Lana Hudanick RN, BSN
Missouri Immunization Rates and Best Practices on Raising Immunization
October 20, 2016
Objectives

• Understand what the National Immunization Survey (NIS) entails
• Understand what Missouri’s NIS rate is compared to the National rate
• Understand how the influenza vaccination rate is determined
• Best Practices to increase immunization rates in the clinic setting
National Immunization Survey

• Began April 1994

• Monitors Immunization rates nationwide

• Target certain populations

• Conducted by the National Opinion Research Center (NORC) at the University of Chicago
Why was the NIS was created?

• Began as a result of the 1989-92 measles outbreak
  – Outbreak was mainly in minority, preschool-aged children

• The Childhood Immunization Initiative
  – Increase vaccination coverage of children 2 years of age and older to 90%
  – Improve vaccine delivery
  – Decrease cost of vaccination
  – Increase vaccination accessibility
  – Increase awareness of vaccination
  – Monitor vaccine coverage levels

• To facilitate Immunization Program improvement and to observe changes in behavior that increases vaccination levels
What Immunization rates does the NIS monitor?

- Immunization Coverage for:
  - Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP/DT/DTP)
  - Poliovirus vaccine (Polio)
  - Measles or Measles-Mumps-Rubella vaccine (MMR)
  - Haemophilus influenza type b vaccine (Hib)
  - Hepatitis B vaccine (HepB)
  - Varicella zoster (chickenpox) vaccine (VAR)
  - Pneumococcal conjugate vaccine (PCV)
  - Rotavirus vaccine (ROT)
  - Hepatitis A vaccine (HepA)
  - Influenza vaccine (Flu)
What Immunization rates does the NIS monitor?

• Immunization Coverage for
  – Tetanus, diphtheria, acellular pertussis (Tdap)
  – Meningococcal conjugate (MenACWY)
  – Human papillomavirus (HPV)
  – Influenza vaccine (Flu)
What ages does the NIS target?

• Infants and Children 19 - 35 months of age
  – Started 1994

• Adolescents 13 -17 years of age
  – Started 2006
2015 NIS for Children 19–35 Months of age

National Immunization Survey Rates

- Telephone survey to households with children age 19 -35 months of age
- Follow up survey’s mailed to identified health care providers of child
- Assesses individual vaccines as well as series completion
- Series is 4 DTaP, 3 IPV, 1 MMR, 3 Hib, 3 HepB, 1 Varicella and 4 Pneumococcal Conjugate 13 otherwise known as 4:3:1:3:3:1:4 series
2015 NIS for Children 19–35 Months of age

• The survey assessed 15,167 children nationally

• Statewide, the survey assessed 226 children in Missouri

• The survey includes children from all counties in Missouri
### National Rates & Missouri Rates for Children 19–35 months old

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Healthy People 2020 goal</th>
<th>National Percentage</th>
<th>Missouri Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTaP 4 doses</td>
<td>90%</td>
<td>84.6%</td>
<td>82.6%</td>
</tr>
<tr>
<td>Polio 3 doses</td>
<td>90%</td>
<td>93.7%</td>
<td>90.8%</td>
</tr>
<tr>
<td>MMR 1 dose</td>
<td>90%</td>
<td>91.9%</td>
<td>91.6%</td>
</tr>
<tr>
<td>Hib 3 doses</td>
<td>90%</td>
<td>82.7%</td>
<td>82.7%</td>
</tr>
<tr>
<td>Hep B 3 doses</td>
<td>90%</td>
<td>92.6%</td>
<td>91.4%</td>
</tr>
<tr>
<td>Varicella 1 dose</td>
<td>90%</td>
<td>91.8%</td>
<td>92.4%</td>
</tr>
<tr>
<td>PCV 4 doses</td>
<td>90%</td>
<td>84%</td>
<td>83.4%</td>
</tr>
<tr>
<td>Combined series</td>
<td></td>
<td>72%</td>
<td>71%</td>
</tr>
</tbody>
</table>
What other immunization data is gathered by the survey?

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Healthy People 2020</th>
<th>National Percentage</th>
<th>Missouri Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth dose HepB</td>
<td>85%</td>
<td>72.4%</td>
<td>75%</td>
</tr>
<tr>
<td>Rotavirus series</td>
<td>80%</td>
<td>73.2%</td>
<td>76%</td>
</tr>
<tr>
<td>Hep A series 2 doses</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Birth dose of Hepatitis B rates
  - Hepatitis B vaccine administered within 3 days of birth

- Rotavirus vaccination rates
  - Started no later than 14 weeks & 6 days of age
  - Completed no later than 32 weeks / 8 months of age

- Nationally less than 1% of those contacted had received no vaccinations.
Why are some vaccines higher than others?

- Missouri requires some but not all recommended vaccine series for entrance into Preschool or daycare
  - DTaP
  - Polio
  - Hib
  - Hepatitis B
  - PCV 13
  - MMR
  - Varicella

- In Missouri Hepatitis A and Rotavirus are not required vaccinations for preschool or daycare

- The combination 4:3:1:3:3:1:4 series survey rate is based on completion of vaccination series by 24 months of age
Points to remember for NIS 2015

• Nationally, coverage did not change from the previous survey
• The Healthy People 2020 goal was met for 4 out of 8 vaccines
• The survey is performed by telephone with follow up mailings to providers
• Some information is discarded
Missouri Immunization Rates

Missouri collects immunization information for children attending preschool/childcare

• Childcare Immunization Status Report
  – Completed by all daycares/preschools who care for 10 or more children
  – Completed by January 15th of each year
MISSOURI CHILD CARE IMMUNIZATION RATES
19 Months through Kindergarten Entry

IMMUNIZATION RATES BY ANTIGEN

<table>
<thead>
<tr>
<th>Antigen</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTaP</td>
<td>92.4%</td>
<td>93.2%</td>
<td>93.0%</td>
<td>93.0%</td>
</tr>
<tr>
<td>IPV / Polio</td>
<td>97.5%</td>
<td>97.3%</td>
<td>97.7%</td>
<td>97.9%</td>
</tr>
<tr>
<td>MMR</td>
<td>96.5%</td>
<td>96.3%</td>
<td>96.6%</td>
<td>96.8%</td>
</tr>
<tr>
<td>Hib</td>
<td>94.9%</td>
<td>95.5%</td>
<td>95.5%</td>
<td>95.7%</td>
</tr>
<tr>
<td>HepB</td>
<td>95.3%</td>
<td>96.2%</td>
<td>96.9%</td>
<td>97.1%</td>
</tr>
<tr>
<td>Varicella</td>
<td>97.3%</td>
<td>96.2%</td>
<td>96.2%</td>
<td>96.5%</td>
</tr>
<tr>
<td>PCV</td>
<td>92.4%</td>
<td>95.0%</td>
<td>95.1%</td>
<td>95.3%</td>
</tr>
</tbody>
</table>

Note: Data is based on child care assessments conducted to verify compliance with Section 210.003, RSMo.
- 2012 children assessed: 20,313
- 2013 children assessed: 20,287
- 2014 children assessed: 19,765
- 2015 children assessed: 18,057

Section 210.003, RSMo requires that no child be permitted to enroll in or attend any public, private or parochial day care center, preschool or nursery school caring for 10 or more children unless the child has been adequately immunized against vaccine-preventable childhood illnesses.

Missouri Child Care Requirements for Children 19 Months through Kindergarten Entry
- DTaP: 4 or more doses of diphtheria, tetanus and pertussis vaccine
- IPV / Polio: 3 or more doses of poliovirus vaccine
- MMR: 1 or more doses of measles, mumps and rubella vaccine
- Hib: number of doses of Haemophilus influenzae type b vaccine depends on product type received and age at first dose
- HepB: 3 or more doses of hepatitis B vaccine
- Varicella (chickenpox): 1 or more doses of varicella vaccine
- PCV: number of doses of pneumococcal conjugate vaccine depends on age at first dose

MEDICAL EXEMPTIONS

Medical exemption: certification by a licensed doctor of medicine, doctor of osteopathy or his or her designee indicating that either the immunization would seriously endanger the child’s health or life, or the child has documentation of disease or laboratory evidence of immunity to the disease.

PARENT / GUARDIAN EXEMPTIONS

Parent / Guardian exemption: a parent or guardian exemption, by which a child shall be exempted from the requirements of this rule if one parent or guardian files a written objection to immunization with the child care administrator.

Missouri Department of Health and Senior Services • Bureau of Immunizations • 800.219.3224
AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER Services provided on a nondiscriminatory basis

Updated 3/23/16
2015 NIS for Adolescents 13 – 17 years of age

• The National Survey assessed 21,875 adolescents Nationally

• Statewide the survey assessed 300 adolescents in Missouri
### National Rates and Missouri Rates for 13–17 year olds

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Healthy People 2020 Goal</th>
<th>National Percentage</th>
<th>Missouri Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tdap</td>
<td>80%</td>
<td>86.4%</td>
<td>85.7%</td>
</tr>
<tr>
<td>MCV 1 dose</td>
<td>80%</td>
<td>81.3%</td>
<td>69.7%</td>
</tr>
<tr>
<td>Varicella 2nd Dose</td>
<td>90%</td>
<td>83.1%</td>
<td>68.6%</td>
</tr>
<tr>
<td>HPV 1 dose F</td>
<td>80%</td>
<td>62.8%</td>
<td>59.3%</td>
</tr>
<tr>
<td>HPV 1 dose M</td>
<td>80%</td>
<td>49.8%</td>
<td>44.7%</td>
</tr>
<tr>
<td>HPV 3 doses F</td>
<td>80%</td>
<td>41.9%</td>
<td>31.5%</td>
</tr>
<tr>
<td>HPV 3 doses M</td>
<td>80%</td>
<td>28.1%</td>
<td>25.1%</td>
</tr>
</tbody>
</table>
Points to remember for NIS 2015

• Missouri does have a 8th-12th grade school requirement for Tdap and according to the annual school survey from 2015, the Tdap rate is 96.8%

• The MCV rate should increase as this is the first year the vaccination is required for 8th grade and 12th grade
Missouri Eighth Grade Immunization Rates

Missouri has a state statute which requires schools in Missouri to submit an immunization status report:

- Aggregate report by vaccine antigen
- Number of students enrolled
- All students are assessed each year
- Annual report submitted by October 15 each year
- Bureau of Immunization posts kindergarten and eighth grade immunization rates on the website
### Immunization Rates by Antigen

<table>
<thead>
<tr>
<th></th>
<th>Tdap</th>
<th>IPV / Polio</th>
<th>MMR</th>
<th>Hep B</th>
<th>Varicella</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-2014</td>
<td>97.6%</td>
<td>98.4%</td>
<td>98.2%</td>
<td>98.3%</td>
<td>94.4%</td>
</tr>
<tr>
<td>2014-2015</td>
<td>96.9%</td>
<td>98.7%</td>
<td>98.5%</td>
<td>98.6%</td>
<td>96.0%</td>
</tr>
<tr>
<td>2015-2016</td>
<td>96.8%</td>
<td>98.5%</td>
<td>98.5%</td>
<td>98.5%</td>
<td>96.8%</td>
</tr>
</tbody>
</table>

**Note:** Data is based on self-reported school summary report data in compliance with 19 CSR 20.28.010.

- 2013-2014 children enrolled: 75,123
- 2014-2015 children enrolled: 74,426
- 2015-2016 children enrolled: 73,934

As stated in 19 CSR 20.28.010, it is unlawful for any student to attend school unless the student has been immunized according to this rule or unless a signed statement of medical or religious exemption is on file with the school administrator.

**Missouri Eighth Grade Requirements**

- DTaP: 4 or more doses of diphtheria, tetanus and pertussis vaccine
- Tdap: 1 booster dose of tetanus, diphtheria and pertussis vaccine
- IPV / Polio: 3 or more doses of poliovirus vaccine
- MMR: 2 doses of measles, mumps and rubella vaccine
- Hep B: 3 or more doses of hepatitis B vaccine

### Medical Exemptions

- 2013-2014: 0.2%
- 2014-2015: 0.1%
- 2015-2016: 0.1%

### Religious Exemptions

- 2013-2014: 1.0%
- 2014-2015: 1.1%
- 2015-2016: 1.1%

Medical exemption: Certification by a licensed doctor of medicine, doctor of osteopathy or his or her designee indicating that either the immunization would seriously endanger the child’s health or life, or the child has documentation of disease or laboratory evidence of immunity to the disease.

Religious exemption: A parent or guardian objects in writing to the school administrator that immunization of that student violates his/her religious beliefs.

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Missouri Department of Health and Senior Services - Bureau of Immunizations - ISO:219.322.4
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Updated 04/25/2016
National Immunization Survey data

Influenza

• Influenza vaccination data is collected along with other immunization data for children
  – 19-35 months of age
  – 13-17 years of age

• A short flu survey is conducted by NIS for children of these ages:
  – 6-18 months of age
  – 5-12 years of age
Behavioral Risk Factor Surveillance System

- A telephone survey to monitor major behavioral risks among adults in the U.S.
- All fifty states and Washington DC plus three U.S territories participate
- Data is collected on actual behaviors
- Data collected is used in health promotion and disease prevention
## Influenza Vaccination Rates
### National vs Missouri

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Healthy People 2020</th>
<th>National Average</th>
<th>Missouri Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 mo and older</td>
<td>70%</td>
<td>45.6%</td>
<td>47.4%</td>
</tr>
<tr>
<td>6 mo – 17 years of age</td>
<td>80%</td>
<td>59.3%</td>
<td>59.4%</td>
</tr>
<tr>
<td>6 mo – 4 years</td>
<td>80%</td>
<td>70%</td>
<td>68%</td>
</tr>
<tr>
<td>5 – 12 years of age</td>
<td>80%</td>
<td>61.8%</td>
<td>67.4%</td>
</tr>
<tr>
<td>13 – 17 years of age</td>
<td>80%</td>
<td>46.8%</td>
<td>39.4%</td>
</tr>
<tr>
<td>18 – 64 years of age</td>
<td>70%</td>
<td>36.3%</td>
<td>37.1%</td>
</tr>
<tr>
<td>18 – 49 years of age</td>
<td>80%</td>
<td>32.7%</td>
<td>32.4%</td>
</tr>
<tr>
<td>HR 18 – 49 years of age</td>
<td>90%</td>
<td>46.0%</td>
<td>44.9%</td>
</tr>
<tr>
<td>50 – 64 years of age</td>
<td>80%</td>
<td>43.6%</td>
<td>45.7%</td>
</tr>
<tr>
<td>65 years of age</td>
<td>80%</td>
<td>63.4%</td>
<td>69.8%</td>
</tr>
</tbody>
</table>
Points to remember

• Missouri and the Nation were down as a whole on flu vaccination by 1.9%
• Coverage relatively stayed the same as the previous year
• No age group approached the Healthy People 2020 target
IN RAISING IMMUNIZATION RATES
Raising Immunization Rates

Evidence-based strategies from The Guide to Community Preventive Services

• Enhancing Access to Vaccination Services
• Increasing Community Demand
• Provider-or System-Based Interventions
Enhancing Immunization Access

Make it easier for people to get vaccinated

• Provide vaccinations in schools and child care centers

• Work with your local Women, Infant, Child (WIC) offices

• Home visits
Immunization Access: Schools and Childcare

Why collaborate with childcare/preschool to increase immunizations?

- 300,694* children under 6 years of age with working parents
- 33,205* of these children receiving some form of public assistance

*Figures from Childcare Aware
Immunization Access: Schools and Childcare

Why collaborate with local schools to increase immunization rates?

- 800,000+ children in Missouri are enrolled in school
- 522 public school districts in Missouri
Immunization Access: WIC

Missouri numbers

- 242 WIC clinics throughout the state
- WIC provides food and nutrition counseling services to
  - Pregnant women
  - Infants birth-12 months of age
  - Children 1-5 years of age
- 135,000* participants on average

*2015 data
Increasing Access: Home Visits

Might be too labor-intensive to immunize at home but work with home visiting organizations to assess and refer their clients for immunizations

• Parents as Teachers
• Early Head Start/ Head Start
• First Steps
• Nurses for Newborns
Increasing Community Demand

Encouraging people to get immunized can increase immunization rates

• Immunization Reminder/Recall programs

• Mandated Immunizations
Increasing Community Demand: Immunization Reminder/Recall Programs

Reminder/Recall systems can work in a range of settings

• Community
  – Specific populations
    • 15-35 month old reminder/recall program
      – Missing one or more immunizations from the 4:3:1:3:3:1:4 series

• Individual healthcare clinics
  – Missed appointments
  – Upcoming appointments
Increasing Community Demand: Mandated vaccination requirements

Missouri mandates immunization requirements for:

• Preschool/childcare attendance
  – All ACIP recommended immunizations except for
    • Hepatitis A, Flu and Rotavirus

• School attendance
  – All ACIP recommended immunizations except for
    • Hepatitis A, Flu, HPV and MenB
Provider-or System-Based Interventions

- ShowMeVax
- AFIX
- Standing Orders for immunizations
- Best Practice Alerts
Provider- or System-Based Interventions: ShowMeVax

ShowMeVax

- Assess client’s immunization status
- Decision support for clinician
- Able to run immunization reports for clinicians
- Assist with Vaccine accountability and ordering
Provider-or System-Based Interventions: AFIx

• Assessment
  – Review immunization records for specific populations at clinics

• Feedback
  – Identify immunization rates for specific populations
  – Review missed opportunities for immunizations
  – Review what is working well

• Incentive

• eXchange
Provider-or System-Based Interventions: Standing Orders

Allows nurses and pharmacists in Missouri to assess and administer the recommended immunizations without a physician being present

- Clinics
- Hospitals
- Pharmacies
- Long-term care facilities
Provider- or System-Based Interventions: Best Practice Alerts

Remind the provider that immunizations are due by utilizing:

• Chart notes
• Computerized alerts
• checklists
Resources Available

• Easy to read Immunization Schedules
  – Adult, infant & adolescent

• Infographics on Immunizations
  – HPV & Hep B

• Clinic tools
  – Pneumococcal Algorithm

• Posters, Fact sheets
  – Flu, pertussis, HPV & Meningococcal

• Postage Paid reminder/recall cards
  – Adults, infant/child and adolescent
## Assistance for Immunization Providers

- **Immunization Quality Manager (IQM)**
  - Assistance with Vaccines for Children Program
  - Visits

- **ShowMeVax**
  - Online Trainings
  - Support staff available for
    - Calls
    - Trainings
Assistance for Immunization Providers

• Trainings
  – VFC411
  – Immunizations411 Move the Needle on Immunization Rates
  – Missouri Immunization Conference 2017
  – Immunizations411 Monthly Webinars

• Assistance
  – In-person trainings
  – Phone calls
  – Online support
  – ShowMeVax reports
Questions

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