Vaccine Preventable Diseases

NEC - DOH

Measles

9th leading cause of deaths for children aged 1-4 years of age (1998)

10th leading cause of deaths among infants (1998)
Measles

Infectious agent: Measles virus

Mode of transmission:
- Airborne
- Direct contact

Incubation period: 7 to 18 days

Period of communicability:
- 4 days before and after the onset of the rash

Susceptibility/Resistance:
- Highly communicable
- 80% attack rate among the unvaccinated
- Permanent immunity
- Passive immunity by maternal antigen
Measles

Signs and Symptoms:

Day 1-3 - high fever, colds and cough
- eyes are pink, watery, sensitive to light

Day 2-4 - rash spreads over the face and body
- rash disappears after about a week and skin may peel

Maculopapular rash
Measles

Koplik spots

Courtesy of World Health Organization

Measles

Prevention and Control

- Vaccination with live attenuated measles vaccine at nine months
**Diphtheria**

- **Infectious agent**: *Corynebacterium diphtheriae*
- **Mode of transmission**: Direct contact
- **Incubation period**: 2-5 days
- **Period of communicability**: 2 weeks

**Number of Diphtheria Cases by Year Philippines, 1997-2001**

Source: NESSS Data
Diphtheria

Susceptibility/Resistance
- Infants of immune mothers (5 months)
- Lifelong immunity (but not always)

Signs and Symptoms
Day 1-3 - mild sore throat, unwell
Day 4-6 - very ill, neck is swollen, membrane on the throat is obvious and may obstruct breathing
After 2 weeks
- toxin may cause heart failure, paralysis of breathing
Diphtheria

Thick gray membrane

"bullneck diphtheria"

Courtesy of Centers for Disease Control and Prevention
Diphtheria

Prevention and Control
- Active immunization
  - 3 doses in combination with pertussis and tetanus toxoids
- For household contacts
  - Single dose of benzathine penicillin or a 7-10 days course of erythromycin

Pertussis

Infectious agent: *Bordetella pertussis*

Mode of transmission: Direct contact
  - Airborne

Incubation period: 7-20 days

Period of communicability: highly communicable in the early catarrhal stage
Number of Pertussis Cases by Year Philippines, 1997 - 2001

Source: NESSS Data

Signs and Symptoms of Pertussis

- **Catarrhal stage**
  - coryza, sneezing, low-grade fever, mild occasional cough

- **Paroxysmal stage**
  - cough becomes severe, occurs more at night with an average of 15 attacks in 24 hours

- **Convalescent stage**
  - paroxysms still occur with subsequent respiratory infection
Whooping cough

Prevention and Control

- Active immunization against *B. pertussis* infection
  - 3 doses in combination with diphtheria and tetanus toxoids

- Infectious agent: Clostridium Tetani
**Tetanus**

- **Mode of transmission**: introduction of tetanus spores
  - puncture wound
  - Laceration
  - Burns
  - trivial or unnoticed wounds
  - surgical procedures
- **Incubation period**: 3-21 days

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**Number of Non-Neonatal Tetanus Cases Philippines, 1997-2001**

![Bar chart showing the number of non-neonatal tetanus cases from 1997 to 2001.](chart)

Source: NESSS Data
**Neonatal Tetanus**

- **Mode of transmission**: unhygienic cutting of the umbilical cord
  - improper handling of cord stump
- **Incubation period**: 3-28 days
- **Period of communicability**: not transmitted from man to man

**Number of Neonatal Tetanus Cases Philippines, 1997-2001**

Source: NESSS Data
Neonatal Tetanus

Signs and Symptoms

At birth
- appears healthy and sucks well

5-7 days
- tight mouth that does not open
- stops sucking

7-10 days
- does not suck
- entire body is tight and there are severe fits

Opisthotonus - Infant
Opisthotonus - Adult

Prevention and Control

- Prenatal check-up
- Vaccination with tetanus toxoid
- Training of birth attendants on safe delivery and proper cord dressing
**Poliomyelitis**

- **Infectious agent**: Poliovirus type 1, 2, and 3
- **Mode of transmission**: fecal-oral route
- **Incubation period**: 7-14 days
- **Period of communicability**: 7 to 16 days before the onset of symptoms and first few days after the onset of symptoms

**Susceptibility/Resistance**
- Infants born to immune mothers remain immune for about 5 months
Poliomyelitis

Signs and Symptoms

Day 1-3  - appears unwell, may have slight fever
Day 3-5  - headache, stiff neck, muscle pains, increase fever
Day 5-7  - paralysis of one or both legs, inability to breathe without the help of a machine, death
Poliomyelitis

Prevention and Control
- Vaccination with oral polio for 3 doses at 4 weeks interval

Hepatitis B

Infectious agent: Hepatitis B virus

Mode of transmission: sexual contact, household contact, perinatal transmission, sharing of unsterilized needles, razors

Incubation period: 45-180 days
Hepatitis B

**Signs and Symptoms**
- Jaundice - loss of appetite
- Fatigue - nausea, vomiting
- Abdominal pain - joint pain

**About 30% are asymptomatics**

**Signs and symptoms are less common in children**

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Hepatitis B

**Long term effects without vaccination**
- Chronic infection occurs in:
  - 90% of infants infected at birth
  - 30% of children infected at age 1-5 years
  - 6% of persons infected after age 5 years

**Death from chronic liver diseases occurs in:**
- 15-25% of chronically infected persons
**Hepatitis B**

**Risk groups**
- Persons with multiple sex partners
- Men who have sex with men
- Sex contacts of infected persons
- Injection drug users
- Household contacts of chronically infected persons
- Infants born to infected mothers
- Health care and public safety workers
- Hemodialysis patients

**Prevention and Control**
- Hepatitis B vaccine
- Use of condom
- Infants of HBV-infected mothers should be given H-BIG and vaccine
- Do not share personal care items
- For health workers, get vaccinated against hepatitis B and always follow universal precaution