

Immunizations – What’s New?

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Objectives

- Pharmacist
 - Summarize recent changes to the 0-18 yr immunization schedule
 - Identify strategies to deal with vaccine hesitancy
 - Apply key considerations for the various CDC-recommended immunizations to determine which are indicated for a given adult
 - Describe opportunities for pharmacists in utilizing the South Dakota Immunization Information System (SDIIS)
- Technician
 - Review recent changes to the 0-18 yr immunization schedule
 - Review strategies for addressing vaccine hesitancy
 - Recognize the various CDC-recommended immunizations and what diseases they prevent in certain eligible adult patients
 - Describe opportunities for pharmacy technicians and other staff in utilizing the South Dakota Immunization Information System (SDIIS)

Disclosure

- I have had no financial relationship over the past 12 months with any commercial sponsor with a vested interest in this presentation.

Immunization 2017 Schedule Updates, Age 0-18 Years

- Hepatitis B
- Polio vaccine
- Medical conditions
- Diphtheria, tetanus, and pertussis
- Hib
- HPV
- Influenza
- Meningococcal
- Pneumococcal

HPV Vaccination

- First recommended for females in 2006
- Males included in recommendation in 2011
- Currently, routine vaccination is recommended for boys and girls 11-12 years of age
- Vaccination is also recommended for females 13-26 years of age and males 13-21 years of age not previously vaccinated

HPV Vaccination

- WHO changed to a 2 dose recommended vaccination series in girls aged 9-14 years
- Shorter series based on immunogenicity studies comparing immune response in younger patients versus young women
- JAMA study of 9-valent HPV vaccine found noninferior immunogenicity using 2 doses in girls and boys age 9-14 compared to 3 doses in female adolescents and young women

Influenza Vaccination in Pediatrics

- Recommendation for inactivated vaccine annually beginning at 6 months of age for every infant, child, and adolescent
 - Two doses the first season the child is immunized
 - One dose the second season of immunization or at age 9 years
 - No live-attenuated influenza vaccine (LAIV)

Influenza Vaccination in Pediatrics

- 2013 – 90% of pediatric patients who died of influenza were not vaccinated
- Pediatrics study (2010-2014) --
 - 74% of patients who died were not vaccinated
 - 47% of patients who died had no health conditions that put them at high risk
 - Less than half of the high risk children who died had received the annual vaccination

Influenza Vaccination in Pediatrics

- Who is at high risk?
 - Asthma
 - Chronic lung disease
 - Neurologic/neurodevelopmental disorders
 - Blood disorders
 - Endocrine disorders
 - Metabolic disorders
 - Kidney or liver disorders
 - Immunosuppression
 - Pregnancy

Meningococcal Vaccination

- Quadrivalent vaccines (serogroups A, C, Y, W-135; MenACWY)
 - MenHibrix (Hib-MenCY; at least 6 weeks of age)
 - Menveo (MenACWY-CRM; at least 2 months of age)
 - Menactra (MenACWY-D; at least 9 months of age)
- Serogroup B vaccines
 - Trumenba (MenB-FHbp)
 - Bexsero (MenB-4C)

Meningococcal Vaccination

- ACIP recommendation:
 - “Administer at single dose of Menactra or Menveo vaccine at age 11 through 12 years, with a booster at age 16 years”
- SD requires 1 dose of MenACWY for children entering the 6th grade IF the child is 11 years of age and and transfer students grades 6-12
 - Or 45 days after their 11th birthday to receive 1 dose of MenACWY

Meningococcal Vaccination

- Serotype B
 - ACIP has no preference for one vaccine over the other
 - MenB-FHbp (Trumenba, 3 dose and 2 dose) and MenB-4C (Bexsero, 2 dose) are NOT interchangeable
 - Recommended for “at risk” individuals
 - Patientsreceiving eculizumab (Soliris)

Maternal Immunization

- Benefits to mom and infant
- Reductions in mortality from vaccine preventable diseases have been slower in infants compared to older children
- In the US, recommended vaccines for a mom-to-be are influenza (inactivated) and Tdap
- Results of vaccination studies in pregnant women

Maternal Influenza Vaccination

- Pregnancy is less likely to result in low birth weight
- Offers protection from secondary bacterial infection
- Inactivated influenza vaccination recommended for women who are or will be pregnant during the influenza season
- Safety

Maternal Tdap Vaccination

- Vital to protect the infant from pertussis
- Recommended for every pregnancy
- Studies have shown maternal vaccination to be 91-93% effective in the prevention of pertussis in young infants
- Safety
- Timing

Minnesota Measles Outbreak

- Headlines:
 - 4/15, Fox News: 5 new measles cases confirmed in Hennepin County, source still unknown
 - 5/4, CBS: Measles outbreak in Minnesota sickens dozens -- 34
 - 5/11, Helio.com: Minnesota measles outbreak linked to anti-vaccine rhetoric hits 50 cases
 - 6/2, CNN: Minnesota measles outbreak exceeds last year's nationwide numbers -- 73 vs 70

Vaccine Hesitancy

- Hesitancy versus resistance
- Knowledge and information gained
- Past experiences with vaccine and vaccine-preventable diseases
- Perceived importance of vaccination
- Risk perception
- Trust of medical professionals and experts
- Perceived societal "normal"
- Parental responsibility
- Religious beliefs

Hesitancy Versus Resistance

- Definitions vary
 - WHO: "delay in acceptance or refusal of vaccines despite availability of vaccination services"
- Hesitant parents have a high risk of finding misinformation
- An important predictor of vaccine acceptance is recommendations from healthcare workers

Knowledge and Information Availability

- Amount of information on the internet
 - Information versus misinformation
- Conflicting information on the internet
- Incomplete understanding of scientific literature
- Media coverage
- Social media

Past Experiences

- Pain associated with immunizations
- Child's anxiety due to vaccinations
- Short term side effects
- Non-science based influences

Perceived Importance of Vaccination

- Incidence of vaccine-preventable diseases
 - Vaccines can be a victim of their own success
- Belief the disease doesn't "apply to my child"
- Misunderstanding direct and indirect immunization protection
- Concerns regarding vaccine efficacy and number of injections

Risk Perception

- Immune system overload
- Overestimated incidence of adverse outcomes
- Perception the natural disease is less severe than a vaccine reaction
- Vaccine scares
- Vaccine controversies
 - Thimerosal
 - Autism

Trust of Medical Professionals and Experts

- Recommendations regarding vaccination are vital
- Challenges for medical professionals
 - Keeping up with changes to the schedule
 - Keeping up with new vaccines
- Public health system influence

Perceived Societal “Normal”

- Geography
 - Nonmedical exemptions
- Behaviors and attitudes of peers
- Altered vaccine schedules

Parental Responsibility and Religious Beliefs

- Parents feel responsible for making the best decisions for their child
- Wanting control over the schedule
- Exemptions due to religious beliefs vary from avoidance of medical intervention to problems with vaccine components

Addressing Vaccine Hesitancy

- Real data
- Refer to reliable websites
- Reminders regarding dangers of the diseases
- Patience
- Remember: parents are trying to do what's right for their children

Questions

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