Immunization Update
May 2009

Live Satellite Conference and Webcast
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Faculty

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Objectives

- Identify general recommendations for immunizations in specific groups
- Identify false contraindications to vaccination
- Discuss requirements for vaccinations in daycare and school

Objectives

- Identify missed opportunities for vaccinations
- Identify correct techniques and needle lengths for I.M. and subcutaneous vaccinations

Immunization Records

- A verbal history of previous immunizations is not sufficient evidence
- Accept as valid only immunizations that are in writing and dated
- Check ImmPRINT for immunization history

Screening Questions

- Are you/child sick today?
- Allergies to foods, medications, vaccines, latex?
- Any serious reactions to a prior vaccine?
- Seizures, brain or nerve problem?
- Cancer, leukemia, AIDS, or any other immune system disorder?

Screening Questions

- Any steroids, chemotherapy or X-ray treatments in the past 3 months?
- Any blood or blood products, including immune globulin in the past year?
- Pregnant, or chance of pregnancy in next 3 months ?
- Any other vaccinations in the past 4 weeks?

Principles of Vaccination

- General rule
  - All vaccines can be administered at the same visit as all other vaccines

Spacing of Live Vaccines

- Two live injected or intranasal influenza vaccines not given on the same day should be separated by 4 weeks
  - If given <28 days, second dose should be repeated

Simultaneous Administration

- Simultaneous vaccination with multiple vaccines has no adverse effect on the normal childhood immune system

Use of Combination Vaccines

- To minimize the number of injections children receive, parenteral combination vaccines should be used, if licensed and indicated for the patient's age, instead of their equivalent component vaccines

Principles of Vaccination

- General rule
  - Increasing the interval between doses of a multidose vaccine does not diminish the effectiveness of the vaccine*

    * After the series has been completed

Principles of Vaccination

- General rule
  - Decreasing the interval between doses of a multidose vaccine may interfere with antibody response and protection

Minimum Intervals and Ages

- Vaccine doses should not be administered at intervals less than the minimum intervals or earlier than the minimum age

Violation of Minimum Intervals or Minimum Age

- ACIP recommends that vaccine doses given up to four days before the minimum interval or age be counted as valid
- Immunization programs and/or school entry requirements may not accept all doses given earlier than the minimum age or interval

Extended Interval Between Doses

- Not all permutations of all schedules for all vaccines have been studied
- Available studies of extended intervals have shown no significant difference in final titer
- It is not necessary to restart the series or add doses because of an extended interval between doses

Precaution

- A condition in a recipient that might increases the chance or severity of an adverse reaction
  - Prolonged crying or high fever after a dose of pertussis-containing vaccine

Precaution

- A condition that might compromise the ability of the vaccine to produce immunity
  - Giving MMR to someone who has recently had a blood transfusion

Contraindication

- A condition in a recipient that greatly increases the chance of a serious adverse reaction
  - Giving influenza vaccine to a person with a true anaphylactic allergy to eggs

Permanent Contraindications

- Permanent contraindications to vaccination
  - Severe allergic reaction to a vaccine component or following a prior dose
  - Encephalopathy not due to another identifiable cause occurring within 7 days of vaccination

Invalid Contraindications to Vaccination

- Mild illness
- Antimicrobial therapy
- Disease exposure or convalescence
- Pregnant or immunosuppressed person in the household
- Breastfeeding

Invalid Contraindications to Vaccination

- Preterm birth
- Allergy to products not present in vaccine or allergy that is not anaphylactic
- Family history of adverse events
- Tuberculin skin testing
- Multiple vaccines

Vaccination During Acute Illness

- No evidence that acute illness reduces vaccine efficacy or increases vaccine adverse reactions
- For moderate or severely ill, vaccines should be delayed until the illness has improved

Vaccination During Acute Illness

- Mild illness, such as otitis media or an upper respiratory infection, is NOT a contraindication to vaccination

Benefit and Risk Communication

- Opportunities for questions should be provided before each vaccination
- Federal Law mandates Vaccine Information Statements (VISs)
  - Must be provided by public and private providers before each dose of each vaccine
  - Available in multiple languages

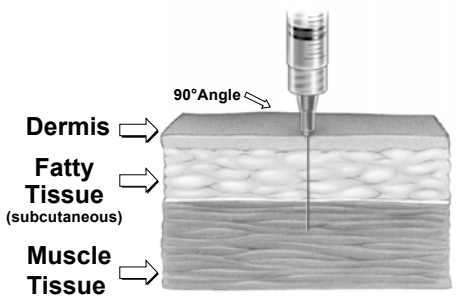
5/6 Rs

- Right patient
- Right vaccine
- Right dosage
- Right route
- Right site
- Right needle length

Correct I.M. Needle Length

Patient Age	Injection Site	Needle Size
Newborn (0-4 months)	Anterolateral thigh muscle	5/8" 22-25 gauge
Infant/Toddler	Anterolateral thigh muscle	1" 22-25 gauge
Children (4-18 yrs.)	Deltoid muscle	5/8"-1" 22-25 gauge
Children (4-18 yrs.)	Alternate: Anterolateral thigh	1-1 1/2" 22-25 gauge
Adults > 19 years	Deltoid muscle	1-1 1/2" 22-25 gauge
Adults > 19 years	Anterolateral thigh	1-1 1/2" 22-25 gauge

Intramuscular Needle Insertion

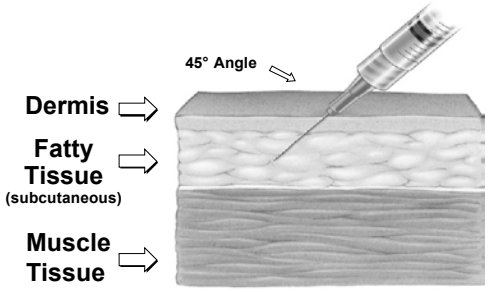


Intramuscular Injection Technique

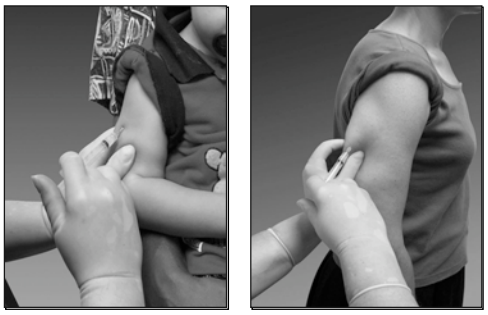
Correct Sub-q Needle Length

- A 5/8" needle should be used for subcutaneous injections on infants, children, and adults

Subcutaneous Needle Insertion



Subcutaneous Injection Technique



Minimizing Pain, Discomfort, and Anxiety

- Adopt a reassuring attitude
  - Needle phobia prevalent among teens
- Give patients choices
  - Allow them to sit or lie down for the vaccination

Minimizing Pain, Discomfort, and Anxiety

- Use relaxation or distraction techniques
  - Allow teens to listen to headphones
- Apply cold compress to injection site after the shot
- Apply adhesive compress over the injection site

Minimizing Pain, Discomfort, and Anxiety

- Consider analgesic medication
  - For injection pain
    - Vapocoolant spray
  - For subsequent discomfort
    - Acetaminophen

Other Vaccine Administration Issues

- Not necessary to change needles between drawing or reconstituting vaccine and administration
- NEVER mix vaccines in the same syringe unless approved for mixing by the FDA

Other Vaccine Administration Issues

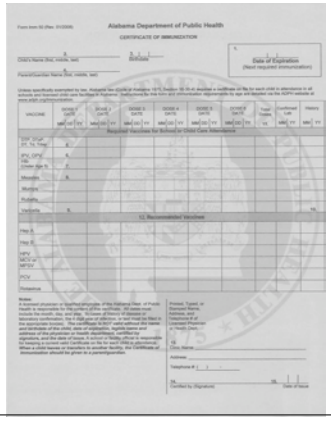
- No attempt should ever be made to transfer vaccine from one syringe to another
- Injection sites in same limb should be separated by at least 1 inch

Other Vaccine Administration Issues

- Expired vaccine should NEVER be administered
- DO NOT reconstitute vaccines until ready to administer
- DO NOT pre-fill syringes
- NEVER detach, recap, or cut used needles
- Aspiration NOT required

Documentation

- Type of vaccine
- Date the vaccine was administered
- Dose number and amount
- Manufacturer, lot number and expiration date
- Anatomic site and route
- Signature of vaccinator
- Type and publication date of VIS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CERTIFICATE OF IMMUNIZATION

IMM-50 (Blue Form) Requirements

- Effective December 1, 2005, the expiration date following the booster dose of DTaP vaccine given at 4-6 years of age should be set to expire on the child's 12th birthday

IMM-50 (Blue Form) Requirements

- If preschool booster was given after 6 years of age, the expiration date should be 5 years after the booster was given

Daycare Requirements

- Infants should not enter daycare until they have received their first set of immunizations, minimum age 6 weeks
- Must be age appropriately immunized
- A new requirement for Prevnar is coming

School Requirements

- 4 doses of Dtap, given at proper intervals, with the last dose after 4th birthday
- 4 doses of polio vaccine separated by at least 28 days (only 3 doses needed if last dose after 4th birthday)
- 1 dose of mumps and rubella vaccine administered at 12 months of age or later

School Requirements

- 2 doses of measles-containing vaccine, first dose at age 12 months and second at least 28 days later
- 1 dose of varicella vaccine at 12 months of age or older for children in daycare through 8th grade for school year 2009-2010 OR provider documentation of varicella disease OR positive varicella titer

Recommendations for Tdap Vaccination of Adolescents

- Adolescents 11-12 years of age should receive a single dose of Tdap instead of Td*
- Adolescents 13-18 years who have not received Tdap should receive a single dose of Tdap as their catch-up booster instead of Td*
  - * If the person has completed the recommended childhood DTaP/DTP vaccination series, & has not yet received a Td booster

Tdap Use in Older Children

- Tdap minimum ages:
  - 10 years for Boostrix
    - Approved for > 10 yr. but no protocol yet
  - 11 years for Adacel
- Tdap not approved for children 7-9 years of age

Tdap For Persons Without A History of DTP or DTaP

- All adolescents and adults should have documentation of having received a series of DTaP, DTP, DT, or Td
- Persons without documentation should receive a series of 3 vaccinations

Tdap For Persons Without A History of DTP or DTaP

- Preferred schedule
  - Single dose of Tdap
  - Td at least 4 weeks after the Tdap dose
  - Second dose of Td at least 6 months after the Td dose

Minimum Interval Between Td and Tdap

- ACIP did not define an absolute minimum interval between Td and Tdap, in CHD 5 years
- In outbreak situations, CHDs will be instructed to administer vaccine using a shorter interval

DTaP and Tdap Errors

Error	Action
DTaP given to person ≥ 7 yrs.	Count dose as valid
Tdap given to child < 7 yrs. as DTaP dose #1, 2, or 3	Do NOT count the dose as valid; Give DTaP now
Tdap given to child < 7 yrs. as DTaP dose #4 or #5	Count dose as valid

Vaccination of Immunosuppressed Persons

- Live vaccines should not be administered to severely immunosuppressed persons
- Persons with isolated B-cell deficiency may receive varicella vaccine

Vaccination of Immunosuppressed Persons

- Inactivated vaccines are safe to use in immunosuppressed persons but the response to the vaccine may be decreased

Immunosuppression

- Disease
  - Congenital immunodeficiency
  - Leukemia or lymphoma
  - Generalized malignancy
- Chemotherapy
  - Alkylating agents
  - Antimetabolites
  - Radiation

Immunosuppression

- Corticosteroids
  - 20 mg or more per day of prednisone*
  - 2 mg/kg or more per day of prednisone*
  - NOT aerosols, alternate day, short courses, topical

    * For 14 days or longer

Vaccination of Pregnant Women

- Live vaccines should not be administered to women known to be pregnant
- In general inactivated vaccines may be administered to pregnant women for whom they are indicated
- HPV vaccine should be deferred during pregnancy

Use of Tdap Among Pregnant Women

- Any woman who might become pregnant is encouraged to receive a single dose of Tdap
- Women who have not received Tdap should receive a dose in the immediate postpartum period

Use of Tdap Among Pregnant Women

- ACIP recommends Td when tetanus and diphtheria protection is required during pregnancy
- Pregnancy is not a contraindication for Tdap

Use of Tdap Among Pregnant Women

- Clinician may choose to administer Tdap to a pregnant woman in certain circumstances
  - During a community pertussis outbreak, should be in 2nd or 3rd trimester

Methods for Reducing Missed Opportunities

- Regard every visit as a potential vaccination opportunity
  - Check immunization status at each contact and immunize if needed and not contraindicated
- Give all recommended vaccines at a single visit

Methods for Reducing Missed Opportunities

- Use chart reminders
- American Academy of Pediatrics (AAP): "Minor illness with or without fever does not contraindicate immunization…"
- Be familiar with special vaccination needs of patients with medical problems

Resources

- CDC Vaccine Information Statements (VISs)
  - http://www.cdc.gov/vaccines/pubs/vis/default.htm
- Hepatitis B: What Every Teen Should Know
  - http://www.nfid.org/%5Fold/factsheets/hbagadol.html
- CDC immunization hotline
  - 800-CDC-INFO20

Resources

- Allied Vaccine Group
  - http://www.vaccine.org
- Association of Teachers of Preventive Medicine
  - http://www.atpm.org
- The National Immunization Program (NIP)
  - http://www.cdc.gov/vaccines