Immunization Schedule
Outline

- Introduction
- Current EPI immunization schedule in Abu Dhabi Emirate
- School nurse responsibilities
- Immunization encounter activities
- Reporting issues
- Quizzes
Introduction

Parents are constantly concerned about the health and safety of their children and they take many steps to protect them.

These preventive measures range from child-proof door latches to child safety seats.

In the same respect, vaccines safeguard children from illnesses and death caused by infectious diseases.
Why immunization:

- A proven tool for controlling and eliminating life-threatening infectious.
- Estimated to avert over between 2 and 3 million deaths each year.
- One of the most cost-effective health investments.
- Target groups are clearly defined
- Vaccination does not require any major lifestyle change (WHO, 2011).
Life-cycle of an immunization Program

Image and content adapted from:
## Current Immunization Schedule for Children Aged 0 through 18 Months in Abu Dhabi Emirate

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Age</th>
<th>Birth</th>
<th>1 month</th>
<th>2 months</th>
<th>4 months</th>
<th>6 months</th>
<th>12 months</th>
<th>18 months</th>
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<tr>
<td>Oral Polio Vaccine</td>
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<td>Tetra</td>
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</tbody>
</table>
Continuation...

- Immunization must be administered by the end of the month
- The schedule is approved by HAAD-VC
- Tetravalent: Diphtheria, Tetanus, acellular Pertussis, Haemophilus influenzae type B
- Pentavalent: Diphtheria, Tetanus, Pertussis, Haemophilus influenzae type B
- Hexavalent: Diphtheria, Tetanus, acellular Pertussis, Haemophilus influenzae type B, Hepatitis B, Inactivated Polio Vaccine
**Recommended Immunization Schedule for School Children**

1. **For Children born on or after September 2009**
2. Consent form should be signed before giving the vaccine

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Grade</th>
<th>Grade 1</th>
<th>Grade 9</th>
<th>Grade 11</th>
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</thead>
<tbody>
<tr>
<td>Oral Polio Vaccine (booster)</td>
<td>OPV</td>
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<td>OPV</td>
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<tr>
<td>Measles, Mumps, Rubella</td>
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<tr>
<td>Varicella**</td>
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<tr>
<td>Diphtheria, Tetanus</td>
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<tr>
<td>Rubella (females)</td>
<td>RUB</td>
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<tr>
<td>Tetanus, Diphtheria (adult)</td>
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<tr>
<td>Human Papilloma Virus 1dose</td>
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<td></td>
<td>HPV</td>
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<tr>
<td>(females)</td>
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<tr>
<td>Human Papilloma Virus 2 dose</td>
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<td>HPV</td>
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<tr>
<td>(females)</td>
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<tr>
<td>Human Papilloma Virus 3 dose</td>
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<td>HPV</td>
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<tr>
<td>(females)</td>
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</tbody>
</table>
Nurses Responsibilities

- Ordering & storage of vaccine
  - Expiry date.
  - Inventory.
- Maintenance of cold chain.
- Evidence base practice.
- Consent for giving vaccines (HPV).
- Knowledge skills framework to assess competency.

(Royal College of Nurses, 2005)
Continuation...

- Risk assessment of environment & procedures
  - Vaccine exposure
  - Vaccine administration
    - Subcutaneous
    - Intradermal
    - Intramuscular
- Documentation & record keeping
  - Adverse Events Following Immunization
  - Report on number vaccinated
  - Missed doses
Nurses Responsibilities

- Assess and plan the environment in which immunization will take place:
  - Access to telephone and internet
  - Access to hand washing facilities
  - Privacy
  - First Aid & emergency support
  - Health & safety policy
Nurses Responsibilities

- Should also ensure management of:
  - Adverse reaction
  - Adverse incident handling
  - Needle stick injuries issues
  - Safe disposal of sharps and clinical waste
  - Update students record
The Immunization Encounter:

Encounter Activities
Pre-encounter Activities

- Staff training and education
- Reminder for parents before date
- Adequate clinic supplies and patient education materials
- Prescreen medical record for recommended immunizations
- Vaccine storage and handling
- Emergency preparedness
Pre-encounter Activities

- **Vaccine Inventory Log**
  - Name of each vaccine
  - Number of doses for each vaccine
  - Date received
  - Condition of the vaccines upon arrival
  - Name of the vaccine manufacturers
  - Lot numbers
  - Expiration dates for each vaccine
Pre-encounter Activities

- Vaccine Storage Requirements
  - Maintain required temperature range throughout the year.
  - Large enough to hold year’s largest vaccine inventory.
  - Dedicated to biologics (no food or beverages!).
Pre-encounter Activities

NO VACCINES ARE KEPT HERE

Expired vaccine should NEVER be administered
Pre-encounter Activities

- Vaccine Inventory Control
  - Conduct a monthly vaccine inventory
  - Avoid stocking excessive vaccine supplies
  - Monitor expiration date
  - Rotate stock to avoid waste from expiration
Screening for Contraindications and Precautions

- Immunization Records
  - A verbal history of previous immunizations is not sufficient evidence
  - Accept as valid only immunizations that are documented in writing and dated 5/8/2011
Screening for Contraindications and Precautions

- Screening Questions
  - Is the child sick today?
  - Does the child have an allergy to any medication, food or vaccine?
  - Has the child had a serious reaction to a vaccine in the past?
  - Has the child had a seizure, brain or nerve problem?
  - Has the child had asthma, lung disease, heart disease, kidney disease, metabolic disease, such as diabetes, or a blood disorder?
Screening for Contraindications and Precautions

- Screening Questions
  - Does the child have cancer, leukemia, AIDS, or any other immune system problem?
  - Has the child taken cortisone, prednisone, other steroids, or anticancer drugs, or had x-ray treatments in the past 3 months?
  - Has the child received any vaccinations in the past 4 weeks?
Vaccine Administration

- **Subcutaneous Vaccines**
  - Measles, mumps and rubella-containing vaccines
  - Meningococcal polysaccharide
  - Varicella

- **Intramuscular Vaccines**
  - Diphtheria, tetanus and pertussis
  - *Haemophilus influenzae* type b
  - Hepatitis A
  - Hepatitis B
  - Influenza (inactivated)
  - Pneumococcal conjugate
  - Meningococcal conjugate
Subcutaneous Needle Insertion

- Dermis
- Fatty Tissue (subcutaneous)
- Muscle Tissue

45° Angle
Subcutaneous Sites
Subcutaneous Needle

• Gauge:
  – 23 to 25
• Length:
  – 5/8 inch
Subcutaneous Injection Technique
Intramuscular Needle Insertion

90° Angle

Dermis

Fatty Tissue (subcutaneous)

Muscle Tissue
Intramuscular Sites

- **Vastus lateralis muscle**

- **Deltoid muscle Site of injection**
Do not use the gluteus for vaccine administration
Vaccine Administration

- Intramuscular Needle
  - Gauge:
    - 22 to 25
  - Length:
    - newborn: 5/8 inch
    - infant: 1 inch
    - older children: 5/8 to 1¼ inch
    - adolescent/adult: 1 to 1½ inch
Intramuscular Injection Technique
Vaccine Administration

- Infection Control
  - Hand hygiene
    - recommended between each patient
    - alcohol-based waterless antiseptic can be used
  - Gloves
    - not required by Occupational Safety and Health Administration (OSHA) unless potential for exposure to blood or body fluids, open lesions on the hands, or agency policy
Vaccine Administration

- Infection Control
  - Equipment disposal
    - NEVER detach, recap or cut a used needle
    - place in puncture-proof container
    - dispose as infectious medical waste
Vaccine Administration

- 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 Food and Drug Administration (FDA)
  - 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 if possible
Vaccine Administration

- Vaccine Administration Errors
  - Administration of the wrong vaccine formulation
  - Wrong diluent
  - Wrong route of administration
Post-encounter Activities

- Documentation and recordkeeping
- Clinic clean-up and medical waste disposal
- Adequate clinic supplies
- Patient recall
- Quality assurance and improvement
Post-encounter Activities

- Immunization Record
  - Type of vaccine
  - Dose number
  - Dose amount
  - Manufacturer
  - Lot number and expiration date
  - Date the vaccine was administered
  - Anatomic site
  - Name of the person giving the vaccine
  - Office address
  - Publication date of the Vaccine Information Statement
Post-encounter Activities

- Benefits of Maintaining Immunization Records
  - Timely, age-appropriate immunization
  - High vaccination coverage among their patient population
  - Satisfaction of knowing their patients are protected
Patient and Parent Education

- Parents’ Concerns About Vaccines
  - Number of vaccines
  - Number of injections
  - Immune system overload
  - Preservatives and other ingredients
  - Association of vaccination with autism-spectrum disorders
Patient and Parent Education

- Challenges To Effective Communication With Parents
  - Finding the time to communicate
  - The science of vaccines and immunology is complicated
  - Language barriers
  - Information resources
Patient and Parent Education

One of the most important factors that influence a parent’s decision to vaccinate their child is a clear and unequivocal recommendation of the vaccine from the provider.
Patient and Parent Education

- Strategies To Reduce Myths and Misperceptions about Vaccines
  - Listen to the parent
  - Be a role model
  - Speak from your experience
  - Keep your message simple
  - Advise the parents what to expect after the vaccination
  - Emphasize the return visits
Adverse Events Following Immunization (AEFI)

- Adverse events are defined as health effects that occur after immunization that may or may not be causally related to the vaccine.
  - Some of these events may be due to the vaccine.
  - Some due to error in the administration of the vaccine.
- There is no vaccine that is 100% safe & without any risks
- Such events may range from mild side effects to life-threatening, but rare, illnesses
Adverse Events Following Immunization (AEFI)

- Mild Reactions
  - Mild reactions following immunization are common
  - They include pain & swelling at the site of injection, fever, irritability, malaise
  - They are self-limiting, hardly requiring even symptomatic treatment
  - But it is important to reassure parents about such events so that they know about it
Adverse Events Following Immunization (AEFI)

- Rare, more severe reactions
  - Severe reactions are rare
  - Such reactions include seizures, thrombocytopenia, hypotonic hyporesponsive episodes, persistent inconsolable screaming
  - In most cases they are self-limiting and lead to no long-term problems
  - Anaphylaxis, while potentially fatal, is treatable without any long-term effects
Adverse Events Following Immunization (AEFI)

- Why monitor AEFI?
  - No vaccines are 100% safe and without any risks
  - It is important to know the risks and how to handle such an event when it occurs
  - Informing people correctly on AEFI helps keep public’s confidence in the immunization programmes
  - Monitoring AEFI also helps improve the quality of service
Steps in AEFI surveillance

- Detection and reporting
- Investigation
- Data analysis
- Corrective and other actions
- Evaluation
AEFI reporting to HAAD

- All AEFI must be reported to HAAD
- The following AEFI are of special concern:
  - All injection site abscesses.
  - All cases of BCG lymphadenitis
  - All deaths that are thought by health workers, or the public, to be related to immunization.
  - All cases requiring hospitalizations that are thought by health workers, or the public, to be related to immunization.
  - Other severe or unusual medical incidents that are thought by health workers, or the public, to be related to immunization.
AEFI Reporting to HAAD

- Serious AEFI or death must be reported immediately
- Report any other AEFI weekly every Sunday
- Zero reporting is required if there is no AEFI
- Use the form specified for reporting
- Follow the guidelines specified in the AEFI guidelines form