

MATERNAL IMMUNIZATION

— TASK FORCE —



ACOG



AMERICAN ACADEMY OF
FAMILY PHYSICIANS



AMERICAN COLLEGE
of NURSE-MIDWIVES

With women, for a lifetime®



AWHONN

PROMOTING THE HEALTH OF
WOMEN AND NEWBORNS

MATERNAL IMMUNIZATION

— TASK FORCE —

Immunization for Pregnant Women: A Call to Action

from the

American Academy of Family Physicians; American College of Nurse-Midwives; American College of Obstetricians and Gynecologists; and Association of Women's Health, Obstetric and Neonatal Nurses

INTRODUCTION

Immunizations are an essential part of prenatal care, offering critical protection to women and their fetuses against potentially deadly diseases. The Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices recommends that women who are pregnant receive an inactivated influenza and a tetanus/diphtheria/acellular pertussis (Tdap) vaccine in every pregnancy (1). The American Academy of Family Physicians; American College of Nurse-Midwives; American College of Obstetricians and Gynecologists; and Association of Women's Health, Obstetric and Neonatal Nurses strongly support this recommendation. As professional organizations whose members care for pregnant women, we affirm the importance of recommending and advocating that pregnant women receive all recommended vaccines at the appropriate time during each pregnancy. The current increase in hesitancy about the safety and efficacy of vaccines has created an environment that calls for our urgent commitment to discussing the evidence-based benefits of vaccination with pregnant women.

INFLUENZA

During the 2018-19 season, an estimated 35.5 million people in the United States contracted influenza, and 16.5 million visited health care practitioners for related care. In the same season, more than 490,000 hospitalizations and 34,000 deaths were attributed to influenza (2). Among women of reproductive age, pregnant women account for more than a quarter of flu-associated hospitalizations each season (3). Influenza can be a devastating disease for pregnant women because of the increased risk of fetal demise (4) and preterm labor and preterm birth (5, 6). Influenza can also cause severe, life-threatening illness to pregnant women (7, 8). Influenza vaccination plays an important role in protecting pregnant women against such serious illness. Moreover, influenza vaccination during pregnancy also transfers antibodies to the fetus, helping to protect babies against flu before their own eligibility for the vaccination at 6 months (9).



AMERICAN ACADEMY OF
FAMILY PHYSICIANS



AMERICAN COLLEGE
of NURSE-MIDWIVES

With women, for a lifetime®



AWHONN
PROMOTING THE HEALTH OF
WOMEN AND NEWBORNS

In the United States, the influenza season typically lasts from October to May. The CDC recommends that all women who are, will, or could be pregnant during influenza season should receive an influenza vaccine during any trimester (1). The composition of the influenza vaccine typically changes annually to accommodate the strain(s) of the virus that are expected to be most prevalent that year, making it critical to receive an influenza vaccine each year (10).

PERTUSSIS

Pertussis (whooping cough) can be a deadly infection for infants and children. Most cases occur in infants less than two months old; babies in this age group account for 69% of pertussis deaths and 262-743 pertussis-related hospitalizations each year (3). Yet, infants are not eligible for the first pertussis containing vaccine until two months of age. As a result, newborns are best protected if their mothers received a Tdap vaccine during pregnancy.

Pregnant women should receive the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine during *each* pregnancy, between 27 weeks and 36 weeks of gestation. When a pregnant woman receives a Tdap vaccine, maternal antibodies are passed to the fetus, giving the infant a boost of protection at birth until they can receive their first pertussis-containing vaccine. The Tdap vaccine should be administered as early as possible in the 27-36-weeks-of-gestation window to maximize the maternal antibody response and passive antibody transfer to the fetus (11-14). Pregnant women should be counseled that, when given during the recommended time period, the Tdap vaccine is extremely effective at preventing pertussis in infants less than 2 months of age (15). Partners, family members, and infant caregivers should also receive the Tdap vaccine if they have not previously been vaccinated (14).

SAFETY

No evidence currently demonstrates that vaccinating pregnant women with inactivated virus, bacterial vaccines, or toxoids adversely affects the fetus. In fact, a growing body of data demonstrates the safety of these vaccines in pregnancy (13, 16-18). Influenza vaccination, for example, has been shown to reduce pregnant women's risk for influenza-associated hospitalizations by an average of 40%, thus demonstrating that pregnancy is in fact safer *because* of prenatal vaccination (3). Health care practitioners should point women to evidence-based resources and studies such as those referenced herein when they express doubts or questions about the safety of vaccines during pregnancy.

YOUR ROLE AND RESPONSIBILITIES

Collectively, the American Academy of Family Physicians; American College of Nurse-Midwives; American College of Obstetricians and Gynecologists; and Association of

Women's Health, Obstetric and Neonatal Nurses are deeply committed to improving immunization rates in pregnant women and ask that our members commit to the following:

1. For pregnant women, assess vaccine status and discuss which vaccines they should receive and when, ideally during the first prenatal visit.
2. Strongly recommend that all pregnant women and anyone who resides in their households receive an influenza vaccine annually.
3. Strongly recommend that all pregnant women receive a Tdap vaccine between 27 weeks and 36 weeks of gestation in each pregnancy, preferably during the earlier part of this time period.
4. If a pregnant woman declines vaccination, inquire about her reasons; reintroduce the discussion and offer the immunization at the next office visit.
5. Become educated on the safety and efficacy of vaccines during pregnancy and be comfortable communicating this information thoroughly to patients.

Making a strong recommendation is crucial to vaccine uptake. Routinely reviewing a woman's antepartum record will reveal important gaps in immunization status and prompt an open and fact-based dialogue. Addressing hesitancy about vaccines with firm data is important. Messaging to the community should consistently emphasize that getting vaccinated is the best step for preventing illness and that the inactivated (injectable) influenza and Tdap vaccines are safe to receive during pregnancy (17-20).

John Cullen, MD, FAAFP
Board Chair
American Academy of Family Physicians

Maureen G. Phipps, MD, MPH, FACOG
Chief Executive Officer
American College of Obstetricians and Gynecologists

Susan Stone, DNSc, CNM, FAAN, FACNM
President
American College of Nurse-Midwives

Rebecca Cypher, MSN, PNP
President
Association of Women's Health, Obstetric and Neonatal Nurses

This publication was supported by the Centers for Disease Control and Prevention of the U.S. Department of Health and Human Services (HHS) as part of a financial assistance award totaling \$500,000 with 100 percent funded by CDC/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by CDC/HHS, or the U.S. Government.

REFERENCES

- Centers for Disease Control and Prevention. Guidelines for vaccinating pregnant women. Atlanta, GA: CDC; 2016. Available at: <https://www.cdc.gov/vaccines/pregnancy/hcp-toolkit/guidelines.html>. Retrieved February 6, 2020.
- Centers for Disease Control and Prevention. Estimated influenza illnesses, medical visits, hospitalizations, and deaths in the United States — 2018–2019 influenza season. Atlanta, GA: CDC; 2020. Available at: <https://www.cdc.gov/flu/about/burden/2018-2019.html>. Retrieved February 6, 2020.
- Lindley MC, Kahn KE, Bardenheier BH, D'Angelo DV, Dawood FS, Fink RV, et al. Vital signs: burden and prevention of influenza and pertussis among pregnant women and infants - United States. *MMWR Morb Mortal Wkly Rep* 2019;68:885-92. Available at: https://www.cdc.gov/mmwr/volumes/68/wr/mm6840e1.htm?s_cid=mm6840e1_w. Retrieved February 6, 2020.
- Haberg SE, Trogstad L, Gunnes N, Wilcox AJ, Gjessing HK, Samuelsen SO, et al. Risk of fetal death after pandemic influenza virus infection or vaccination. *N Engl J Med* 2013;368:333-40. Available at: <https://www.nejm.org/doi/full/10.1056/NEJMoa1207210>. Retrieved February 6, 2020.
- Richards JL, Hansen C, Bredfeldt C, Bednarczyk RA, Steinhoff MC, Adjaye-Gbewonyo D, et al. Neonatal outcomes after antenatal influenza immunization during the 2009 H1N1 influenza pandemic: impact on preterm birth, birth weight, and small for gestational age birth. *Clin Infect Dis* 2013;56:1216-22. Available at: <https://academic.oup.com/cid/article/56/9/1216/294242>. Retrieved February 6, 2020.
- Pierce M, Kurinczuk JJ, Spark P, Brocklehurst P, Knight M. Perinatal outcomes after maternal 2009/H1N1 infection: national cohort study. *UKOSS. BMJ* 2011;342:d3214. Available at: <https://www.bmj.com/content/342/bmj.d3214.long>. Retrieved February 6, 2020.
- Oluyomi-Obi T, Avery L, Schneider C, Kumar A, Lapinsky S, Menticoglou S, et al. Perinatal and maternal outcomes in critically ill obstetrics patients with pandemic H1N1 Influenza A. *J Obstet Gynaecol Can* 2010;32:443-7. Available at: <https://www.sciencedirect.com/science/article/pii/S1701216316344978>. Retrieved February 6, 2020.
- Jamieson DJ, Honein MA, Rasmussen SA, Williams JL, Swerdlow DL, Biggerstaff MS, et al. H1N1 2009 influenza virus infection during pregnancy in the USA. *Novel Influenza A (H1N1) Pregnancy Working Group. Lancet* 2009;374:451-8. Available at: <https://www.sciencedirect.com/science/article/pii/S0140673609613040>. Retrieved February 6, 2020.
- Nunes MC, Madhi SA. Prevention of influenza-related illness in young infants by maternal vaccination during pregnancy. *F1000Res* 2018;7:122. Available at: <https://f1000research.com/articles/7-122/v1>. Retrieved February 7, 2020.
- Centers for Disease Control and Prevention. Selecting viruses for the seasonal influenza vaccine. Atlanta, GA: CDC; 2018. Available at: <https://www.cdc.gov/flu/prevent/vaccine-selection.htm>. Retrieved February 6, 2020.
- Winter K, Nickell S, Powell M, Hariman K. Effectiveness of prenatal versus postpartum tetanus, diphtheria, and acellular pertussis vaccination in preventing infant pertussis. *Clin Infect Dis* 2017;64:3-8. Available at: <https://academic.oup.com/cid/article/64/1/3/2404576>. Retrieved February 6, 2020.
- Furuta M, Sin J, Ng ESW, Wang K. Efficacy and safety of pertussis vaccination for pregnant women - a systematic review of randomised controlled trials and observational studies. *BMC Pregnancy Childbirth* 2017;17:390-2. Available at: <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-017-1559-2>. Retrieved February 6, 2020.
- McMillan M, Clarke M, Parrella A, Fell DB, Amirthalingam G, Marshall HS. Safety of tetanus, diphtheria, and pertussis vaccination during pregnancy: a systematic review. *Obstet Gynecol* 2017;129:560-73. Available at: https://journals.lww.com/greenjournal/fulltext/2017/03000/Safety_of_Tetanus_Diphtheria_and_Pertussis.25.aspx. Retrieved February 6, 2020.
- Update on immunization and pregnancy: tetanus, diphtheria, and pertussis vaccination. Committee Opinion No. 718. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2017;130:e153-7. Available at: https://journals.lww.com/greenjournal/fulltext/2017/09000/Committee_Opinion_No_718_Update_on_Immunization.49.aspx. Retrieved February 6, 2020.

15. Winter K, Cherry JD, Harriman K. Effectiveness of prenatal tetanus, diphtheria, and acellular pertussis vaccination on pertussis severity in infants. *Clin Infect Dis* 2017;64:9-14. Available at: <https://academic.oup.com/cid/article/64/1/9/2404575>. Retrieved February 6, 2020.
16. Polyzos KA, Konstantelias AA, Pitsa CE, Falagas ME. Maternal influenza vaccination and risk for congenital malformations: a systematic review and meta-analysis. *Obstet Gynecol* 2015;126:1075-84. Available at: https://journals.lww.com/greenjournal/FullText/2015/11000/Maternal_Influenza_Vaccination_and_Risk_for.24.aspx. Retrieved February 6, 2020.
17. Sperling RS, Riley LE. Influenza vaccination, pregnancy safety, and risk of early pregnancy loss. Immunization and Emerging Infections Expert Work Group. *Obstet Gynecol* 2018;131:799-802. Available at: <https://journals.lww.com/greenjournal/pages/articleviewer.aspx?year=2018&issue=05000&article=00007&type=Fulltext>. Retrieved February 6, 2020.
18. Influenza vaccination during pregnancy. ACOG Committee Opinion No. 732. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2018;131:e109-14. Available at: https://journals.lww.com/greenjournal/fulltext/2018/04000/ACOG_Committee_Opinion_No_732_Influenza.45.aspx. Retrieved February 6, 2020.
19. Maternal immunization. ACOG Committee Opinion No. 741. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2018;131:e214-7. Available at: https://journals.lww.com/greenjournal/FullText/2018/06000/Maternal_Immunization_ACOG_Committee_Opinion.60.aspx. Retrieved February 6, 2020.
20. Donahue JG, Kieke BA, King JP, Mascola MA, Shimabukuro TT, DeStefano F, et al. Inactivated influenza vaccine and spontaneous abortion in the Vaccine Safety Datalink in 2012-13, 2013-14, and 2014-15. *Vaccine* 2019;37:6673-81. Available at: <https://www.sciencedirect.com/science/article/pii/S0264410X19312447>. Retrieved February 6, 2020.

Copyright July 2020 by the American College of Obstetricians and Gynecologists. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, posted on the Internet, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from the publisher.