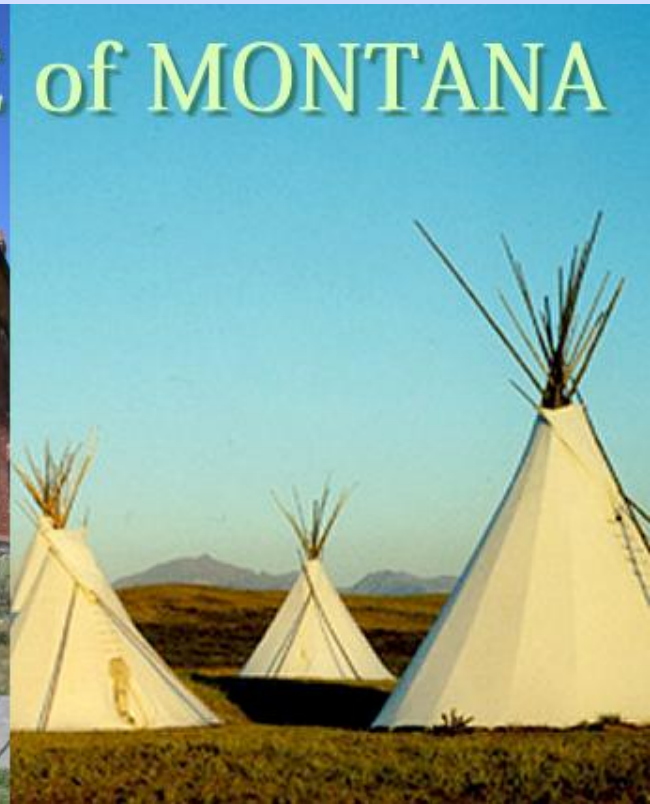
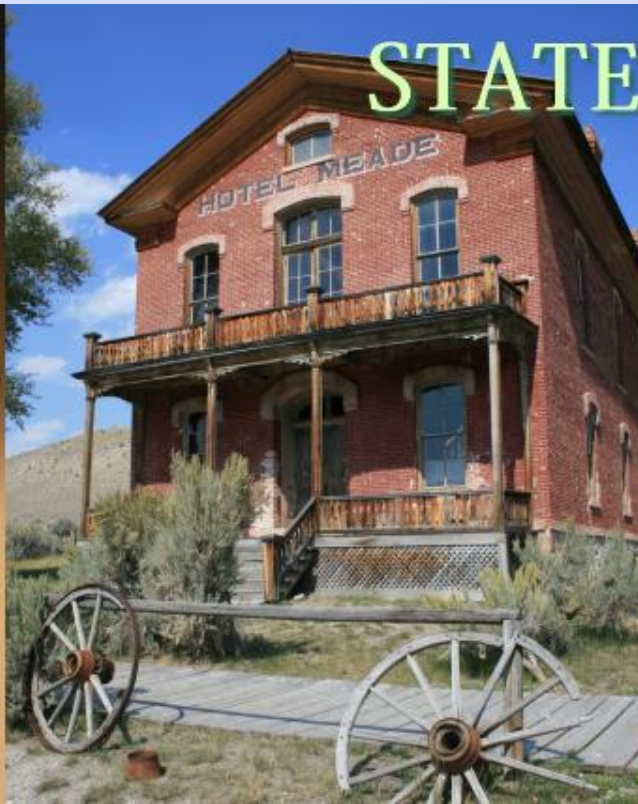


Tdap Vaccination Strategies for Adolescents, Adults and Health Care Personnel



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**WHOOPING COUGH COMES
BACK 2/3/2011**

**CHICKEN POX VACCINATION URGED 7
CASES IN CALAVERAS COUNTY
2/25/2011**

**Increasing Number of Pertussis
Outbreaks Prompt CDC Health
Alert on PCR Testing 2/23/2011**

**CDC CLAIMS 21,000 HAD
PERTUSSIS 2/ 23/ 2011**

**Boston Works to Contain
Measles Cases 2/25/2011**

**Thousands of Passengers at risk of
catching measles after infected traveler
flew into four major U.S. airports
2/28/2011**

**Whooping Cough on the
Rise, February 28, 2011**

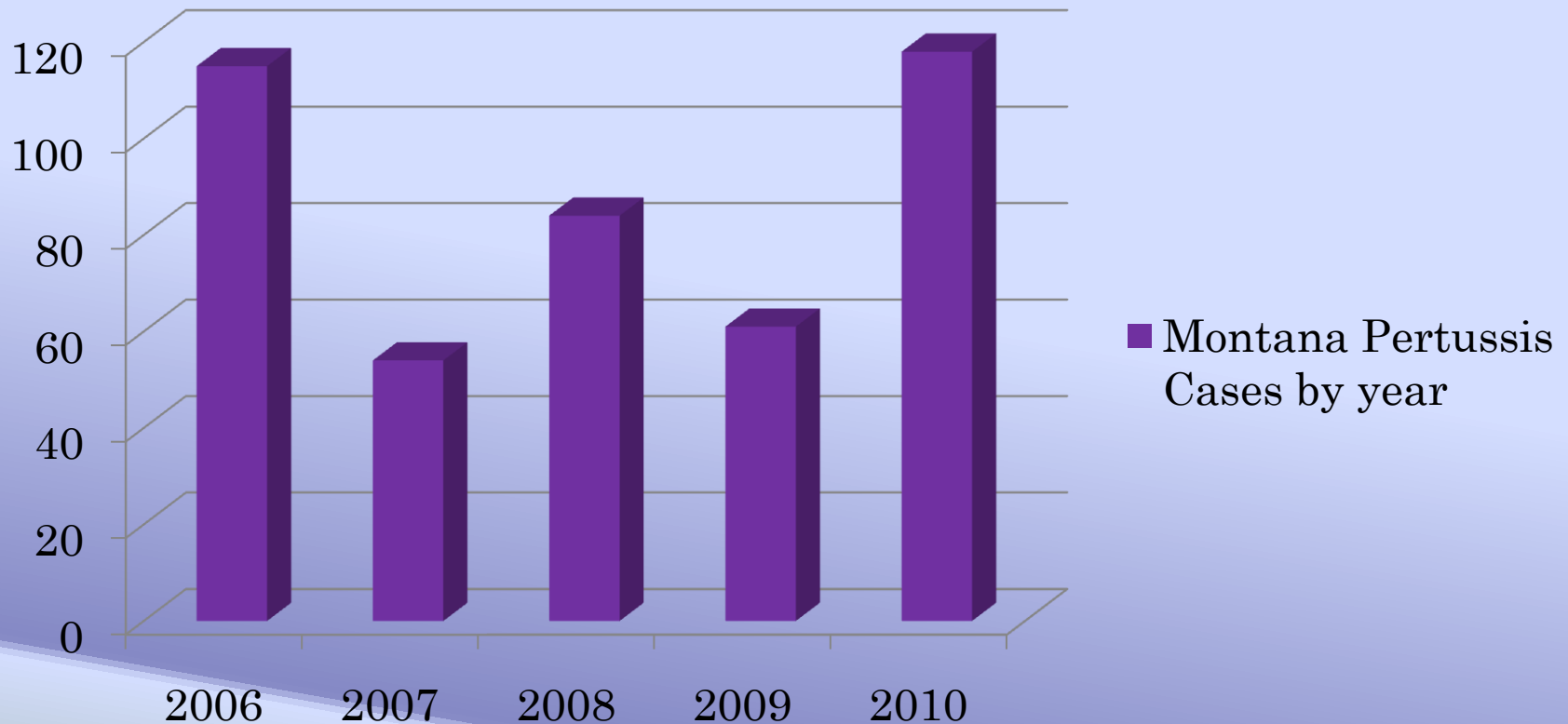
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Objective

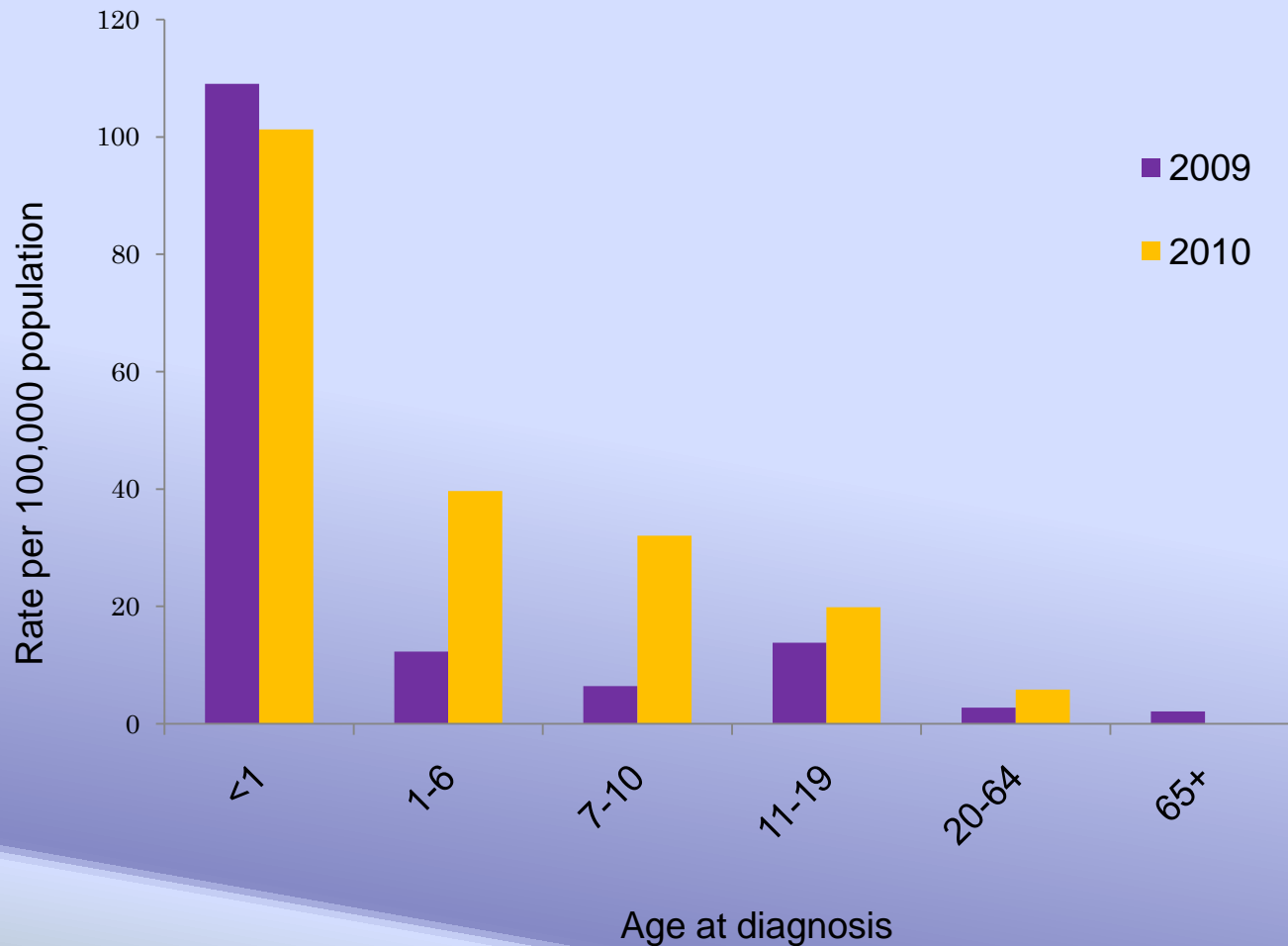
- List the advantages of standing orders to increase immunization rates.
- List the advantages of using chart reminders to increase immunization rates.

Number of Pertussis Cases by Year

Montana Pertussis Cases by year



Pertussis incidence by age, Montana, 2009-2010



Guidance from the Epidemiology Section

- Pertussis is epidemic every 3 to 5 years our last epidemic was in 2005
- Our cases have been on the increase since 2006
- Suspect pertussis in cough illness greater than 2 weeks and test accordingly
- Administer Tdap to everyone who is eligible.

New Tdap Recommendations for Adolescents*

- Persons 7 through 10 years of age who are not fully immunized against pertussis (including those never vaccinated or with unknown pertussis vaccination status) should receive a single dose of Tdap

* ACIP recommendation. *MMWR* 2011; 60 (No. 1):13-5

Tdap for those >65 yrs of age*

- All clients 65 years and older who have contact with infants under 12 months old can receive a one time dose of Tdap. This is especially important for grandparents to help “cocoon” the new infant from pertussis.
- ACIP is the recommendation standard of practice in the United States, so when in doubt go to the ACIP recommendations.

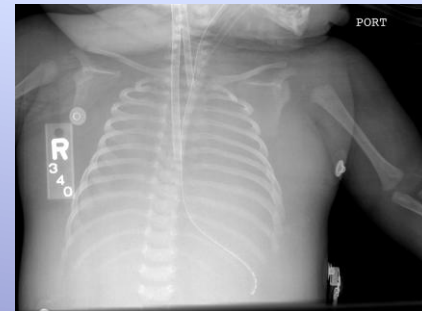
*ACIP recommendation. *MMWR* 2011; 60 (No. 1):13-5

Pertussis Threatens Infants

- Infants too young to be immunized (< 6 months) have up to 20 times higher risk of pertussis
- Two thirds of these are admitted to hospital
 - Pneumonia, seizures, brain damage
- Pertussis causes ~ 20 deaths per year, almost all in very young infants

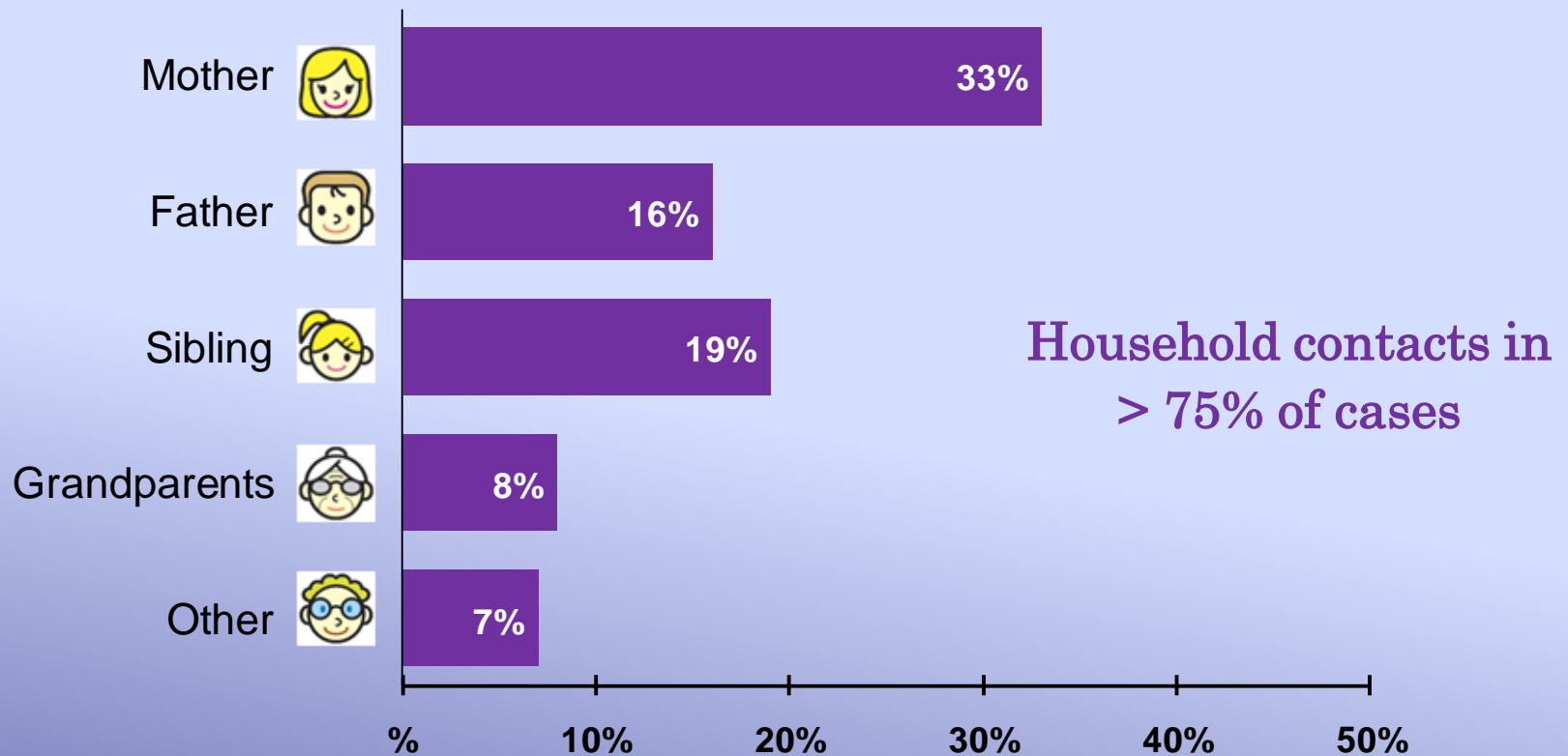


Normal Chest x-ray



Baby with Pertussis

Who Infects Infants?



Pediatr Infect Dis J. 2004;23:985-9.

Pediatr Infect Dis J. 2007;26:293-9.

HCP and Pertussis

- HCP greater risk of acquiring pertussis than general public
- HCP with pertussis may go unnoticed, resulting in transmission of disease outside of the facility
- Target those who have close contact with infants including the front staff.

Proposed ACIP language: Use of Tdap in HCP

- Health-care personnel (HCP), regardless of age, should receive a single dose of Tdap as soon as feasible if they have not previously received Tdap and regardless of the time since last Td dose.
- Tdap is not currently licensed for multiple administrations. After receipt of Tdap, HCP should receive routine booster immunization against tetanus and diphtheria according to previously published guidelines.

Proposed ACIP language: Use of Tdap in HCP

- Hospitals and ambulatory-care facilities should provide Tdap for HCP and use approaches that maximize vaccination rates (e.g., education about the benefits of vaccination, convenient access, and the provision of Tdap at no charge).

Hospitals, as defined by the Joint Commission on Accreditation of Healthcare Organizations, do not include long-term-care facilities such as nursing homes, skilled-nursing facilities, or rehabilitation and convalescent care facilities.

Ambulatory-care settings include all outpatient and walk-in facilities.

Reasons for HCP Refusing Pertussis Vaccine

- Doubt about being at risk 81%
- Belief pertussis not serious 27%
- Fear about adverse effects 20%
- Fear vaccine might cause pertussis 17%

Misconceptions about pertussis vaccine common among nursing staff

Wicker S., et al Obstacles in the motivation of health care workers for pertussis vaccination. In *Procedia in Vaccinology*, Vol 1, Issue 1, 2009. Boston MA: 2nd Global Congress on Vaccine, Dec7-9, 2008 pp.174-176

Pertussis in 500 bed tertiary care hospital in Washington 2004

- **Source:** 1 ED doctor 37 weeks pregnant
- **Exposed:** Patients, HCP, Visitors
- **Results:** Doctor had pertussis symptoms over a month. 388 HCP, 265 Patients and 85 visitors potentially exposed to the one doctor. HCP with symptoms furloughed 5 days, without symptoms antibiotics 21 days

Associated Costs of the Above Mentioned Outbreak

• Direct costs	\$195,342
• Indirect costs	\$68,015
• Total cost per case (6)	\$43,893
• Total cost per person exposed to a case (738)	\$263,466
	<hr/>
	\$570,716

Ways to enhance vaccination among HCP

- Multifaceted campaigns are most successful
 - Free vaccinations
 - Easy access
 - Using vaccination clinics
 - Using mobile carts
 - Ensure access to vaccination during all work shifts
 - Hold several vaccination days

Ways to enhance vaccination among HCP (cont)

- Leaders emphasizing the importance of vaccination
- Use of informed declinations
- HCP education that stresses patient safety as a reason for accepting vaccination

Talbot et al: Factors associated with increased healthcare worker influenza vaccination rates. Results from a national survey Infect Control Hop Epidemiology 31:456-462, May 2010

Kimura A.C. et al: The effectiveness of vaccine day and educational interventions on influenza vaccine coverage among health care workers at long-term care facilities Am J Public Health 97:684-690, Ar 2007

Ways to Increasing Rates

- Standing Orders
- Use client and or provider reminder/recall systems,
- Provider Feedback

Standing Orders

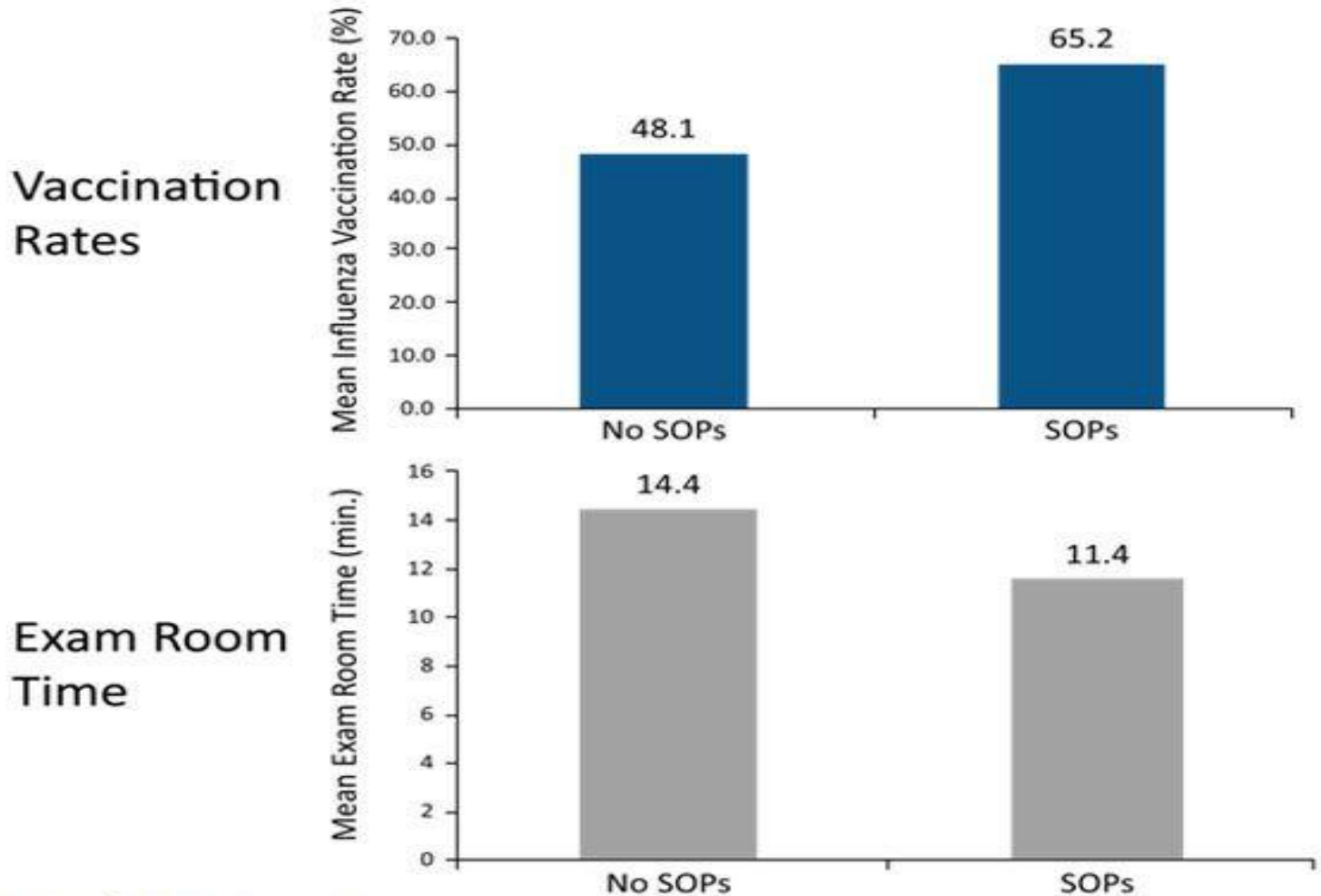
- **Definition**

A standing order is a written order stipulating that all persons meeting certain criteria (i.e., age or underlying medical condition) should be vaccinated, thus eliminating the need for individual physician's orders for each patient.

- **Advantage**

Standing orders are the most consistently effective method for increasing adult vaccination rates and the easiest to implement.

Practices Using SOPs Associated With Higher Vaccination Rate, Despite Less Physician Time in Exam Room



Vaccination Rates

Exam Room Time

Mean Influenza Vaccination Rate (%)

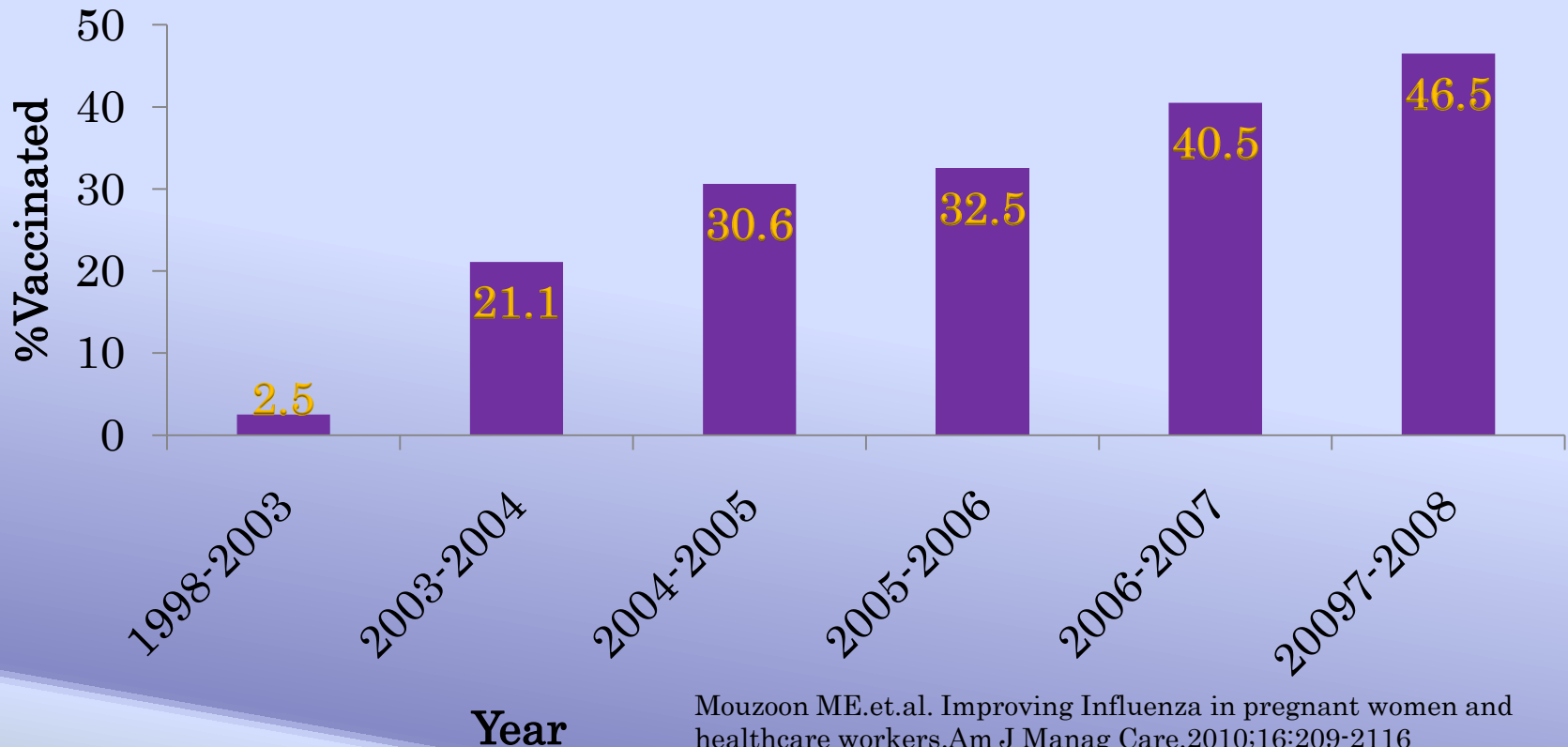
Mean Exam Room Time (min.)

SOPs = standing-order programs

Zimmerman RK, Nowalk MP, Tabbarah M, Hart JA, Fox DE, Raymund M; FM Pitt-Net Primary Care Research Network. Understanding adult vaccination in urban, lower-socioeconomic settings: influence of physician and prevention systems. *Ann Fam Med.* 2009;7:534-541.

Best-practices case study for improving vaccination rates among pregnant women at the Kelsey-Seybold Clinic, Texas

% of pregnant women vaccinated for influenza



Mouzon ME.et.al. Improving Influenza in pregnant women and healthcare workers. Am J Manag Care.2010;16:209-2116

Standing Orders: Implementation

- Decide what criteria will be used to indicate patient eligibility for vaccination
- Write standing order
- Meet with staff to discuss implementation of the standing order
- Monitor vaccination rates (suggested)
- Resources needed:
 - Standing order

Standing Orders for Administering Influenza Vaccine to Adults

Purpose: To reduce morbidity and mortality from influenza by vaccinating all adults who meet the criteria established by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices.

Policy: Under these standing orders, eligible nurses and other healthcare professionals (e.g., pharmacists), where allowed by state law, may vaccinate patients who meet any of the criteria below.

Procedure:

1. Identify adults in need of influenza vaccination based on meeting any of the following criteria:
 - a. Want to reduce the likelihood of becoming ill with influenza or of transmitting it to others
 - b. Age 50 years or older
 - c. Having any of the following conditions:
 - chronic disorder of the pulmonary or cardiovascular system, including asthma
 - chronic metabolic disease (e.g., diabetes), renal dysfunction, hemoglobinopathy, or immunosuppression (e.g., caused by medications, HIV)
 - any condition that compromises respiratory function or the handling of respiratory secretions or that can increase the risk of aspiration (e.g., cognitive dysfunction, spinal cord injury, seizure disorder or other neuromuscular disorder)
 - d. Being pregnant during the influenza season
 - e. Residence in a nursing home or other chronic-care facility that houses persons of any age who have chronic medical conditions
 - f. In an occupation or living situation that puts one in proximity to persons at high risk, including
 - a healthcare worker, caregiver, or household member in contact with person(s) at high risk of developing complications from influenza
 - a household contact or out-of-home caretaker of a child age 0-59 months or of an adult age 50 years or older
2. Screen all patients for contraindications and precautions to influenza vaccine:
 - a. **Contraindications:** serious reaction (e.g., anaphylaxis) after ingesting eggs or after receiving a previous dose of influenza vaccine or an influenza vaccine component. For a list of vaccine components, go to www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/exipient-table-2.pdf. Do not give live attenuated influenza vaccine (LAIV) to an adult who is pregnant or who has any of the conditions described in 1.b. or 1.c. above or who has a history of Guillain-Barré syndrome. Use of inactivated influenza vaccine is preferred over LAIV for close contacts of severely immunosuppressed persons during periods when the immunocompromised person requires a protective environment.
 - b. **Precautions:** moderate or severe acute illness with or without fever
3. Provide all patients with a copy of the most current federal Vaccine Information Statement (VIS). You must document in the patient's medical record or office log, the publication date of the VIS and the date it was given to the patient. Provide non-English speaking patients with a copy of the VIS in their native language, if available; these can be found at www.immunize.org/vis.
4. Administer 0.5 mL of injectable trivalent inactivated influenza vaccine (TIV) IM (22-25g, 1-1½" needle) in the deltoid muscle. Alternatively, healthy adults younger than age 50 years without contraindications may be given 0.2 mL of intranasal LAIV; 0.1 mL is sprayed into each nostril while the patient is in an upright position.
5. Document each patient's vaccine administration information and follow up in the following places:
 - a. **Medical chart:** Record the date the vaccine was administered, the manufacturer and lot number, the vaccination site and route, and the name and title of the person administering the vaccine. If vaccine was not given, record the reason(s) for non-receipt of the vaccine (e.g., medical contraindication, patient refusal).
 - b. **Personal immunization record card:** Record the date of vaccination and the name/location of the administering clinic.
6. Be prepared for management of a medical emergency related to the administration of vaccine by having a written emergency medical protocol available, as well as equipment and medications.
7. Report all adverse reactions to influenza vaccine to the federal Vaccine Adverse Event Reporting System (VAERS) at www.vaers.hhs.gov or (800) 822-7967. VAERS report forms are available at www.vaers.hhs.gov.

This policy and procedure shall remain in effect for all patients of the _____ until rescinded or until _____ (date).
(name of practice or clinic)

Medical Director's signature: _____ Effective date: _____

Sample Standing Order Policies

Available at the Immunization Action Coalition Website

www.immunize.org/standingorders/

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Reminder/Recall

- Reminder systems track future appointments
- Recall systems track missed appointments during which immunizations would have been given.
- Combining reminder and recall systems is a powerful method for ensuring optimal vaccination rates.
- Patients who are behind on immunizations are at greater risk of being behind on other preventive services.

Reminder/Recall

- One size does not fit all.
 - Successful recall systems vary from tickler files to community-based immunization registries.
 - These systems are dependent upon office personnel's ability to utilize the system and fine-tune it to meet the specific needs of the practice.

Chart Reminders

- Chart reminders can be as simple as a colorful sticker on the chart or
- As comprehensive as a checklist of preventive services including vaccinations.
- Reminders to physicians should be prominently placed in the chart.
- Reminders that require some type of acknowledgment, even a simple check mark by the physician, are more effective.

Chart Reminders: Implementation

- Design or identify a chart reminder to use
- Make copies to be inserted into all appropriate patient records
- Assign a staff person to place the reminders in a prominent place in the chart
- Resources Needed:
 - Staff time
 - Chart reminders

Advantages

- Chart reminders are inexpensive and efficient.
- Reviewing health maintenance inventories with patients requires less than 4 minutes and can become part of the physician's routine.
- Provider reminder strategies are so effective they have been demonstrated to improve rates both alone and in combination with other strategies.

Effectiveness

- When tetanus and pneumococcal vaccinations were included in a health maintenance inventory sheet, results went from 3.2% and 1.6% to 19.8% and 14.6% vaccinated against tetanus and pneumococcal disease respectively (Rodney, 1983).
- In another study (Davidson, 1984), influenza vaccination rates increased from 18% before use of a health maintenance flow sheet to 40% with use of the health maintenance flow sheet.

Rodney WM, Chopivsky P, Quan M. Adult immunization: the medical record design as a facilitator for physician compliance. *Journal of Medical Education* 1983;58:576-580.

Davidson RA, Fletcher SW, Retchin S, Duh S. A nurse-initiated reminder system for the periodic health examination. Implementation and evaluation. *Archives of Internal Medicine* 1984;144:2167-2170.

Computerized Immunization Reminders

- The new IIS is programmed to determine the dates that certain preventive immunizations are due or past due.
- A printed list of possible reminders based on the client's record can be created and/or
- IZ records can be printed overnight, for patients with visits the next day that includes coming due or past due immunizations.

Advantages

- Computerized record reminders can be effective, efficient, and inexpensive once the computerized system is in place.
- Provider reminder strategies are so effective they have been demonstrated to improve rates both alone and in combination with other strategies.

Effectiveness

- Computerized chart reminders can be very effective.
- In one practice, pneumococcal vaccination rates of high-risk persons increased from 29% to 86% after implementation of computerized chart reminders (Payne, 1995).

Payne TH, Galvin M, Taplin SH, Austin B, Savarino J, Wagner EH. Practicing population-based care in an HMO: evaluation after 18 months. *HMO Practice* 1995;9:101-110.

Provider assessment and feedback

- **Advantages:**
 - Competition increases motivation and provider compliance with vaccination recommendations
 - Immediate feedback on each provider's performance
 - Easy to implement
 - Each provider can use his/her own approach to improve vaccination rate
 - Evaluation is built into this approach
- **Disadvantages:**
 - Time to train staff and implement strategy
 - Requires continual tracking of vaccination rates

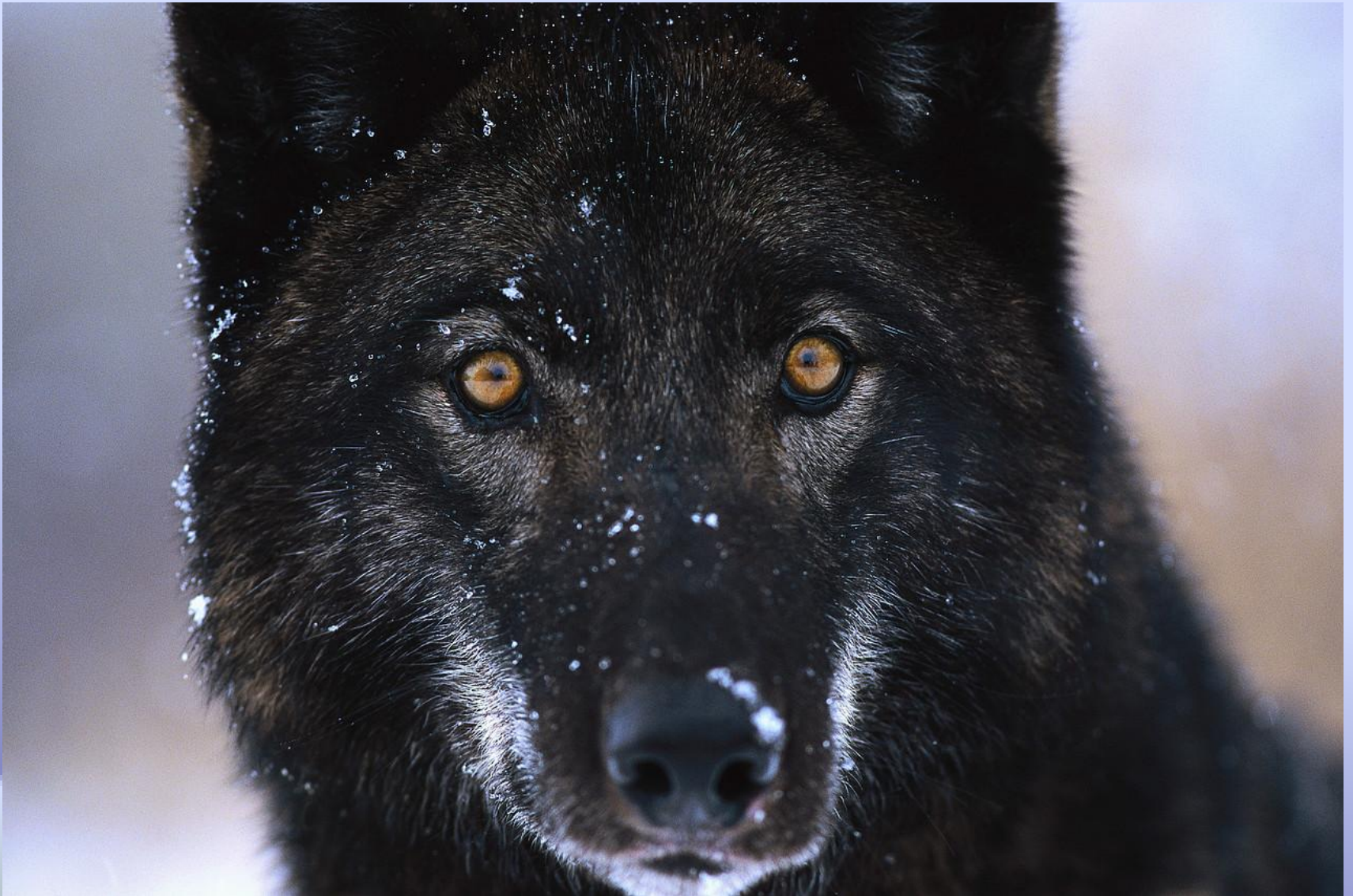
Vaccine Sad Facts

In the typical American household, which family member has the most accurate and up-to-date immunization record on file?

- A. The parents
- B. The children
- C. The pets



Questions?



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References:

- American Academy of Pediatrics <http://www.aap.org>
- Association for Professionals in Infection Control and Epidemiology (APIC) <http://www.apic.org>
- Advisory Committee on Immunization Practices <http://www.cdc.gov/vaccines/recs/acip>
- Healthy People 2020 <http://healthypeople.gov/hp2020>
- Immunization Action Coalition <http://www.immuniza.org>
- Vaccineinformation.org home page <http://www.vaccineinformation.org>
- Infectious Diseases Society of America <http://www.idsociety.org/adultimmunization.htm>
- Adult Immunization: Shots to Save Lives:
<http://healthyamericans.org/assets/files/TFAH2010AdultImmznzBrief>
- National Network of Immunization Information (NNii) <http://www.immunizationinfo.org>
- National Foundation for Infectious Diseases (NFID) <http://www.nfid.org>
- Parents of Kids with Infectious Diseases (PKID) <http://www.pkids.org>
- Society for Healthcare Epidemiology of America (SHEA) <http://www.shea-online.org>

