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**Strengthening Vaccine Confidence in Pediatric Practice**

January 16, 2020
Featured Speaker

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- Pomona Pediatrics PC, a Division of Boston Children’s Health Physicians
- Clinical Assistant Professor New York Medical College

Conflict of Interest & Disclosure Statements

- Planner Sarah Hershey, RN, BSN:
  - Spouse owns stock in Bristol Myers Squibb
- Speaker Jesse Hackell, MD, FAAP
  - Is a stockholder in Pfizer, GlaxoSmithKline and Merck
  - Is on the Advisory Board of GlaxoSmithKline

- None of the other planners or content reviewers have any financial arrangements or affiliations with any commercial entities whose products, research or services may be discussed in this activity.
Learning Objectives

- Discuss the key concepts of vaccine hesitancy and vaccine safety and efficacy;
- Identify ways that providers can address parental concerns and hesitancies; and
- Indicate the key components of a strong presumptive recommendation.

2019 CDC ACIP Vaccine Schedule

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger United States, 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccine</td>
<td>Birth</td>
</tr>
<tr>
<td>Hepatitis B (HepB)</td>
<td>3rd dose</td>
</tr>
<tr>
<td>Rotavirus (RV) (RV1, 2 doses series) (RV2, 3 doses series)</td>
<td>1st dose</td>
</tr>
<tr>
<td>Diphtheria, tetanus, &amp; acellular pertussis (DTaP/DT)</td>
<td>1st dose</td>
</tr>
<tr>
<td>Hemophilus influenzae type b (Hib)</td>
<td>1st dose</td>
</tr>
<tr>
<td>Pneumococcal conjugate (PCV13)</td>
<td>1st dose</td>
</tr>
<tr>
<td>Inactivated poliovirus (IPV)</td>
<td>1st dose</td>
</tr>
<tr>
<td>Influenza (IV)</td>
<td>1st dose</td>
</tr>
<tr>
<td>Influenza (IIV)</td>
<td>1st dose</td>
</tr>
<tr>
<td>Mumps, measles, rubella (MMR)</td>
<td>1st dose</td>
</tr>
</tbody>
</table>

- 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
## Vaccine Schedule (cont.)

### 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). Schedules by age 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>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>
</tr>
</thead>
<tbody>
<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td>See Notes</td>
<td>4th dose</td>
<td>2nd dose</td>
<td></td>
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<tr>
<td>Varicella (VZV)</td>
<td>See Notes</td>
<td>1st dose</td>
<td>2nd dose</td>
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<tr>
<td>Hepatitis A (HepA)</td>
<td>See Notes</td>
<td>2nd dose series, See Notes</td>
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<tr>
<td>Haemophilus b conjugate vaccine (HbOC, PRP-OMP)</td>
<td>See Notes</td>
<td>1st dose</td>
<td>2nd dose</td>
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<tr>
<td>Tetanus, diphtheria, &amp; acellular pertussis (Tdap)</td>
<td>See Notes</td>
<td>15 yrs</td>
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<tr>
<td>Human papillomavirus (HPV)</td>
<td>See Notes</td>
<td>See Notes</td>
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<td></td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td>See Notes</td>
<td>1st dose</td>
<td>2nd dose</td>
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</tr>
<tr>
<td>Pneumococcal polysaccharide (PPV23)</td>
<td>See Notes</td>
<td>Range of recommended ages for all children</td>
<td>Range of recommended ages for certain high-risk groups</td>
<td></td>
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</tbody>
</table>

### Table 1. Comparison of Annual Cases of Vaccine Preventable Diseases Before and After Vaccine Introduction

<table>
<thead>
<tr>
<th>Disease</th>
<th>Estimated Annual Average Cases Pre vaccine Introduction</th>
<th>Number of cases reported in 2018</th>
<th>Percent decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smallpox</td>
<td>29,005</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>21,053</td>
<td>1</td>
<td>100%</td>
</tr>
<tr>
<td>Measles</td>
<td>530,217</td>
<td>375</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Mumps</td>
<td>162,344</td>
<td>2,515</td>
<td>99%</td>
</tr>
<tr>
<td>Pertussis</td>
<td>200,752</td>
<td>15,609</td>
<td>91%</td>
</tr>
<tr>
<td>Polio (paralytic)</td>
<td>16,316</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Rubella</td>
<td>47,745</td>
<td>4</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Congenital Rubella Syndrome</td>
<td>152</td>
<td>0</td>
<td>99%</td>
</tr>
<tr>
<td>Tetanus</td>
<td>580</td>
<td>26</td>
<td>96%</td>
</tr>
</tbody>
</table>
Vaccine Hesitancy

“Vaccine hesitancy refers to delay in acceptance or refusal of vaccines despite availability of vaccine services. Vaccine hesitancy is complex and context specific, varying across time, place and vaccines. It is influenced by factors such as complacency, convenience and confidence.”


The Three “C”s

- Complacency – vaccines as victims of their own success
- Convenience – complex immunization schedule, need for timeliness
- Confidence – trusting parents, trusted providers, safety and efficacy of vaccines
Countering Complacency

Vaccines as a victim of their own success
- With reduced incidence of these illnesses, people soon forget disease severity and its impact on both individuals and society
- New healthcare providers must maintain a historical perspective about diseases, even if they no longer see those diseases
- Until a disease is totally eliminated, like smallpox, vigilance and prevention remains critical

Creating Convenience: Simplifying Complexity and Ensuring Access
- Dealing with a complex immunization schedule
- Ensuring access to vaccines – VFC
- Bunch vaccines into as few visits as possible
- Emphasis on “timeliness” of immunization
- Dealing with so-called “alternative vaccine schedules”

“To be perfectly clear, there is no "alternative“ immunization schedule. Delaying vaccines only leaves a child at risk of disease for a longer period of time … it does not make vaccinating safer. There is no alternative if you want the optimal protection for your child.” - Sandra G. Hassink MD FAAP, President, American Academy of Pediatrics, May 5, 2015
Constructing Confidence: Demonstrating Safety and Efficacy

- Understand and communicate the development and testing process for vaccines
- Safety and efficacy data is available and should be shared
- Anecdotes are not data

“Vaccine confidence …recognizes that parents and health-care providers need to have trust in the recommended vaccines, trust in the providers who recommend and administer vaccinations, and trust in the processes that lead to vaccine licensure and the recommended schedule.” - National Vaccine Advisory Committee Report, 2015

Vaccine Hesitancy: How Significant a Problem?

- 87% of pediatricians reported parental vaccine refusals in 2013, up from 74.5% in 2006
- Reasons for refusal included: child’s discomfort (75%), fear of overwhelming child’s immune system (72%), and believing that vaccines are unnecessary (73%)
  - All reasons have been increasing since 2006
- Fear of vaccines causing autism (64%) and worry about mercury (thimerosal) in vaccines remained significant, but less in 2013 than in 2006

Source: AAP Periodic Survey of Fellows #66 and #84
Exemption Laws and Dismissal

- Nationally, 2.5% of children in 2018-19 school year have some exemption (0.3% medical, 2.2% non-medical) up from 2.3% in 2017-18 school year.

- States without religious/philosophical exemptions (exemptions harder to obtain) have:
  - Higher immunization rates
  - Lower incidence of vaccine-preventable disease
  - Physicians more likely to dismiss vaccine refusing families

Exemption Laws and Dismissal

- Relationships not clear – but stricter laws and willingness to dismiss DO NOT seem to lead to clustering of susceptible individuals with increased spread of disease.

- Strong laws may move social norm toward vaccinating – supports parents who vaccinate AND physicians who dismiss.
**Vaccine Hesitancy: Pediatric and Public Health Responses**

Address on several levels:
- Society and community – inspire confidence in vaccines
- Individual patient level – determine specific concerns of the individual, and address these concerns directly

To paraphrase Leo Tolstoy: “All vaccinated families are alike; every unvaccinated family is unvaccinated for its own reasons.”

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**Practical Aspects**

- Acceptance of physician’s recommendation - 75%
- Hesitancy – spectrum of concerns - 23%
  - Specific issues of concern
  - Vague or free-floating anxiety
- Outright vaccine refusal – some or all vaccines - 2%

Vaccine Refusal

- Outright refusal of all vaccines from initial contact - 1-3% of parents

- Individual decision on handling this:
  - Responsibility to child who is not making the decision
  - Potential poor physician-family relationship
  - “If they don’t trust my recommendation on vaccines, will they trust any other recommendations I might make?”

Vaccine Refusal

- Each provider/group must develop a philosophy and response
  - Consistency among patients
  - Consistency within a group practice
  - Administrative constraints
Vaccine Refusal

Refusal of some, but not all, vaccines
- School requirements – less likely to be refused

- Influenza
  - Disease perception
  - Variable track record of efficacy

- HPV
  - Implied issues of adolescent sexuality
  - Benefits are seen years or decades after vaccination
  - Even physicians may not have disease familiarity

Addressing Parental Concerns

- Great opportunity for a dialogue
- Listen to the parents and be open to discussion
- Determine specific concerns
- Address these concerns – with facts, understanding and empathy

Always remember that a concerned and caring pediatrician is still the parents' most trusted resource for information about their children’s health
Parental Concerns About Vaccines

Vaccine Safety
- Too many vaccines
- Development of autism
- Vaccine additives (thimerosal, aluminum)
- Overload the immune system
- Serious adverse reactions
- Potential for long-term adverse events
- Inadequate research performed prior to licensure
- May cause pain to the child
- May make the child sick

Necessity of Vaccines
- Disease is more “natural” than vaccine
- Parents do not believe diseases being prevented are serious
- Vaccine preventable diseases have disappeared
- Not all vaccines are needed
- Vaccines do not work

Parental Concerns About Vaccines

Freedom of Choice
- Parents have “the right to choose” whether to immunize their child
- “Know what’s best for their child”
- Believe that the risks outweigh the benefits of vaccine
- Do not trust organized medicine, public health
- Do not trust government health authorities
- Do not trust pharmaceutical companies
- Ethical/moral/religious reasons
Specific Techniques

- Sharing firsthand knowledge of diseases
  - Differences in physicians’ experience over time

- Personalizing the message
  - Stories and anecdotes about vaccine success and efficacy
  - Experience with children with vaccine-preventable diseases
  - Personal and family experience with immunizations: children, grandchildren, self

Physicians sharing that they have immunized their own children, grandchildren or themselves, sends a compelling message about their confidence in the safety of vaccines

Specific Techniques

Targeted Discussion Strategies

- Web based random recruitment

- Different messages – text, visual, audio and control concerning MMR

- No difference between groups in parental intent to vaccinate
Specific Techniques

Presumptive Delivery Strategy
- Subtle alteration in messaging
- Immunizations required to maintain optimal disease prevention
- Majority of hesitant parents accepted provider’s recommendation
- Among all parents, a larger proportion resisted vaccine recommendations when providers used a participatory rather than presumptive initiation format (83% vs 26%; P < .001)
- Greater uptake of vaccination associated with lower visit satisfaction

Specific Techniques

Legal Tools
- Parent-centered messaging may have some effect
- Additive benefit of vaccination laws – two centuries experience
- Role of exemption laws
Specific Techniques: Motivational Interviewing

Patient/family centered, open ended discussion technique
- Consent to discuss issues at hand, mirroring, empathy
- Two-way dialog between physician and family to achieve agreement
- Limited effectiveness for refusal, ideal for hesitant parents, unneeded for those ready to vaccinate
- A technique which can be learned
- Still requires a strong physician recommendation

What I Do….

- Start with a presumptive approach: “Today I will give Susie the MMR, varicella and pneumococcal vaccines.”
  - Be alert to subtle, non-verbal signs of hesitation
  - Start motivational interviewing techniques: “You seem hesitant – is it OK to discuss your concerns?”
  - Open ended questions to bring out parental concerns
What I Do (continued)…

- Avoid trying to argue misinformation
- Include factual information about disease severity and complications as well as vaccine safety and efficacy
- Conclude with a simple, strong and personalized recommendation: “It’s what I’ve done with my own children/grandchildren, and I would do no less for your children.”

Does it Work?

- A concerned and informed pediatrician is the most important influence on parents’ decision to immunize their child
- Participation in social media reinforces one’s beliefs about vaccination, no matter what those beliefs are
- Up to half of parents initially refusing a vaccine ultimately accept the pediatrician’s recommendation
- These are time consuming, often repetitive and frustrating conversations
Does it Work?

- Keep in mind the ultimate goal – to protect as many children as possible from serious, vaccine-preventable illnesses!

Visit the *Public Health Live!* webpage for references and resources.

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