



SAN FRANCISCO PERINATAL & NEWBORN PERTUSSIS AND FLU COLLABORATIVE

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BEGINNINGS

- **Carol Schulte, LCSW, MBA**
SFDPH MCAH, Perinatal Services Coordinator
- **Cora Hoover, MD, MPH**
SFDPH, Communicable Disease Control and Prevention, Director

Meeting in 2014 to discuss collaboration.

Synergy!

Agreed to develop a collaborative to focus on decreasing the incidence of pertussis and flu with perinatal clients and newborns.

SAN FRANCISCO PERINATAL & NEWBORN PERTUSSIS AND FLU COLLABORATIVE

Members:

- SF DPH MCAH staff
- SF DPH Communicable Disease staff
- Anthem Blue Cross and San Francisco Health Plan (two Medi-Cal Managed Care Plans)
- Perinatal providers
- Zuckerberg San Francisco General pharmacist
- CPSP clinic staff

FIRST MEETINGS: PLANNING

- Began meeting July 2014, bi-monthly meetings.
- Prioritized pertussis due to pertussis epidemic.
- **Developed aim statement:**
To prevent the incidence of pertussis infections in newborns and infants.

ROOT CAUSE ANALYSIS

Brainstorming: Barriers to Tdap Immunization

- Patients
- Family/close contacts
- Providers
- Provider organizations and clinics
- Payors and health plans

STRATEGIES AND SOLUTIONS

Brainstorming: Possible strategies/solutions

- Technical assistance & vaccine supply
- Provider outreach
- Patient and community education
- Creative partnerships
- Quality improvement initiatives
- Institutional policies

STRATEGIES: HIGH IMPACT

- Solve logistics of **cocooning**: how to identify family members, and who pays for them.
- Promote pertussis **QI** measures.
- Develop accurate **data collection methods** to determine baseline Tdap immunization rates for all patients across San Francisco Health Network.
- **Academic detailing** (i.e., technical assistance for providers).
- **Standing orders or standing workflow** for OB patients: prenatal, postpartum and labor and delivery.

STRATEGIES: LOWER IMPACT

- Systematic **communication** to providers (i.e., list serves).
- For prenatal providers: SFHP/SFGH workshop; **billing** practices for prenatal Tdap.
- Provide **simple messages for patients** in multiple languages.

TDAP IN THE THIRD TRIMESTER: HIGH VACCINE EFFECTIVENESS

Effectiveness of maternal pertussis vaccination in England: an observational study



Gayatri Amirthalingam, Nick Andrews, Helen Campbell, Sonia Ribeiro, Edna Kara, Katherine Donegan, Norman K Fry, Elizabeth Miller, Mary Ramsay

Summary

Background In October, 2012, a pertussis vaccination programme for pregnant women was introduced in response to an outbreak across England. We aimed to assess the vaccine effectiveness and the overall effect of the vaccine programme in preventing pertussis in infants.

Methods We undertook an analysis of laboratory-confirmed cases and hospital admissions for pertussis in infants between Jan 1, 2008, and Sept 30, 2013, using data submitted to Public Health England as part of its enhanced surveillance of pertussis in England, to investigate the effect of the vaccination programme. We calculated vaccine effectiveness by comparing vaccination status for mothers in confirmed cases with estimates of vaccine coverage for the national population of pregnant women, based on data from the Clinical Practice Research Datalink.

Findings The monthly total of confirmed cases peaked in October, 2012 (1565 cases), and subsequently fell across all age groups. For the first 9 months of 2013 compared with the same period in 2012, the greatest proportionate fall in confirmed cases (328 cases in 2012 vs 72 cases in 2013, -78%, 95% CI -72 to -83) and in hospitalisation admissions (440 admissions in 2012 vs 140 admissions in 2013, -68%, -61 to -74) occurred in infants younger than 3 months, although the incidence remained highest in this age group. Infants younger than 3 months were also the only age group in which there were fewer cases in 2013 than in 2011 (118 cases in 2011 vs 72 cases in 2013), before the resurgence. 26 684 women included in the Clinical Practice Research Datalink had a livebirth between Oct 1, 2012 and Sept 3, 2013; the average vaccine coverage before delivery based on this cohort was 64%. Vaccine effectiveness based on 82 confirmed cases in infants born from Oct 1, 2012, and younger than 3 months at onset was 91% (95% CI 84 to 95). Vaccine effectiveness was 90% (95% CI 82 to 95) when the analysis was restricted to cases in children younger than 2 months.

Interpretation Our assessment of the programme of pertussis vaccination in pregnancy in England is consistent with high vaccine effectiveness. This effectiveness probably results from protection of infants by both passive antibodies and reduced maternal exposure, and will provide valuable information to international policy makers.

Funding Public Health England.

Introduction

In the UK, pertussis-containing vaccines have been used in infancy since 1957, at an accelerated schedule (at 2, 3, and 4 months of age) since 1990, and with acellular pertussis since 2004.¹ High coverage during the past two decades, combined with the 2001 introduction of a preschool booster for acellular pertussis from 3 years and 4 months of age, has achieved good disease control without additional boosters at older ages.¹ However, in late 2011, a national increase in confirmed pertussis cases was reported, initially restricted to adolescents and adults, but extending to young infants in 2012.² Resurgence of pertussis has recently been reported in several countries,³⁻⁵ but the reasons are not yet fully understood. The improved availability of methods to confirm diagnosis (eg, serology and PCR), increased awareness among health professionals, and waning natural or vaccine immunity during periods of low pertussis activity have been suggested.⁵ Changes in *Bordetella pertussis* organisms and decreased duration of protection or effectiveness against transmission with acellular pertussis vaccines

(by comparison with whole-cell vaccines) have also been described.⁵

The high rates of disease in infants younger than 3 months and a concomitant increase in pertussis-related infant deaths led to an urgent review of potential control strategies by the UK's Joint Committee on Vaccination and Immunisation. In September, 2012, the UK Department of Health recommended a temporary programme to offer a five-component acellular-pertussis-containing vaccine, Repevax (Sanofi Pasteur MSD, Maidenhead, UK)—a diphtheria, tetanus, pertussis (acellular, component), and poliomyelitis (inactivated) vaccine, also known as dTaP/IPV—to all women between 28 and 38 weeks of pregnancy.⁶ Repevax was available without delay in sufficient quantities required for the UK programme. Although the WHO Global Advisory Committee on Vaccine Safety has pronounced the safety of vaccination with inactivated vaccines in pregnancy, the effectiveness of a maternal immunisation programme for pertussis has not been shown.⁷ We aimed to provide the first estimates of the effectiveness of a maternal pertussis vaccination programme in prevention of infant disease in England.

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WHAT ARE THE THIRD TRIMESTER TDAP RATES IN SAN FRANCISCO?

- Statewide surveys reported less than ideal rates.
- Ana Delgado, CNM, Mission Neighborhood Health Center, did a quick Tdap study and presented at the December 2014 Collaborative meeting. Definitions for the denominator and numerator, results and strategies. Data!
- How can we encourage each prenatal site to get their third trimester Tdap baseline, assess barriers, develop strategies, make and measure changes?

LITERATURE SEARCH: MANY TOOLS

- **Tools!** Searched for practical tools to help providers implement QI and/or improve immunization rates. None completely addressed our specific need.
- **One template doesn't fit all!** Each prenatal provider is unique. Each practice must identify their own root causes and strategies.
- **Distribute the tools?** How to share the practical tools we developed ourselves and identified from other sources?

QUALITY IMPROVEMENT

- Quality Improvement (QI) is fundamental and required in all clinical settings.
- Leverage the existing QI process to target the issue of Tdap in the third trimester.
- QI could be the vehicle to “move the needle” to improve Tdap in the third trimester in prenatal settings.

TDAP IN THE THIRD TRIMESTER QI TOOLKIT

- Two Preventive Medicine Residents with SFDPH Communicable Disease.
Monica Kaitz, MD, MPH
Sona Aggarwal, MD, MPH
- Key informant interviews.
- Reviewed literature.
- Drafted a toolkit for prenatal providers to guide them in identifying their baseline, conducting a root cause analysis, assessing strategies, and implementing and measuring changes.
- The draft was reviewed by many including prenatal care providers and clinic staff.

PRENATAL TDAP QI TOOLKIT

www.sfdcp.org/tdaptoolkit

PRENATAL TDAP VACCINATION TOOLKIT

This toolkit was created to assist prenatal care providers to improve pertussis vaccination rates in their practices. Implementation of this toolkit may also help meet requirements for specialty board maintenance of certification (MOC).



POPULATION HEALTH DIVISION
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH



PRENATAL TDAP QI TOOLKIT

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POSTERS: SIMPLE MESSAGES, LOW LITERACY, THREE LANGUAGES

Pregnant?

Get the whooping cough (pertussis) vaccine, called Tdap, during each pregnancy.



The protection you get from the Tdap shot passes to your baby during pregnancy. This is the only way to protect your baby during the first few months of life.

Whooping cough

is dangerous for babies. It may cause:

- Coughing fits
- Breathing problems
- Hospitalization
- Death

Family members who will be in close contact with you or your baby should also get the vaccine. Protect yourself and your baby. Get the Tdap vaccine, in the 3rd trimester.

¿Está embarazada?

Póngase la vacuna contra la tos ferina (o pertussis), conocida como la vacuna Tdap, en cada embarazo.



La protección que obtiene de la vacuna Tdap se transmite a su bebé durante el embarazo. Esta es la única manera de proteger a su bebé durante los primeros meses de vida.

La tos ferina

es peligrosa para los bebés. Puede causar:

- ataques de tos
- problemas para respirar
- hospitalización
- la muerte

Los familiares que tengan contacto cercano con usted o su bebé también deben ponerse la vacuna. Protéjase usted y a su bebé. Aplíquese la vacuna Tdap en el 3er trimestre de embarazo.

懷孕了？

請在每次懷孕時注射名為Tdap的哮喘（百日咳）疫苗。

若您在懷孕期間接種Tdap疫苗，其保護效果可傳遞給嬰兒。這是在出生數月內保護嬰兒的唯一方式。

哮喘

對嬰兒來說很危險。此病可能會導致：

- 咳嗽發作
- 呼吸問題
- 住院
- 死亡



將與嬰兒密切接觸的人也應接種此疫苗。保護您自己和嬰兒。在第三孕期接種疫苗。

www.sfdcp.org/tdaptoolkit

TOOLKIT: GETTING THE WORD OUT

- Email blasts: CPSP Clinics, County Perinatal Coordinators, MCAH Directors, CDCP Directors
- Informing partners through various mechanisms:
 - Webinar
 - Website: www.sfchcp.org/tdaptoolkit
 - Women's Health Advisory Council (OB chiefs from San Francisco's five delivery hospitals) presentation
 - Comprehensive Perinatal Services Program (CPSP) Roundtable and ongoing follow-up with CPSP clinics
 - State MCAH webinar

NEXT STEPS

- Work with providers to encourage implementation of QI projects focusing on Tdap in the third trimester.
- Pursue additional strategies to address Tdap immunization and pertussis prevention during pregnancy and the newborn period.
- Conduct root cause analysis and develop strategies targeting flu immunizations during pregnancy.

BENEFITS OF COLLABORATION

- Synergy!
- MCAH has a strong relationship with perinatal providers, who are not necessarily the primary partners for Communicable Disease.
- Relationships (MCAH and Communicable Disease) are formed that can impact future work (e.g., Zika).
- Partnership between county MCAH and Communicable Disease can be powerful and save lives.

THANK YOU!

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