Maryland Vaccination & Testing Program

For EMT-Paramedic Providers
Maryland Vaccination & Testing Program Overview

- Program Administration
- Hepatitis B
- Hepatitis B Vaccination
- Influenza
- Influenza Vaccination
- PPD Test/Titers
- Practice
- Written Examination
Program Objectives

• By the conclusion of the Maryland Vaccination & Testing Program, the EMT-P shall be able to:
  – Recall the responsibilities of the medical director;
  – Identify the vaccines & test permitted to be administered;
  – Explain the pathophysiology of Hepatitis B and Influenza;
Program Objectives
Continued

– Recite the dosage, administration route/site, contraindications, side effects and rules associated with approved vaccines & tests;
– Explain the effects of both Hepatitis B & Influenza vaccinations;
– Demonstrate/Indicate how to administer all approved vaccines & tests;
– Demonstrate/Indicate how to read a PPD test;
– Describe the process of drawing titres
Program Administration

• Medical Director Responsibilities
  – Instruction;
  – Personnel selection;
  – Quality assurance;
  – Occupational medicine liaison;
  – Assure OSHA/MOSH compliance;
  – Maintain records.
Recommended & Approved Vaccines & Tests

• Vaccines
  – Hepatitis B
  – Influenza

• Tests
  – PPD
  – Vaccine Titers
Latex Allergies

ALERT

• If you are using latex equipment (gloves, tubing, etc.) during any of the vaccinations or tests, be sure to ask about latex allergies during initial interview process.

• Failure to do so could precipitate an anaphylactic reaction
Hepatitis B

• Inflammation of the liver
• Caused by Hepatitis B Virus (HBV)
• Effects vary
  – no symptoms
  – mild illness
  – short-term severe illness
  – long-term (chronic) infection
  – liver damage, cirrhosis
  – liver cancer
  – liver failure, death
Hepatitis B

- Major infectious hazard for health care workers (HCWs)
- During 1993, estimated 1450 HCWs became infected through blood/body fluid exposure
- Estimated 100-200 HCWs have died annually in the 1990s because of chronic consequences of HBV infection
Hepatitis B Vaccine

- Best protection against Hepatitis B virus
- Safe, effective
- First anti-cancer vaccine
- Recommended for all HCWs whose jobs involve a reasonable potential for contact with blood or body fluids
- Risks are often highest during training so vaccine should be completed before trainees have contact with blood
Hepatitis B Vaccine

- Three doses (1 ml each); use 3 cc syringe with 1 inch 25 ga. needle
  - Initial,
  - 2nd dose 4 weeks after initial,
  - 3rd dose 5-6 months after 2nd dose
- Booster doses not necessary
- Indications:
  - Pre-exposure - preventive
  - Post-exposure - initiate series if unvaccinated
Hepatitis B Vaccine

• Administered IM in the deltoid
• Contraindications
  – Previous anaphylactic reaction to bakers yeast
• Pregnancy is *NOT* considered a contraindication.
• CDC recommends antibody testing 1-2 months after the third dose to determine immunity.
• Must read and sign consent form.
Influenza

• Characterized by abrupt onset of fever, myalgia (sore muscles), sore throat, cough
• Can cause severe malaise (general discomfort, uneasiness) lasting several days
• Can lead to influenza pneumonia or secondary bacterial pneumonia
• In the US, influenza activity generally peaks between late December and early March
Influenza

- Influenza viruses undergo antigenic “shift” (minor changes, same subtype) and “drift” (major changes, new subtype.)
- Severity of illness depends on prior experience with antigenically derived virus.
- Virus change, either shift or drift, occurs every year.
Influenza Vaccine

- Vaccinating persons at high risk before the influenza season each year is the most effective measure for reducing the impact of influenza.

- Each year’s influenza vaccine contains three virus strains (usually 2 type A and 1 type B), representing the influenza viruses that are likely to circulate in the US in the upcoming months.
Influenza Vaccine

• To reduce staff illnesses and absenteeism during influenza season and to reduce the spread of influenza to and from workers and patients, the CDC recommends influenza vaccine each year for:
  – persons who attend patients at high risk for complications, e.g. the elderly and children
  – persons with chronic medical conditions
  – pregnant women who will be in the second or third trimester of pregnancy during influenza season
  – providers of essential community services
Influenza Vaccine

- Administered annually using current vaccine
  - 1 Dose (0.5-1 ml each) depending on manufacturer recommendation; use 3 cc syringe with 1 inch 25 ga. needle
- Given IM in the deltoid
- Contraindication
  - History of anaphylactic hypersensitivity to eggs
- Vaccine should be delayed in the presence of acute febrile illness; administer after symptoms have abated.
Influenza Vaccine

- Most frequent side effect is soreness at the injection site that lasts up to 2 days.
- Systemic reactions uncommon - fever, malaise, myalgia beginning 6-12 hours after vaccination and persisting for 1 to 2 days.
- Immediate hypersensitivity reactions are rare.
- Neurologic reaction - extremely rare
Influenza Vaccine

• Takes 2 weeks for patient to develop adequate antibodies against the vaccine strain

• Optimal time for organized vaccination campaigns is usually the period from October through mid-November.

• Because influenza vaccine contains only killed or noninfectious viruses, it cannot cause influenza.

• Must read and sign consent form.
Purified Protein Derivative (PPD)

• Administration:
  – 1 Dose (0.1 ml each); use 1 cc with needle tuberculin syringe
    • Per manufacturers recommendation
    • Administered in the medial forearm intradermally; directly below the epidermis (avoiding veins)
    • Create a wheal under the epidermal layer
  – Yearly administration
PPD Continued

- Contraindications
  - Previous positive reaction to PPD
  - Has had TB
- Must read and sign consent form
- Video
Reading the PPD Test

• Feel induration (hardness) with your finger tips
• Mark the widest part of the induration
  – (Not the redness)
• Measure with approved device recorded in millimeters (mm)
  – **Less than 5 mm** is negative
  – **Greater than or equal to 5 mm** requires clinical correlation and evaluation by the medical director or other appropriate physician
Drawing Titers

- Red or Tiger top vacutainer
- Utilize antecubital vein
- Sterile technique
- Storage and delivery of vacutainers
Practice

• Check your medications
  – Right medication, Right dose, Right route, Right patient

• IM Injections
  – Use the correct volume prescribed for the vaccinations.

• ID Injections
  – Use the correct volume prescribed for the PPD (Mantoux) test.
Written Examination

• 20 questions are on the exam;
  – To successfully complete the course, you must score at least a 70%.
  – You have 20 minutes to complete it.
Summary

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