HPV vaccine long-term safety data

- Kaiser-Permanente: 190,000 females who received ≥ 1 dose of HPV vaccine August 2006 and March 2008
- No increase in emergency room visits, hospitalizations, or any of 200 categories of illnesses
- Karolinska Institute: Register based cohort study, Denmark and Sweden, October 2006 to December 2010.
- 997,585 girls aged 10-17, among whom 296,826 received a total of 696,420 qHPV vaccine doses
- No increase in auto-immune disease, thromboembolic disease, neurologic disease

Arnheim-Dahlström, BMJ, Oct 2013
Klein NP, Archives of Pediatrics and Adolescent Medicine Oct 2012
HPV-9 Vaccine

- Gardasil 9 approved by FDA on December 10, 2014 for females aged 9 to 26 years and males aged 9 to 15 years
- Same schedule
- 97% effective against cervical, vulvar and vaginal cancers associated with the additional types
Reasons for Missed Opportunities for HPV Vaccination


❖ Parents
  ❖ are not offered vaccination
  ❖ perceive vaccine as optional or unnecessary
  ❖ perceive that providers discourage vaccination
  ❖ want information about safety
  ❖ do not understand vaccinating 11-12 year-olds

❖ Providers
  ❖ are reluctant to give multiple shots
  ❖ do not recommend it strongly for 11 year-olds
  ❖ recommend based on estimation of sexual activity
  ❖ have limited experience of HPV disease and underestimate it
  ❖ perceive HPV vaccine as more emotionally charged
  ❖ are often unaware of timing of sexual debut
  ❖ by delaying, leading to non-vaccination
Successful Techniques for Addressing Missed Opportunities for HPV Vaccination


Parents
- want to prevent cancer
- trust in provider recommendation
- think benefit outweighs risk
- Want a strong recommendation

Providers
- emphasized cancer prevention
- normalize HPV vaccine/coadminister with other vaccines
- give a strong recommendation
Estimated Vaccination Coverage with Tdap, MCV4, and HPV among Adolescents 13-17 years, MA 2008 – 2013
Call to Action
HPV Vaccination as a Public Health Priority
Imported Measles Cases in Massachusetts, August 2013

- Patient 1, unvaccinated infant <12 months, just moved to U.S. from overseas and developed classic measles symptoms shortly after arrival.

- Patient 2, non-US born, adult, unclear vaccination history, returned from three weeks of international travel and experienced fever and headache followed by rash
Exposures

- >400 people (non-HCPs) exposed
- >250 HCPs exposed at one facility
  - Three were excluded from work
- >75 HCPs exposed at 2\textsuperscript{nd} facility
  - Facility evaluated evidence of immunity of 4500 staff in whole agency. 263 did not have evidence of immunity (most were born before 1957)
- >400 people contacted by state and local health
  - Those without evidence of immunity were excluded in some settings; others got a first or second dose of MMR and returned to normal activities
- No additional cases seen
MDPH Measles Recommendations for Healthcare Settings

- **Consider measles.**
  - Assess and screen all patients with febrile rash illness.

- **Institute control measures promptly.** This is essential to prevent spread of disease and to limit disruption at your facility due to vaccination activities, exclusion of staff, etc.
  - Escort patients to a separate waiting area or place them immediately in a private room.
  - Place on standard and airborne infection isolation.

MDPH should be contacted at 617-983-6800 or 888-658-2850 as soon as there is suspicion of a case of measles - 24 hours/day, 7 days/week
2-Dose MMR Recommendations: Healthcare Workers

- All healthcare workers without laboratory evidence of immunity should have 2 doses of MMR vaccine, regardless of year of birth.

- Documentation of 2 doses or serologic evidence of immunity will be required if exposed to a case or suspect case.

It is important to ensure all who work in healthcare settings are protected prior to an exposure, as vaccination of susceptible workers after exposure will no longer be acceptable in most settings -- and such individuals will be excluded from work for 5 to 21 days.
CDC Guidance for Evaluating Health-Care Personnel for Hepatitis B Virus Protection and for Administering Postexposure Management
Number of Reported Acute Hepatitis B Cases

Incidence of Percutaneous Injury and Mucosal Exposure

Exposure Prevention Information Network, 1997–2011


Serologic evidence of Protection, by Years Since Vaccination Among Persons Vaccinated at Age <1 Year

Proportion with anti-HBs ≥10 mIU/mL

Years since primary vaccination

Pre-exposure Evaluation for Health-care Personnel Previously Vaccinated With Complete, ≥3-dose Hepatitis B Vaccine Series Who Have Not Had Post-Vaccination Serologic Testing

1. Measure antibody to hepatitis B surface antigen (anti-HBs)
   - anti-HBs < 10 mIU/mL
     - Administer 1 dose of HepB vaccine, postvaccination serologic testing
       - anti-HBs < 10 mIU/mL
         - Administer 2 more doses of HepB vaccine, postvaccination serologic testing
           - anti-HBs < 10 mIU/mL
             - Health-care personnel need to receive hepatitis B evaluation for all exposures
       - anti-HBs ≥ 10 mIU/mL
         - No action for hepatitis B prophylaxis (regardless of source patient hepatitis B surface antigen status)
   - anti-HBs ≥ 10 mIU/mL

<table>
<thead>
<tr>
<th>Health-care personnel status</th>
<th>Postexposure testing</th>
<th>Postexposure prophylaxis</th>
<th>Postvaccination serologic testing†</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source patient (HBsAg)</td>
<td>HCP testing (anti-HBs)</td>
<td>HBIG*</td>
</tr>
<tr>
<td>Documented responder§ after complete series (≥3 doses)</td>
<td>Positive/unknown</td>
<td>—**</td>
<td>HBIG x2 separated by 1 month</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td></td>
<td>No action needed</td>
</tr>
<tr>
<td>Documented nonresponder¶ after 6 doses</td>
<td>Positive/unknown</td>
<td>&lt;10mIU/mL**</td>
<td>HBIG x1</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>≤10mIU/mL</td>
<td>None</td>
</tr>
<tr>
<td>Response unknown after 3 doses</td>
<td>Any result</td>
<td>≥10mIU/mL</td>
<td></td>
</tr>
<tr>
<td>Unvaccinated/incompletely vaccinated or vaccine refusers</td>
<td>Positive/unknown</td>
<td>—**</td>
<td>HBIG x1</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>—</td>
<td>None</td>
</tr>
</tbody>
</table>

*HBIG: Hepatitis B immune globulin

**Anti-HBs: Antibodies to hepatitis B surface antigen

†Postvaccination serologic testing is recommended for all persons with unknown postexposure HBV status. This testing occurs at 1 month and 6 months after the exposure, or later if more convenient.
68 y.o. Female Diabetic

- Pneumococcal
- Zoster
- Tdap
- Hepatitis B
- Influenza
68 y.o. Female

- Pneumococcal ✓ (if no dose after 64 y.o. and for 5 years) Now with PCV13 and PPSV23
- Zoster ✓
- Tdap – if no previous dose of Tdap, if potentially exposing infant
- Hepatitis B ✗
- Influenza ✓
Pregnant 28 y.o. Woman

- Tdap
- Pneumococcal
- Influenza
- MMR
- HPV
Pregnant 28 y.o. Woman

- Tdap ✓
- Pneumococcal ✗
- Influenza ✓ - and for all contacts
- MMR ✗
- HPV ✗
36 y.o. Male Diabetic, with Asthma

- Influenza
- HPV
- Hepatitis B
- Tdap
- Pneumococcal
- MCV
36 y.o. Male Diabetic, with Asthma

- Influenza ✓
- HPV ❌
- Hepatitis B ✓
- Tdap – if no previous Tdap, if potentially exposing infant
- Pneumococcal ✓
- MCV – if asplenic, complement deficiency, or occupational exposure, or travel to endemic area
48 y.o. Female with Hepatitis C

- Pneumococcal
- Influenza
- Hepatitis A
- Zoster
- Hepatitis B
- HPV
- Tdap
48 y.o. Female with Hepatitis C

- Pneumococcal ✓ *
- Influenza ✓
- Hepatitis A ✓
- Zoster ✗
- Hepatitis B ✓
- HPV ✗
- Tdap – if no previous Tdap
<table>
<thead>
<tr>
<th>Strategies That Work to Improve Adult Immunization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing Orders</td>
</tr>
<tr>
<td>Computerized Record Reminder</td>
</tr>
<tr>
<td>Chart Reminder</td>
</tr>
<tr>
<td>Performance Feedback</td>
</tr>
<tr>
<td>Home Visits</td>
</tr>
</tbody>
</table>
Try using a “presumptive” rather than “participatory” approach

- 87% indicated they would be likely to get a vaccine if the provider recommended it
- 55% indicated they would get a vaccine if their provider recommended it

**Your Strong routine recommendation is critical**

NFID. *National Survey on adult vaccination reports low consumer awareness of vaccines and risks of vaccine-preventable diseases.* Bethesda, MD: 9 National Foundation for Infectious Diseases: 2008
FLU SHOTS
ALL DAY! EVERY DAY!
SHINGLES SHOTS
No Appointment Needed
 Summon "Screening Questionnaire for Adult Immunization"

For patients: The following questions will help us determine which vaccines you may be given today. If you answer "yes" to any question, it does not necessarily mean you should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are you sick today?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Do you have allergies to medications, food, or any vaccine?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Have you ever had a serious reaction after receiving a vaccination?</td>
<td></td>
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</tr>
<tr>
<td>4. Do you have a long-term health problem with heart disease, lung disease, asthma, kidney disease, metabolic disease (e.g., diabetes), anemia, or other blood disorder?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Do you have cancer, leukemia, AIDS, or any other immune system problem?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Do you take cortisone, prednisone, other steroids, or anticancer drugs, or have you had radiation treatments?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Have you had a seizure, brain, or other nervous system problem?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. During the past year, have you received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Women: Are you pregnant or is there a chance you could become pregnant within the next month?  

Did you receive any vaccinations in the past 4 weeks?  

completed by: __________________________  Date: __________________________
reviewed by: __________________________  Date: __________________________

Did you bring your immunization record card with you?  yes □ no □
Adult Immunization Scheduler

http://www.cdc.gov/vaccines/recs/Scheduler/AdultScheduler.htm
American College of Physicians
Guide to Adult Immunizations

http://immunization.acponline.org/
American College of Physicians Immunization Portal

ACP Immunization Advisor

Find
Vaccines by Age & Condition

Browse
All Vaccines

ACP News
Latest News & Updates from ACP

ACIP Vaccine Schedule & Other Resources

Sign-up
Get updates on new ACP Products

Vaccine Library

- Hep A
- Hep B
- Herpes Zoster
- HPV
- Influenza High-Dose
- Influenza Inactivated
- Influenza Intradermal
- Influenza LAIV
ACOG’s Immunization Program

http://www.immunizationforwomen.org/

- Tool Kits
  - General Immunization
  - Tdap
  - Flu
- Policy Statements
- Q and As
- Scripts for providers
- Links
Flu Vaccine for Everyone!
A Guide to Reaching and Engaging Diverse Communities

Massachusetts Department of Public Health—Office of Health Equity

September 2011

www.mass.gov/dph/flu
Shots aren’t just for kids.

Vaccines for adults can prevent serious diseases and even death. Ask your doctor about what immunizations you need. Because staying healthy at any age isn’t kid stuff.

Vaccines can prevent Influenza (flu), shingles, diphtheria/tetanus, pertussis, and pneumococcal diseases.

http://www.cdc.gov/vaccines/adults