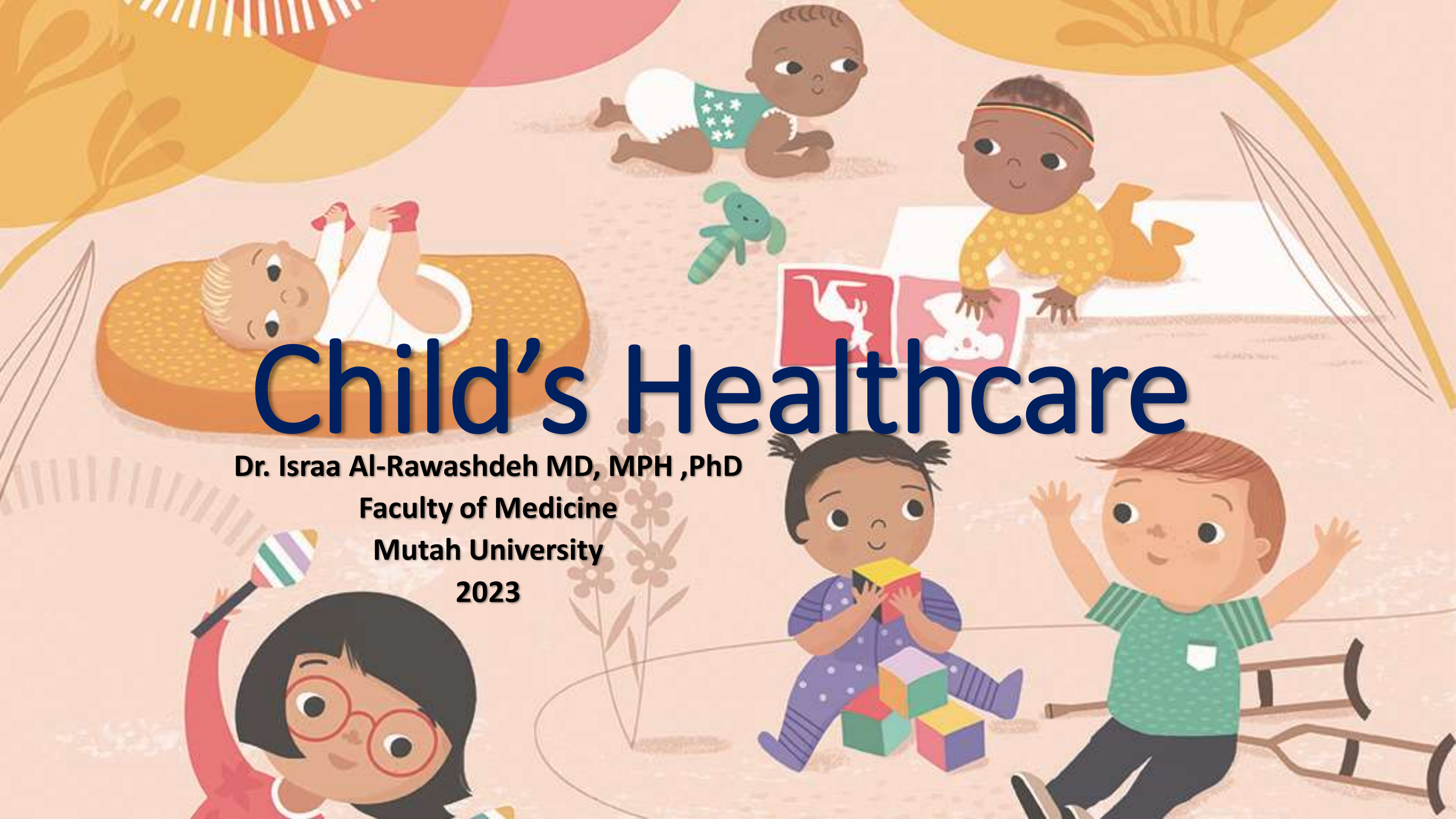

Child's Healthcare

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2023

Definitions:

- A child is a person 18 years or younger unless national law defines a person to be an adult at an earlier age.
- Child health: is a state of physical, mental, intellectual, social and emotional well-being and not merely the absence of disease or infirmity.
- Healthy children live in families, environments, and communities that provide them with the opportunity to reach their *fullest developmental potential*.

Within the life course, the period of life before reaching adulthood is divided into three age subgroups based on epidemiology and healthcare needs:

The first 5 years (under-5 children)

- Neonatal period (the first 28 days of life) early + late
- Infancy (the first year of life)
- Pre-school years (from 1 to less than 6 years).

The next 5 years (older children)

The second decade of life (adolescents).

Universal Children's Day
20 November

2023 Theme: For every child, every right

Why focus on child's health?

1. Major proportion of the populations, (Jordan: 34% <14 years)
2. A child is dependant on adults for optimal development and survival.
3. Critical years of life: biologic immaturity (immunity): ↑ risk of infectious diseases and rapid growth and development (e.g. brain).
4. Childhood illness contribute substantially to the global burden of disease.
5. Majority of child deaths are preventable and treatable.
6. A good measure of societal development.

Child Mortality indicators

- **Under-five mortality rate U5MR** - Probability of dying between birth and exactly five years of age expressed per 1,000 live births.
- **Infant mortality rate IMR** - Probability of dying between birth and exactly one year of age expressed per 1,000 live births
- **Neonatal mortality rate NMR**: Probability of dying during the first 28 days of life, expressed per 1,000 live births. (early and late)
- **Post Neonatal mortality rate PNMR:** Probability of dying between 28 days and exactly one year of age expressed per 1,000 live births

Infants and children

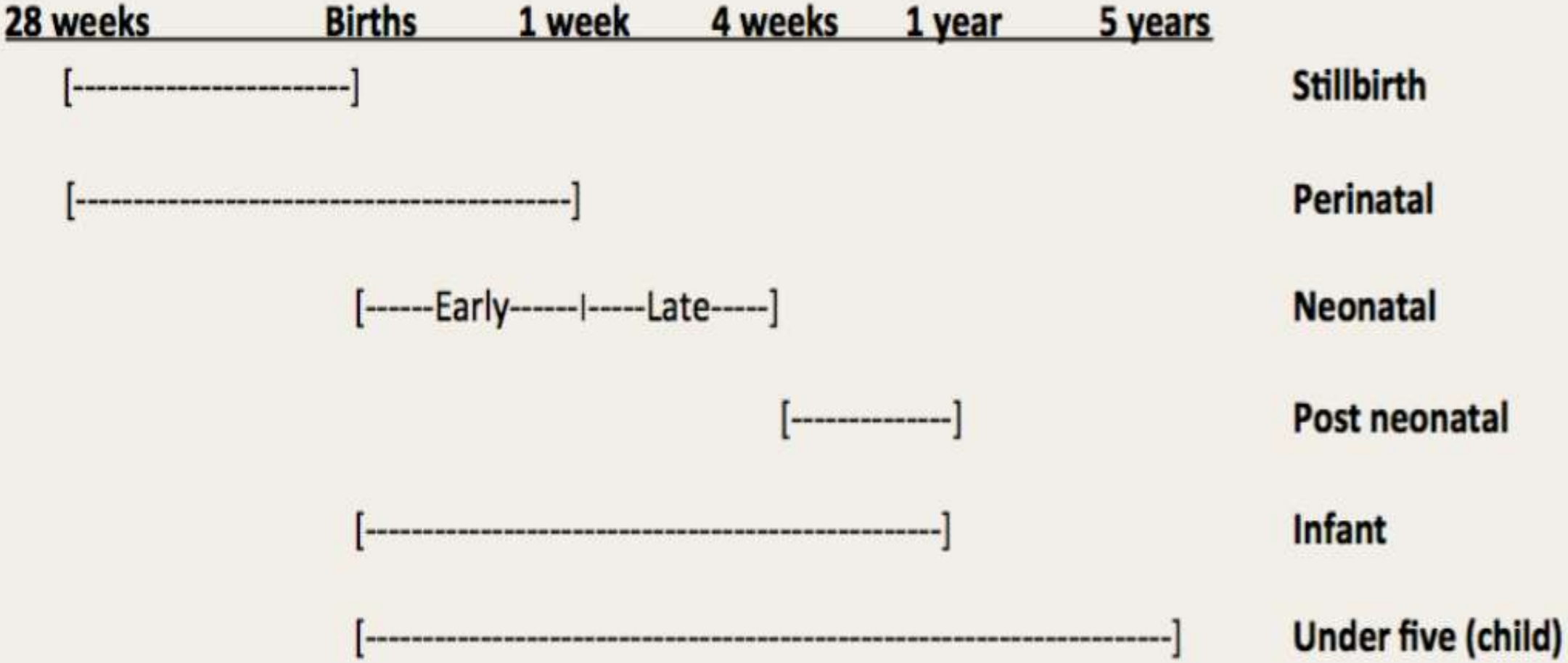
$$\text{Neonatal mortality rate} = \frac{\text{Annual no. of deaths in the first 28 days}}{\text{No. of live births in a year}} \times 1{,}000$$

$$\text{Postneonatal mortality rate} = \frac{\text{Annual no. of deaths between 28 days and 1 year}}{\text{No. of live births in a year}} \times 1{,}000$$

$$\text{Infant mortality rate} = \frac{\text{Annual no. of deaths in the first year}}{\text{No. of live births in a year}} \times 1{,}000$$

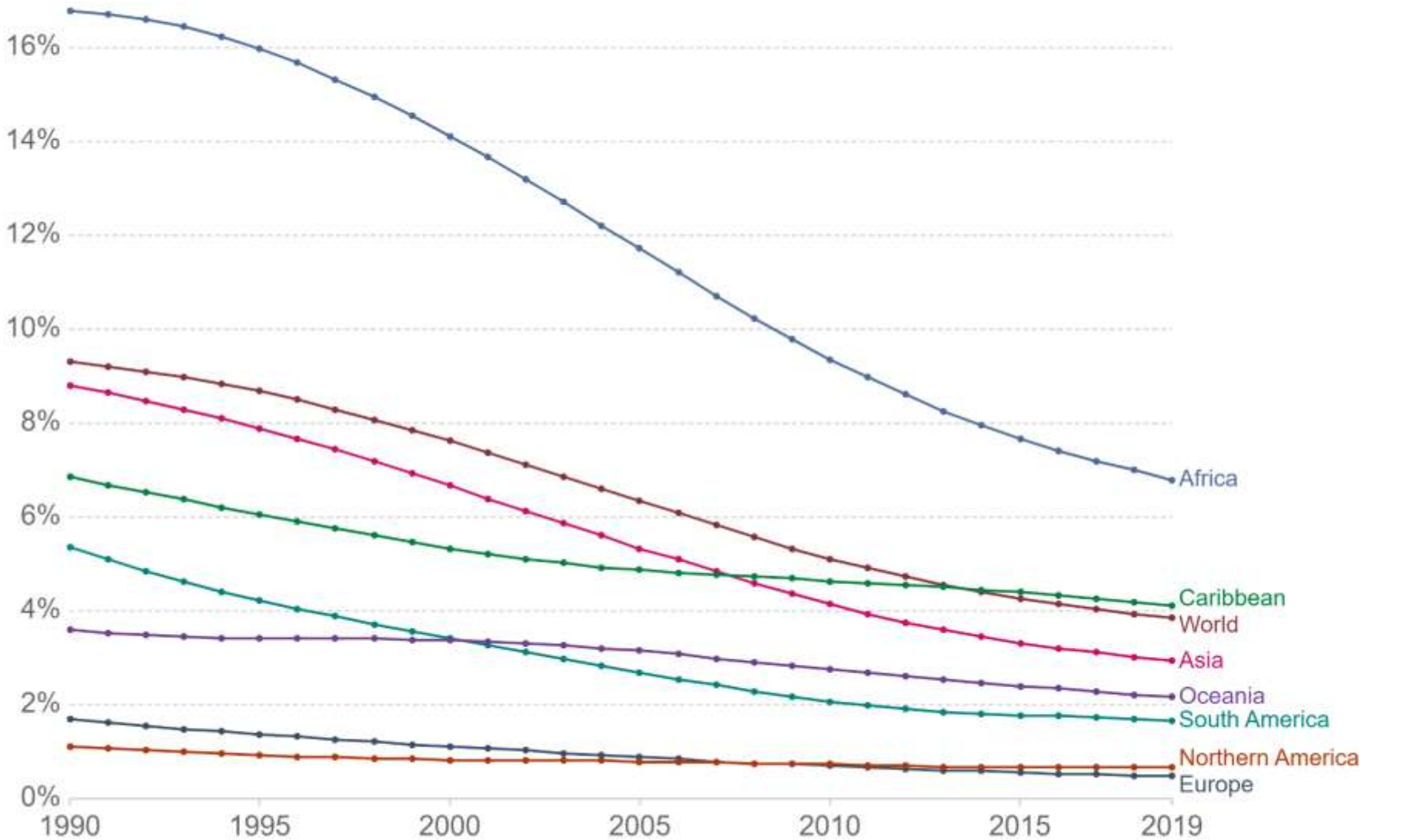
$$\text{Child death rate} = \frac{\text{Annual no. of deaths between 1 and 4 years}}{\text{No. of live births in a year}} \times 1{,}000$$

$$\text{Under five mortality rate} = \frac{\text{Annual no. of deaths under 5 years}}{\text{No. of live births in a year}} \times 1{,}000$$


28 weeks
Births
1 week
4 weeks
1 year
5 years
Stillbirth
Perinatal
Neonatal
Early
Late
Post neonatal
Infant
Under five (child)

Child mortality

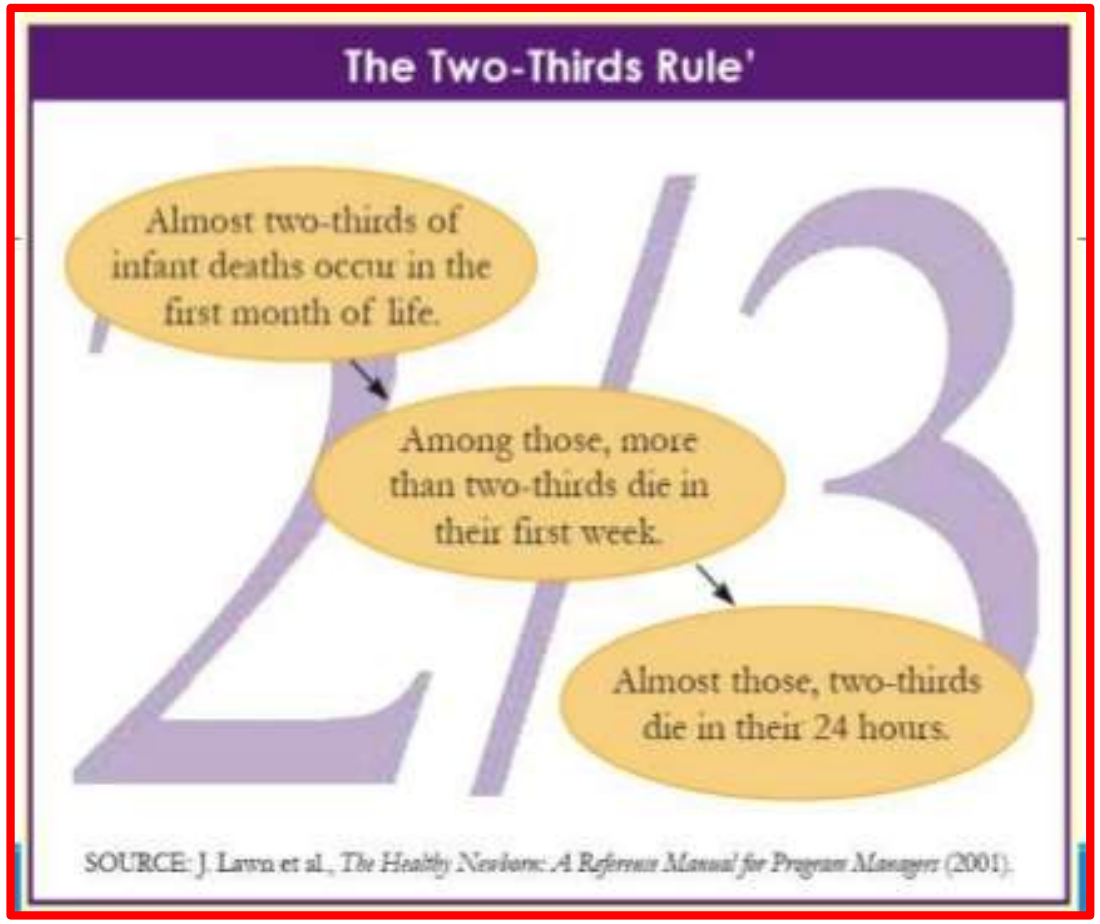
Share of children, born alive, dying before they are five years old.



Source: United Nations – Population Division (2019 Revision)

OurWorldInData.org/child-mortality/ • CC BY

Scope of the Problem



- The world made remarkable progress in child survival in the past 30 years (1 in 27 children died before reaching age five in 2019, compared to 1 in 11 in 1990).
- In 2020 alone, 5 million children died before reaching their fifth birthday, even without an increase in mortality attributable to COVID19.
- Half of those deaths, occurred among newborns.
- In 2020, 14,000 under-five deaths occurred every day → preventable causes.
- 50% of those deaths occurred in sub-Saharan Africa.

UN report

MDG 4: The child mortality rate has reduced by more than half over the past 25 years – falling from 90 to 43 deaths per 1,000 live births – but it has failed to meet the MDG target of a drop of two-thirds.

Hope---SDGs

GOAL 03 ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

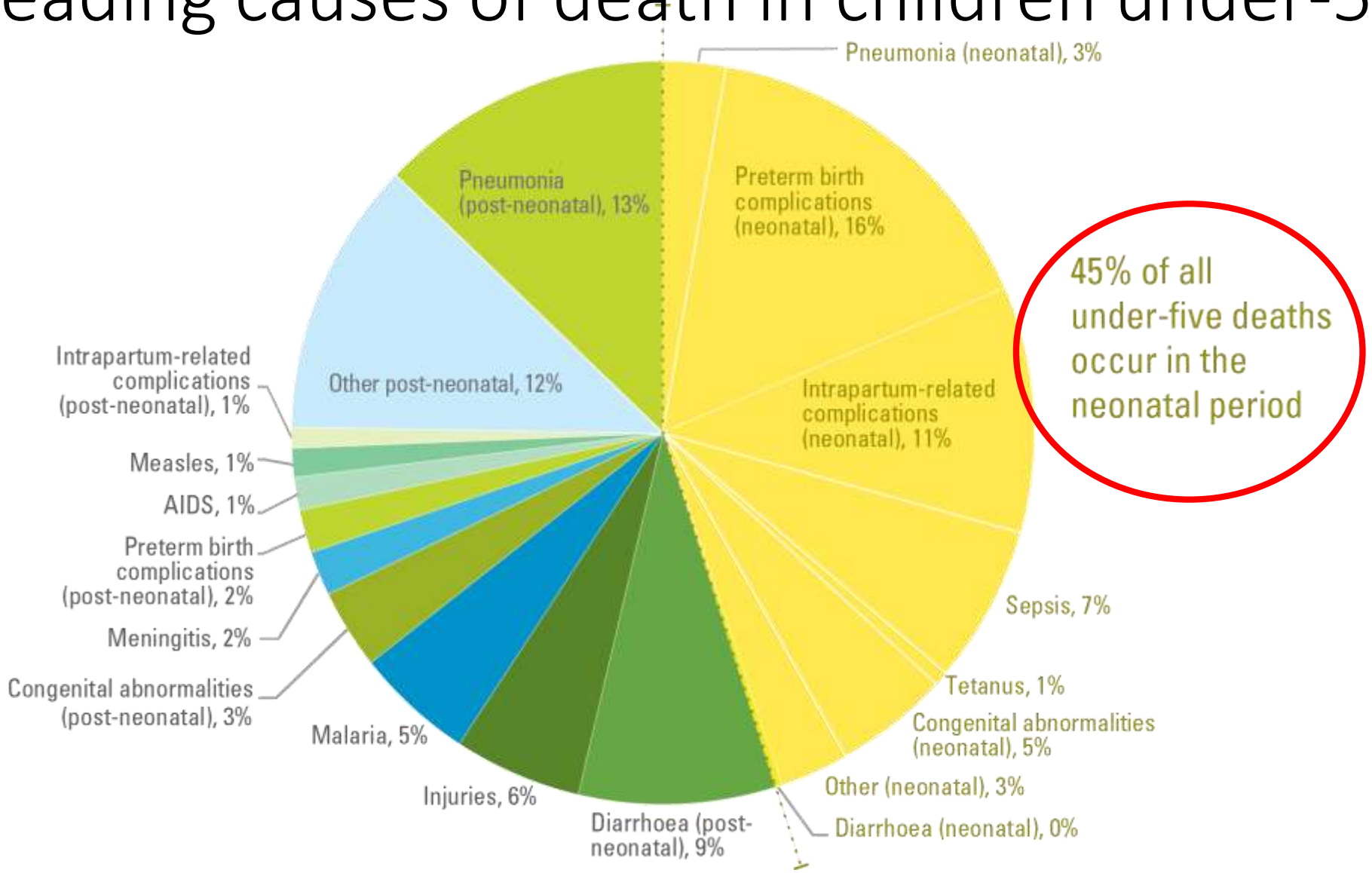
Target 3.2

By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births.

Target 3.8

Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

Leading causes of death in children under-5 years



Leading causes of death in children under-5 years

Neonatal:

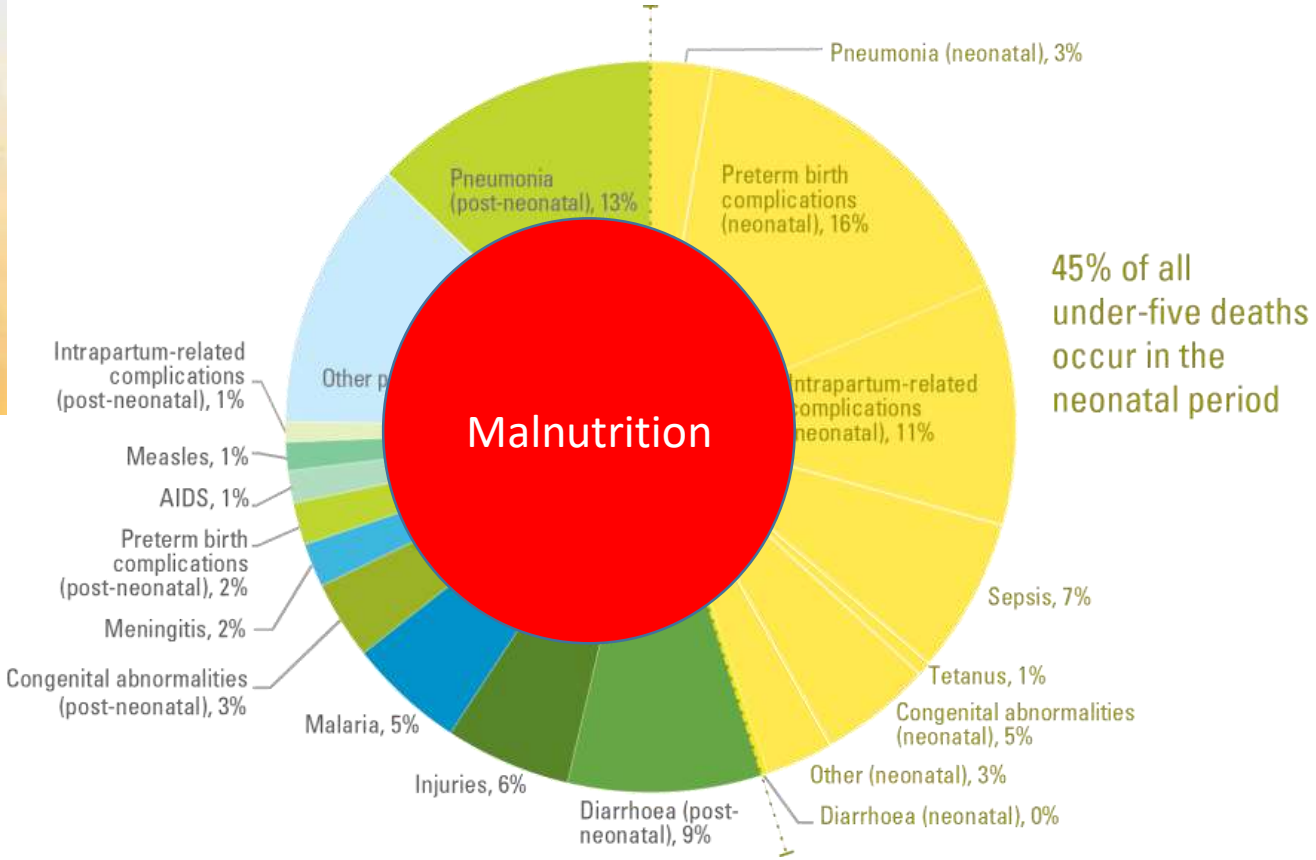
- Premature birth (being born before the completed 37th week of gestation) and birth complications: ↑ risk of: birth asphyxia, birth trauma, LBW, underdeveloped organ failures, infections and sepsis.

Post-neonatal:

1. Acute respiratory infections (Pneumonia)
2. Other post neonatal causes
3. Diarrhea
4. Injuries: more prominent in the deaths of older children.
5. Other Infectious diseases: measles, malaria, meningitis.
6. Congenital anomalies: physical or genetic abnormalities present at birth and include neural tube defects, heart defects, Down syndrome, microcephaly and others.

(WHO, 2018)

Malnutrition is estimated to contribute indirectly to more than one third of all child deaths.



45% of all under-five deaths occur in the neonatal period

Therefore,

Causes of death differ by child's age group (neonatal, postneonatal, etc..)

- **Neonatal Period (0-28 days):**
- **Interventions:** Most interventions aimed at decreasing neonatal mortality are linked to *prenatal and maternal care interventions (*clinical based interventions). Including improving the quality of antenatal care, ensuring skilled attendance during childbirth, and promoting practices such as early initiation of breastfeeding and infection prevention.
- **Post-Neonatal Period (29 days to 1 year) and beyond:**
- **Interventions:** Public health strategies become more important during the post-neonatal period. These may include vaccination programs to prevent diseases, nutritional interventions, improved water and sanitation infrastructure, and safety measures to prevent inuries and education programs.

Factors that Affect the Health of Children

- 1. Biological
- 2. Socio-economic
- 3. Cultural

1. **Biological:**

✓Birth Weight: low birth weight (< 2.5 kg) & high birth weight (> 4 kg)

✓Age of The Mother : <19 years) or >over 40 years

✓High Fertility

✓Birth Order: Mortality risk increased after the third birth.

✓Birth Spacing: < 2 year ↑ 2-4 times risk

✓Mutiple Births: more risk due to low birth weight

✓Family Size: 3 or more children, more frequent/prolonged illness

2. Socio-economic Factors

- ✓Low income countries (poverty)
- ✓Rural areas
- ✓Poor education (Maternal)
- ✓Poor and inadequate nutrition
- ✓Formula milk use vs Breastfed
- ✓Health care services quality
- ✓Environmental conditions (Conflict/War/Disaster)
- ✓Violence (wife beating, infanticide)

3. Cultural Factors

- Religion
- Motherhood and child care traditions (restrictive swaddling, rubbing a newborn's body with salt, and encouraging the ingestion of herbs in newborns, Treating newborn jaundice)
- Early marriages
- Sex of child

1. Al-Sagarat AY, Al-Kharabsheh A. TRADITIONAL PRACTICES ADOPTED BY JORDANIAN MOTHERS WHEN CARING FOR THEIR INFANTS IN RURAL AREAS. Afr J Tradit Complement Altern Med. 2016 Nov 23;14(1):1-9. doi: 10.21010/ajtcam.v14i1.4499. PMID: 28331910; PMCID: PMC5357881.

2. Khassawneh M, Khader Y, Amarin Z, Alsaad S, Alkafajei A. Traditional Practices for Newborns Care: The North of Jordan Perspective. *Jordam medical Journal.* 2008;42:1–9.

Morbidity

Common diseases with low fatality but cause significant disability.

Not evident if we only consider U5MR, IMR,NMR!

Examples:

- **Vitamin A Deficiency:**
  - **Effect:** A leading cause of preventable blindness worldwide. Vitamin A deficiency compromises the health of the eyes and can lead to irreversible vision impairment.
  - **Interventions:** Vitamin A supplementation and dietary improvements.
- **Iodine Deficiency:**
  - **Effect:** A preventable cause of developmental delay. Iodine deficiency, especially during pregnancy and early childhood, can lead to intellectual disabilities and stunted growth.
  - **Interventions:** Iodized salt programs, ensuring adequate iodine intake.
- **Iron Deficiency:**
  - **Effect:** Affects over 50% of children, leading to anemia and decreased performance at school. Iron deficiency can result in fatigue, impaired cognitive function, and developmental issues.
  - **Interventions:** Iron supplementation, dietary changes, and education on nutrition.
- **Helminthic Infections:**
  - **Effect:** Parasitic infections, such as intestinal worms, can cause anemia, poor growth, and decreased learning abilities in children.
  - **Interventions:** Deworming programs, improved sanitation, and health education.

Morbidity

- **Musculoskeletal Conditions:**
  - **Effect:** Chronic pain and limited mobility in childhood.
  - **Interventions:** Pediatric physical therapy, pain management, and appropriate medical care.
- **Respiratory Conditions (e.g., Asthma):**
  - **Effect:** Recurrent symptoms, limitations in daily activities, reduced quality of life for children.
  - **Interventions:** Asthma management, environmental control measures, and patient education.
- **Dental Diseases:**
  - **Effect:** Pain, difficulty eating, and impaired overall health in children.
  - **Interventions:** Access to pediatric dental care, preventive measures, and oral hygiene education.
- **Mental Health Conditions:**
  - **Effect:** Significant impact on the daily life and functioning of children.
  - **Interventions:** Access to child mental health services, counseling, and community support.

In Jordan ,

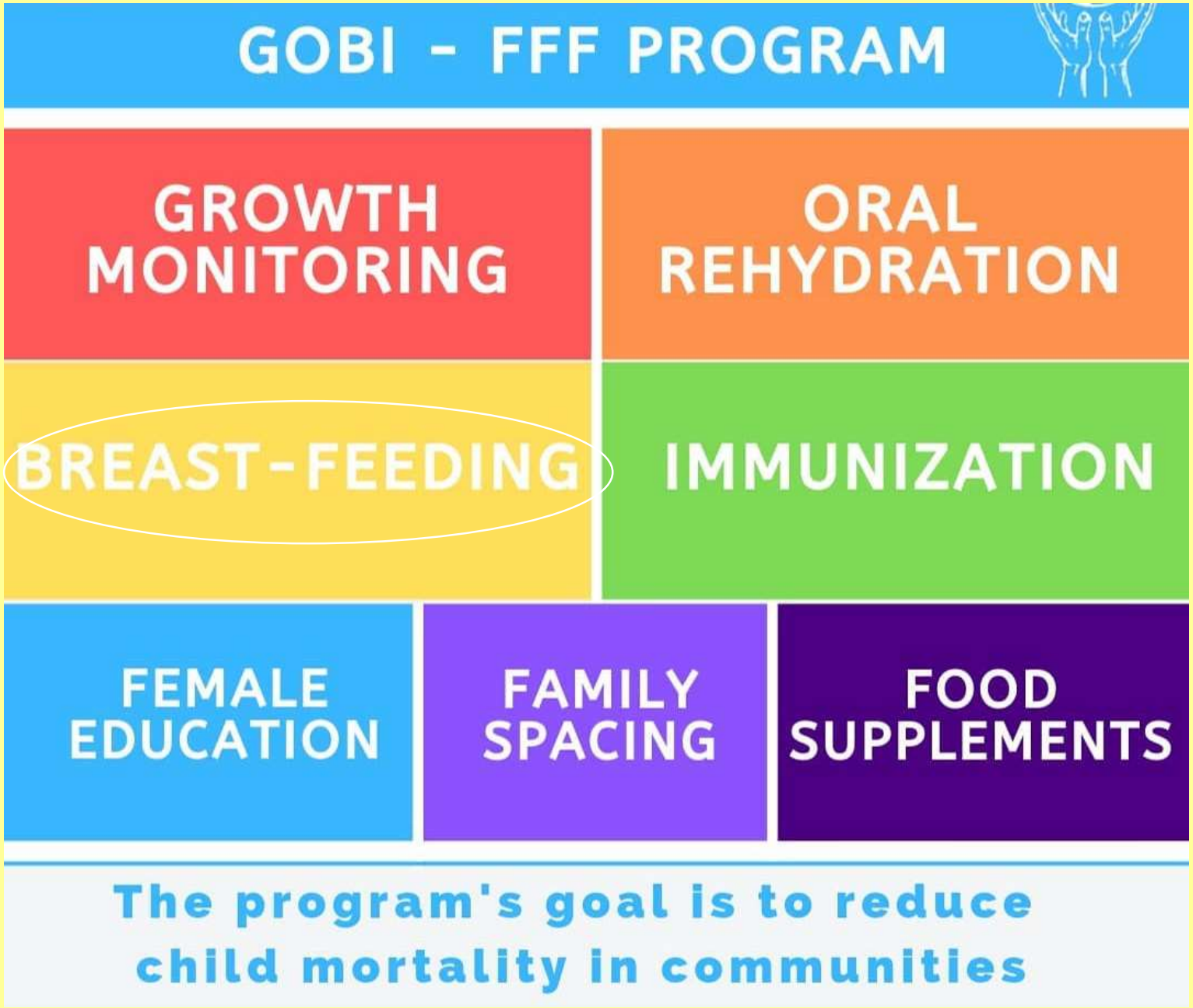
Under five mortality and infant mortality decreased between 1997 and 2012, but not enough to meet the targets of the MDGs.

- Infant mortality rate: 17/1000 live births.
- Under-5 child mortality rate: 21 per 1,000 live births.
- Neonatal deaths are underreported in Jordan (families are responsible for registering births and deaths rather than health facilities and institutions).
- Mortality of children under 5 is nearly three times higher among children in the poorest households (29 deaths per 1,000 live births) than the wealthiest households (11 deaths per 1,000 live births).
- By governorate, NMR range from 26 deaths per 1,000 live births (Ajloun) and 7.4 per 1,000 (Ma'an) (UNICEF and John Snow Inc., 2013).

International efforts to accelerate progress in child survival

- **Relatively simple** and **inexpensive** methods
- **Child survival strategies that were abbreviated as (GOBI-FFF)**

The child survival strategy is defined as a ***set*** of effective ***interventions*** placed together to ***promote*** child growth and development and ***reduce*** the under five child mortality.



ppetels,R,Gulliford,M,Karim,Q,Tan,Chorh(2015)Global Public Health,Oxford,United Kingdom

Breastfeeding:

- **Nutritional Content:**
  - **Content:** Breast milk fully meets the nutritional requirements of infants in the first few months of life.
  - **Average Production:** Mothers typically produce 450-600ml of milk daily.
  - **Nutritional Composition:** Contains 1.1gm of protein per 100ml and 70 kcals per 100ml.
- **Promotion of Bonding:**
  - **Bonding:** Breastfeeding promotes bonding between mothers and infants.
- **Prevention of Malnutrition and Reduced Infant Mortality:**
  - **Impact:** Prevents malnutrition and reduces infant mortality.
  - **Estimate:** Breastfeeding could prevent the deaths of at least one million children a year.
- **Natural Birth Spacing:**
  - **Encouragement:** Naturally encourages birth spacing.
- **Developmental Benefits:**
  - **Sucking:** Sucking during breastfeeding aids in the development of jaws and teeth.
  - **Protection:** Protects babies from the tendency to obesity.

Yet breast feeding practice is not uniformly common in many developing countries for several reasons:

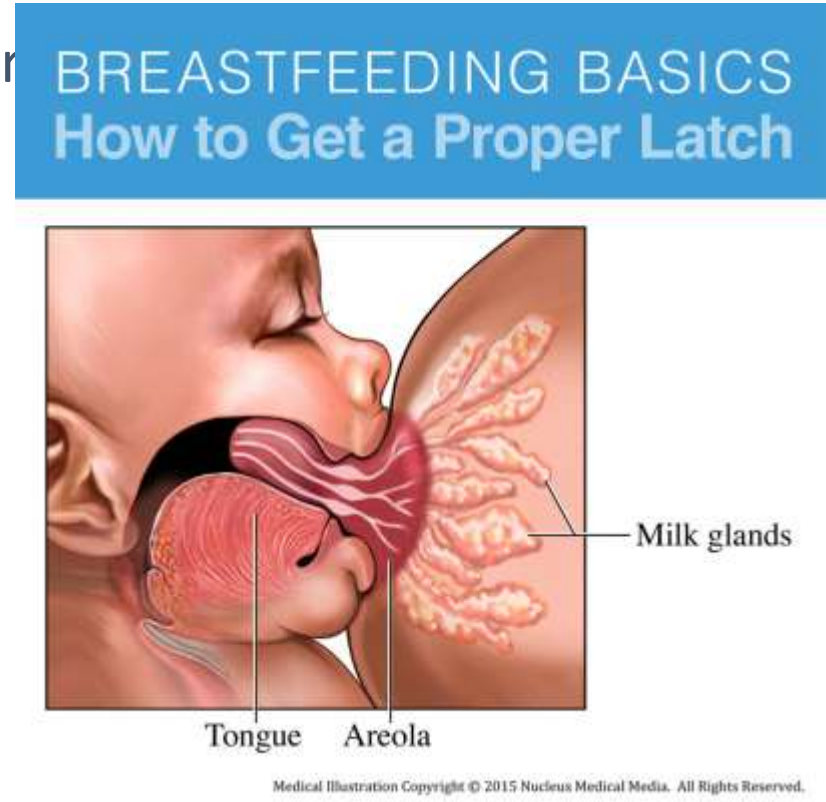
- **Aggressive Marketing by Formula Manufacturers:**
  - **Issue:** Hospitals and maternity clinics in many developing countries promote bottle-feeding due to aggressive marketing by infant formula manufacturers.
  - **Free or Low-Cost Supplies:** Manufacturers often provide free or low-cost supplies to healthcare facilities.
- **Separation of Babies from Mothers at Birth:**
  - **Issue:** Practices such as separating babies from mothers at birth can inhibit breastfeeding initiation and continuity.

Initiation and Maintenance of Breast feeding

- The decision of breast- feeding should be made during antenatal period by the help of the obstetrician and pediatrician.

Breast Feeding Guidelines:

1. Begin breast feeding as soon as possible, preferably within the first hour after delivery. The first milk is called " colostrum ". The regular milk comes on the 3 rd to 6 th day after birth
2. Breast feeding should be on demand, whenever the infant is hungry, both day and night.
3. Exclusive breast feeding through the first 6 months of life.
4. Appropriate complementary semi-solid food should be started after 6 months of age, but the breast milk should be offered first.
5. Breast-feeding should be continued throughout the second year of life.
6. Position the infant so that its mouth covers both the nipple and areola, and latches on properly.
7. Avoid the use of bottles or pacifiers.
8. The mother's food and fluids should meet her needs during lactation.



BREASTFEEDING FOR BABIES

Optimal Nutrition

Human milk contains the right nutrients in the right amounts for baby. The nutrient composition even changes to meet the baby's needs over the course of the feeding, the day, and the infant's lifespan.

Human milk contains maternal antibodies that are passed from mother to baby, substances that weaken or destroy harmful bacteria, compounds that help generate antibodies, and factors that promote the growth of friendly bacteria in the infant's gut.

Stronger Immune System

Lower Risk for Obesity

Helps Brain Development

Reduced Risk for Allergies

Decreased Risk of SIDS

Supplementary foods

- Babies can grow on breast milk alone for the first 6 months of life.
- After that age, breast milk alone is not enough; other foods need to be added with continuation of breast feeding (preferably 24 months).
- Gradual foods introduction along with breast milk “weaning” is recommended.
- In most communities, supplementary feeding starts by *semisolid* prepared from the local commonly available food.

The weaning period poses two risks:

- **Malnutrition:** a common problem during the weaning period as the weaning foods are usually watery, less nutritive and less energy supplying than breast milk.
- **Contamination:** the risk of contamination of the weaning food is high, so diarrhea is common during this period. With diarrhea, some parents usually starve the infant, which aggravates malnutrition.

-To avoid these risks; **the UNICEF developed the following guidelines' for safe supplementary feeding.**

1. It should be started at the age of 6 months. By that age, the iron stores in the liver are depleted so the infant needs a diet rich in iron.
2. Breast-feeding should be continued until the end of the second year of life, together with supplements, as breast milk may be the only available clean source of animal protein.
3. Abrupt weaning should be avoided. Only one new food is introduced at a time.
4. Small quantities of the new food is introduced first and gradually increased.
5. The nutritional value of the traditional weaning foods should be improved.
6. All foods offered to the infant preferred to be freshly prepared.
7. Increase the number of times that the child is fed: 2–3 meals per day for infants 6–8 months of age and 3–4 meals per day for infants 9–23 months of age, with 1–2 additional snacks as required.

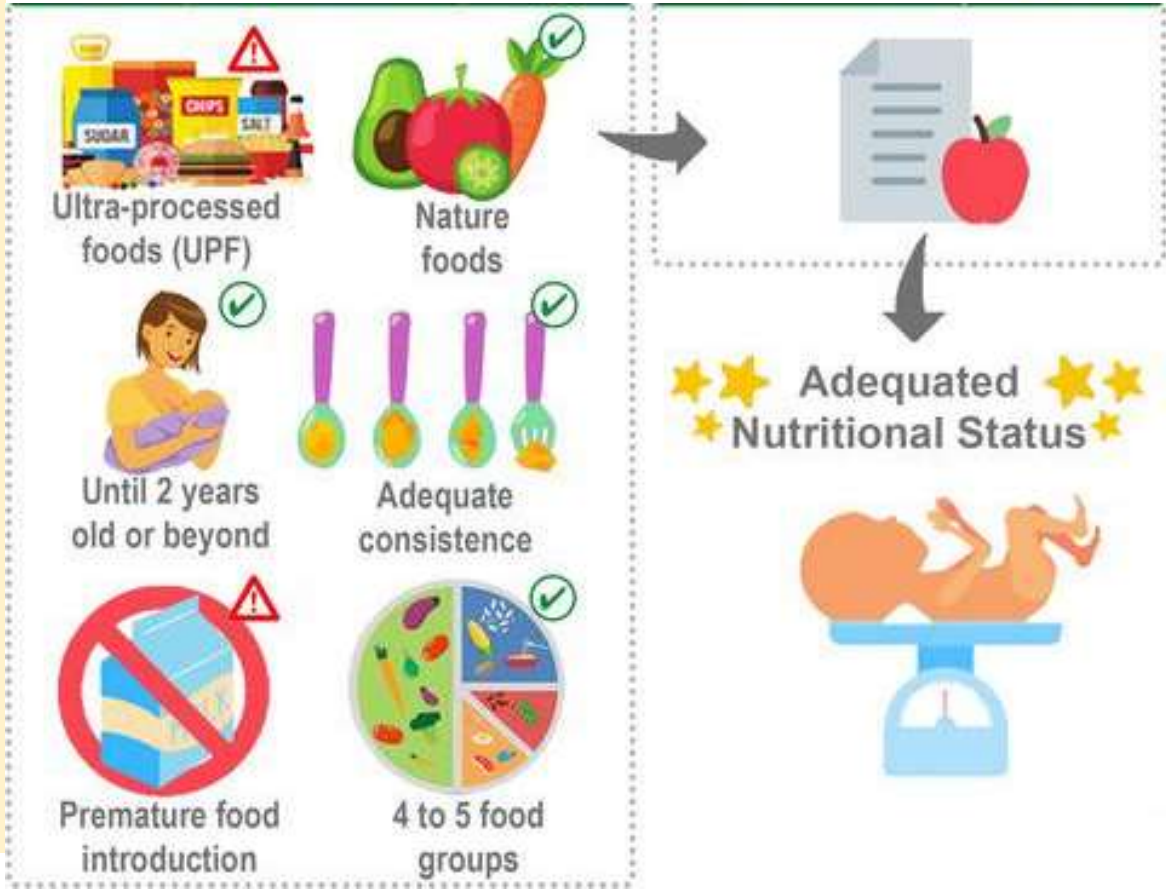
Continued guidelines for safe supplementary feeding:

8. Cleanliness & hygiene should be ensured during food preparation

9. Use fortified complementary foods or vitamin-mineral supplements as needed

10. during illness, increase fluid intake including more breastfeeding, and offer soft, favourite foods. Infant starvation during diarrhea should be avoided..

11. With the beginning of weaning, the chances of another pregnancy are greatly increased, so family spacing should be encouraged.



FYI

- The brain develops more rapidly when the child first enters school than at any other age!

False

- The brain develops most rapidly before birth and in the first two years of life. The efforts to help the child learn at this age will benefit the child for their whole life.

- THANK YOU

CHILD
HEALTH