Vaccinations for Mothers and Infants: Weaving a Safety Net
Disclosures

• No financial disclosures to report
• We are fully vaccinated

Many thanks to Dr. Elizabeth Rosenblum for inspiring this talk and providing some of the slides.
* National Infant Immunization Week *

- April 27-May 4, 2019
- Annual observance to highlight the importance of protecting infants

National Infant Immunization Week
IMMUNIZATION. POWER TO PROTECT.
25 YEARS

California Department of Public Health
Objectives

• Overview of vaccine recommendations
• Community immunity (safety net part 1)
• The importance of vaccinating pregnant women
• Your role (safety net part 2)
• Communication tips
• Practice
• Resources
10 Greatest Public Health Achievements in the 20th Century

1. Immunizations
2. Motor Vehicle Safety
3. Workplace Safety
4. Infectious DZ. Control
5. Declines in DEATHS: Heart Dz. and Stroke
6. Safer & Healthier Food
7. Healthier Moms & Babies
8. Family Planning
9. Water Fluoridation
10. Tobacco Control

California Department of Public Health
Vaccine-Preventable Diseases (VPDs)

- Pertussis (whooping cough)
- Influenza (flu)
- Measles
- Mumps
- Rubella
- Hepatitis A and B
- Hib
- Tetanus
- Diphtheria
- Meningococcal meningitis
- Rotavirus
- Varicella (Chicken pox)
- Polio
- HPV infection (→ cancers)
Can you identify these?
VPDs in the News

Soaring US measles cases near 700, set record
Jim Wannop | Editorial Director | CIDRAP News | Apr 26, 2019
A significant factor in a New York outbreak is misinformation about vaccine safety, the CDC says.

Flu activity in California higher than nationwide
March 13, 2019
Nationwide, influenza activity was observed at the end of February and Prevention experts the high level of activity to continue.

Orange County baby dies of whooping cough
By: EDDIE KUDIANA | 2/18/2022 | 2:00 PM
A baby in Orange County has died of whooping cough, marking the first death from the disease this year in the state, California health officials said Thursday.

Infant dies of whooping cough in San Bernardino County
February 25, 2022
A 4-month-old infant died of whooping cough in San Bernardino County.

San Diego State University Student Diagnosed With Mumps
February 24, 2022
San Diego State University sent an email to students Friday warning that a student had been diagnosed with mumps and contagious.

Two unvaccinated pregnant women hospitalized with flu complications
December 29, 2015
Two pregnant women in San Diego County have been hospitalized due to flu complications, the county’s Health and Human Services Agency announced Wednesday.

A 40-year-old woman spent 16 days in the intensive care unit and a 30-year-old woman spent nine days in the ICU. Both women were unvaccinated, in their third trimesters and contracted influenza A. According to the Centers for Disease Control and Prevention, women have some of the highest risk of developing flu complications if they become infected.
How can we measure success?

• When we see outbreaks, it means there’s a hole in the safety net.

• When prevention is successful, it is “hidden” or “invisible.”

• Immunization levels are a good indicator of how we are doing at preventing disease in our community.
# Recommended IZ Schedule - 2019

0 through 18 years

## Table 1

**Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2019**

These recommendations must be read with the Notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Table 1. To determine minimum intervals between doses, see the catch-up schedule (Table 2). School entry and adolescent vaccine age groups are shaded in gray.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Birth</th>
<th>1 mo</th>
<th>2 mos</th>
<th>3 mos</th>
<th>4 mos</th>
<th>6 mos</th>
<th>9 mos</th>
<th>12 mos</th>
<th>15 mos</th>
<th>18 mos</th>
<th>19-23 mos</th>
<th>2-3 yrs</th>
<th>4-6 yrs</th>
<th>7-10 yrs</th>
<th>11-12 yrs</th>
<th>13-15 yrs</th>
<th>16 yrs</th>
<th>17-18 yrs</th>
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<tbody>
<tr>
<td>Hepatitis B (HepB)</td>
<td>1st</td>
<td>2nd</td>
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<td>Rotavirus (RV)</td>
<td>1st</td>
<td>2nd</td>
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<tr>
<td>Diphtheria, tetanus, &amp; acellular pertussis (DTaP)</td>
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<td>Haemophilus influenza type b (Hib)</td>
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<td>3rd or 4th</td>
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<td>Pneumococcal conjugate (PCV13)</td>
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<tr>
<td>Inactivated poliovirus (IPV&lt;18 yrs)</td>
<td>1st</td>
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<td>Influenza (IVI)</td>
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<td>Measles, mumps, rubella (MMR)</td>
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<td>Hepatitis A (HepA)</td>
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<td>Meningococcal (MenACWY-D)</td>
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<td>Tetanus, diphtheria, &amp; acellular pertussis (Tdap)</td>
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<td>Human papillomavirus (HPV)</td>
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<td>Pneumococcal polysaccharide (PPSV23)</td>
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</table>

**Legend:**
- Range of recommended ages for all children
- Range of recommended ages for catch-up immunization
- Range of recommended ages for certain high-risk groups
- Range of recommended ages for non-high-risk groups that may receive vaccine, subject to individual clinical decision-making
- No recommendation
# Recommended 2019 IZ Schedule

**Parents’ Version**

## 2019 Recommended Immunizations for Children from Birth Through 6 Years Old

<table>
<thead>
<tr>
<th>Age</th>
<th>Birth</th>
<th>1 month</th>
<th>2 months</th>
<th>4 months</th>
<th>6 months</th>
<th>12 months</th>
<th>15 months</th>
<th>18 months</th>
<th>19–23 months</th>
<th>2–3 years</th>
<th>4–6 years</th>
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<tbody>
<tr>
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<td>HepB</td>
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<td>DTaP</td>
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<td>PCV13</td>
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<td>Influenza (Yearly)*</td>
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<td>MMR</td>
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<td></td>
<td>Varicella</td>
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<td></td>
<td>HepA⁹</td>
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</tbody>
</table>

**Is your family growing?** To protect your new baby against whooping cough, get a Tdap vaccine. The recommended time is the 2nd through 36th week of pregnancy. Talk to your doctor for more details.

Shaded boxes indicate the vaccine can be given during shown age range.

**NOTE:**
- If your child misses a shot, you don't need to start over. Just go back to your child's doctor for the next shot.
- Talk with your child's doctor if you have questions about vaccines.

**FOOTNOTES:**
1. Two doses given at least four weeks apart are recommended for children age 6 months through 6 years of age who are getting an influenza (H3N2) vaccine for the first time and for some other children in this age group.
2. Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 months after the first dose. HepA vaccination may be given to children 12 months and older to protect against hepatitis A. Children and adolescents who did not receive the HepA vaccine and are at high risk should be vaccinated against hepatitis A.
3. If your child has any medical conditions that put him at risk for infection or is traveling outside the United States, talk to your child's doctor about additional vaccines that he or she may need.

For more information, call toll-free 1-800-CDC-INFO (1-800-232-4636) or visit [CDC website](https://www.cdc.gov/vaccines/parents).

**U.S. Department of Health and Human Services**

**Centers for Disease Control and Prevention**

**AAFP (American Academy of Family Physicians)**

**American Academy of Pediatrics**

**Dedicated to the Health of All Children**

See back page for more information on vaccine-preventable diseases and the vaccines that prevent them.
# Recommended IZ Schedule - 2019

## 19 years and older

### Table 1: Recommended Adult Immunization Schedule by Age Group

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>19-21 years</th>
<th>22-26 years</th>
<th>27-49 years</th>
<th>50-64 years</th>
<th>≥65 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza inactivated (IV) or</td>
<td></td>
<td></td>
<td>1 dose annually</td>
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<td></td>
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<tr>
<td>Influenza recombinant (RIV)</td>
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<tr>
<td>Influenza live attenuated (LAIV)</td>
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<td></td>
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<tr>
<td>Tetanus, diphtheria, pertussis (Tdap or Td)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 dose Tdap, then Td booster every 10 yrs</td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td></td>
<td></td>
<td></td>
<td>1 or 2 doses depending on indication (if born in 1957 or later)</td>
<td></td>
</tr>
<tr>
<td>Varicella (VAR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 doses (if born in 1980 or later)</td>
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<tr>
<td>Zoster recombinant (RZV) (preferred)</td>
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<td></td>
<td></td>
<td></td>
<td>2 doses or</td>
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<tr>
<td>Zoster live (ZVL)</td>
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<td></td>
<td></td>
<td>1 dose</td>
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<tr>
<td>Human papillomavirus (HPV) Female</td>
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<tr>
<td>Human papillomavirus (HPV) Male</td>
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<tr>
<td>Pneumococcal conjugate (PCV13)</td>
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<td>1 dose</td>
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<tr>
<td>Pneumococcal polysaccharide (PPSV23)</td>
<td></td>
<td></td>
<td></td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
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<tr>
<td>Hepatitis A (HepA)</td>
<td></td>
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<td></td>
<td>2 or 3 doses depending on vaccine</td>
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<tr>
<td>Hepatitis B (HepB)</td>
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<td></td>
<td>2 or 3 doses depending on vaccine</td>
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<tr>
<td>Meningococcal A, C, W, Y (McrACWY)</td>
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<td></td>
<td>1 or 2 doses depending on indication, then booster every 5 yrs if risk remains</td>
<td></td>
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<tr>
<td>Meningococcal B (MenB)</td>
<td></td>
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<td></td>
<td>2 or 3 doses depending on vaccine and indication</td>
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<tr>
<td><em>Haemophilus influenzae</em> type b (Hib)</td>
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<td></td>
<td>1 or 3 doses depending on indication</td>
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</tr>
</tbody>
</table>

- Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection
- Recommended vaccination for adults with an additional risk factor or another indication
- No recommendation
### Recommended IZ Schedule - 2019

19 years and older – *medical conditions*

#### Table 2: Recommended Adult Immunization Schedule by Medical Condition and Other Indications
United States, 2019

<table>
<thead>
<tr>
<th>Vaccine / Condition</th>
<th>HIV Infection CD4 count</th>
<th>Asplenia, complement deficiencies</th>
<th>End-stage renal disease, on hemodialysis</th>
<th>Heart or lung disease, alcoholism</th>
<th>Chronic liver disease</th>
<th>Diabetes</th>
<th>Health care personnel*</th>
<th>Men who have sex with men</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV or RIV or LAIV</td>
<td>CONTRAINDICATED</td>
<td>PRECAUTION</td>
<td>CONTRAINDICATED</td>
<td>CONTRAINDICATED</td>
<td>CONTRAINDICATED</td>
<td>CONTRAINDICATED</td>
<td>1 dose annually</td>
<td>1 dose annually</td>
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<tr>
<td>Tdap or Td</td>
<td>1 dose Tdap each pregnancy</td>
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<td></td>
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<td></td>
<td>1 dose annually</td>
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<tr>
<td>MMR</td>
<td>CONTRAINDICATED</td>
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<td>VAR</td>
<td>CONTRAINDICATED</td>
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<td>2 doses</td>
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<td>RZV (preferred) or ZVL</td>
<td>DELAY</td>
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<td>2 doses at age ≥50 yrs</td>
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<td>1 dose at age ≥60 yrs</td>
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<td>HPV Female</td>
<td>DELAY</td>
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<td>3 doses through age 26 yrs</td>
<td>2 or 3 doses through age 26 yrs</td>
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<tr>
<td>HPV Male</td>
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<td></td>
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<td>2 doses through age 21 yrs</td>
<td>2 or 3 doses through age 26 yrs</td>
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<tr>
<td>PCV13</td>
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<td>1 dose</td>
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<td>PPSV23</td>
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<td></td>
<td>1, 2, or 3 doses depending on age and indication</td>
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<tr>
<td>HepA</td>
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<td>2 or 3 doses depending on vaccine</td>
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<td>HepB</td>
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<td>2 or 3 doses depending on vaccine</td>
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<td>MenACWY</td>
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<td>1 or 2 doses depending on indication, then booster every 5 yrs if risk remains</td>
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<tr>
<td>MenB</td>
<td>PRECAUTION</td>
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<td>2 or 3 doses depending on vaccine and indication</td>
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<tr>
<td>Hib</td>
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<td></td>
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<td></td>
<td>3 doses HSCT recipients only</td>
<td>1 dose</td>
</tr>
</tbody>
</table>

*Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection.

*Recommended vaccination for adults with an additional risk factor or another indication.

*Precaution—vaccine might be indicated if benefit of protection outweighs risk of adverse reaction.

*Delay vaccination until after pregnancy if vaccine is indicated.

*Contraindicated—vaccine should not be administered because of risk for serious adverse reaction.

*No recommendation.
Community Immunity

A certain level of protection is necessary to protect those who can’t be vaccinated.

IT TAKES A COMMUNITY
TO PROVIDE IMMUNITY

Getting vaccinated protects you and others you care about such as infants, people with cancer, and anyone with a compromised immune system.

95%
Up to 95% of people must be vaccinated to stop the spread of measles.

VACCINATE YOUR FAMILY

California Department of Public Health
WHY DOES MY CHOICE MATTER TO OTHERS?

It matters because of the concept of “herd immunity.” Here’s how it works:

- **Not immunized but still healthy**
  - When no one is immunized ... 
    - disease spreads through the population.

- **Immunized and healthy**
  - When some of the population is immunized ... 
    - disease spreads through some of the population.

- **Not immunized, sick and contagious**
  - When most of the population is immunized ... 
    - spread of the disease is constrained.
Community Immunity

The number of people that one sick person will infect (on average) is called $R_0$. Here are the maximum $R_0$ values for a few viruses.

- Hepatitis C: 2
- Ebola: 2
- HIV: 4
- SARS: 4
- Mumps: 10
- Measles: 18
The W in WIC: Women

- Healthy babies start with healthy moms
- Antibodies pass from mom to baby during pregnancy
- Recommendations:
  - Annual flu shot, regardless of trimester
  - Tdap in 3rd trimester, regardless of prior vaccinations
Flu Vaccine Protects Pregnant Women

• Flu vaccine is recommended for everyone 6 months and older
• Can give in any trimester
• Pregnant women are much more vulnerable to serious complications of flu, including pneumonia
• Large scientific studies show it’s safe & effective
Flu Vaccine Protects the Baby

• Studies have shown increases in bad outcomes when the woman had flu during pregnancy
  • Preterm birth
  • Low birth weight
  • Fetal death
  • Birth defects

• Babies whose moms receive flu vaccine during pregnancy are 70% less likely to get the flu and be hospitalized in the first 6 months of life
Pertussis = Whooping Cough

- “100 day cough”
- Very infectious
- Paroxysmal cough: gasping, gagging, vomiting
- Rarely causes serious illness in older kids/adults
- Pertussis in babies looks different:
  - Can be fatal
  - Cough may be mild
  - Baby may have apnea
  - Complications can include encephalitis, seizures, pneumonia
Tdap During Pregnancy Protects the Baby

• Women should receive Tdap between week 27-36 of EACH pregnancy
• Babies whose moms receive Tdap during pregnancy are 90% less likely to get pertussis and 95% less likely to die from pertussis.
• Vaccination during pregnancy is much more effective than postpartum vaccination.
• Large scientific studies show the vaccine is safe.
People of all ages need WHOOPING COUGH VACCINES

- **DTaP** for young children:
  - 2, 4, and 6 months
  - 15 through 18 months
  - 4 through 6 years
- **Tdap** for preteens:
  - 11 through 12 years
- **Tdap** for pregnant women:
  - During the 27-36th week of each pregnancy
- **Tdap** for adults:
  - Anytime for those who have never received it

[www.cdc.gov/whoopingcough]
Prenatal Tdap Coverage Estimates in California: Maternal and Infant Health Assessment, 2016*

*The Maternal and Infant Health Assessment (MIHA) is an annual population-based survey of postpartum women. Percentages are weighted to represent all women with a live birth in 2016 in California.

Any Questions?
Weaving the Safety Net

• Who
  • Community Partners
  • Local health department IZ Program
  • Immunization coalitions

• What
  • Clinical resources
  • Educational resources

• Where
  • Vaccines For Children providers
  • Local clinics

• Why
  • Vaccines save lives
  • Prevention saves money and heartbreak

• How
  • Stay up-to-date with current and accurate information
  • Ask for help
Your Job

- Provide a strong recommendation
- Reinforce the message at every visit
- Walk the walk
  - Make sure you’re up-to-date
  - Take pride in your health
  - Share your stories and images
- Provide info about where patients can get vaccinated
- Encourage your coworkers to stay up-to-date
  - Group photos
  - Friendly competition with other WIC offices
Main reasons parents who planned to delay or not to get a vaccine for their child changed their minds.

- Information or assurances from health care provider (40%)
- Just thought more about it (20%)
- Information from some other source (15%)
- Doctor refused to treat/day care refused to admit non-immunized child (10%)
- Discussion with spouse or relative (5%)
- Other (5%)
- Do not know/refused (5%)

Provide a strong recommendation

I want to make sure we touch base regarding the vaccines you need to keep you and your baby healthy.

Getting vaccinated during pregnancy is the best way to protect you and your baby.
Reinforce the message

Babies are particularly vulnerable because they haven’t built up antibodies against these diseases.

I want you and your baby to be protected and safe.
Provide accurate information

Numerous studies have shown that vaccines are safe for pregnant women and their babies.

If you don’t know where to get shots, I can help you...

Vaccines keep children healthy so they can spend more time learning, growing, and playing!
Walk the walk

I’m fully vaccinated.

I want to keep myself, my loved ones, and my clients healthy.
Work as a team

Every year, as soon as everyone gets their flu shot, we have a celebration!

WIC staff are vaccinated so we don’t pass along diseases to the moms and children in our program.

It’s especially important for us to be up to date on all our shots. People are counting on us!
Communication Tips

• Make it easy to agree
  • Be supportive and encouraging
  • Find common ground
  • Avoid arguments and debates

• Frame vaccines as the norm
  • Be confident and clear
  • “Lila is due for her 4 month shots.”

• Appeal to the parent’s identity
  • “…good parent…”
  • “…want to keep baby healthy ….”

• Choose positive words
  • “safe”
  • “protection”
  • “healthy”
Less Successful Strategies

• “Myth-busting”
• Scolding
• Arguing
• Scare tactics

Research studies have shown that fear-based messages increase vaccine hesitancy.

If a parent strongly objects to vaccination, share informational resources and refer him or her back to their PCP/Prenatal care provider.
Let’s practice!

• Team up
• Take turns
• Sample situations
  • First pregnancy and has lots of general concerns
  • Pregnant client worried that getting a vaccine will harm her baby
  • Believes the flu shot gives you the flu
  • Afraid baby will have an adverse reaction to his two-month shots

Cues:

Make her feel comfortable
Vaccines are the norm
She’s a good parent
Use positive words
Let’s process
Helpful Websites

CDC.gov
- Immunization Schedules
- Training tools and resources

EZIZ.org
- Vaccines For Children (VFC) guidance
- Disease-specific resources
- Educational and promotional tools

ShotsForSchool.org
- Childcare and school info
- downloadable tools and resources

CDPH
- Info on statewide programs
- Newsworthy health topics
Pertussis Prevention Resources on EZIZ.org

Whooping Cough: What You Need to Know

What is Whooping Cough?
- Whooping cough also called pertussis is a highly contagious disease.
- It spreads easily when a person coughs or sneezes.
- It can be serious for young children and pregnant women.

What are the symptoms of whooping cough?
- A dry cough that gets worse over time.
- A whoop as part of a coughing attack.
- Fatigue.

Prevention is Key
- Get vaccinated.
- Wash your hands.
- Cover your nose and mouth when you cough or sneeze.

Expecting?
Protect yourself and your baby against flu and whooping cough!

You may not realize it, but changes to your body during pregnancy put you and your baby at risk for serious complications from flu or whooping cough. Getting flu or whooping cough when you are pregnant can help protect you and your baby against these serious diseases. The protection you get from the shots passes to your baby in the womb. This will help protect your baby in early life when she is most vulnerable.

Is flu really dangerous?
Yes, if you get the flu, it is not the same as getting a cold. Women who are pregnant are more likely to get very sick from flu than women who are not pregnant.

Flu can lead to serious complications such as high fever, pneumonia, and death for both you and your baby. Flu can lead to pneumonia in both you and your baby. Flu can lead to pneumonia in both you and your baby.

How dangerous is whooping cough for babies? Coughing whooping cough can lead to brain damage (cerebral palsy), death, and in some cases, blindness.

For adults, coughing fits can last for months and lead to vomiting, trouble sleeping, and even death. Whooping cough is very contagious and can easily spread to others, including babies.

How common are these diseases?
Each year, millions of Californians get flu, and hundreds of babies under 6 months of age are hospitalized due to flu. In 2017, more than 11,000 babies were hospitalized with whooping cough. Hundreds were hospitalized, and three babies died. In 2018, nearly 30,000 Californians caught whooping cough, and 51 babies died. Tragically, more than 7 out of 10 babies hospitalized were younger than 6 months old.

How can I protect my baby and myself?
- The American Academy of Pediatrics and Immunization Action Coalition (IAC), the American Academy of Pediatrics (AAP), and the Centers for Disease Control and Prevention (CDC) recommend that all pregnant women get these flu-saving shots:

**Flu Shot**
To get during the Fall.

**Whooping Cough Shingles (Tcp)**
As early as possible during your third trimester (up to 36 weeks of pregnancy - note you get the first shot during pregnancy). You need two shots in the 36th week during pregnancy.

Pass protection to your baby.
Get immunized during pregnancy.

Your baby may be at risk for flu and whooping cough.

- Low birth weight
- Premature birth
- Pneumonia
- Stillbirth
- Hospitalization
- Death

Stop Whooping Cough.
Get Immunized!

Visit: www.cdc.gov/whoopingcough

Whooping Cough Vaccinate To Protect
Who Needs Whooping Cough Vaccines?
- Pregnant women
- Infants and young children
- Preteens and teens
- Adults of all ages

Whooping cough is most deadly for infants. Get vaccinated. Protect yourself. Protect babies.
New WIC-specific resources!

Elizabeth Rosenblum, MD, focuses primarily on the care of pregnant women and of newborns, children and adolescents. Her video empowers WIC staff on how to speak about the benefits of prenatal immunizations with WIC participants.

View on YouTube: https://www.youtube.com/watch?v=3ZNlf_tPzd8

To download file: https://www.dropbox.com/s/t7xsyskb8du6xl08/Pregnancy%20and%20Vaccinations%20Weaving%20Safety%20Net%20download%29.mp4?dl=1

I’m Pregnant Magazine now features prenatal immunization information.