?s_cid=rr5808a1_e

##AN20090721-19* Fetuga BM; Ogunlesi
TA; Adekanmbi F; et al Neonatal tetanus
in the babies of Nigerian mothers
immunised against Tetanus. Tropical
Doctor, vol 39, no 3, July 2009, pp 135-
137.

The objective of this study was to describe
the clinical characteristics of babies with
neonatal tetanus (NNT) whose mothers
were immunised against tetanus and
determine the outcome of their
hospitalisation. The hospital records of
babies affected by NNT whose mothers
received at least two doses of anti-tetanus
vaccine during pregnancy were identified
and compared with similarly affected babies
whose mothers were not immunised against
tetanus during pregnancy in a Nigerian
hospital. Out of 175 cases of NNT, the
mothers of 24 (13.7%) babies were
immunised against tetanus during
pregnancy while the mothers of 151 (86.3%)
were not. The proportions of babies of
immunised mothers and unimmunised
mothers who presented within the first three
days of life, within a day of the onset of
symptoms and with spasms were similar.
Nevertheless, the survival rate was higher
(62.5% vs. 26.5%; P = 0.0004) among
babies of immunised mothers. Despite
similarities in clinical presentation of babies
of mothers with and without anti-tetanus
vaccination, the survival rate was higher for
the former. (Author)

##AN20090331-98# Yudin MH; Salaripour
M; Sgro MD Pregnant women's
knowledge of influenza and the use and
safety of the influenza vaccine during
pregnancy. JOGC [Journal of Obstetrics
and Gynaecology Canada], vol 31, no 2,
February 2009, pp 120-125.

Introduction: We wished to assess pregnant
women's knowledge of influenza, vaccine
safety during pregnancy and breast feeding,

and the recommendations for use of the influenza vaccine in pregnancy. Methods: We performed a cross-sectional survey of postpartum women during influenza season in 2006. Results: Pregnant women's overall knowledge of these subjects was poor. Most women (95%) knew that influenza is highly contagious, but almost 90% incorrectly believed that pregnant women have the same risk of complications as non-pregnant women. Only one half of the women were aware of national recommendations for vaccination during pregnancy and that the vaccine is safe during pregnancy and breast feeding, and 80% incorrectly believed that the vaccine can cause birth defects. Only 20% of women had been offered the vaccine during the current pregnancy or a prior pregnancy. Conclusions: Pregnant women's knowledge about influenza vaccine recommendations and safety during pregnancy is poor. There is substantial room for improvement among prenatal care providers in both patient education and offering the vaccine. (19 references) (Author)

##AN20090324-18 Bruhn K; Tillett J Administration of vaccinations in pregnancy and postpartum. MCN - American Journal of Maternal Child Nursing, vol 34, no 2, March/April 2009, pp 98-105.

Immunization through vaccines is one of the most effective means of preventing disease, disability, and death from infectious disease. Nurses can play an important role in helping to prevent infectious disease during pregnancy and postpartum by better understanding which vaccinations can be used in pregnancy and during breastfeeding. This article discusses 21 adult vaccinations and the diseases they prevent and provides nursing considerations to ensure safety and efficacy through appropriate vaccination scheduling, administration, storage/handling, and patient education. (35 references) (Author)

##AN20090324-28 Sjoborg KD; Eskild A Vaccination against human papillomavirus--an impact on preterm delivery? Estimations based on literature review. Acta Obstetrica et Gynecologica Scandinavica, vol 88, no 3, 2009, pp 255-260.

OBJECTIVE: Cervical cone excision increases the risk of preterm deliveries. Vaccination against human papillomavirus 16/18 (HPV16/18) will probably prevent development of high grade cervical intraepithelial neoplasia and thereby reduce the need for cervical cone excisions. An HPV16/18 vaccination programme may therefore also prevent some preterm deliveries. METHODS: We identified the parameters influencing the effect of a HPV16/18 vaccination programme on preterm deliveries, and estimated a possible range of preventable deliveries before the 37th week of pregnancy. The number of preterm deliveries prevented by HPV16/18 vaccination programme would depend on the number of preterm deliveries related to cervical cone excision (extent of the health problem), and the proportion of this health problem that could be prevented by a vaccination programme. We obtained values on the parameters used in the estimations from the scientific literature. RESULTS: If 2% of childbearing women are treated with cervical cone excision, between 60 and 220 preterm deliveries/100 000 births may be related to such treatment. Close to 60% (between 35 and 128 preterm deliveries) could be prevented by an HPV16/18 vaccination programme, if the programme coverage was 90%. If 4% of women are treated with cone excision, between 70 and 257 preterm deliveries/100 000 births could be prevented. CONCLUSION: HPV16/18 vaccination programmes may reduce the number of preterm deliveries through reducing the need for cone excision. (37 references) (Author)

##AN20081028-37 Flu vaccine for pregnant women. Community Practitioner, vol 81, no 11, November 2008, p 8.

Very brief news item reporting that pregnant women could soon be offered flu vaccinations, following the publication of research (1), which showed that it could benefit the baby. 1. Zaman K et al. Effectiveness of maternal influenza immunization in mothers and infants. NEJM, vol 359, no 15, 9 October 2008, pp 1555-1564. (CR)

##AN20080924-44 Engstrom JL Magical thinking. Journal of Midwifery and

Women's Health, vol 53, no 5, September/October 2008, pp 401-402.

Editorial on incidence of influenza and its complications experienced by pregnant women in the United States. Approximately 36,000 people die of the condition every year, but a recent study found that only 13.8% of pregnant women were vaccinated against influenza. (12 references) (TM)

##AN20080919-17 Gottvall T; Filbey D Alloimmunization in pregnancy during the years 1992-2005 in the central west region of Sweden. Acta Obstetrica et Gynecologica Scandinavica, vol 87, no 8, 2008, pp 843-848.

OBJECTIVES: To study the incidence of red cell immunization and to evaluate the use of low-risk invasive procedures in the management of alloimmunized during pregnancy. DESIGN: A 14-year retrospective study of all immunized mothers and their newborns. Population. All reported alloimmunizations between the years 1992 and 2005 in our catchment area were examined. METHODS: Background factors, maternal antibody classification, antibody titers, anti-D quantitation, procedures and maternal treatments instituted during pregnancy, fetal outcome and treatment of the newborn were evaluated. RESULTS: There were 78,145 deliveries in the region. Alloimmunization during pregnancy was detected in 0.4% of all pregnancies, excluding ABO immunizations. A significant alloimmunization (titer level ≥ 8) was detected in 0.16%. Anti-D immunizations were responsible for 60% of significant immunizations followed by anti-Fy(a) in 10%, anti-c in 7% and anti-K in 4%. Maternal plasma exchange and high-dose intravenous immunoglobulin were used as low-risk invasive treatments in 12 cases. Delivery was in ≥ 38 weeks in 93% of cases. Twenty-nine newborns were treated with exchange transfusions (ETs) after delivery, whereof 21/29 were due to anti-D, seven due to anti-c and anti-E and in one case anti-Fy(a). No deaths occurred due to severe alloimmunization. CONCLUSION: Anti-D still accounts for the most severe immunizations and for most of the cases where ET was necessary. Low-risk invasive techniques to evaluate and treat pregnancies complicated by alloimmunization seem possible and

accurate, avoiding invasive procedures that may exacerbate the immunization during pregnancy. (16 references) (Author)

##AN20080910-20* Ryan MA; Smith TC; Sevick CJ; et al Birth defects among infants born to women who received anthrax vaccine in pregnancy. American Journal of Epidemiology, vol 168, no 4, 15 August 2008, pp 434-442.

In response to bioterrorism threats, anthrax vaccine has been used by the US military and considered for civilian use. Concerns exist about the potential for adverse reproductive health effects among vaccine recipients. This retrospective cohort evaluated birth defects, in relation to maternal anthrax vaccination, among all infants born to US military service women between 1998 and 2004. Department of Defense databases defined maternal vaccination and infant diagnoses; multivariable regression models described potential associations between anthrax vaccination and birth defects in liveborn infants. Among 115,169 infants born to military women during this period, 37,140 were born to women ever vaccinated against anthrax, and 3,465 were born to women vaccinated in the first trimester of pregnancy. Birth defects were slightly more common in first trimester-exposed infants (odds ratio = 1.18, 95% confidence interval: 0.997, 1.41) when compared with infants of women vaccinated outside of the first trimester, but this association was statistically significant only when alternative referent groups were used. Although the small observed association may be unlikely to represent a causal relation between vaccination in early pregnancy and birth defects, this information should be considered when making decisions about administering anthrax vaccine to pregnant women. (Author)

##AN20080717-16 Hayes CE Prevention of influenza. Journal of Midwifery and Women's Health, vol 53, no 3, May/June 2008, pp 268-271.

Reviews methods of preventing influenza. Includes information on timing and efficacy of the flu vaccine and the different types. Also considers vaccination in pregnancy and the thimerosal controversy. (28 references) (MB)

##AN20080717-5 Hackley B Incorporating immunization services into reproductive health care. Journal of Midwifery and Women's Health, vol 53, no 3, May/June 2008, pp 175-187.

Vaccine-preventable infections are common in adults and associated with significant morbidity and mortality. Since 2005, the Advisory Committee on Immunization Practices (ACIP) has released more than 15 recommendations governing the use of new vaccines, as well as recommendations for regimen changes for use of older ones, in adults. Understanding these changes and incorporating them into practice is essential to protect adults from vaccine-preventable infections. Because many women receive care in obstetric and gynecologic practices, integrating these services into reproductive health care provides an opportunity to offer vaccination to many women who otherwise might not be offered these recommended vaccines. (80 references) (Author)

##AN20080617-45* World Health Organization World's top vaccine scientists to discuss the latest research Geneva: WHO, 17 June 2008.

Announces the 8th World Health Organization Global Vaccine Research Forum, to be held in Paris from 29 June to 2 July 2008. States that topics for discussion include: the long quest for HIV vaccines; vaccinating teenagers against human papillomavirus (HPV), vaccinating against hospital-acquired infections; vaccines for priority diseases in developing countries, such as malaria, meningitis and rotavirus; and an update on clinical vaccine trials. (JSM)

Available From: <http://www.who.int>

##AN20080606-2* Advisory committee on Immunization Practices Workgroup on the Use of Vaccines during Pregnancy and Breastfeeding Guiding Principles for Development of ACIP Recommendations for Vaccination During Pregnancy and Breastfeeding. Centers for Disease Control and Prevention, April 2008. 16 pages.

Gives guidance to aid the standardization of procedures for policy making and the presentation of the rationale and recommendations for vaccination in pregnancy and to breastfeeding mothers. (JSM)

Available From:

<http://www.cdc.gov/vaccines/recs/acip/downloads/preg-principles05-01-08.pdf>

##AN20080530-2 Centers for Disease Control and Prevention Prevention of Pertussis, Tetanus, and Diphtheria Among Pregnant and Postpartum Women and their Infants. Recommendations of the Advisory Committee on Immunization Practices (ACIP). Morbidity and Mortality Weekly Report (MMWR), vol 57, no 4, 30 May 2008, pp 1-47, 51.

In 2005, two tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccines were licensed and recommended for use in adults and adolescents in the United States: ADACEL® (sanofi pasteur, Swiftwater, Pennsylvania), which is licensed for use in persons aged 11--64 years, and BOOSTRIX® (GlaxoSmithKline Biologicals, Rixensart, Belgium), which is licensed for use in persons aged 10--18 years. Both Tdap vaccines are licensed for single-dose use to add protection against pertussis and to replace the next dose of tetanus and diphtheria toxoids vaccine (Td). Available evidence does not address the safety of Tdap for pregnant women, their fetuses, or pregnancy outcomes sufficiently. Available data also do not indicate whether Tdap-induced transplacental maternal antibodies provide early protection against pertussis to infants or interfere with an infant's immune responses to routinely administered pediatric vaccines. Until additional information is available, CDC's Advisory Committee on Immunization Practices recommends that pregnant women who were not vaccinated previously with Tdap: 1) receive Tdap in the immediate postpartum period before discharge from hospital or birthing center, 2) may receive Tdap at an interval as short as 2 years since the most recent Td vaccine, 3) receive Td during pregnancy for tetanus and diphtheria protection when indicated, or 4) defer the Td vaccine indicated during pregnancy to substitute Tdap vaccine in the immediate postpartum period if the woman is likely to have sufficient protection against tetanus and diphtheria. Although pregnancy is not a contraindication for receiving Tdap vaccine, health-care providers should weigh the

theoretical risks and benefits before choosing to administer Tdap vaccine to a pregnant woman. This report 1) describes the clinical features of pertussis, tetanus, and diphtheria among pregnant and postpartum women and their infants, 2) reviews available evidence of pertussis vaccination during pregnancy as a strategy to prevent infant pertussis, 3) summarizes Tdap vaccination policy in the United States, and 4) presents recommendations for use of Td and Tdap vaccines among pregnant and postpartum women. [Erratum: Morbidity and Mortality Weekly Report (MMWR) vol 57, no 26, 4 July 2008, p 723] (437 references) (Author)

Available From: www.cdc.gov.mmwr

##AN20080415-41* Wilson E; Goss MA; Marin M; et al Varicella vaccine exposure during pregnancy: data from 10 years of the pregnancy registry. *Journal of Infectious Diseases*, vol 197, suppl 2, 2008, pp S178-S184.

Background. The Pregnancy Registry for Varivax (Merck) was established to monitor for congenital varicella syndrome or other birth defects in the offspring of women who were exposed to varicella vaccine while pregnant. Methods. The registry receives voluntary reports from health care providers or consumers about women given the vaccine 3 months before or during pregnancy. Follow-up is conducted to obtain and classify pregnancy outcomes. All reports are evaluated for the presence of birth defects. Outcomes from prospectively reported pregnancy exposures are used to calculate rates and 95% confidence intervals. Results. From 17 March 1995 through 16 March 2005, 981 women were enrolled. Pregnancy outcomes were available for 629 prospectively enrolled women. Among the 131 live births to varicella-zoster virus-seronegative women, there was no evidence of congenital varicella syndrome (rate, 0% [95% confidence interval {CI}, 0%–6.7%]), and major birth defects were observed in 3 infants (rate, 3.7% [95% CI, 0.8%–10.7%]). Conclusions. Although the numbers of exposures are not sufficient to rule out a very low risk, data collected in the pregnancy registry to date do not support a relationship between the occurrence of congenital varicella syndrome or other birth

defects and varicella vaccine exposure during pregnancy. (Author)

##AN20071109-56 Ogburn T; Espey EL; Contreras V; et al Impact of clinic interventions on the rate of influenza vaccination in pregnant women. *Journal of Reproductive Medicine*, vol 52, no 9, September 2007, pp 753-756.

OBJECTIVE: To assess the impact of interventions in a prenatal clinic on the influenza vaccination rate in pregnant women. STUDY DESIGN: This retrospective study of women receiving care in a university prenatal clinic examined the impact of several interventions to increase immunization rates implemented over 2 years. Influenza vaccination rates were assessed before and after the interventions, which included provider and staff education, stocking of the vaccine in the clinic and implementation of standing orders. RESULTS: Influenza vaccination rates in pregnant women increased from <1% to 37%. Standing orders were the most important intervention for increasing immunization rates. Patients who received care in the certified nurse midwife clinic were more likely to be vaccinated, while those who received care in a high-risk obstetric clinic were less likely. CONCLUSION: Interventions to improve influenza vaccination rates among pregnant women, particularly standing orders, are effective. These interventions should be implemented nationally in all prenatal care clinics. (9 references) (Author)

##AN20070727-4 George T; Shefer AM; Rickert D; et al A status report from 1996-2004: are more effective immunization interventions being used in the women, infants, and children (WIC) program? *Maternal and Child Health Journal*, vol 11, no 4, July 2007, pp 327-333.

BACKGROUND: The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) enrolls almost 50% of the US birth cohort and these children have significantly lower immunization coverage rates than their counterparts not eligible for WIC. In 1994, the Centers for Disease Control and Prevention (CDC) and USDA began a national initiative to increase immunization coverage in low-income children by incorporating immunization-promoting activities into WIC visits