

Project: Ghana Emergency Medicine Collaborative

Document Title: Measles/Mumps/Rubella

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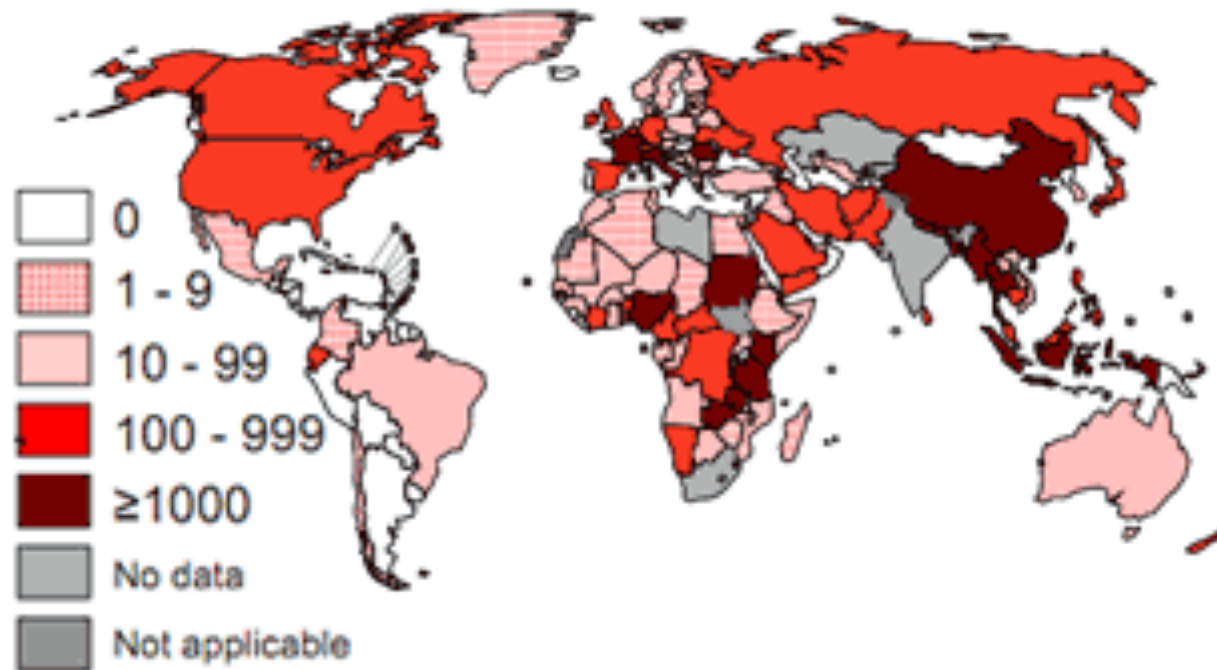
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Measles, Mumps, Rubella

- ***Measles*** is a highly contagious viral infection of an infection of the throat, airways, lungs, and skin caused by rubeola virus
- ***Mumps*** is an acute viral disease
- ***Rubella*** is another acute disease that usually affects susceptible individuals of any age

Measles

Reported Measles Cases onset date Jun-Dec 2011



Map production: Immunization Vaccines and Biologicals, (IVB), World Health Organization
Data in HQ as of 11 January 2012

Symptoms of Measles

Symptoms usually begin 8 - 12 days after exposure

- Bloodshot eyes
- Cough
- Fever
- Light sensitivity
- Muscle pain
- Rash – may appear as flat, discolored areas
- Runny nose
- Sore throat
- Tiny white spots inside the mouth (Koplik's spots)

Complications

- Pneumonia
- Encephalitis
- Bronchitis
- Otitis Media

Measles Transmission

- Spread by contact with droplets from the nose, mouth, or throat of an infected person. Sneezing and coughing can put contaminated droplets into the air



Diagnosis of Measles

- Ask questions about:
 - Symptoms
 - Current medical conditions
 - Current medications
 - Family history of medical conditions
- Serology- detect the presence of antibodies against a microorganism
 - certain microorganisms stimulate the body to produce antibodies during an active infection

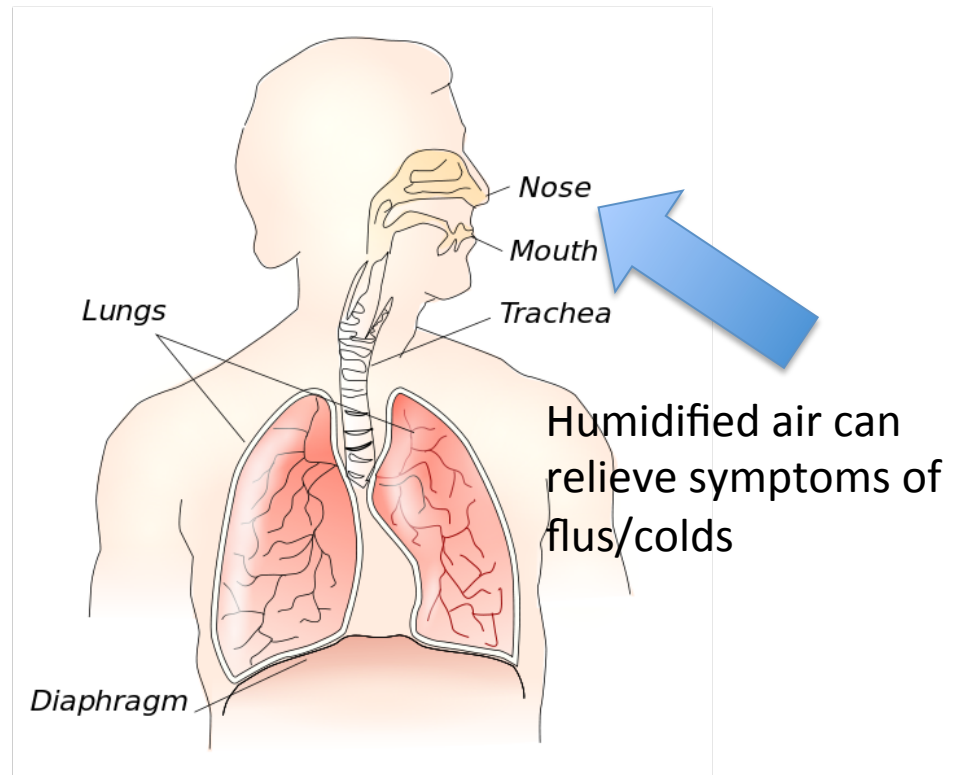
Serology Technique

- Gently inserts a needle into the vein. The blood collects into an airtight vial or tube attached to the needle
- In infants or young children, a lancet may be used to puncture the skin and make it bleed. The blood collects into a small glass tube called a pipette, or onto a slide or test strip

Treatment of Measles

There is no treatment for measles, but the following may relieve symptoms:

- Tylenol
- Bed rest
- Humidified air



Prevention

- **MMR vaccine:** helps prevent measles, mumps, and rubella. Children 1 year of age and older get 2 doses given between ages 15 and 18 months and again between ages 4 and 6 years.



- Taking serum immune globulin 6 days after being exposed to the virus can reduce the risk of developing measles, or can make the disease less severe

Prevention

- Vitamin A supplements: reduce the risk of death and complications in children in less developed countries
- People who lack vitamin A are more likely to get infections, including measles.

Isolation Precautions

- Airborne Precautions are used for those patients who have or are suspected of having infections transmitted by the airborne route
- This means that the bacteria or virus causing their disease is so small that it can be suspended in the air for long periods of time
 - Examples of diseases: **tuberculosis (TB), varicella (chickenpox), zoster (shingles), and measles**

Isolation Precautions

- The preferred placement for patients who require Airborne Precautions is in an airborne infection isolation room (AIIR)
- If possible single patient room that is equipped with special air handling and ventilation capacity

Isolation Precautions

- Employees who are not immune to the disease should not enter the room unless absolutely necessary
- If they must enter, they must wear an approved respirator mask and visitors should be assisted by the nursing or medical staff in determining their immune status (i.e., natural disease, immunization)
- Immune visitors need not wear a mask. Non-immune visitors should be discouraged from entering. If visitation is essential, then the non-immune visitor must wear a surgical mask

N95 Mask



The rating N95 means that N95 Mask filters at least 95% of the air particulates

Patient Education

AFTER YOU LEAVE:

- **Give your child's medicine as directed:** Call the child's primary healthcare provider if you think the medicine is not working as expected..
- **Do not give aspirin to children under 18 years of age:** the child could develop Reye syndrome if he takes aspirin, a life-threatening brain and liver damage
- **Antibiotics:** Always give the child's antibiotic exactly as ordered by the caregiver. Keep giving this medicine until it is completely gone, even if the child feels better.
- **Cough Medicine:** the child may need a cough suppressant
- **Give** acetaminophen or ibuprofen to treat fever and discomfort.

Patient Education

Prevent your child from spreading measles to others:

- Keep your child away from others, especially people who have never had measles or an MMR shot
- Keep your child away from pregnant women or people with long-term medical problems
- Keep your child home from school or day care until the fever and rash are gone. This usually takes about eight days.

Patient Education

CONTACT A CAREGIVER IF:

- Your child has a fever
- Your child's cough lasts for more than four or five days or coughing brings up thick sputum that is not clear. This could mean your child has another infection.
- Your child has an earache
- Your child or anyone in your household develops a rash that looks like measles

SEEK CARE IMMEDIATELY IF:

- Your child has trouble breathing or is breathing very fast
- Your child has a headache, drowsiness, and stiff neck
- Your child has a seizure

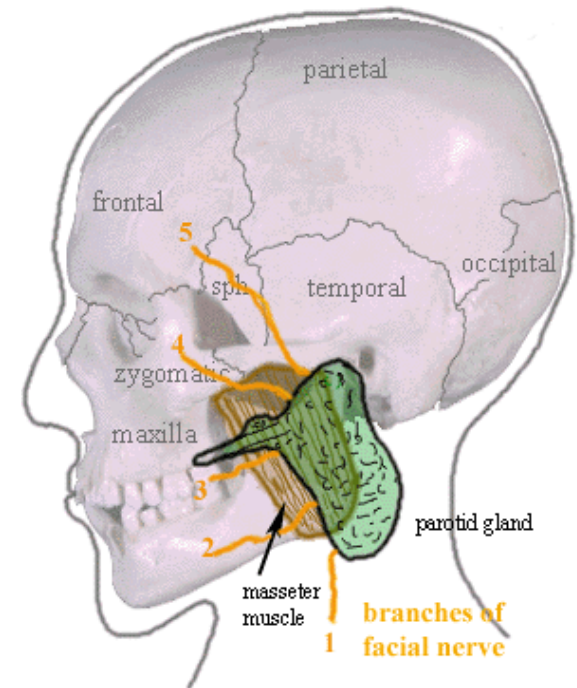
MUMMPS

- An infection with the mumps virus, an RNA (ribonucleic acid) virus from the family Paramyxovirus & Rubella virus

Symptoms

Early symptoms can include:

- Sore throat *hallmark*
 - Difficult swallowing
- Fever
- Tiredness
- Muscle and body aches
- Loss of appetite
- Chills



Diagnosis

Diagnosis is made from:

- Symptoms
- Current medical conditions
- Current medications
- Family history of medical conditions

Diagnosis

Physical exam:

- Diagnosing mumps can often be done just based on a person's symptoms and findings on the physical exam
- A blood test to look for antibodies to the mumps virus
- Throat culture to look for the virus in the fluid that surrounds the brain and spinal cord (CSF) may be ordered

Transmission

- Mumps is spread by coughing and sneezing or touching something infected with the mumps virus
- It can occur anytime, from a few days prior to the onset of swelling of the salivary glands to 9 days after the onset of symptoms
- Once the virus enters the body, it travels to the back of the throat, nose, and lymph glands in the neck, where it multiplies

Prevention

- **MMR vaccine:** helps prevent measles, mumps, and rubella. Children 1 year of age and older get 2 doses. These are usually given between ages 15 and 18 months and again between ages 4 and 6 years



Isolation Precautions



- S/S of mumps illness should be cared for using droplet precautions
 - These pathogens do not remain infectious over long distances in a healthcare facility
 - Special air handling and ventilation are not required to prevent droplet transmission

Patient Education

When to Call the Doctor:

- Call the doctor if you suspect that your child has mumps
- If your child has been diagnosed with mumps, keep track of his or her temperature and call the doctor if goes above 101° (38.3° Celsius)
- Mumps can also involve the brain and its membranes, call the doctor immediately if your child has any of the following:
 - stiff neck, convulsions (seizures), extreme drowsiness, severe headache, or changes of consciousness

Complications

- Deafness
- Meningitis – an infection of the fluid and lining covering the brain and spinal cord
- Myocarditis
- Arthritis
- Infertility – infection can spread to ovaries

Nursing Interventions

- Watch for abdominal pain, can mean involvement of the pancreas in either sex or involvement of the ovaries in girls
- In boys, watch for high fever with pain, swelling of the testicles
- Isolation until swelling subside
- Bed rest until swelling subside
- Liquid or soft food, restrict food containing acid

RUBELLA

“German Measles”

First described by German
physicians in the mid-eighteenth
century

Clinical Features

- Low-grade fever
- Maculopapular rash 14-17 days after exposure
- Malaise
- Usually quite mild



Transmission

- Acquired via airborne droplet emission from upper respiratory tract
- May also present in urine, feces & on skin
- No reservoir cases, only active human cases
- Incubation period of 2-3 weeks

Complications

- Thrombocytopenia
- Purpura
- Encephalitis
- Arthritis

Treatment & Prevention

- Self limited illness
- No specific treatment or Antiviral treatment
- Clinically missed Rubella in 3-4 months of pregnancy is associated with fetal infections

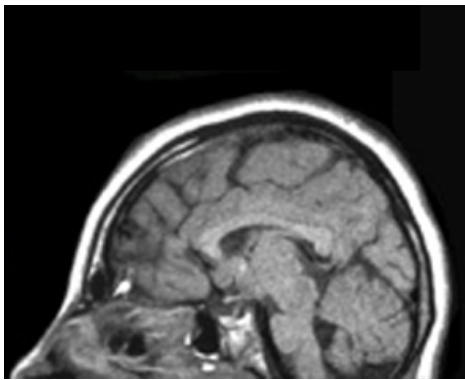
Congenital Rubella Syndrome

Classic Triad

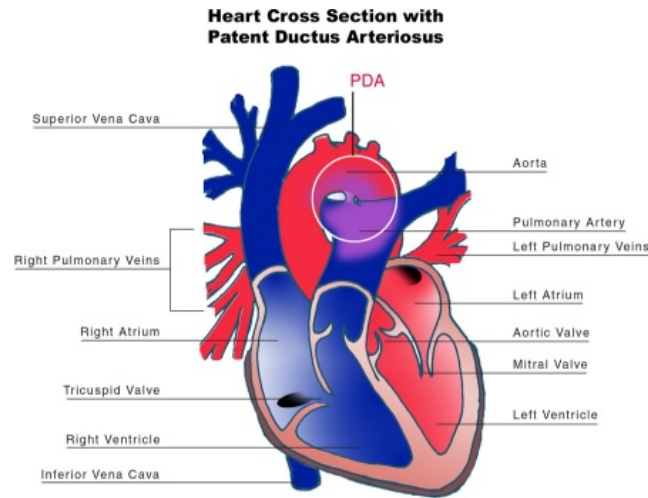
- Cataract
- Cardiac abnormalities
- Deafness

Maternal viremia with Rubella infections during pregnancy may result in infection of placenta & fetus

Congenital Rubella Syndrome



Microcephaly



PDA



Cataracts

Congenital Rubella Syndrome

- Growth rate of fetal cells are reduced
- Fewer number of cells after birth
- Growth retardation
- Jaundice
- Meningoencephalitis
- CNS defects lead to moderate to profound mental retardation

Treatment, Prevention, Control

- Congenital Rubella Syndrome can be prevented by effective immunization
- **MMR vaccine:** helps prevent measles, mumps, and rubella. Children 1 year of age and older get 2 doses. These are usually given between ages 15 and 18 months and again between ages 4 and 6 years



Nursing Interventions

- In few cases people develop ear infection or encephalitis
- Rest
- Tylenol or non-aspirin pain reliever to treat fever
- Prognosis for children affected by congenital rubella is poor, many die from heart defects
- Those children who survive require specialized care for blindness, deafness, or mental retardation

Isolation Precautions

Droplet precautions: health care workers and caregivers wear masks, eye protection, gowns, and gloves when providing care

- These pathogens do not remain infectious over long distances in a healthcare facility
- Special air handling and ventilation are not required to prevent droplet transmission
- Visitors should **not** enter the room if they have never had rubella, or are not sure if they have had the measles or the MMR vaccine. All visitors who enter the room should wear protective items – gowns, gloves, and masks