



Vaccines are Not Just for Kids

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At a Glance

- Burden of vaccine-preventable diseases
- Vaccines recommended for adults (age and risk indicated)
- Statewide vaccination rates for adults
- What the Wisconsin Immunization Registry can do for you
- Adult Immunization Standards
- Case studies

Abbreviations

- WIR: Wisconsin Immunization Registry
- ACIP: Advisory Committee on Immunization Practices
- HPV: human papillomavirus vaccine
- Td: tetanus-diphtheria vaccine
- Tdap: tetanus-diphtheria-acellular pertussis vaccine
- PPSV23: pneumococcal polysaccharide vaccine
- PCV13: pneumococcal conjugate vaccine

Tdap/Td Vaccines

- Tdap
 - Adacel (sanofi pasteur) is licensed for use in persons aged 10 through 64 years.
 - Boostrix (GlaxoSmithKline) is licensed for use in persons aged 10 years and older.
- Td
 - Tenivac (Sanofi Pasteur) is licensed for use in persons aged 7 years and older.
 - Td vaccine (Grifols) is licensed for use in persons aged 7 years and older.

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Tdap/Td Recommendations

- All adults who have not previously received Tdap should receive one dose; boost with Td every 10 years thereafter.
- Adults aged ≥65 years: Providers should not miss an opportunity to vaccinate persons aged 65 years and older with Tdap; either Boostrix or Adacel may be used.
- Wound management: Tdap is preferred over Td for wound management among persons aged ≥11 years who have not received Tdap previously.

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Tdap and Pregnancy

- Pregnant women should receive a dose of Tdap during *each* pregnancy, preferably during weeks 27 through 36, to maximize maternal antibody response and passive antibody transfer to the infant.
- Tdap will provide some protection against pertussis during early months following birth and before the infant is able to receive the primary pertussis vaccine series.

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Tdap and Pregnancy (cont.)

- All family members and caregivers (for example, babysitters or grandparents) of infants should receive Tdap vaccine, optimally at least two weeks before the birth of the infant.

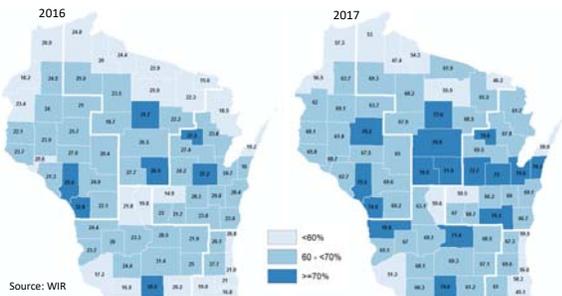
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Impact of Vaccination – Tdap

- In general, Tdap protects 70% of those who receive it, but protection wanes over time.
- About 30–40% remain fully protected against pertussis four years after receiving Tdap.

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Percent of adults aged 19–64 years who have received one dose of Tdap vaccine, by county, 2016 and 2017



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Hepatitis B Disease Burden

- 3,050 acute cases of hepatitis B were reported in 2013 out of an estimated 19,800 cases.
- Progression from acute to chronic infection
 - 5% in the general adult population
 - 40% of hemodialysis patients
 - 20% of patients with immune deficiencies
- Chronic infection may result in cirrhosis or liver cancer.

CDC. Viral Hepatitis Surveillance United States, 2013. National Center for HIV/AIDS, Viral Hepatitis, STD & TB Prevention/Division of Viral Hepatitis.

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Hepatitis B Vaccines

- Recombivax HB (Merck) is licensed for use among all ages.
- Engerix-B (GSK) is licensed for use among all ages.
- Heplisav-B (Dynavax) is licensed for use in persons aged 18 years and older.
- Twinrix, hepatitis A/hepatitis B combination (GlaxoSmithKline), is licensed for use in persons aged 18 years and older.

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Hepatitis B Recommendations

- All unvaccinated adults at risk for HBV infection and all adults requesting protection from HBV infection
- Persons at risk
 - Percutaneous or mucosal exposure to blood
 - End-stage renal disease (including predialysis, hemodialysis, peritoneal dialysis, and home dialysis)
 - Diabetes mellitus (type 1 or type 2)

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Diabetic Patients

- Diabetics are at risk for serious complications from illness.
 - Influenza can raise blood glucose to dangerously high level.
 - There are higher rates of hepatitis B than general population.
 - There is an increased risk of death from pneumonia, bacteremia, and meningitis.

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Diabetic Patients (cont.)

- Diabetics aged 19 to 59 years should be vaccinated as soon as possible after diagnosis.
- Diabetics aged 60 years and older should be vaccinated at the discretion of the treating physician.

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Impact of Vaccination – Hepatitis B

- Up to 90% effectiveness after completing three-dose series
- Effectiveness estimated to be lower in persons with diabetes with increasing age
 - 90%, older than aged 40 years
 - 80%, 41 to 59 years
 - 65%, 60 to 69 years
 - <40%, 70 years and older

CDC. Use of hepatitis B vaccine for adults with diabetes mellitus. MMWR 2011;60:1709–1711.

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Post-Vaccination Serologic Testing (PVST)

Testing for antibody to hepatitis B surface antigen 1–2 months after completion of the hepatitis B vaccine series

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PVST Recommendation

- Not routinely recommended following vaccination of most adults
- Recommended for:
 - Chronic hemodialysis patients
 - Other immunocompromised persons
 - Persons with HIV infection
 - Sex partners of hepatitis B surface antigen-positive persons
 - Health care personnel who have contact with patients or blood

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Influenza Disease Burden

- Influenza disease burden varies from year to year.
 - Millions of cases; average of 226,000 hospitalizations annually, with greater than 75% among adults¹
 - 3,000–49,000 deaths annually, with greater than 90% among adults^{2,3}
- Many factors increase risk of severe illness, including chronic medical conditions, pregnancy, and obesity.

¹Thompson WW, et al. Influenza-Associated Hospitalizations in the United States. JAMA 2004; 292: 1333–1340
²CDC. Estimates of deaths associated with seasonal influenza—United States, 1976–2007. MMWR. 2010;59(33):1057–1062.
³Molinari, et al. The annual impact of seasonal influenza in the US: Measuring disease burden and costs. Vaccine 2007;25:5086–5096.

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Influenza Vaccine

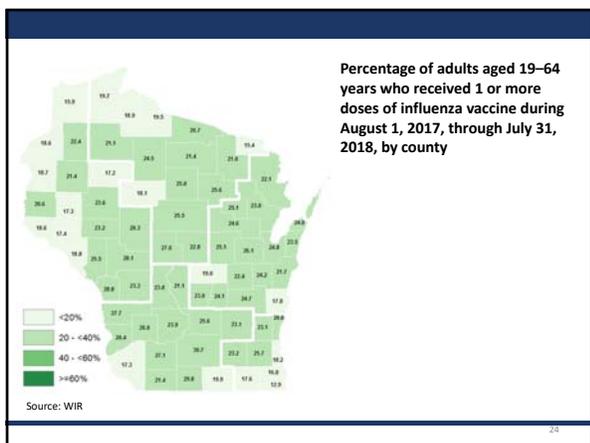
| Vaccine | Trade Name | Manufacturer | Age Group |
|--------------|-------------------|--|---|
| IIV4 | Fluzone | Sanofi Pasteur | ≥6 months |
| IIV4 | FluLaval | ID Biomedical Corporation of Quebec (distributed by GlaxoSmithKline) | ≥6 months |
| IIV4 | Fluarix | GlaxoSmithKline | ≥6 months |
| IIV3 or IIV4 | Afluria | Seqirus | ≥5 years via needle/syringe 18–64 years via jet injector |
| IIV3 | Fluzone High-Dose | Sanofi Pasteur | ≥65 years |
| RIV4 | FluBlok | Sanofi Pasteur | ≥18 years |
| ccIIV4 | Flucelvax | Seqirus | ≥4 years |
| IIV3 | Fluad | Seqirus | ≥65 years |
| LAIV | FluMist | AstraZeneca | 2–49 years |

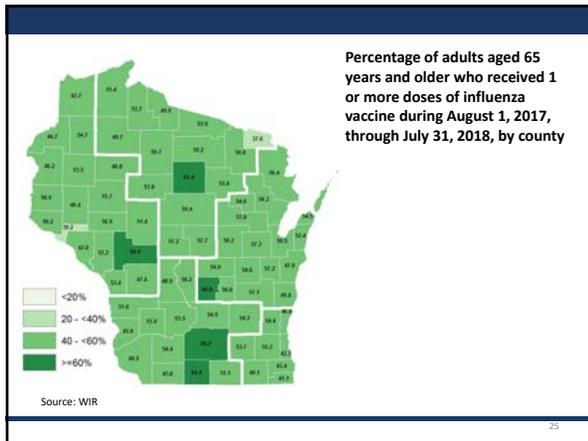
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Influenza Recommendations

Influenza vaccine should be offered to all adults as soon as it is available and should continue to be offered as long as influenza viruses are circulating.

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Impact of Vaccination – Influenza

- Effectiveness varies based on antigenic match and the age and health status of person vaccinated.
 - Approximately 60–70% effective in younger adults when good match¹
 - Approximately 30% in adults aged 65 years and older against medically attended influenza when good match
- 2017–18 season effectiveness: 36% effective against medically attended, lab-confirmed influenza²

¹CDC. Prevention and Control of Seasonal Influenza: Recommendations of the ACIP—U.S., 2014–15 Influenza Season. MMWR 2014; 63(32): 691–697.
²Presented at May 2018 NAHIS meeting.

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Pneumococcal Disease Burden

- Invasive pneumococcal disease (IPD):
 - 33,900 total cases and 3,700 total deaths in 2013
 - 89% of IPD cases and nearly all IPD deaths among adults
- Pneumococci account for up to 36% of adult community-acquired pneumonia
- Case-fatality rate is 5%–7% and may be much higher among elderly persons

CDC. Active Bacterial Core Surveillance. <http://www.cdc.gov/abcs/reports-findings/survreports/spneu13.pdf>

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Pneumococcal (PPSV23 and PCV13) Vaccines

- Pneumovax 23 (Merck)
- Prevnar 13 (Wyeth)

PPSV23 and PCV13 Recommendations

- Adults aged 19 years and older with immunocompromising conditions, functional or anatomic asplenia, cerebral spinal fluid leaks, or cochlear implants and who have not previously received PCV13 or PPSV23 should receive a dose of PCV13 first, followed by a dose of PPSV23 at least eight weeks later.
- All adults aged 65 years and older should routinely receive a dose of PCV13 and PPSV23 in series.

Underlying Medical Conditions or Other Indications for PPSV23

| Risk Group | Underlying Medical Condition | One Dose Recommended | Revaccination 5 Years After First Dose |
|-------------------------|------------------------------------|----------------------|--|
| Immunocompetent persons | Chronic heart disease ^a | Y | |
| | Chronic lung disease ^b | Y | |
| | Diabetes mellitus | Y | |
| | Cerebrospinal fluid leak | Y | |
| | Cochlear implant | Y | |
| | Alcoholism | Y | |
| | Chronic liver disease, cirrhosis | Y | |
| | Cigarette smoking | Y | |

^aIncluding congestive heart failure and cardiomyopathies, excluding hypertension
^bIncluding chronic obstructive pulmonary disease, emphysema, and asthma

Underlying Medical Conditions or Other Indications for PPSV23

| Risk Group | Underlying Medical Condition | One Dose Recommended | Revaccination 5 Years After First Dose |
|--|--|----------------------|--|
| Persons with functional or anatomic asplenia | Sickle cell disease/other hemaglobinopathy | Y | Y |
| | Congenital or acquired asplenia | Y | Y |
| | Splenic dysfunction | Y | Y |
| Immunocompromised persons | HIV infection | Y | Y |
| | Chronic renal failure | Y | Y |
| | Nephrotic syndrome | Y | Y |
| | Leukemia | Y | Y |
| | Lymphoma | Y | Y |
| | Hodgkin disease | Y | Y |

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Underlying Medical Conditions or Other Indications for PPSV23

| Risk Group | Underlying Medical Condition | One Dose Recommended | Revaccination 5 Years After First Dose |
|---------------------------------------|--|----------------------|--|
| Immunocompromised persons (continued) | Generalized malignancy | Y | Y |
| | Solid organ transplant | Y | Y |
| | Multiple myeloma | Y | Y |
| | Congenital or acquired immunodeficiency ^c | Y | Y |
| | Iatrogenic immunosuppression ^d | Y | Y |

^cIncludes B- (humoral) or T-lymphocyte deficiency, complement deficiencies and phagocytic disorders (excluding chronic granulomatous disease)
^dDiseases requiring treatment with immunosuppressive drugs, including long-term systemic corticosteroids and radiation therapy

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PCV13 and PPSV23 in Series

- Adults aged 65 years and older who have not previously received pneumococcal vaccine or whose previous vaccination history is unknown should receive a dose of PCV13 first, followed by a dose of PPSV23, ideally one year later.

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PCV13 and PPSV23 in Series

- Adults aged 65 years and older who have previously received 1 or more doses of PPSV23 also should receive a dose of PCV13 if they have not yet received it. A dose of PCV13 should be given 1 or more years after receipt of the most recent PPSV23 dose.
- Adults who received PCV13 at age 64 years or younger do not need any additional doses of PCV13 at age 65 years or older.

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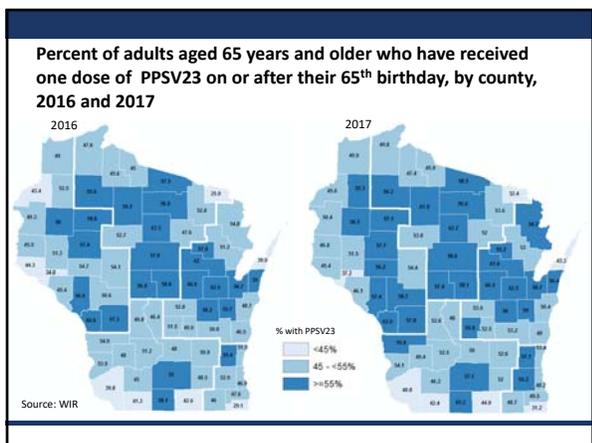
Intervals for Use of PCV13 and PPSV23

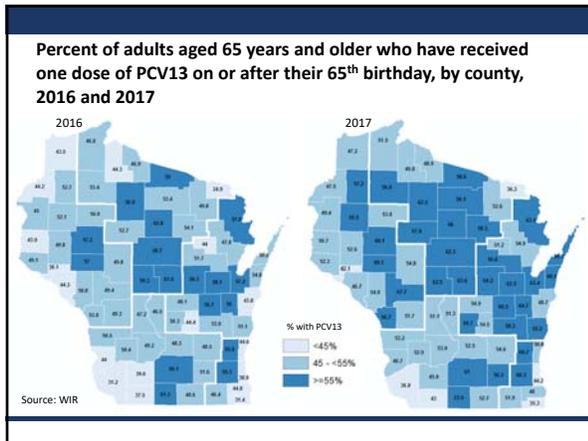
Pneumococcal vaccine-naïve persons aged ≥65 years

Persons who previously received PPSV23 before age 65 years who are now aged ≥65 years

Persons who previously received PPSV23 at age ≥65 years

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Impact of Vaccination – Pneumococcal

PCV13:

- 45% efficacy against vaccine-type pneumococcal pneumonia
- 75% efficacy against vaccine-type invasive pneumococcal disease among adults aged 65 years and older

Bonten MJ, et al. NEJM 2015;372:1114–25.

Zoster Disease Burden

- Zoster (also known as shingles): About 1 million cases annually in U.S.
- Lifetime risk of zoster: At least 32%, with 50% of persons living until age 85 years developing zoster
- Most important risk factors: Increasing age and cellular immunosuppression

CDC. Prevention of Herpes Zoster. MMWR 2008. 57(RR-5): 1–30.

Zoster Vaccine

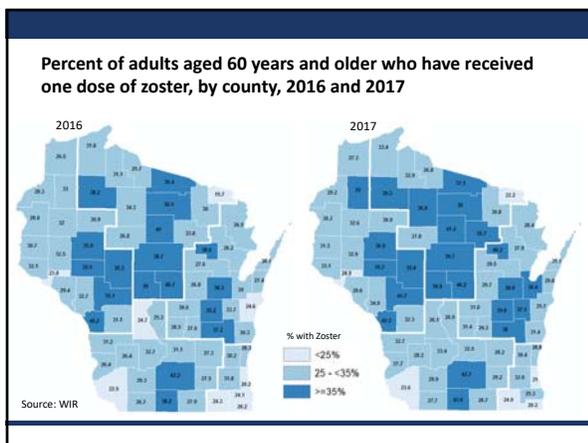
- Zostavax (Merck)
- Shingrix (GSK)

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Zoster Vaccine Recommendation

- Shingrix is preferred over Zostavax.
- Shingrix may be used in immunocompetent adults aged 50 years and older. Second dose should be administered 2–6 months following first dose.
- Zostavax remains a recommended vaccine among immunocompetent adults aged 60 years and older. Administer a single dose.

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Impact of Vaccination – Zoster

Zoster vaccine effectiveness: Two doses of Shingrix is more than 90% effective at preventing shingles and postherpetic neuralgia.

CDC. Recommendations of the Advisory Committee on Immunization Practices for Use of Herpes Zoster Vaccines. MMWR 2018. 67(3); 103–108.

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Key Adult Immunization Facts

| | |
|--|---|
| Challenges | Opportunities |
| <ul style="list-style-type: none">• Vaccine coverage among adults is unacceptably low.• There is limited patient awareness about the need for vaccines among adults.• Adult vaccinations are less integrated into clinical practice.• Insurance coverage varies by provider type. | <ul style="list-style-type: none">• Most patients are willing to get vaccinated when medical providers recommend them.• Primary care providers believe that immunizations are an important part of the services they provide to patients.• Systematic offering and recommendations from clinicians result in a higher uptake. |

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Adult Immunization Practice Standards

- Stresses that all providers, including those who don't provide vaccine services, have a role in ensuring patients are up to date on vaccines
- Acknowledges that:
 - Adult patients may see many different health care providers, some of whom do not stock some or all vaccines
 - Adults may get vaccinated in a medical home, at work, or in a retail setting

<http://www.publichealthreports.org/>

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Adult Immunization Practice Standards

- Aims to avoid missed opportunities and keep adult patients protected from vaccine-preventable diseases

<http://www.publichealthreports.org/>

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Key Components of Standards

Call to action for health care professionals: 

- **Assess** immunization status of all patients in every clinical encounter.
- Strongly **recommend** vaccines that patients need.
- **Administer** needed vaccines or **refer** to a provider who can immunize.
- **Document** vaccines received by patients and enter immunizations in the WIR.

Even if you don't vaccinate, recommend vaccines to your patients.

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Examples of Standards Implementation

Assessment

Ask patients about their vaccinations during clinic visits. For example, include a form at check-in and communicate with patients before seeing the provider about which vaccines might be needed.

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Examples of Standards Implementation

Strongly recommend vaccines

- If you provide vaccines, be confident in your recommendation.
- Encourage your staff to use the same vaccine messages when caring for patients.
- Share a personal story, such as your family or staff are up to date with their vaccines, with hesitant patients.

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Examples of Standards Implementation

Administration or referral of needed vaccines

- Develop standing orders or protocols for vaccine administration.
- Ensure practice is up to date with vaccine storage and handling.
- Develop relationships with pharmacies, health departments, and other vaccination providers to refer your patients for vaccines you don't stock.

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Examples of Standards Implementation

Documentation of vaccine doses administered

- Document in electronic medical record and in WIR.
- Provide patients with vaccine documentation for their personal medical records, for example, shot card.
- Follow up with patient or referring provider to document the vaccine given.

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WIR

- In use since May 2000
- Captures immunizations across the lifespan
- Use not required by providers

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WIR Public Access

- Intended for consumers and/or patients and their guardians to look up their immunization record
- Not intended for health care personnel to look up patient immunization records
- Available in English, Spanish, and Hmong:
www.dhswir.org/PR/clientSearch.do?language=en

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What the WIR Can Do for You

- Access patient immunization history, including doses administered at various provider offices and in the pharmacy setting
- Identify which immunization a patient needs using forecasting feature

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What the WIR Can Do for You

- Enter current and historical immunization information
- Track your organization's vaccine inventory and alerts when inventory is low or vaccine is about to expire

There is no cost to immunizing providers.

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Annual Wellness Visit (AWV)

- The AWV was established in 2011.
- There is no cost to Medicare beneficiaries.
- At the AWV, providers review each beneficiary's medical history, risk factors, and functional abilities and work to develop a personalized prevention plan that identified preventive screenings and interventions.
- Providers can offer advice, counseling, and recommendations for ways to improving health and support healthy aging.

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AWV and Vaccination Rates

The AWV is an opportunity to educate beneficiaries on vaccine recommendations and to administer vaccines at the point of care. Beneficiaries who utilize the AWV have higher PCV13 and influenza vaccination rates.

Shen AK, et al. Vaccine 2017. 35(50):6938-40.

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Roster Billing

- Roster billing is a quick and convenient way to bill for influenza and pneumonia vaccinations.
- To submit a roster bill, the same type of vaccination must be provided to five or more people on the same date of service.
- Each type of vaccination must be billed on a separate roster bill.

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Summary

- There is a substantial burden of disease in adults for which vaccines are recommended.
- Vaccination rates are low overall among adults in Wisconsin.
- Systematic offering of vaccines and provider recommendations can improve vaccination rates over time.

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Resources

- Adult immunization schedule: www.cdc.gov/vaccines/schedules/hcp/adult.html
- Adult Immunization Standards: www.publichealthreports.org/issueopen.cfm?articleID=3145
- The Guide to Community Preventive Services: Increasing Appropriate Vaccination: www.thecommunityguide.org/vaccines/index.html
- WIR Help Desk: dhswirhelp@dhs.wisconsin.gov or 608-266-9691

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Educational Posters with Customized Imagery for Long-Term Care Facilities



Source: Ofstead and Associates

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Questions

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Wisconsin Immunization Program
 Bureau of Communicable Diseases
 Division of Public Health
<http://dhs.wisconsin.gov/immunization>

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Slide 61

las70 Changed comma to colon.
Changed email to lowercase.
Changed phone to XXX-XXX-XXXX format.
Lori A. Schultz, 9/6/2018

Case Study #1 – Diabetic Patient

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Case Study #2 – Long-Term Care Patient

Case Study #3 – Health Care Personnel

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