بسم الله الرحمن الرحيم

الحمد لله رب العالمين والصلاة والسلام
على نبينا محمد خاتم الأنبياء وسيد
المرسلين وعلى آله وصحبه أجمعين وبعد

B-Infant and Child Care:

1- Prenatal Care of the infant: (Prematurely, • Congenital abnormalities, Birth injuries, and neonatal infections. Good Nurseries).

A-W.B.C.

1- Physical Examination (Scheduled Visits) •

2-Growth and Development

3- Vaccination •

4- Nutrition 5- Health Education. •

- B- Day Care of Children out-side the home Good child care services are a primary need.
- C- Health of the school age child (School health)
- D- Care of adolescents: Youth Clinics (Psychological problems, Contraception, Smoking, Drug addiction etc.)
- E- Handicapped Children (Physically and Mentally).

Needs of the Newborn

- Improving newborn survival will dramatically reduce infant mortality worldwide.
- Of the 7.1 million infants who die each year, approximately two-thirds die in the first 28 days after birth – the neonatal period.

- Of these deaths, two-thirds take place in the first week after birth.
- Ninety-eight percent of all neonatal deaths occur in developing countries.
- There are basic needs of a newborn that can help ensure a healthy start in life.

Basic needs of a newborn that can help ensure a healthy start in life.

- **During labour and delivery, mothers and newborns need:**
- **Skilled attendance** – provide safe management of normal delivery and timely referral for complications.
- **Support and care** – promote family support and a baby and woman-friendly environment for birth and maternal and newborn care

- **Infection control** – ensure clean delivery, including clean surface, hands, blade, and cord tie.
- **Management of complications** – identify and manage complications, including bleeding, high blood pressure, prolonged labour, and foetal distress

Following birth, newborns need:

- **Air** - stimulate and resuscitate infants who are not breathing at birth.
- **Warmth** – dry the baby at birth. Maintain warmth through skin-to-skin contact, warm ambient temperature, and head and body covering.
- **Breastfeeding** – breastfeed within the first hour after birth. Continue exclusive breastfeeding on demand day and night for six months.

- **Care** – keep the newborn close to the mother, father, or other caregiver. Keep the mother healthy.
- **Infection control** – maintain cleanliness when handling the infant. Keep the cord clean. Provide prophylactic eye care. Promote early and exclusive breastfeeding. Immunize according to schedule. Treat infections promptly.
- **Management of complications** – recognize and respond urgently to serious and life-threatening conditions.

Perinatal Mortality (PM)

- **General Consideration**
- Of the 13 million deaths each year in children under 5 years old in the developing world, 3 million occur in the first week after delivery.
- In addition, there are some 4 million stillbirths or late fetal deaths each year.
- Perinatal mortality is the number of late foetal deaths (also called still births) and early neonatal deaths (before day 7 (168 hours) per 1000 births.

- Among the estimated 25 million low-birth-weight babies born each year worldwide, 24 million are in developing countries where 80% of global births occur, The perinantal mortality rate ranges from 40 to 60 per 1,000 live births in most developing countries, but it is between 6 and 10 in industrial countries.

Causes of Perinatal Mortality

- • Low birth weight
  • Cord prolapse
  • Asphyxia
  • Birth injury
  • Congenital anomalies
  • Sepsis
  • Neonatal tetanus
  • Complicated labours (prolonged, obstructed, breech, transverse)
  • Mismanagement of labour

Low Birth Weight

- Low birth weight is an extremely important factor predisposing for PNM.
- Because the perinatal mortality rate for low-birth weight babies is five to thirty times higher than for fetuses or infants of normal weight. Low-birthweight infants who survive may have serious neurological problems and hearing and visual defects and may be subject to slow development throughout life.

Causes of low birth weight include:

- • Short stature
- • Low pre-pregnancy weight
- • Inadequate weight gain during pregnancy
- • Anemia
- • Reproductive tract infections,

- Other infections during pregnancy. For example, women suffering from malaria in sub-Saharan Africa give birth to an estimated 3 million severely underweight babies. A woman with HIV has a 25 to 40 percent chance of passing the infection on to her fetus in the womb or at birth. According to WHO, 25 percent of the children born with HIV will be diagnosed with AIDS in the first year and 80 percent by the fourth year.
- Antepartum haemorrhage
- Eclampsia,

Few indicators for health status of children

- MCH coverage;
- Vaccination Coverage
- % of Fully Immunized
- Infant mortality rate
- Under five mortality rate
- ORT use rate

Well Baby Clinic

Very imp. Preventive child health clinic. •

From 6 weeks of age to 5 years. •

Main goals: •

A-Health education •

B- Growth and development. •

C- Vaccination •

D- Nutritional and Psychological counseling. •

WBC

- baby should be seen by a health care provider at the following ages:
- two months
- Four months
- Six months
- Nine months
- Fifteen months
- Eighteen months
- Two years
- Three years

Assessing the baby's capabilities

- Monitoring Growth and Development.
- Growth : Head circ. Length and weight.(Growth chart.)
- Infant Feeding.
- Skills and Behavior.

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Infant Morbidity

- Morbidity is a measure of disease, illness or injury within a population. Like infant mortality, conditions resulting from prematurity and low birth weight are strongly associated with infant morbidity.[1,2] Infant morbidity can be measured by the presence of diagnosed conditions, such as respiratory distress and hyperbilirubinemia (or jaundice), as well as by service utilization indicators, including admission to a neonatal intensive care unit (NICU) and length of hospital stay.[3]

Prematurely and low birth (differentiate)

Higher Morbidity and Mortality rates

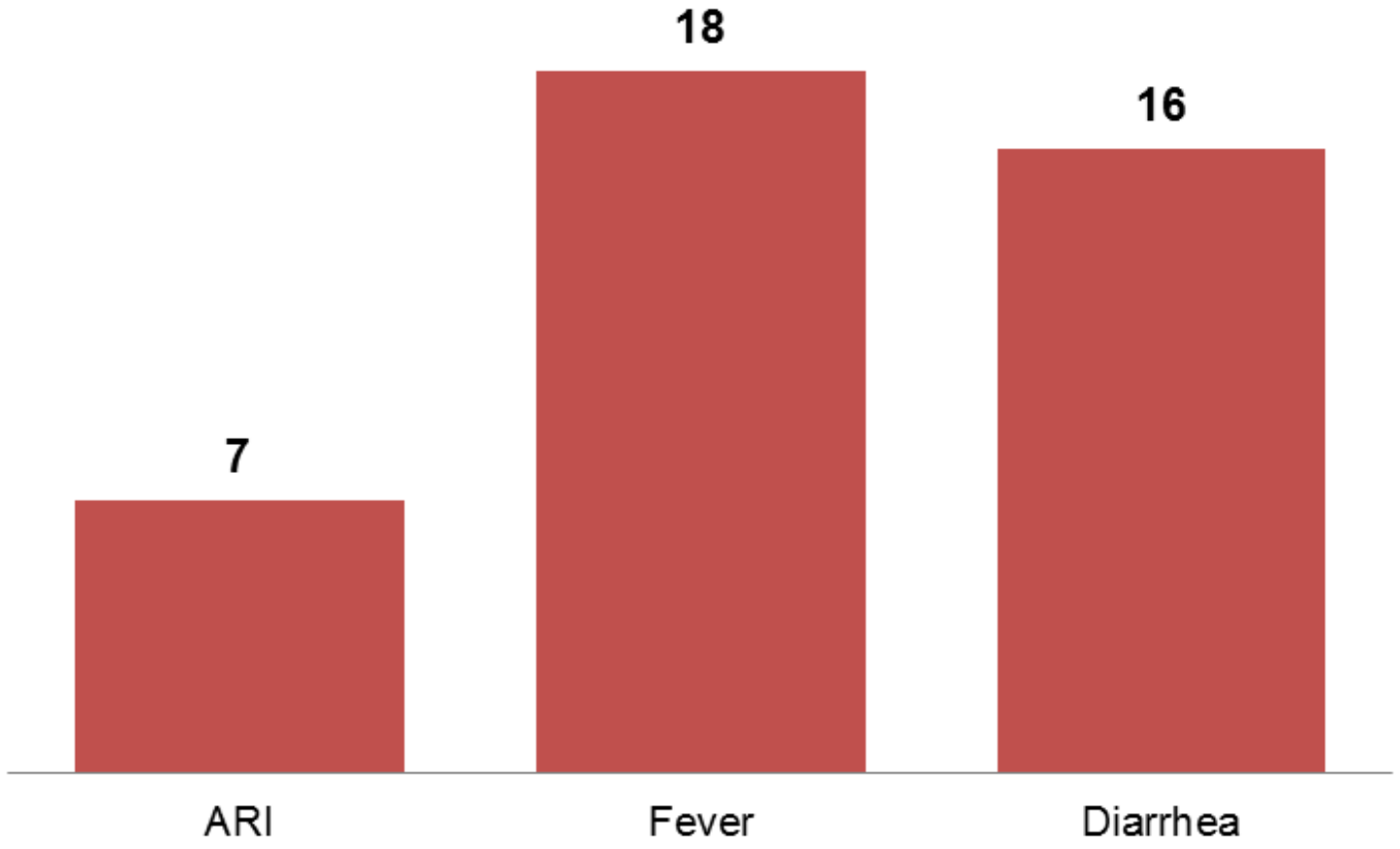
-

1- Respiratory distress syndrome
2- Birth Trauma
3- Hemorrhages.
4-Feeding problems
5-Infections
6-Failure to thrive

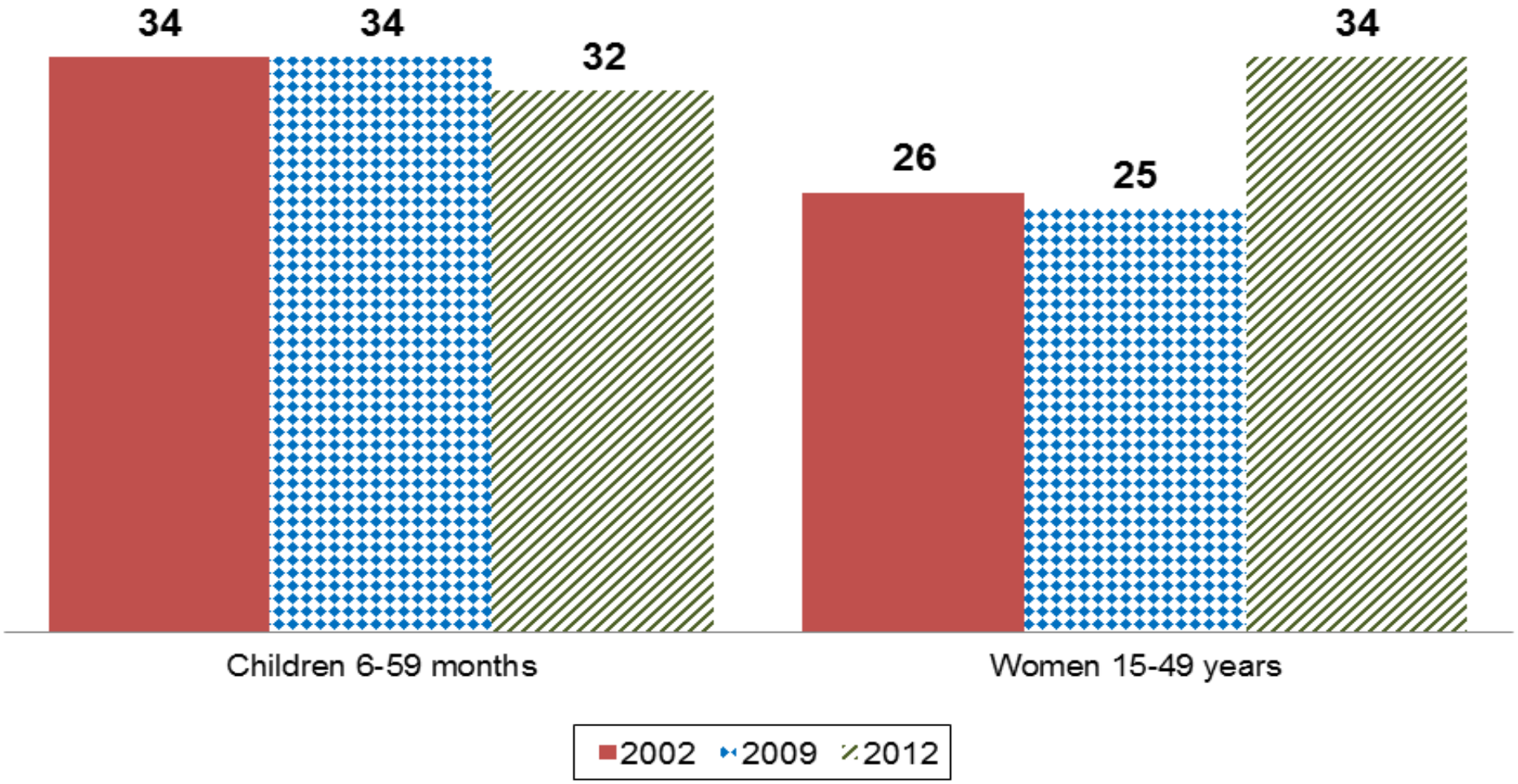
CHILDHOOD DISEASES

Prevalence of childhood illnesses, 2012

(Percentage of children under five with illness in the 2 weeks before the survey)



Trends in prevalence of anemia, 2002, 2009 and 2012



Acute respiratory infection

- Acute respiratory infections cause four and a half million deaths among children every year, the overwhelming majority occurring in developing countries .

Pneumonia unassociated with measles causes 70% of these deaths; post-measles pneumonia, 15%;pertussis, 10%;and bronchiolitis and croup syndromes, 5%. Both bacterial and viral pathogens are responsible for these deaths.

-

Bacterial causes

- The most important bacterial agents are:-

A- streptococcus pneumonia •

B- haemophilus influenza •

C- staphylococcus aureus. •

Viral causes

- A- respiratory syncytial virus, 15%-20%

B- Parainfluenza viruses, 7%-10% •

C- influenza A and B viruses and adenovirus, 2%-4% •

Mixed viral and bacterial infections occur frequently •

Risk factors

- Risk factors that increase the incidence and severity of lower respiratory infection in developing countries include:

A- large family size •

B- lateness in the birth order, •

C- crowding •

D- low birth weight •

E- malnutrition •

F-vitamin A deficiency •

G-young age - •

H- lack of breast feeding

I- Pollution •

Effective interventions for prevention and medical case management are urgently needed to save the lives of many children predisposed to severe disease. •

Diarrhea

- Diarrheal diseases are one of the leading causes of childhood morbidity and mortality in developing countries. An estimated 1,000 million episodes occur each year in children under 5 years of age. Diarrhea causes an estimated 5 million deaths in children under 5 years of age per year .

- About 80% of these deaths occur in children in the first 2 years of life .

Approximately one third of deaths among children under five are caused by diarrhea

-

- Most diarrheal illnesses are acute, usually lasting no more than 3-5 days and are secondary to infectious causes
- (bacterial, viral, and parasitic).
- Infectious agents that cause diarrheal disease are usually spread by the fecal-oral route, specifically by a ingestion of contaminated food or water or contact with contaminated hands

Causes

- The following are the commonest etiologic agents of diarrhea for all ages in decreasing order of prevalence obtained from pooled data world wide.

Rotavirus, •

Enterotoxigenic •

Escherichia coli (ETEC) bacteria, •

Shigella, Campylobacter, Vibrio Cholera, and • non-Typhoidal Salmonella,

Noninfectious causes of diarrhea include
- drugs,
- surgical conditions,
- systemic infections
- and food intolerance.

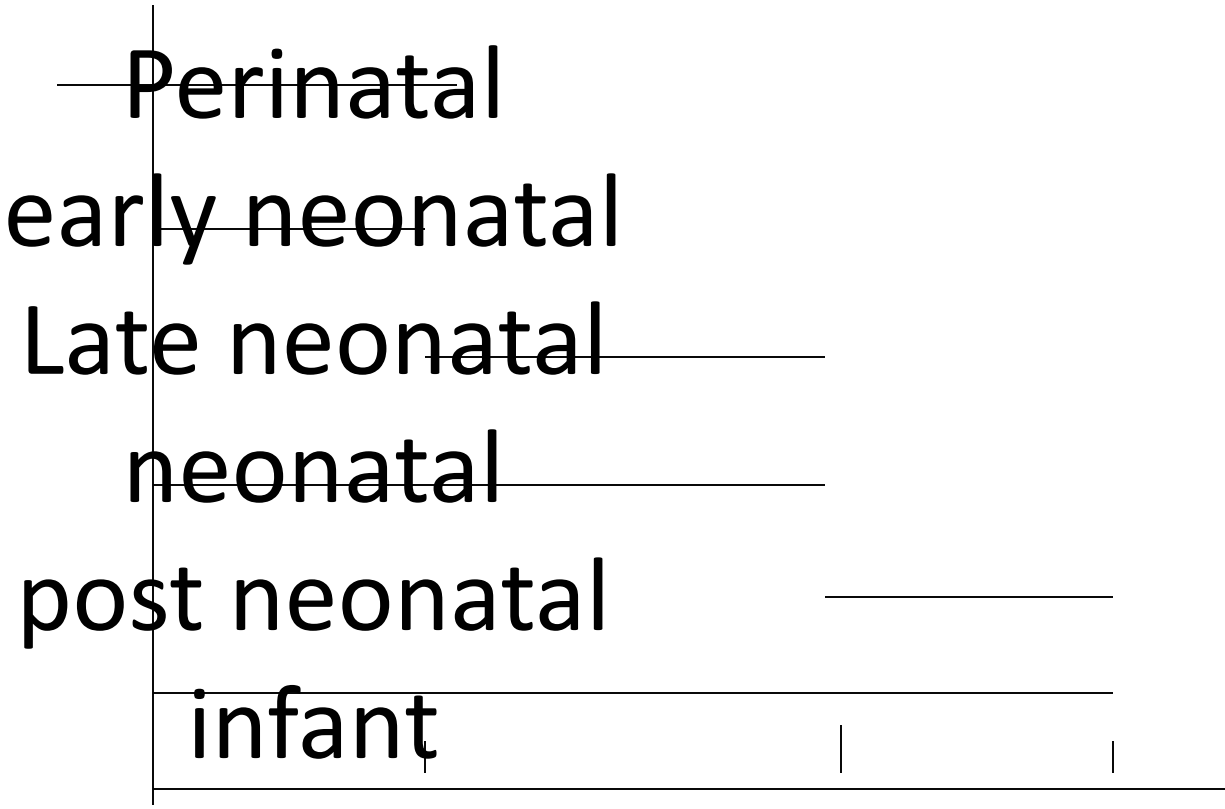
Infant and Child Mortality/The five measures of infant and child mortality

- **Neonatal mortality,** the probability of dying in the first month of life
- **Postneonatal mortality**, the probability of dying after the first month of life but before the first birthday (the difference between infant and neonatal mortality rates)
- **Infant mortality** (1q0), the probability of dying before the first birthday

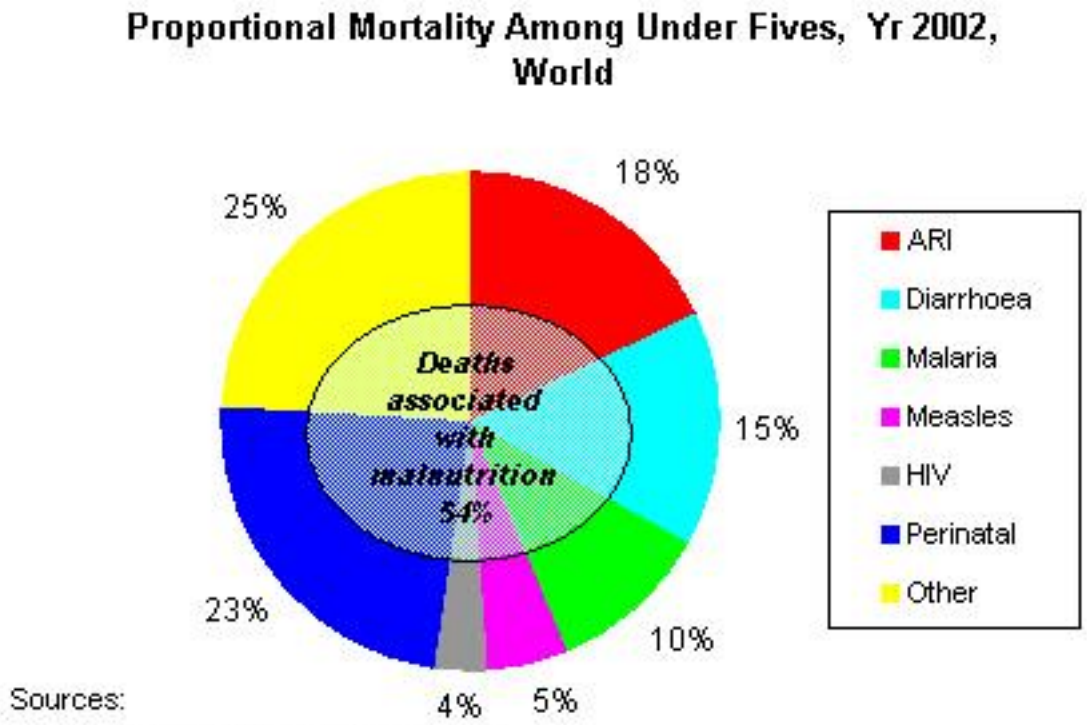
- **Child mortality** (4q1), the probability of dying between the first and fifth birthday

- **Under-five mortality** (5q0), the probability of dying before the fifth birthday.

- All of these rates are calculated per 1,000 live births, except for child mortality which is calculated per 1,000 children surviving to age one.


Perinatal
early neonatal
Late neonatal
neonatal
post neonatal
infant
Birth
1 wk
1 mon.
1 y

Proportional Mortality among<5 yrs. WHO Report 2002/World Wide



Causes of Infant and Child Mortality in Jordan

The 3 leading causes of infant death were

1-Conditions originating in the perinatal period.

2-Congenital malformations.

3- Diseases of the respiratory system.

- The leading cause of death in the neonatal period was conditions originating in the perinatal period, while in the post-neonatal period, it was congenital malformations.
- Prematurity was the leading contributory cause of infant death.

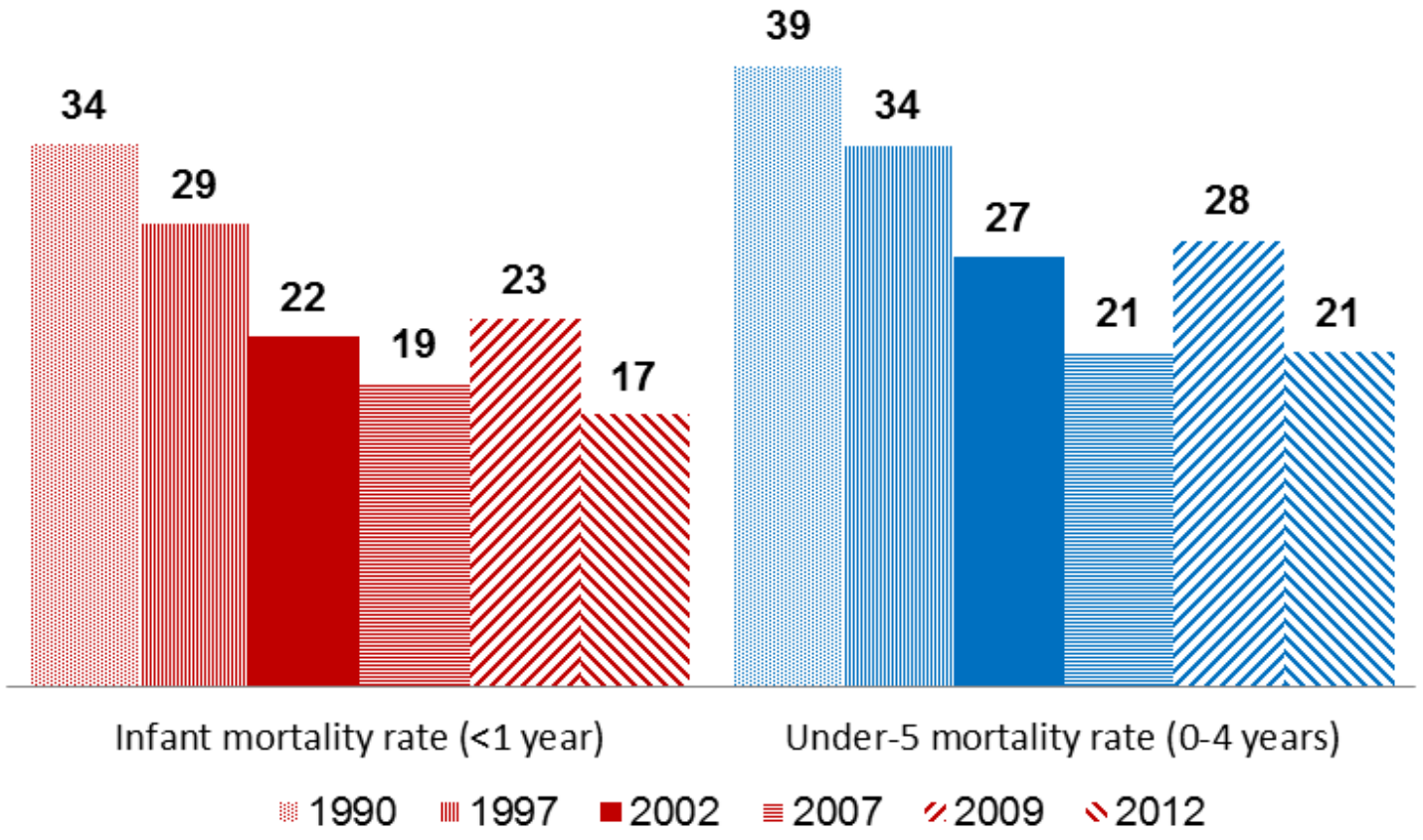
CONCLUSION:

- This study showed that causes of infant mortality in Jordan tend to be similar to those prevailing in developed countries.

- Khoury SA, Mas'ad DF.
- Department of Family and Community Medicine, University of Jordan, Amman, Jordan.

- Saudi Med J. 2002 Apr;23(4):432-5.

Trends in childhood mortality rates, 1990-2012 /DHS Jordan



بسم الله الرحمن الرحيم

الحمد لله رب العالمين والصلاة والسلام على سيدنا محمد الصادق الوعد الأمين
اما بعد..

Prevention and control of Communicable Diseases

- Communicable diseases are diseases that can be transmitted from a person to another through different means (direct contact, droplet infection, sexual contact, or mother fetus infection.)

Steps followed to accomplish control of communicable diseases:

1- Reporting •

2- Observing of the coming foreigners and tourist who are going to stay in the country for more than one month and testing them for certain disease e.g AIDS, Malaria etc.. •

3-Sending teams in cases of outbreaks and epidemics. •

4-Coordination with other ministries (Ministry of agriculture and Brucellosis) •

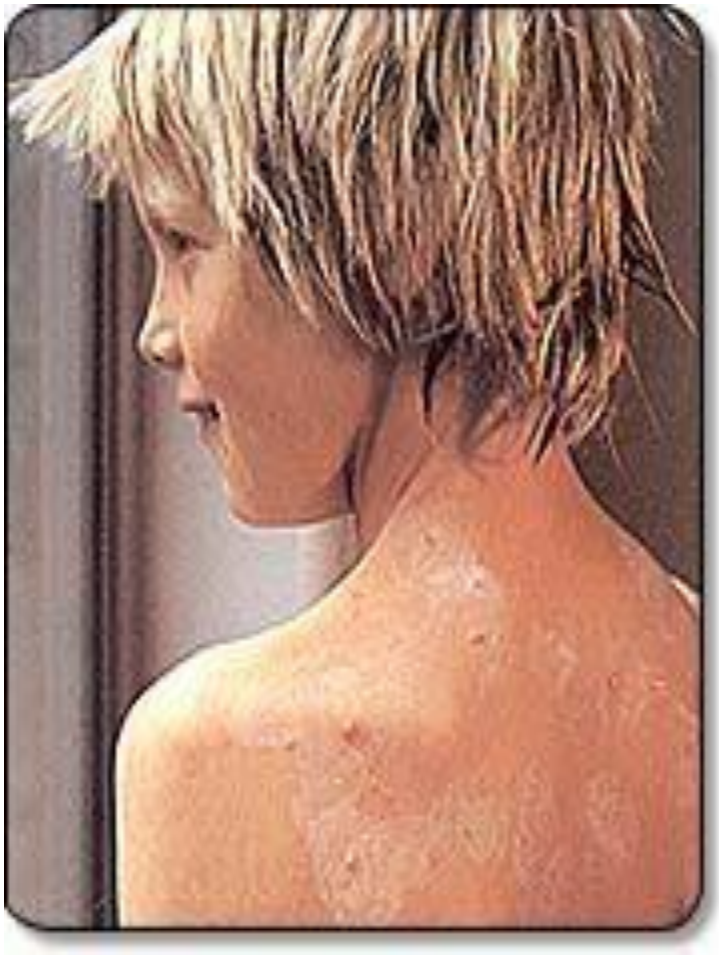
5-Vaccination •

How Some Childhood Infectious Diseases Are Spread

- **Direct Contact with infected person's skin or body fluid**
- **Respiratory Transmission (passing from the lungs, throat, or nose of one person to another person through the air)**
- **Fecal-Oral Transmission (touching feces or objects contaminated with feces then touching your mouth)**

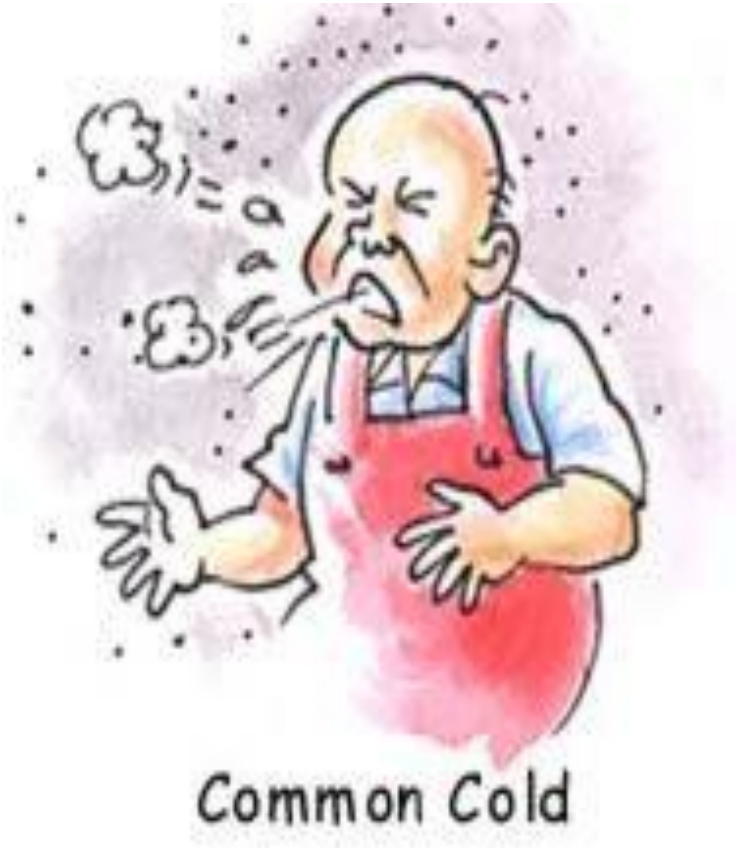
Direct Contact with infected Person's skin or body fluid

- Chickenpox*
- Cold Sores
- Conjunctivitis
- Head Lice
- Impetigo
- Ringworm
- Scabies



Respiratory Transmission

- ***Chickenpox***
- ***Common Cold***
- ***Diphtheria***
- ***Fifth Disease***
- ***Bacterial meningitis***
- ***Hand-Foot-Mouth Disease***
- ***Impetigo***
- ***Influenza***
- ***Measles***
- ***Mumps***
- ***Pertussis***
- ***Pneumonia***
- ***Rubella****



Fecal-Oral Transmission

- ***Campylobacter***
- ***E. Coli***
- ***Enterovirus***
- ***Giardia***
- ***Hand- Foot- Mouth Disease***
- ***Hepatitis A***
- ***Infectious Diarrhea***
- ***Pinworms***
- ***Polio***
- ***Salmonella***
- ***Shigella***

Vaccination

- Vaccination against childhood communicable diseases through the Expanded Program on Immunization (EPI) is one of the most cost-effective public health interventions available (UNICEF 2002; World Bank 1993). By reducing mortality and morbidity, vaccination can contribute substantially to achieving the Millennium Development Goal of reducing the mortality rate among children under five by two-thirds between 1990 and 2015.

Vaccination

- ***Protecting Your Newborn From Disease***

- ***How do vaccines work?***

- ***Are vaccines safe?***

- ***Keeping an immunization record***

Immunity

- It is the defense mechanism of the body against the invasion of pathological microorganisms.
- **General immunity**

General defensive mechanisms available from birth . eg skin, mucosal barriers, tears, blood substances that inhibit motility or multiplication of organisms ...etc

Immunity (contd)

Specific Immunity •

This type develops against specific microorganisms. It can be acquired in 2 ways:

Active immunity: acquired by coming in • contact with the pathogen either by contracting the disease itself or by vaccination.

Passive immunity

- Acquired by receiving antibodies from an actively immunized person or animal.
- It is quickly acquired
- Short lived in comparison to actively acquired immunity.
- Can be acquired in two ways:

Passive Immunity

- **Natural** : Antibodies passing from mother to newborn via placenta start falling during the first weeks and disappear within the first 6 months.
- **Artificial**: acquired by injection of specific or standard (non-specific gamma globulins).e.g. Specific immunoglobulins are available for hepatitis B, tetanus, mumps..etc.

Importance of vaccination

Diseases that are common, can kill or cause disability,

Can be prevented.

The main diseases are:

- TB,
- Pertusis ,
- Diphteria ,
- Poliomyelitis,
- Tetnus.
- Measles

Diphtheria

Diphtheria is caused by a toxin-producing strain of the bacterium *Corynebacterium diphtheriae,* which is transmitted by means of respiratory droplets.

-

- Before the widespread use of immunization, more than 5 percent of people living in temperate climates suffered from clinical diphtheria at some point during their lifetimes (Griffith 1979). Rates exceeding 100 cases per 100,000 population were seen in Europe during World War II (Galazka, Robertson, and Oblapenko 1995).

Diphtheria

Once infected
- takes 2-5 days to get sick

Symptoms
- some people might not feel or look sick
- others might have
  - sore throat
  - fever
  - chills
  - difficulty swallowing
  - thick gray coating over the back of the throat

Complications
- within 6-10 days serious problems can occur
  - suffocation
  - paralysis
  - heart failure
  - coma
  - death

Tetanus

- *Clostridium tetani* is maintained in nature and is found in all countries. Spores remain viable for many years in soil and dust, especially in areas contaminated by animal feces (Cherry and Harrison 2004).

- The organism is usually transmitted through burns, cuts, and other penetrating injuries. Neonatal tetanus is the most common presentation in developing countries. The portal of entry is usually the umbilical stump but has been associated with circumcision and other surgical procedures (Birmingham and others 2004; Stanfield and Galazka 1984).

Tetanus

Once infected •

• takes 3 days to 3 weeks to get sick

Symptoms •

• stiff muscles in the jaw and neck with difficulty in swallowing

• difficulty opening mouth

• muscle rigidity in the chest causing breathing difficulties and spastic arms, legs, and stomach with painful convulsions

Tetanus

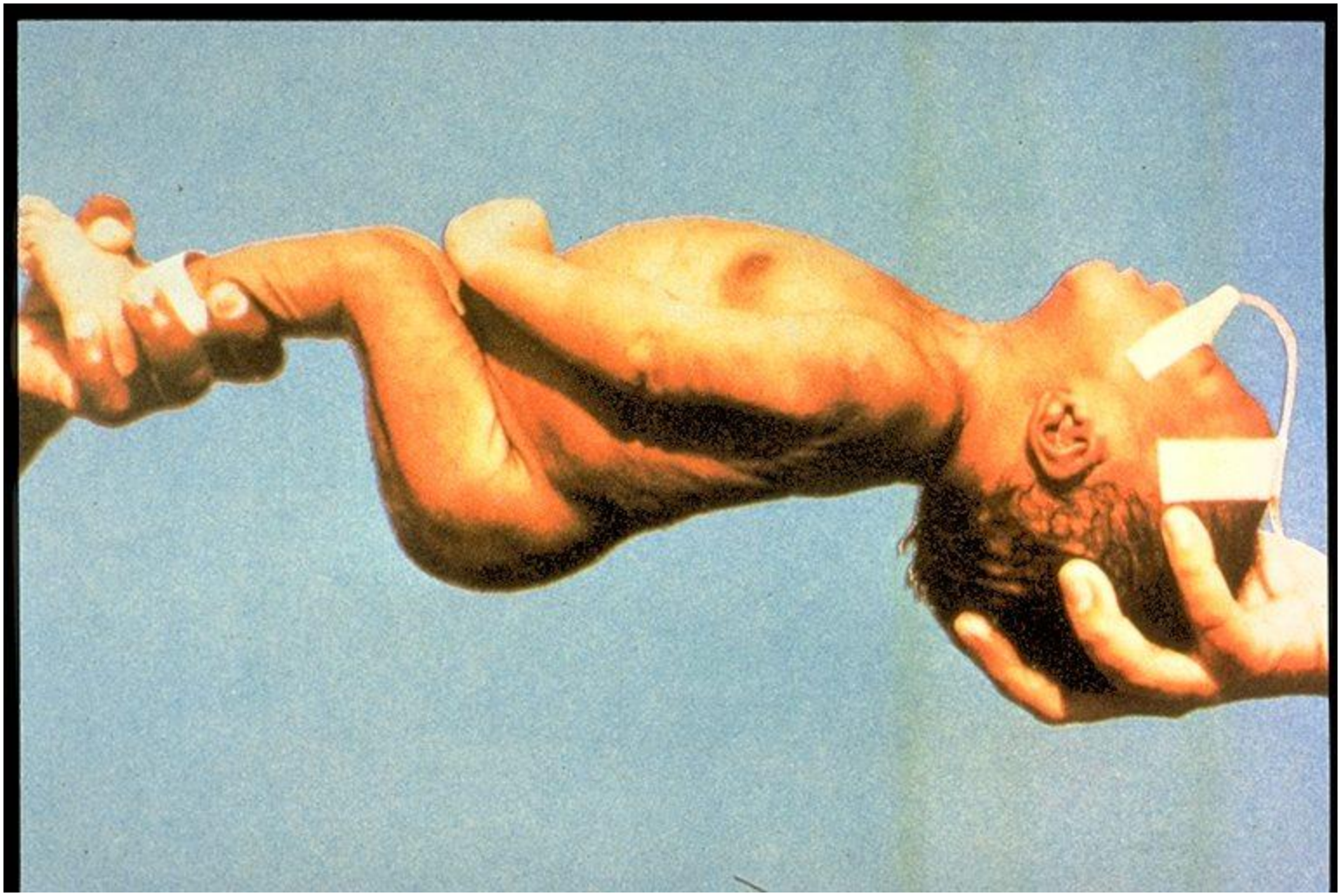
Complications •

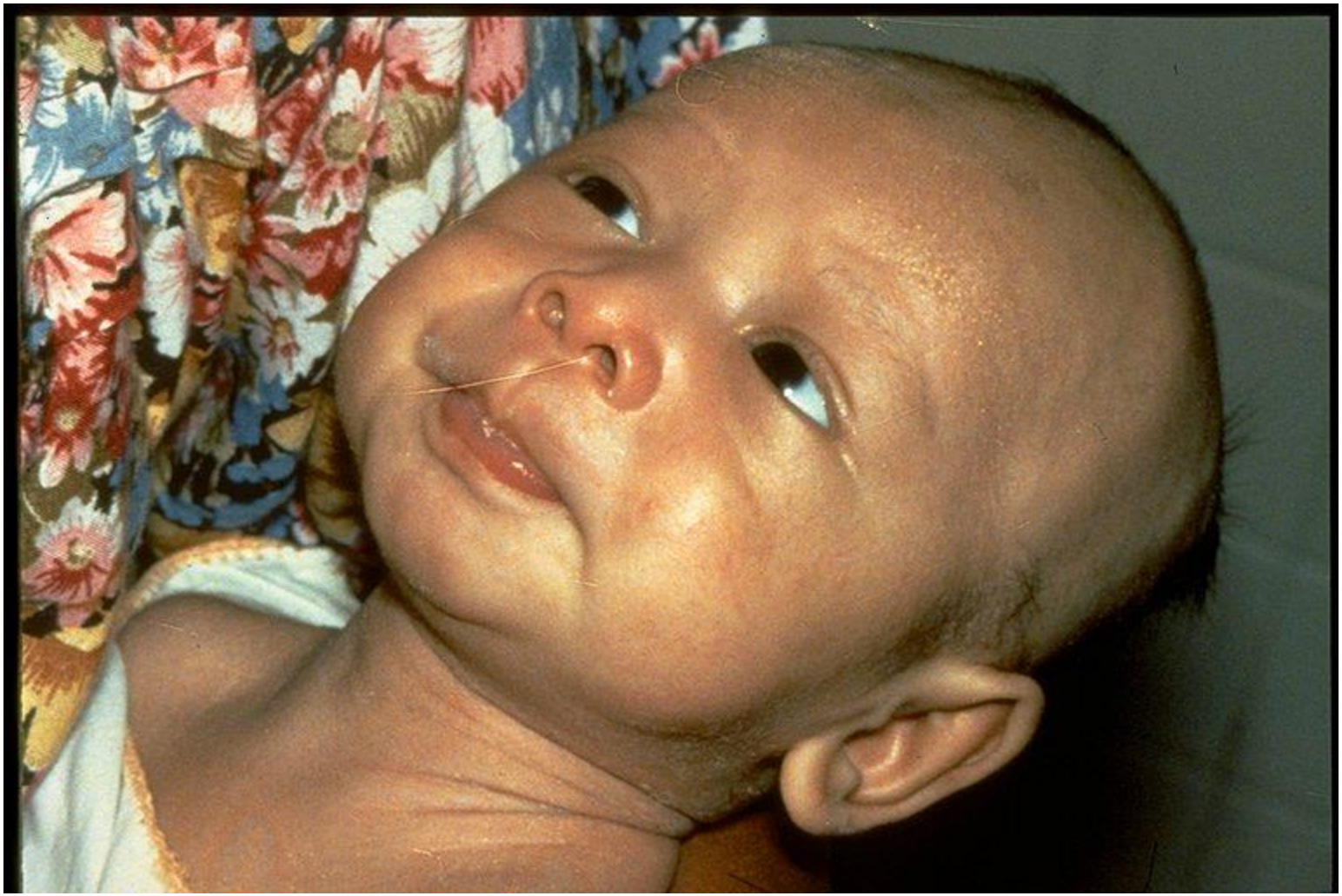
- broken bones from muscle spasms
- breathing problems/lung infections
- coma and death

child has painful muscle spasms from • tetanus nearly impossible for her to move or control the muscles in her body

baby has neonatal tetanus; baby is • completely rigid

- tetanus kills most babies who get it
- infection can happen when newly cut umbilical cord is exposed to dirt





Pertussis

- *Bordetella pertussis bacteria* is transmitted through respiratory excretions and occurs throughout the world. Most pertussis in developing countries occurs in school-age children. In developed countries, mild or asymptomatic infections in adults are believed to be common sources of transmission to very young infants (Edwards and Decker 2004).

Pertussis

- **Pertussis**
- serious disease especially for babies
- most babies who get pertussis have to be hospitalized because of asphyxia and some even die

Pertussis Bacteria

- lives in the mouth, nose, and throat
- spreads through coughing and sneezing
- spreads very easily from parent to child or child to child

Pertusis

Once infected

- takes 5-10 days to get sick

Symptoms

- adults usually do not get very sick
- children can have
  - fever
  - coughing
  - severe cough with a "whooping" sound
  - vomiting and exhaustion after severe coughing
  - difficulty in breathing

Complications

- pneumonia
- seizures
- brain damage
- death

Children under 7 years of age need to be vaccinated against pertussis.

Poliomyelitis

- Before the availability of polio vaccines, as many as 90 percent of children in the developing world were infected with all three types of the polio virus in the first two or three years of life (Sutter and Kew 2004). In developed countries, transmission occurred primarily in school-age children and more than 90 percent of infections were asymptomatic; 4 to 8 percent of children had nonspecific febrile illness and less than 1 percent developed acute flaccid paralysis (Sutter and Kew 2004).

Children with residual paralysis require rehabilitation. Surgical intervention is necessary if contractures develop because of the lack of rehabilitative services following the acute illness. These children are at increased risk of premature death because of late onset postpolio muscle atrophy (postpolio syndrome), which occurs 20 to 40 or more years after acute illness.

-

Polio

- can cause severe illness, paralysis, and even death

Polio Virus

- lives in throat and intestines of an infected person
- usually spreads to other people through contact with feces

Once infected

- takes 6-20 days to get sick

Polio

Symptoms

- fever
- severe muscle pain or spasm
- paralysis
- headache
- some people do not look or feel sick, but can still spread the disease to others

Complications

- long-term paralysis
- inability to breathe without the help of a machine if the chest mucsles were affected.
- Asphyxia and death.


MARINA

Measles

- Measles is an acute respiratory viral infection. Children born to immune mothers are protected against clinical measles from passively acquired maternal antibodies until they are five to nine months of age. More than 90 percent of infections are associated with clinical disease (Krugman 1963).

In the absence of vaccination, the measles virus would infect almost 100 percent of the population, including most of the 688 million children under five in the developing world. Using the methods described here, approximately 125 million cases and 1.8 million to 2.0 million deaths per year would be expected in the absence of vaccination

-

Measles

- spreads easily between people
- can cause serious illness in children
- can cause death in serious cases

Measles Virus

- spreads through coughing, sneezing, or just talking to an infected person

Once infected

- takes 10-14 days to get sick

Measles

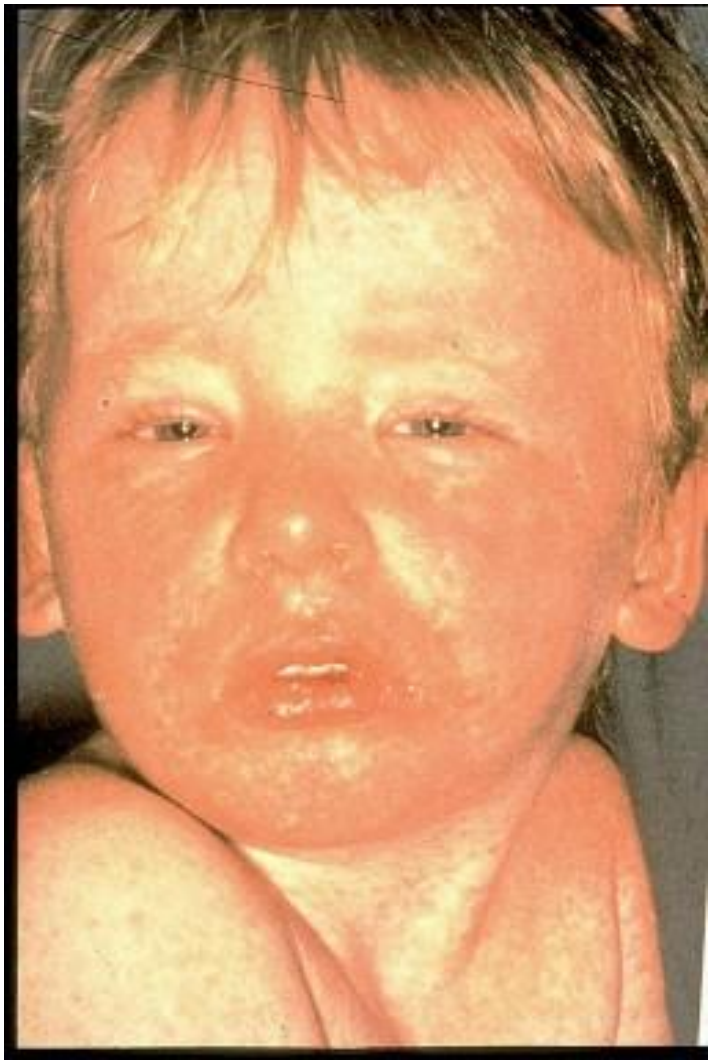
Symptoms

- coughing
- runny nose
- fever
- red eyes
- small white spots inside the mouth
- rash that begins along the hairline and moves downward to the face, neck, body, hands, and feet

Complications

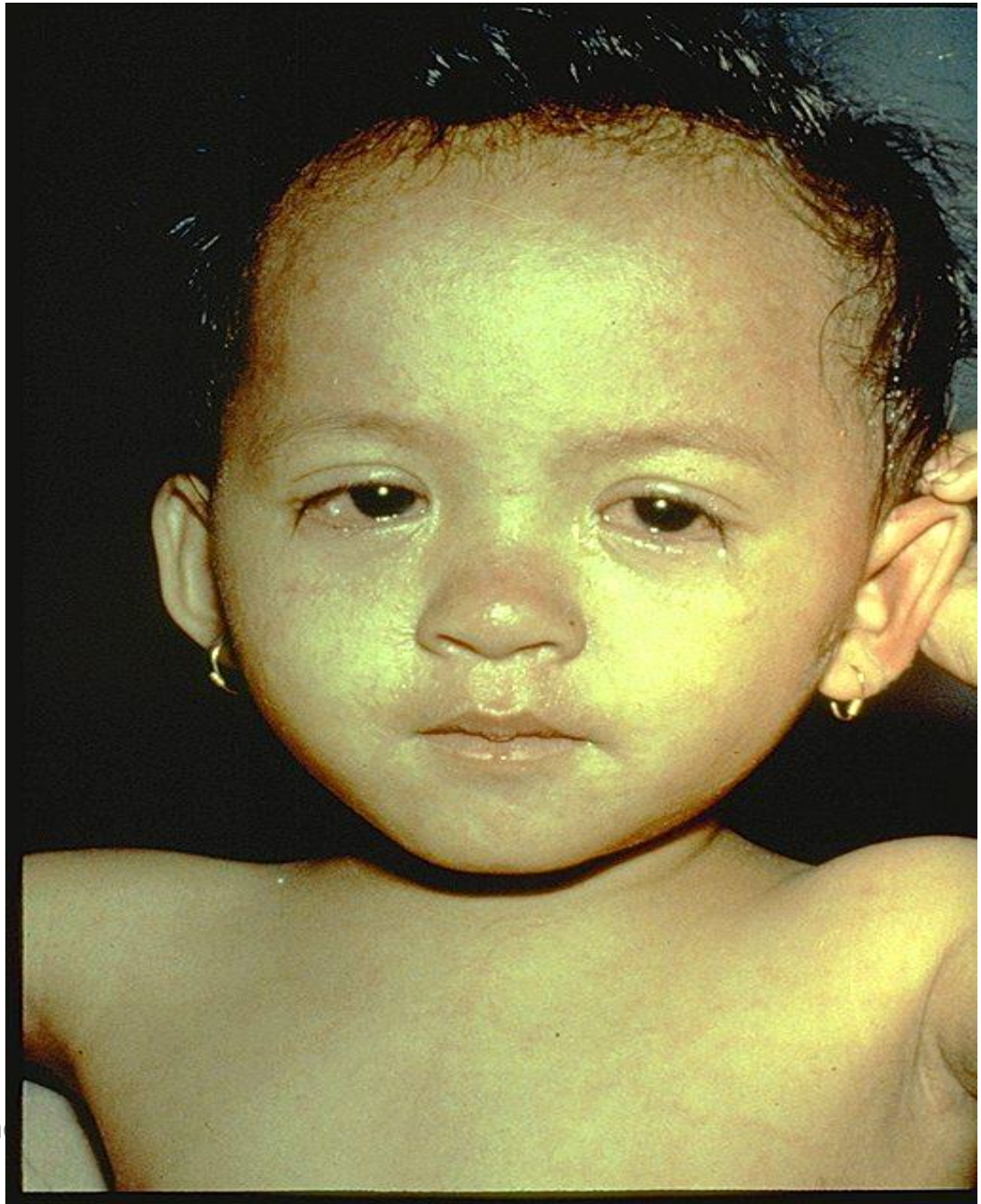
- pneumonia
- ear infections
- brain damage
- seizures
- death

MEASLES



child has a bad rash caused by measles

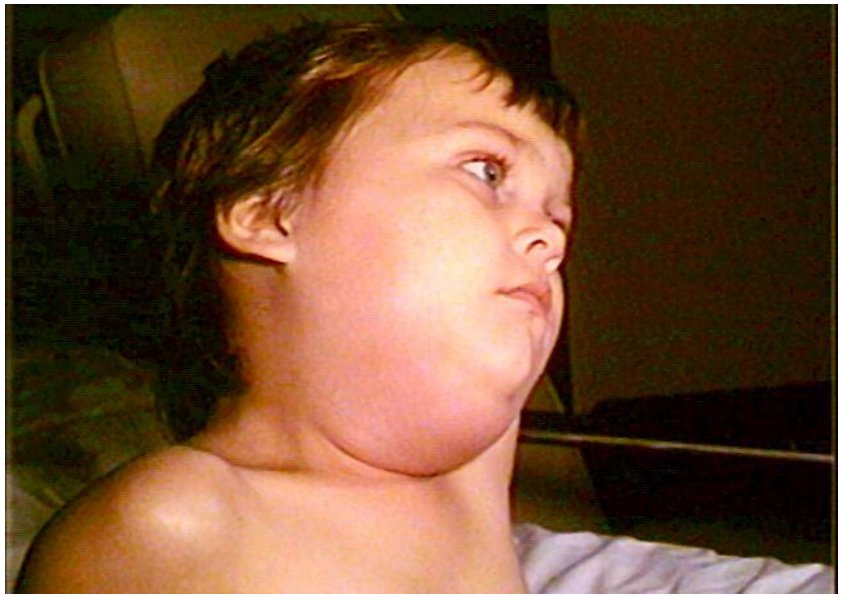
- eyes are red and runny
- has a runny nose and fever

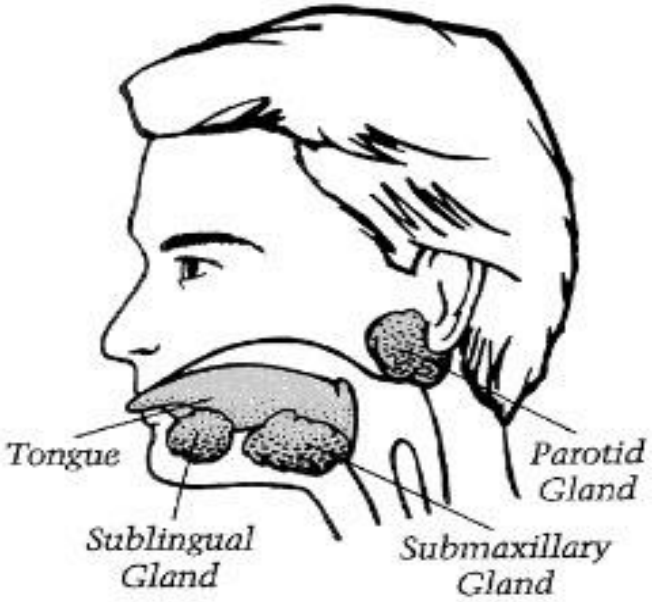


Mumps (Epidemic Parotitis)

- Paramyxovirus, infected saliva
- 14-21 days incubation
- Headache, anorexia, malaise, fever
- Pain on chewing or swallowing acidic liquids
- Parotid and other salivary glands are tender, tissue edema
- The oral duct openings of the glands are „pouting” and inflamed

Mumps




Tongue
Parotid Gland
Sublingual Gland
Submaxillary Gland

Vaccination

Two types of vaccines:

- Live/ attenuated
- Killed/ Inactivated

Types of vaccines

- Live attenuated viruses (measles, mumps, rubella, varicella, oral polio)
- Inactivated viruses (injectable polio (Sabin), hepatitis B, influenza)
- Inactivated bacteria (pertussis, diphtheria, tetanus, H. influenzae type b, pneumococcus)

Live/attenuated Vaccines

- Highly effective
- They induce slight infection → long-lasting protection even with a small dose.
- BCG, measles, MMR, and polio (trivalent oral polio vaccine – TOPV) are live vaccines.

Inactivated Vaccines

- Produce a lower immune response to a single dose in comparison to live vaccines
- Multiple doses are usually required to give long –term protection
- Pertussis , polio (injectable, inactivated polio vaccines IPV), typhoid, tetanus, are inactivated vaccines
- The vaccines for diphteria and tetnus are prepared from the bacterial exotoxin rather than the bacteria organism itself. These are referred to as toxoid vaccines.

How serious is the situation?

Rationale for Immunization

Every year, out of 100 children in the world:

- 3 die from measels
- 2 from pertusis
- 1 from tetanus

For every 200 children who are infected with polio virus, one will be crippled for life.

Expanded Program on Immunization

- WHO set Target: 90% of all children below one year be fully immunized by the year 2000.
- Immunization is an essential part of PHC
- It is a program that was started worldwide by WHO / UNICEF, called (EPI).

Immunization

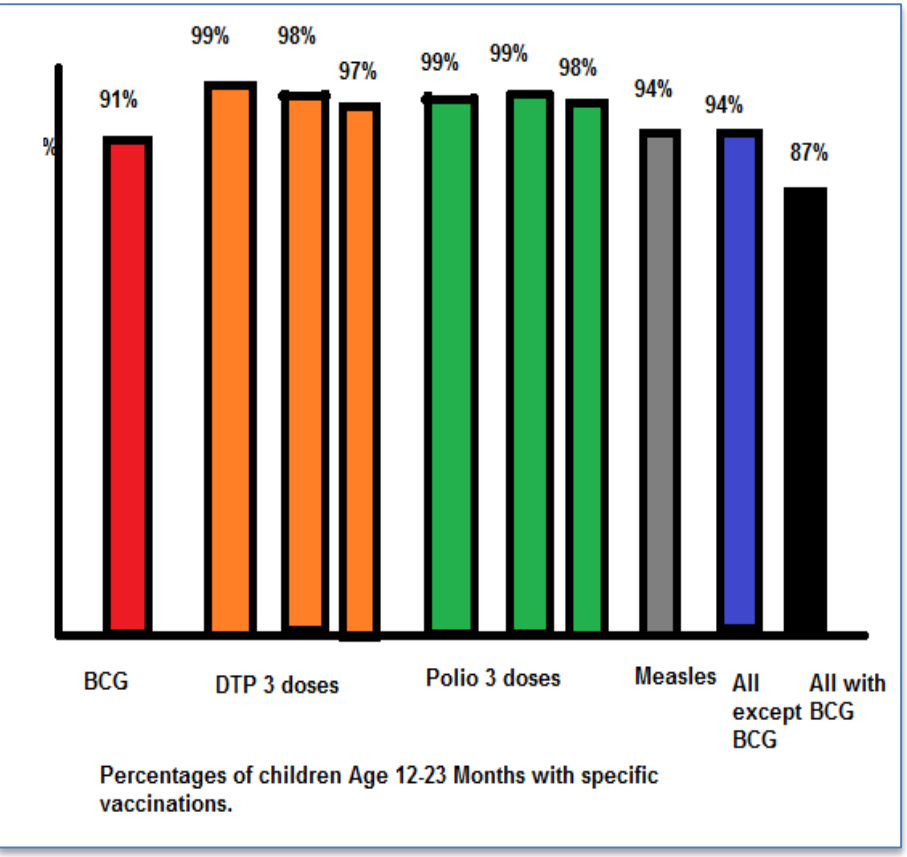
- EPI (Expanded Program on Immunization) was launched in Jordan in 1979
- Jordan achieved universal child immunization in 1988.

National vaccination schedule/ Jordan

type/age	Bir	1m	2m	3m	4m	6m	9m	15	18
BCG									
HB									
DPT									
OPV									
MMR									
measl									

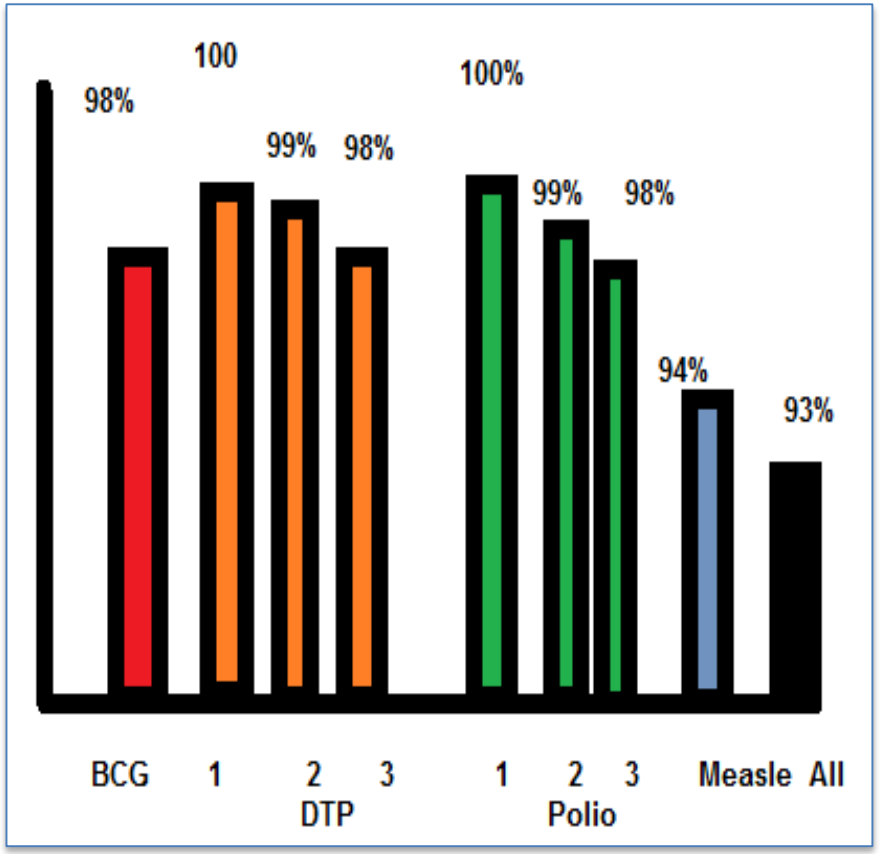
Percentage of children age 12-23 months with specific vaccination

2007



(*JPFHS*, "2007", Section 10.2, Table 10.2, pg.117)

2012



(*JPFHS*, "2012", Section 10.2, Table 10.3, pg.127)


Thank you!!!

تم بحمد الله