Mind the Gap: Using Immunization Information Tools Strategically

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Division of Emergency & Urgent Care
Children’s Mercy Hospitals & Clinics
Kansas City, MO

and

Associate Director for Research
Immunization Action Coalition
10 Questions on ACIP General Recommendations

Please take out a pen
Timing and Scheduling
1. The **minimum interval** between DTaP-3 and DTaP-4 is 6 calendar months. Cole’s DTaP-4 was administered 5 days before the 6 month interval; the dose was invalid.

*Which of the following is the best response to this situation?*
1. Which of the following is the best response to this situation?

A. Count the dose.
B. Restart the DTaP series.
C. Repeat DTaP-4 6 months after the valid 3rd dose of DTaP.
D. Repeat DTaP-4 6 months after the invalid 4th dose of DTaP.
1. Which of the following is the best response to this situation?

A. Count the dose. *DTaP-4 does not need to be repeated if the interval was at least 4 months.*

B. Restart the DTaP series.

C. Repeat DTaP-4 6 months after the valid 3\textsuperscript{rd} dose of DTaP.

D. Repeat DTaP-4 6 months after the invalid 4\textsuperscript{th} dose of DTaP.
2. The **minimum** age for Varicella-dose 1 is 12 months of age. Chase’s Varicella-1 was administered 5 days before his first birthday; the dose was invalid.

*Which of the following is the best response to this situation?*
2. Which of the following is the best response to this situation?

A. Fire the nurse who messed this up.
B. Only advise the mother to keep Chase away from people with chickenpox.
C. Repeat Varicella-1 at least 4 weeks after the invalid dose.
D. Repeat Varicella-1 asap so Chase will be protected asap.
2. Which of the following is the best response to this situation?

A. Fire the nurse who messed this up.
B. Only advise the mother to keep Chase away from people with chickenpox.
C. Repeat Varicella-1 at least 4 weeks after the invalid dose.
D. Repeat Varicella-1 asap so Chase will be protected asap.
3. Potential advantages of **combination vaccines** include improved vaccine coverage rates, but their use may lead to “extra-vaccination.”

<table>
<thead>
<tr>
<th></th>
<th>Birth</th>
<th>2 mos</th>
<th>4 mos</th>
<th>6 mos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hep B</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>DTaP</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>IPV</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
3. Potential advantages of combination vaccines include improved vaccine coverage rates, but their use may lead to “extra-vaccination.”

*Which of the following is NOT one of the factors that ACIP recommends considering when balancing the risks and benefits of extra-vaccination?*
3. Which of the following is NOT one of the factors that ACIP recommends considering when balancing risks & benefits of extra-vaccination?

A. Is the extra antigen contraindicated?
B. Will VFC cover the combination vaccine if a single antigen vaccine is licensed?
C. How reactogenic is the extra antigen? (e.g., Hib & Hep B – low, tetanus –higher)
D. Is the vaccine with the needed antigen readily available without the extra antigen.
3. Which of the following is NOT one of the factors that ACIP recommends considering when balancing risks & benefits of extra-vaccination?

A. Is the extra antigen contraindicated?
B. Will VFC cover the combination vaccine if a single antigen vaccine is licensed?
C. How reactogenic is the extra antigen? (e.g., Hib & Hep B – low, tetanus – higher)
D. Is the vaccine with the needed antigen readily available without the extra antigen.
4. Dale is a healthy girl who had only 1 dose of pneumococcal vaccine in the first year of life. Now she is 22 months old.

Of the following, which is best for Dale?

See the sheet in your packet:
Recommendations for Pneumococcal Vaccine Use in Children
4. Of the following, which is best for Dale?

A. 1 dose now, 2 more ≥ 8 weeks apart
B. 1 dose now, another ≥8 weeks from now
C. 1 dose now (this is the last needed dose)
D. Consider 1 dose of PCV23
4. Of the following, which is best for Dale?

A. 1 dose now, 2 more \( \geq 8 \) weeks apart
B. 1 dose now, another \( \geq 8 \) weeks from now
C. 1 dose now (this is the last needed dose)
D. Consider 1 dose of PCV23
What is a month?

- 28 days?
- 30 days?
- 30.5 days?
- A calendar month?

Relief is on its way, thanks to computers!
Storage and Handling
Storage and Handling or
“When don’t you want to be the biggest loser?”
5. The ACIP General Recommendations include a temperature log. The KS version is shown here.

<table>
<thead>
<tr>
<th>Day of Month</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
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<th>11th</th>
<th>12th</th>
<th>13th</th>
<th>14th</th>
<th>15th</th>
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<tbody>
<tr>
<td>Exact Time</td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td>°F Temp</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Take Immediate Action if Temperature is in the Shaded Area!**
5. Which of the following is a Storage and Handling error that has been documented in several pediatric offices in KS and/or MO?

A. Not documenting temperatures 2 times daily.
B. Recording out-of-range temperatures, but not noticing.
C. Recording out-of-range temperatures, but not doing anything about it.
D. Not knowing what the appropriate temperature is even though it is on the temperature log.
E. All of the above
5. Which of the following is a Storage and Handling error that has been documented in several pediatric offices in KS and/or MO?

A. Not documenting temperatures 2 times daily.
B. Recording out-of-range temperatures, but not noticing.
C. Recording out-of-range temperatures, but not doing anything about it.
D. Not knowing what the appropriate temperature is even though it is on the temperature log.
E. All of the above
6. Which of the following is an acceptable vaccine storage practice?
6. Which of the following is an acceptable vaccine storage practice?

A. Vaccine being stored in a refrigerator with water bottles to stabilize temperatures
B. Vaccine being stored in a dorm style refrigerator
C. Vaccine being stored in the crisper and/or meat drawers
D. Vaccine being stored in a refrigerator with staff food/beverages
6. Which of the following is an acceptable vaccine storage practice?

A. Vaccine being stored in a refrigerator with water bottles to stabilize temperatures

B. Vaccine being stored in a dorm style refrigerator

C. Vaccine being stored in the crisper and/or meat drawers

D. Vaccine being stored in a refrigerator with staff food/beverages
7. If they are frozen, non-lyophilized, aluminum-adjuvanted vaccines may undergo irreversible loss of potency.

Which of the following is FINE to administer after exposure to freezing temperatures?
7. Which of the following is fine to give after being exposed to freezing temperatures?

A. HPV vaccine
B. Hep A and Hep B vaccine
C. MMR vaccine
D. PCV vaccine
E. D, T, or P-containing vaccines
7. Which of the following is fine to give after being exposed to freezing temperatures?

A. HPV vaccine
B. Hep A and Hep B vaccine
C. MMR vaccine
D. PCV vaccine
E. D, T, or P-containing vaccines
Other important things to remember

- No overcrowding in the storage unit
- Rotate stock when vaccines with longer expiration dates are received
- Use thermometers that are certified or calibrated and not expired
- Keep varicella vaccine in the freezer
Storage & Handling Horror Stories: 
Gruesome Tales from the Mid-West
Storage & Handling Horror Stories

- Revaccination due to temperature problems

- The importance of having vaccine management polices and emergency management for vaccine storage

- Staff turnover - new employee was never told that temperatures need to be documented for the vaccine storage unit. She was there for a month with no temperature documentation.
MORE Storage & Handling Horror Stories

- Household refrigerator overloaded with vaccine so they stored vaccine in the door, bins and emptied the pre-filled syringes into the basket to save room

- MMR exposed to light

- Varicella transported to a school clinic and improperly stored
Learn from the mistakes of others.
You can’t live long enough
to make them all yourself.

Eleanor Roosevelt
US diplomat & reformer
1884-1962
Immunization rates of kindergarten students at school entry, KS, 2009

Figure 1  Immunization coverage rates of kindergarten students at school entry, Kansas 2009-2010.

* Based on kindergarten survey from school year starting in 2009.
### Childhood Immunization Coverage by State, NIS 2009

<table>
<thead>
<tr>
<th></th>
<th>4+DTaP</th>
<th>3+Polio</th>
<th>1+MMR</th>
<th>3+Hib</th>
<th>3+PCV</th>
<th>Rotavirus</th>
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<tbody>
<tr>
<td>USA</td>
<td>83.9±1.0</td>
<td>92.8±0.7</td>
<td>90.0±0.8</td>
<td>83.6±1.0</td>
<td>92.6±0.7</td>
<td>43.9±1.4</td>
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<tr>
<td>MO</td>
<td>78.4±6.2</td>
<td>87.5±5.5</td>
<td>88.8±5.0</td>
<td>79.9±6.2</td>
<td>86.1±5.9</td>
<td>46.9±7.1</td>
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<td>KS</td>
<td>87.2±5.9</td>
<td>93.8±4.4</td>
<td>92.5±4.6</td>
<td>86.7±6.3</td>
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<td>39.7±8.1</td>
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<tr>
<td>Highest state</td>
<td>91.3±3.6</td>
<td>98.1±1.5</td>
<td>94.7±2.7</td>
<td>97.1±2.3</td>
<td>98.8±1.0</td>
<td>71.2±7.3</td>
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<tr>
<td>MI</td>
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<td>TN</td>
<td>NH</td>
<td>CT</td>
<td>RI</td>
<td></td>
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<tr>
<td>Lowest state</td>
<td>73.1±6.6</td>
<td>85.8±4.8</td>
<td>81.8±6.0</td>
<td>58.8±9.7</td>
<td>84.5±4.9</td>
<td>20.9±4.7</td>
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<tr>
<td>AR</td>
<td>NV</td>
<td>AR</td>
<td>CT</td>
<td>NV</td>
<td>WA</td>
<td></td>
</tr>
</tbody>
</table>

Even with good rates, there can be clusters of under-immunization.
Estimated # - No MMR*

<table>
<thead>
<tr>
<th>Location, CA</th>
<th>Number (±)</th>
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<tbody>
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<td>1847</td>
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<td>Harris, TX</td>
<td>11205</td>
<td>2254</td>
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<tr>
<td>Cook, IL</td>
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<td>2476</td>
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<td>Maricopa, AZ</td>
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<td>Dallas, TX</td>
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<td>San Diego, CA</td>
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<td>Bexar, TX</td>
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<td>Hillsborough, FL</td>
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<td>Tarrant, TX</td>
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<tr>
<td>Miami-Dade, FL</td>
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<tr>
<td>King, WA</td>
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<tr>
<td>Broward, FL</td>
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<tr>
<td>Santa Clara, CA</td>
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<td>Alameda, CA</td>
<td>2207</td>
<td>655</td>
</tr>
<tr>
<td>Oakland, MI</td>
<td>2187</td>
<td>254</td>
</tr>
</tbody>
</table>

2187 13636

Number Unvaccinated
From 2007 - 2010 no cases of confirmed measles in Kansas

- In 2011, 6 confirmed cases of measles
- All in the Kansas City metro area
- All in unvaccinated children
- 1st reported case was in 18 year old
  - Spread it to her unvaccinated siblings
  - During the investigation 3 more cases were identified in a child care facility where the 18 yr old had visited
All 3 daycare cases...

- Had onset prior to the 18 year old
- Were not old enough to be vaccinated
- Had received medical treatment (and one was hospitalized) but no one suspected measles until after the last cases in the older children were identified.

- SOURCE of exposure has yet to be identified
Sometimes bridging the gap is not easy...

...or comfortable
8. An office manager is a real vaccination champion and she wants to bring her office’s rates up.

Of the following, which is NOT strongly recommended by the Task Force on Community Preventive Services?
8. Which is NOT strongly recommended by the Task Force on Community Preventive Services?

A. Client reminder or recall systems
B. Provider reminder systems
C. Reducing out of pocket costs
D. Use standing orders
E. Attend conferences and then do nothing differently when you get back to your office
8. Which is NOT strongly recommended by the Task Force on Community Preventive Services?

A. Client reminder or recall systems
B. Provider reminder systems
C. Reducing out of pocket costs
D. Use standing orders
E. Attend conferences and then do nothing differently when you get back to your office
Patient Reminder / Recall Messages

You Can Count On Us To Care!

Szilagyi PG. JAMA 2000; 284:1820.
REMEMBER
This patient is due for pneumococcal vaccine!!!

Patient name:
☐ No previous vaccination
☐ Vaccine given before 65 years and ≥ 5 years since last vaccine

☐ Vaccine given
☐ Vaccine not given:
  ☐ Patient did not keep appointment
  ☐ Patient refused
  ☐ Patient previously vaccinated
  ☐ Contraindication
    (specify):
  ☐ Provider forgot
Standing Orders Are Among the Most Effective Strategies

What: Non-MDs offer & give vaccines without direct MD involvement

How: Written policies

Where: office, hospital, residential care

Annual influenza immunization for all high-risk persons and other individuals who wish to reduce the likelihood of becoming ill with influenza is recommended by the Centers for Disease Control and Prevention and the Minnesota Coalition for Adult Immunization. A standing order to immunize high-risk patients, or patients not at high risk but requesting influenza immunization, and who are hospitalized or receiving services is provided below.

To Be Completed by Nurse/Pharmacist

RISK CATEGORY:

☐ Patient is "High Risk" due to:
  ☐ Age 50 or older
  ☐ History of heart disease, lung disease, diabetes, or other chronic medical condition
  ☐ Patient is not "High Risk."

COMPLETE IF PATIENT AT "HIGH RISK" or not high-risk but requests influenza immunization:

☐ Influenza Vaccine not indicated for this patient due to:
  ☐ Previous immunization this influenza season
  ☐ Serious allergies to eggs
  ☐ Previous severe reaction to influenza vaccine
  ☐ Acute febrile illness
  ☐ Refusal of vaccine by patient because he/she:
    ☐ Believes not at risk for disease
    ☐ Believes immunization doesn’t work
    ☐ Fear of adverse effects
    ☐ Wants further advice (e.g. physician, family)
    ☐ Would rather receive elsewhere
    ☐ Other reason: ________________________________

☐ Not indicated for other reason (explain) ________________________________

☐ Influenza Vaccine Indicated. Give Influenza Vaccine Information Statement and Influenza Vaccine 0.5 mL IM if 13 years or older. (If patient is 12 years or younger, contact attending MD for order and refer to Pediatric Dosing Guidelines.)

Information Collected by ________________________________ Date __________________

INFLUENZA IMMUNIZATION ORDERS

MMWR 2000; 49 (RR-1).
<table>
<thead>
<tr>
<th>Intervention</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase community demand for vaccination</td>
<td></td>
</tr>
<tr>
<td>Client reminder or recall systems</td>
<td>Strongly recommended</td>
</tr>
<tr>
<td>Multicomponent interventions, including education</td>
<td>Strongly recommended</td>
</tr>
<tr>
<td>Requirements for entry to schools, child-care facilities, and colleges</td>
<td>Recommended</td>
</tr>
<tr>
<td>Community education alone</td>
<td>Insufficient evidence</td>
</tr>
<tr>
<td>Clinic-based education</td>
<td>Insufficient evidence</td>
</tr>
<tr>
<td>Patient or family incentives or sanctions</td>
<td>Insufficient evidence</td>
</tr>
<tr>
<td>Client-held medical records</td>
<td>Insufficient evidence</td>
</tr>
<tr>
<td>Enhance access to vaccination services</td>
<td></td>
</tr>
<tr>
<td>Reducing out-of-pocket costs</td>
<td>Strongly recommended</td>
</tr>
<tr>
<td>Enhancing access through the U.S. Department of Agriculture's Women, Infants,</td>
<td>Recommended</td>
</tr>
<tr>
<td>and Children program</td>
<td></td>
</tr>
<tr>
<td>Home visits, outreach, and case management</td>
<td>Recommended</td>
</tr>
<tr>
<td>Enhancing access at schools</td>
<td>Recommended</td>
</tr>
<tr>
<td>Expanding access in health care settings</td>
<td>Recommended as part of</td>
</tr>
<tr>
<td></td>
<td>multicomponent</td>
</tr>
<tr>
<td></td>
<td>interventions only</td>
</tr>
<tr>
<td>Enhancing access at child care centers</td>
<td>Insufficient evidence</td>
</tr>
<tr>
<td>Focus on providers</td>
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<tr>
<td>Reminder or recall systems</td>
<td>Strongly recommended</td>
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<tr>
<td>Assessment and feedback</td>
<td>Strongly recommended</td>
</tr>
<tr>
<td>Standing orders</td>
<td>Strongly recommended</td>
</tr>
<tr>
<td>Provider education alone</td>
<td>Insufficient evidence</td>
</tr>
</tbody>
</table>

9. The ACIP General Recommendations cover a host of important topics, including Timing & Scheduling and Storage & Handling as we’ve discussed today.

Which of the following NOT discussed in the General Recs?
9. Which is NOT discussed?

A. Combinations
B. Contraindications
C. Route of administration
D. Bill Atkinson’s birth place
E. Allergies
F. Breastfeeding and pregnancy
G. Persons vaccinated outside the US
H. Vaccine records
I. IIS
J. Increasing rates
K. Vaccine safety
L. Communicating with parents
Like some other great works, the General Recs Summary is more widely owned than read.

Do we need to advertise?
Just read it.
General Recs: less bark, more wag
Welcome to Austin–Bergstrom International Airport (AUS)

“AUSTIN-BERGSTROM INTERNATIONAL AIRPORT (AUS)

“Relax, you’re in Austin”...

Arrive Early in the Terminal

2 hours if flying before 8 a.m.
90 minutes if flying after 8 a.m.
TSA Checkpoints open at 4 a.m.

News

- April 2011 Passenger & Air Cargo traffic
- Delta Air Lines announces new Austin-Kansas City nonstop flight
- Standard & Poor’s raises credit rating for Austin-Bergstrom International Airport
- Best Airports in the World honor includes Austin
- Real-time flight status at Austin

Complimentary WiFi

LOG ON TO BOINGO FOR 30 CONSECUTIVE MINUTES DAILY OF COMPLIMENTARY WI-FI

Provided by Austin-Bergstrom International Airport and Boingo Wireless

Austin-Bergstrom International Airport

Boingo

Twitter | Facebook
10. Does MMR cause autism?
1. Does MMR cause autism?

In 2004 IOM reviewed 14 available studies

- 12 negative:
  - 9 controlled observational
  - 3 ecological
  - 2 passive reporting (Finland)

- 2 positive: both by Geier & Geier

Their conclusion: Evidence favors rejection of a causal relationship
Does MMR cause autism? (cont.)

Subsequently 2 lab studies showed no evidence of measles virus persistence in the peripheral blood mononuclear cells of children with ASD.
What causes autism?

Genetics

- Identical twins; siblings
- A gene on the X chromosome? - Fragile X is a known cause
- Deletion of 593 kb on chromosome 16p11.2
- Brain cell communication gene
- Father over 40
- Certain psychiatric dxn in parent
What causes autism? (continued)

- Genetics
- Prenatal insults (day 20-24 of gestation)
  - Thalidomide
  - Natural congenital rubella
  - Other possibilities: high folic acid level in father’s sperm?
- Gestational age at birth <35 weeks
Autism appears to be based on something a child is born with

- Abnormal brain growth
- Abnormal brain proteins as newborns
- Home movie studies
Revving Up Support at the AML Bikers for Charity Ride

Taking off on Monday, June 13, the ride will start in Rockville Centre, NY and wind along the coast to the Montauk Point Lighthouse. The 100 mile ride will raise awareness and donations for autism science.

Volunteer ride organizer Barry Koch has selected ASF as a beneficiary for the second year in a row. This ride has raised thousands of dollars for outstanding charities over the years.

To register for the ride email ambikersforcharity@gmail.com and make a donation to support an individual rider. Remember that many employers have matching-gift programs which can double or triple the impact of a donation. As a 501(c)3 nonprofit, ASF is eligible for many matching-gift programs of corporations, foundations and other organizations.
Welcome to the Kansas Immunization Program!
The Kansas Immunization Program is committed to keeping Kansans free of vaccine preventable diseases.

Beewise Immunize and Governor Brownback
The Kansas Department of Health and Environment

2011-2012 SCHOOL & CHILD CARE IMMUNIZATION INFORMATION

- School & Child Care Immunization Requirements for 2011-2012 (.pdf)
- 2011-2012 School Entry Requirements Cheat Sheet (.pdf)
- Kansas Certificate of Immunization (KCI) (.pdf) - **Immunizations Required For School Entry**
- Kansas Certificate of Immunizations - Form B (Medical Exemptions) (.pdf)
- Retrospective Immunization Coverage Survey 2008-2009 School Year (.pdf)
- Kansas Immunization Regulations for School & Childcare, published June 26, 2008 (.pdf)
- Kansas Classroom Handbook of Communicable Diseases (.pdf)
- Kansas Statutes Related to School Immunizations (.pdf)
- Additional Kansas Statutes Related to Immunizations (.pdf)

POLIO VACCINE- IMPORTANT INFO FOR SCHOOL COMPLIANCE

The 2011 AAP Immunization Recommended Schedule (http://www.cdc.gov/vaccines/recs/schedules/downloads/child/2011/11_0-6yrs-schedule-pr.pdf) reflects the 2009 updated recommendations of the ACIP regarding routine poliovirus vaccination (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5830a3.htm?s_cid(mm5830a3_e). The final dose in the IPV series should be administered at age 4 years or older and the minimum interval from dose 3 to dose 4 is extended from 4 weeks to 6 months. Communication received from CDC stated that there was no recommendation to make this retroactive before August 7, 2003 when the recommendation was published. The 4 yr minimum age and 6 month minimum interval applies to current vaccination activity for
Jefferson County developed this great tool:

Immunization Requirements for the 2011 - 2012 School Year

K.A.R. 28-1-20 defines immunizations required for any individual who attends school or a childcare program operated by a school. There are changes in requirements for immunizations for the upcoming school year. Please carefully review the requirements below. The usual number of doses required are listed; however there are exceptional circumstances that could alter the number of doses a child needs. If you have questions about your child's immunization status, contact your child's primary care provider or local health department.

*Proof of receiving the immunizations must be provided to the school prior to attending the first day of school.*

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Requirement</th>
<th>Vaccine</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTaP/DT (diptheria, tetanus, pertussis)</td>
<td>4 doses</td>
<td>Tdap</td>
<td>1 dose***</td>
</tr>
<tr>
<td>IPV (polio)</td>
<td>3 doses</td>
<td>IPV (polio)</td>
<td>4 doses</td>
</tr>
<tr>
<td>MMR (measles, mumps, rubella)</td>
<td>1 dose</td>
<td>MMR (measles, mumps, rubella)</td>
<td>2 doses</td>
</tr>
<tr>
<td>Varicella (chickenpox)</td>
<td>1 dose*</td>
<td>Varicella (chickenpox)</td>
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</tr>
<tr>
<td>Hepatitis A</td>
<td>2 doses</td>
<td>Hepatitis B</td>
<td>3 doses</td>
</tr>
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<td>Hepatitis B</td>
<td>3 doses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hib (haemophilus influenza type B)</td>
<td>3 doses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prevnar (pneumococcal conjugate)</td>
<td>4 doses</td>
<td></td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>Vaccine</th>
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</tr>
</thead>
<tbody>
<tr>
<td>DTaP/DT (diptheria, tetanus, pertussis)</td>
<td>5 doses</td>
<td>Tdap</td>
<td>1 dose****</td>
</tr>
<tr>
<td>IPV (polio)</td>
<td>4 doses</td>
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<td>4 doses</td>
</tr>
<tr>
<td>MMR (measles, mumps, rubella)</td>
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### Additional ACIP Recommended Vaccines

**NOT REQUIRED for School Entry**

- Measles, Mumps, Rubella (MMR)
- Varicella (Chickenpox)
- Hepatitis A
- Hepatitis B
- Hib (Haemophilus influenza type B)
- Prevnar (Pneumococcal conjugate)
Why are these requirements important?

All images are courtesy of the IAC Image Library.
http://www.vaccineinformation.org/video/pertussis.asp
Measles
Measles

- Generalized exanthem
- Rash appears on 4th to 7th day of illness
- Classic triad of cough, coryza, conjunctivitis
- Starting on head and progressing caudally
- Classic Koplik spots are transient and often gone by the time the rash is present
- Diagnosis is made by serology or viral culture of NP secretions
Measles (Continued)
Tetanus
Some vaccines are recommended and worth giving even though they are not required for school!

- Influenza
Some vaccines are recommended and worth giving even though not required for school or daycare!

- Influenza
- Rotavirus
Some vaccines are recommended and worth giving even though they are not required for school!

- Influenza
- Rotavirus
- HPV
Some vaccines are recommended and worth giving even though they are not required for school!

- Influenza
- Rotavirus
- HPV
- MCV4
Who is worthy of quality care?
Welcome to the Kansas Immunization Program!
The Kansas Immunization Program is committed to keeping Kansans free of vaccine-preventable diseases.

Beewise Immunate and Governor Brownback
The Kansas Department of Health and Environment
Sam Brownback, Governor - Robert Moser, MD, Secretary
Curtis State Office Building, 1000 SW Jackson, Topeka, Kansas 66612
Phone (785) 296-1500. Fax: (785) 368-6368. Email: info@kdheks.gov

Immunization Manual

Kansas Department of Health and Environment

Bureau of Epidemiology and Disease Prevention

Immunization Manual
Key Books on Vaccination

Seth Mnookin
THE PANIC VIRUS
A True Story of Medicine, Science, and Fear

Autism's False Prophets
Bad Science, Risky Medicine, and the Search for a Cure
Paul A. Offit, M.D.

Deadly Choices
How the Anti-Vaccine Movement Threatens Us All
Paul A. Offit, M.D.

Vaccines and Your Child
Separating Fact from Fiction
Paul A. Offit, M.D. and Charlotte A. Moser