Antepartum Cocooning With Tdap Vaccine to Prevent Pertussis and Promote Maternal, Fetal and Neonatal Outcomes
Background - 1

- Pertussis is the only vaccine preventable disease on the rise worldwide for more than 20 years.

- Adolescents and adults with waning immunity have become today's vectors of pertussis.

- Pertussis morbidity and mortality are highest in infants less than 3 months of age.

- Family members and close contacts of the newborn are the most common source of infection, when a source can be identified.
Many states have had outbreaks of pertussis in recent years including:

- Arizona, Delaware, Illinois, Kentucky, Michigan, Minnesota, Ohio, Oregon, Pennsylvania, South Carolina, Texas, and Wisconsin

Best known is the California epidemic of 2010:

- 9,154 cases of pertussis
- 10 infant deaths; all less than 3 months of age
- New recommendations for Tdap were instituted by the California Department of Public Health in 2010
- The deaths stopped
Since 2005, ACIP recommendations for Tdap in pregnancy have been for women:
- before becoming pregnant
- in the immediate postpartum period

October 21, 2011 ACIP recommendations changed to (PREFERRED):
- administer Tdap during pregnancy, preferably during the third or late second trimester (after 20 weeks’ gestation)
- if not administered during pregnancy, Tdap should be administered immediately

These were the recommendations made in 2010 by the California Department of Public Health
Benefits of Tdap Vaccine Administered During Pregnancy

- Pregnant women protected sooner from:
  - respiratory disease in late pregnancy
  - increased risk of preterm labor and birth

- Fetus protected by transplacental antibodies

- Neonate has passive immunity by birth:
  - protection during most vulnerable period of life
  - active immunity begins with DTaP series at 2, 4, 6, 15-18 months and 4-6 years of life
An Opportunity Presents Itself

- Many OB provider sites (OBs, FPs, CNMs, PAs) across Nevada agreed to offer no-cost H1N1 to pregnant women (2009-2010); “novice immunizers”

- 30 OB provider sites across Nevada agreed to offer no-cost influenza vaccine to pregnant women (2010-2011); “increasingly confident immunizers”

- 29 OB provider sites across Nevada agreed to offer no-cost influenza AND Tdap to pregnant women (2011-2012); “gutsy and maturing immunizers”
Populations Served Through This Project

- **Diverse populations across Nevada:**
  - Urban, rural and frontier communities
  - Hispanic, white, African American and Asian pregnant women
  - Spectrum of economic backgrounds
  - Spectrum of educational backgrounds
  - Spectrum of OB provider sites
Enrollment in a project to offer no-cost influenza AND Tdap vaccines to pregnant women was offered to the 30 OB provider sites from the 2010-2011 influenza project by the Nevada State Immunization Program (NSIP)

The updated ACIP recommendations were given to the OB provider sites by NSIP

Encouragement to follow the science and ACIP recommendations was provided by NSIP

Sites began ordering (317) vaccines from NSIP and administering influenza AND Tdap vaccine to pregnant women across Nevada
NSIP Expectations of This Project

- There would be hesitation on the part of OB providers and pregnant women about Tdap during pregnancy in the beginning; a learning curve for both groups

- Further education and encouragement would be needed to make progress in this new area of OB immunization history

- We would be pleased to see any progress with antepartum cocooning and wanted to know how many pregnant women and neonates we could protect from pertussis in the first year
Our Early Results

- Latest ACIP recommendation on Tdap in pregnancy was only published in MMWR on October 21, 2011:

  - Initial results only represent Tdap vaccine administered from October 2011-February 2012:
    - Influenza vaccine – 1,397 doses given
    - Tdap vaccine – 539 doses given

- We need at least one full year of data collection to see how effective OB providers can be in antepartum cocooning with influenza AND Tdap
Early Results of OB Provider as Immunizer Project

Doses of Influenza and Tdap Vaccines Given

<table>
<thead>
<tr>
<th>Month</th>
<th>Influenza</th>
<th>Tdap</th>
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<tbody>
<tr>
<td>Oct-11</td>
<td>500</td>
<td>100</td>
</tr>
<tr>
<td>Nov-11</td>
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<td>50</td>
</tr>
<tr>
<td>Dec-11</td>
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<td>100</td>
</tr>
<tr>
<td>Jan-12</td>
<td>200</td>
<td>150</td>
</tr>
<tr>
<td>Feb-12</td>
<td>100</td>
<td>200</td>
</tr>
</tbody>
</table>
Further Data We Want to Collect

- We need to collect demographic data on the pregnant women immunized.
- We need to compare cases of infant pertussis in Nevada prior to and after antepartum Tdap immunization of pregnant women.
- We need to compare types of providers of OB care as vaccine champions and immunizers.
Types of OB Providers in the Project

OB Provider Type

- OB
- FP MD/CO
- CNM
- APN
- PA
Conclusion

- After only 4 months of OB providers offering no-cost influenza and Tdap vaccine to pregnant women, we see a gradual increase in doses of Tdap administered, but are only 1/3 through our first year of this project.

- We have had a few more OB provider sites request involvement in this project and would like to increase this number and the number of pregnant women and neonates we can protect.

- More complete information will be available in November 2012....
Contact and Special Thanks!

If you have questions about this presentation, please contact Kathie Lloyd MSN, CNM, CNS, Immunization Special Projects Manager:
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Thank you to the following:
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Centers for Disease Control and Prevention
Nevada State Health Division
OB Providers Across Nevada