

By Targeting Obstetrical Providers, Massachusetts Initiative Increases Influenza Vaccinations Among Pregnant Women

After observing that pregnant women had higher hospitalization rates during the 2009 H1N1 outbreak, the Massachusetts health department partnered with the Massachusetts chapter of the American College of Obstetrician Gynecologists to increase influenza vaccinations among this at-risk population.

Massachusetts has traditionally had high rates of immunization. However, during and after the H1N1 influenza outbreak in the spring of 2009, the Massachusetts Department of Public Health (MA DPH) recognized that it needed to expand its efforts to reach multiple vulnerable populations, including pregnant women and hard-to-reach minority populations. In the first weeks of the H1N1 outbreak, MA DPH identified a significantly higher hospitalization rate among pregnant women: 41 percent compared to 7 percent of all confirmed cases. To increase influenza vaccinations and prompt treatment of pregnant women, particularly those who also belonged to minority populations, MA DPH engaged with multiple bureaus and programs in the department and enhanced partnerships with key external organizations, including the Massachusetts chapter of the American College of Obstetrician Gynecologists (MA ACOG).

Steps Taken:

- After recognizing the much higher risk of significant disease among pregnant women, MA DPH, in conjunction with the Massachusetts chapter of the American College of Obstetrician Gynecologists (ACOG), issued a clinical advisory on June 18, 2009. The advisory recommended that obstetrical providers exercise increased vigilance by closely monitoring their pregnant patients with flu symptoms and modifying their clinical assessments and treatment protocols for pregnant women with flu symptoms to ensure rapid initiation of antiviral therapy. For example, obstetrical providers developed protocols for screening pregnant women for flu symptoms and initiating treatment even before the office visit. The prompt treatment of symptomatic women emerged as a distinguishing feature between patients who recovered and those who did not.¹
- The MA DPH Immunization Program partnered with MA ACOG to connect with providers and identify barriers to immunization among obstetric providers. Barriers they identified included: (1) logistical/administrative, such as lack of familiarity with vaccine purchasing, storage, handling, and documentation, and billing and reimbursement; (2) behavioral, including immunizations not being part of clinical practice during training and inexperience with incorporating into clinical practice flow; and (3) beliefs and attitudes, such as skepticism regarding safety during pregnancy, belief that vaccination was more appropriate for internal medicine or other primary care settings, or concern about patients' reluctance.
- Women cited several barriers for not getting a flu shot during their pregnancy:
 - Their doctor did not mention it.
 - Concern about side effects for themselves or their baby.
 - They did not normally get a flu shot.

- They did not think the flu shot works and were not worried about getting the flu.
- The MA DPH immunization program also promoted the integration of primary care and public health by facilitating participation of obstetrical providers in the department's vaccine distribution system. Many of these providers had not participated in the MA DPH vaccine system before and required additional support and technical assistance on how to sign up and use it efficiently. In addition, the immunization program prioritized vaccine for obstetrical care sites as part of its risk-based distribution process.
- To alert the public to the special risk for pregnant women, MA DPH's communications team included messages regarding this increased risk in all of its [Flu Facts](#) radio, TV, and print public messages and education campaigns. These messages and materials were aimed at consumers, including pregnant women, school and childcare professionals, parents, and employers.
- To ensure that the messages reached pregnant women who were members of hard-to-reach minority communities, the messages were available in 10 languages: English, Arabic, Chinese, Haitian Creole, Khmer, Portuguese, Russian, Spanish, and Vietnamese. The outreach to underserved communities and non-English speakers was coordinated with the MA DPH Office of Health Equity. In addition to providing guidance about the framing and content of the communication, the MA DPH Office of Health Equity contributed to the selection of languages for translation, based on data from their regular surveys of hospital interpreter services across the state.

Results:

MA DPH gathered information on flu vaccinations acceptance, barriers, and predictors through its Pregnancy Risk Assessment Monitory Survey (PRAMS) in 2009-2010 and 2010-2011. The results highlight the key role that obstetrical providers can play in promoting flu vaccination among pregnant women.^{2,3}

- Women cited several barriers for not getting a flu shot during their pregnancy:
 - Their doctor did not mention it
 - Concern about side effects for themselves or their baby
 - They do not normally get a flu shot
 - They do not think the flu shot works and they were not worried about getting the flu
- After the MA DPH-MA ACOG initiative, fewer women who did not receive the flu shot reported that their reason for not getting it was that their doctor did not mention it (21 percent in 2010-11 versus 29 percent in 2009-10). This suggests that the joint MA DPH and MA ACOG outreach to obstetric providers was effective.
- MA PRAMS data also showed improvements in flu vaccination disparities by race/ethnicity, education, and insurance status:

PRAMS Data Support Importance of Obstetrical Providers in Promoting Vaccination Among Pregnant Women

- Provider recommendation of flu vaccine results in a **two-fold increase** in immunization of pregnant women: 75.8 % versus 31.6%
- The majority of pregnant women who received flu vaccine got it in their ob-gyn office: 71.6%

- Sixty-seven percent of black women and 73 percent of Hispanic women were immunized during their pregnancies during the 2010-11 flu season, compared with 53 percent and 65 percent, respectively, during the prior flu season.
- Sixty-four percent of women with less than a high school education and 69 percent of women insured by Medicaid were immunized during their pregnancies during the 2010-11 flu season, compared with 56 percent and 57 percent, respectively, during the prior flu season.

Lessons Learned:

- Success in increasing flu vaccination among pregnant women required the coordinated effort of multiple MA DPH bureaus, including infectious disease, family health and nutrition, and communications.
- The improved communication and interaction between obstetric providers resulted in sustained increases in the number of these providers who participate in the state's vaccine distribution program.
- To create a strong "push-pull" dynamic for vaccination, it is important to educate both pregnant women and obstetric providers about the importance and safety of vaccination during pregnancy.
- Public health departments can encourage obstetrical providers to give strong recommendations for vaccination of pregnant women and their families. Their input has a substantial influence on their patients.
- Public health departments can partner with provider groups to incorporate vaccination of pregnant women into routine clinical practice through:
 - Developing standing orders for flu vaccination of pregnant and post-partum women.
 - Establishing flu vaccination reminders in electronic medical record systems.
 - Offering vaccination at the earliest opportunity and throughout the entire flu season.
- A comprehensive flu vaccination public education campaign should include accurate, culturally appropriate information about vaccine safety and efficacy during pregnancy.

Next Steps:

- MA DPH will continue its collaborations with obstetrical providers, provider groups, and community-based organizations to maintain the flu vaccination initiative's momentum.
- MA DPH will also continue its surveillance and monitoring of vaccination rates among pregnant women so it can identify potential barriers to vaccination and develop appropriate strategies to address safety concerns and increase vaccination among groups with low rates.

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¹ Rasmussen SA, Jamieson DJ. "2009 H1N1 influenza and pregnancy – 5 years later." *N Engl J Med*. October 9, 2014. 1373-1375.

² Howland R, Lu E, Diop H. "Influenza vaccination among pregnant women – Massachusetts, 2009-2010." *MMWR*. November 1, 2013. 62:854-857. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6243a3.htm>. Accessed on 1-13-2015.

³ Ahluwalia IB, Ding H, Harrison L, *et al*. "Seasonal influenza vaccination coverage among women who delivered a live-born infant – 21 states and New York City, 2009-10 and 2010-11 influenza seasons." *MMWR*. December 13, 2013. 62:1001-1004. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6249a3.htm>. Accessed on 1-13-2015.