

Global Adolescent & Child Health

Objectives

- Understand the adolescent and child health issues globally and the burden of diseases in this age group
- Discuss major global interventions that are to address mortality and morbidity in adolescent and children.
- Discuss and understand what preventive services for adolescent, and child health are delivered in KSA

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- Doctor notes
- Important
- Golden notes
- Extra

What do we mean by the term 'adolescents'?

- The second decade: No longer children, not yet adults!
- The definition vary from country to country and from law to law
- WHO has three definitions. The first is adolescence from 10 - 19, 'Youth' from 15-24 , and 'Young People' covers the age range 10-24 years.
- CDC immunization schedule: 7th till 19th birthday
- Society of adolescent medicine: 10-25
- Saudi Arabia, Middle East? unfortunately by law there is no segregation of this age group in saudi arabia nor in the middle east, so we rely on international classification

Lost population? They need more care because they feel lost

- No one wants to care for them?
- Healthy ?
- Developmentally challenging?
- Difficult to deal with?
- Physiology of puberty

Adolescents are a diverse population group

- Different needs
- Changing needs
- Why do we emphasize on this age group? because this age group is going in to a rapid change; physiological, psychological, mental and emotional changes.
- We also have to appreciate that they need are different and keep change because there is a transition from childhood to adolescence and then from adolescence to adulthood

What is special about adolescence?

(What makes it different from childhood & adulthood?)

- A time of rapid physical and psychological (cognitive and emotional) growth and development.
- A time in which new capacities are developed.
- A time of changing social relationships, expectations, roles and responsibilities.
- This age group experience new challenges, develop new capacities and new habits they are semi exposed to the world and therefore it is very very critical the environment that is provided to this population is control environment otherwise they can end up developing risky behavior

Main health problems of adolescents ?

- Studies suggest that depression and anxiety are one of the main problems in this age group
- Technology use and sedentary lifestyles increase the risk for obesity
- The most common cause of death is “Road Injury”
- Third is self-harm, self-harm by poisoning, sharp instruments, medication overdose. This can be grouped with other causes into mental health issues leading to suicide.

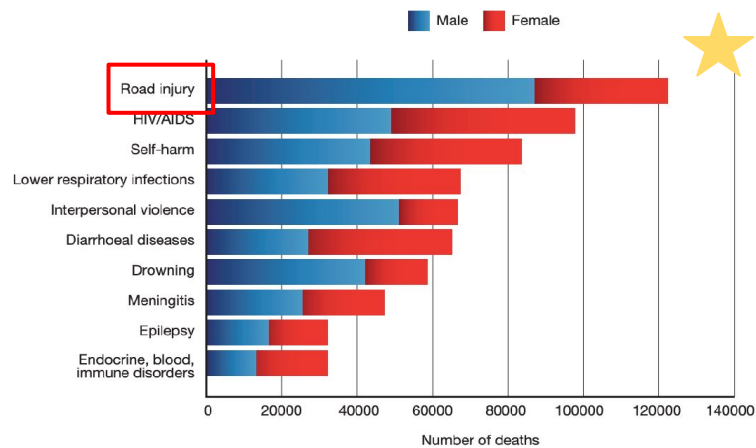
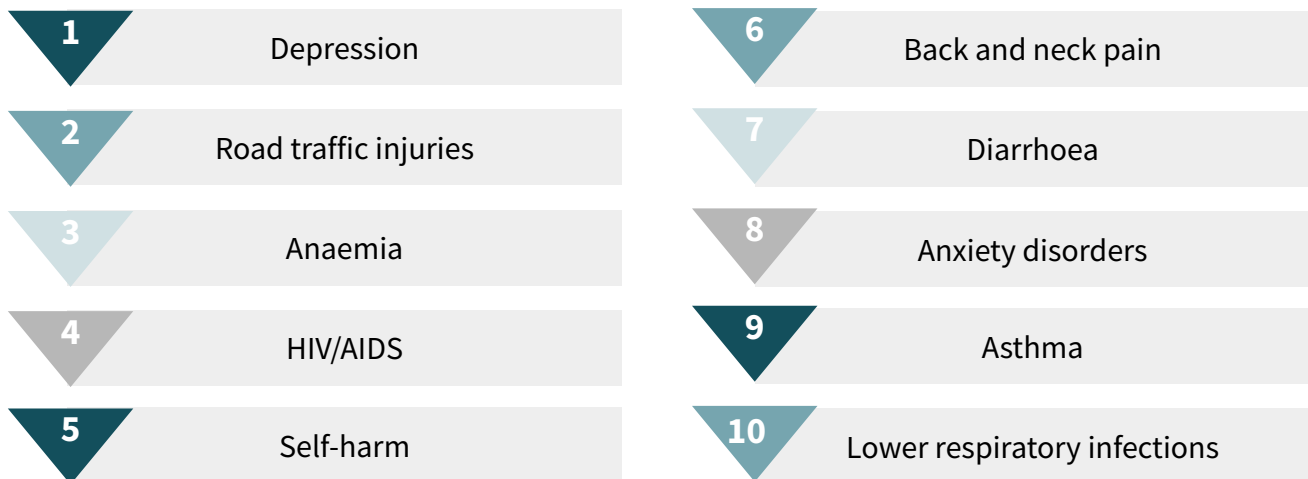


Figure. 1. Top 10 causes of death among adolescents by sex

Top causes of illness and disability:



Key health problems in adolescence:

Sexual & Reproductive Health

- **Too early pregnancy**
 - risks to mother
 - risks to baby
- Health problems during pregnancy & childbirth (including unsafe abortion)
- **Sexually Transmitted Infections** including HIV
- Harmful traditional practices e.g. female genital mutilation
- Sexual coercion

Other issues

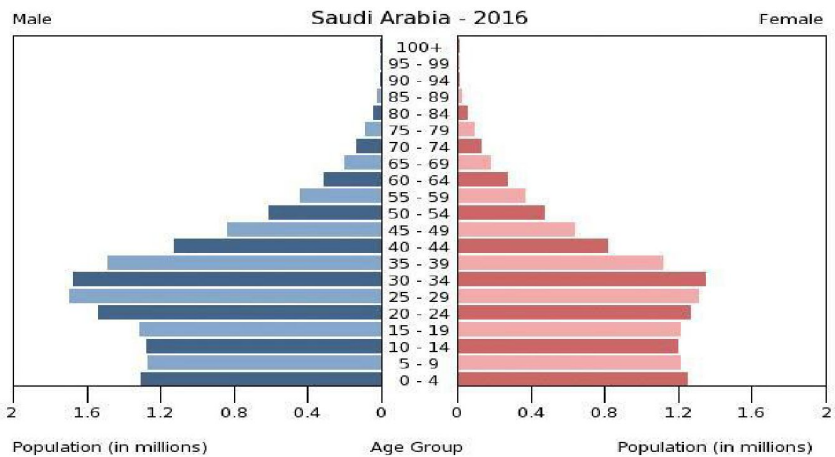
- Injuries from accidents & intentional violence
- Mental health problems
- Substance use problems
- Endemic diseases: malaria, schistosomiasis, tuberculosis
- Under/over-nutrition

- If a girl got pregnant at an early age her body may not be physically mature enough to tolerate the 9 months period of pregnancy, which might predispose the mother to various health issues including malnutrition **which is linked to high infant mortality rate**
- Moreover unsafe deliveries and abortion done in facilities that aren't qualified enough may cause the mother to get infected with tetanus, which can also kill the baby.

Health Problems of Adolescents in Saudi Arabia

Population Pyramid:

- In this population pyramid we can see a big bulk of the population between 25-35.
- Also the period between 10-25 makes a huge portion of the population driving us to investigate more on it.



Health problems of adolescents in Saudi Arabia:

- There are many studies investigating health problems in the youth of Saudi Arabia¹.
- It is well documented in the literature that young adults from the upper socioeconomic class undergo **unlawful sex**.
- **Sex education** among females was found to be extremely **deficit**.
- Many studies also documented the **increasing use of energy drinks** among the kingdom's youths.
- A study also documented that about **30% of this population smokes cigarettes**.

“Jeeluna” Study:

Time for an Adolescent Health Surveillance System in Saudi Arabia: Findings From “Jeeluna”

- A study done on 12000 adolescent,

Table 1
Health risk behaviors among adolescents in Saudi Arabia and gender differences

Health risk behaviors	Prevalence		Prevalence by gender						
	n = 12,575 (%)		Male n = 6,444 (%)		Female n = 6,131 (%)		95% CI		
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	
Dietary behaviors (daily)									
Breakfast intake (sometimes/daily) ^a	54.8	50.8 58.7	62.3	60.7 64.0	46.3	44.6 48.0			
Fruit intake (≥1 servings)	38.1	34.0 42.1	43.6	41.5 45.7	31.8	29.7 33.9			
Vegetable intake (≥1 servings)	54.3	50.7 58.0	55.7	53.8 57.7	52.8	50.8 54.8			
Carbonated beverage consumption (≥2 drinks)	37.5	34.0 41.1	43.9	41.9 45.9	30.4	28.3 32.5			
Energy drinks consumption (≥1 drinks)	21.8	19.7 23.9	25.5	23.8 27.2	17.7	16.1 19.3			
Activity									
Physical exercise (daily)	13.7	10.4 16.9	19.0	17.4 20.6	7.7	6.9 8.5			
Television viewing (≥2 hours/day)	42.4	41.0 43.9	40.4	38.8 42.1	44.7	42.8 46.6			
Video game playing (yes)	55.6	47.7 63.4	68.0	66.4 69.6	41.6	39.3 43.9			
Internet use (≥2 hours/day)	30.1	26.8 33.4	26.0	24.3 27.8	34.6	32.5 36.8			
Cellular phone (<1 hour/day)	14.8	13.2 16.3	13.2	12.0 14.4	16.6	14.8 18.3			
Traffic safety									
Seat belt using (sometimes/always)	13.8	11.4 16.3	17.0	15.3 18.7	10.2	9.0 11.4			
Car taking without permission (yes)	17.9	11.7 24.2	28.6	26.8 30.4	5.9	5.1 6.7			
Bullying and violence									
Exposure to bullying ^a	25.0	23.0 27.0	27.1	25.1 29.0	22.7	21.3 24.2			
Exposure to violence at school ^b	20.8	15.8 25.7	28.9	26.3 31.5	11.7	10.4 12.9			
Exposure to violence in community ^b	19.7	17.6 21.8	22.9	21.3 24.5	16.1	14.6 17.6			
Tobacco and substance (ever use)									
Cigarette smoking	16.2	12.5 19.9	22.1	20.0 24.2	9.6	8.2 10.9			
Sheesha smoking	10.5	8.4 12.5	13.5	11.8 15.3	7.1	5.7 8.4			
Solvents sniffing	16.2	12.7 19.6	11.5	10.3 12.6	21.4	19.7 23.0			
Prescription medication use for nonmedical purpose	7.2	5.7 8.7	6.0	5.3 6.8	8.5	7.4 9.6			
Alcohol consumption	1.4	1.1 1.8	2.1	1.7 2.5	7	5 10			
Stimulants use	1.5	1.1 1.9	1.6	1.3 1.9	1.4	1.0 1.8			
Marijuana use	1.0	.6 1.5	1.6	1.2 2.0	4	2 6			

Table 2
Health status among adolescents in Saudi Arabia and gender differences

	Prevalence		Prevalence by gender						
	n = 12,575 (%)		Male n = 6,444 (%)		Female n = 6,131 (%)		95% CI		
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	
Self-reported health status									
Chronic illness									
Bronchial asthma	8.4	7.1 9.8	10.8	9.6 11.9	5.8	5.1 6.5			
Allergies (not asthma)	4.9	3.5 6.2	4.2	3.5 4.9	5.6	4.7 6.5			
Hematological disorder	3.7	2.9 4.6	3.1	2.5 3.7	4.5	3.7 5.2			
Skin disorders	3.6	2.6 4.6	3.1	2.6 3.6	4.2	3.4 5.0			
Musculoskeletal	1.5	1.0 1.9	1.5	1.0 2.0	1.4	1.0 1.8			
Genitourinary	1.2	.7 1.6	.9	.6 1.2	1.4	.9 1.8			
Diabetes	.7	.5 1.0	.9	.7 1.2	.6	.3 1.0			
Others	4.6	3.8 5.4	5.0	4.0 6.0	4.2	3.3 5.0			
Mental health									
Sadness/depression	14.3	11.0 17.6	10.1	9.3 11.0	19.0	17.6 20.4			
Anxiety	6.7	5.2 8.3	4.6	3.9 5.3	9.1	8.0 10.2			
Measured indicators of health status									
BMI ^d									
Underweight	15.2	13.7 16.7	17.2	15.3 19.0	13.0	11.8 14.2			
Healthy weight	54.8	51.2 58.4	48.8	47.2 50.3	61.5	60.0 63.1			
Overweight	14.1	13.4 14.9	13.9	12.8 15.0	14.5	13.4 15.5			
Obese	15.9	12.6 19.1	20.2	18.7 21.7	11.0	9.8 12.3			

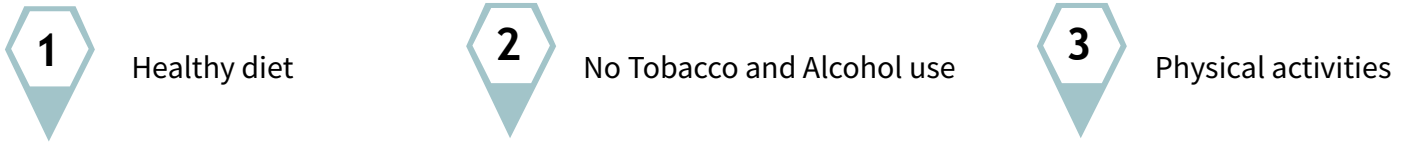
1. Some studies links:

- [Sexual practices of young educated men: implications for further research and health education in Kingdom of Saudi Arabia \(KSA\)](#)
- [Knowledge, attitudes, and resources of sex education among female adolescents in public and private schools in Central Saudi Arabia](#)
- [Knowledge, Attitudes and Practices toward Energy Drinks among Adolescents in Saudi Arabia](#)
- [Prevalence of Cigarette Smoking Usage among Adolescent Students in Northern Saudi Arabia](#)
- [Poor diet quality and food habits are related to impaired nutritional status in 13- to 18-year-old adolescents in Jeddah](#)

Health Problems of Adolescents in Saudi Arabia

❖ Why invest in the health and development of adolescents?

- Investment in their health should focus on:



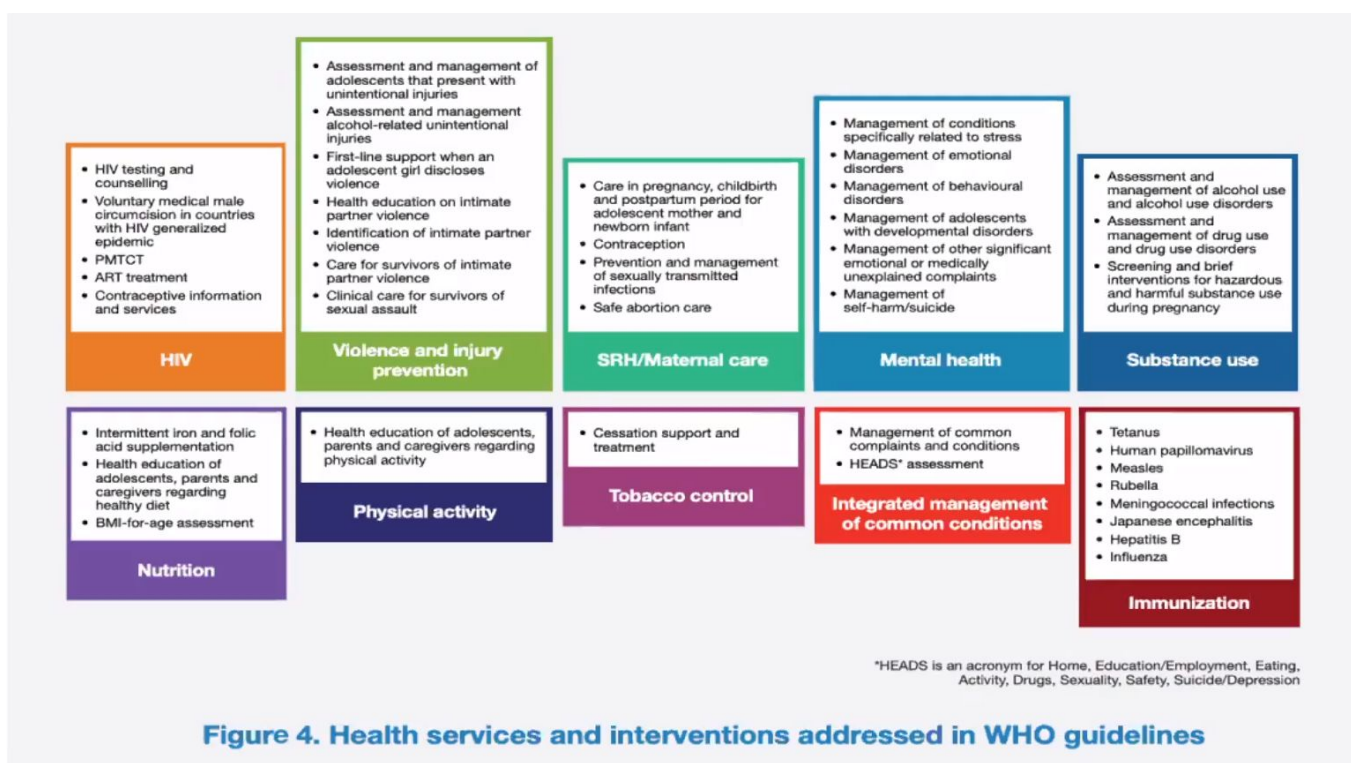
- We should also focus on child marriage and try to prevent it at the government level.

❖ What adolescents need & why and are we providing them?

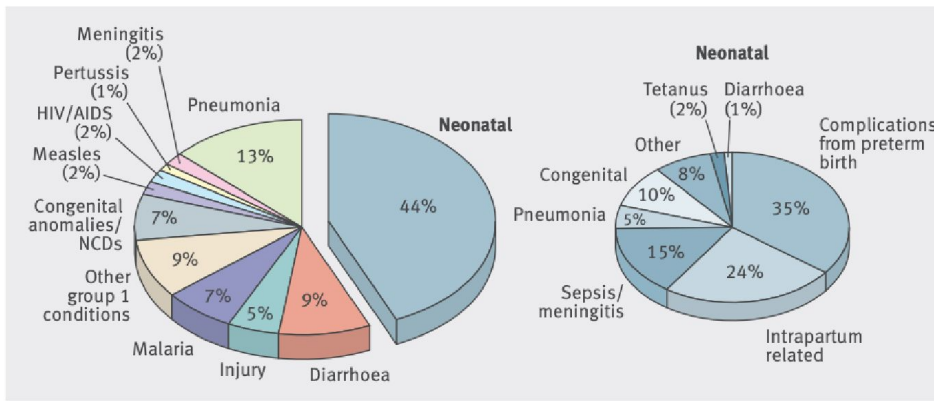
- Information & skills (they are still developing)
- Safe & **supportive environment** (they live in an adult world)
- Health & counselling services (they need a safety net)

❖ Health services and interventions addressed in WHO guidelines

- Saudi Arabia has a plan on adolescence services that was documented in papers in 2009. However, we don't know really how it is implemented.
- if we want to plan some adolescent health services in our country, there are many guidelines this is from WHO for example.



Child Health



Causes of death among children under 5 years, globally, 2016

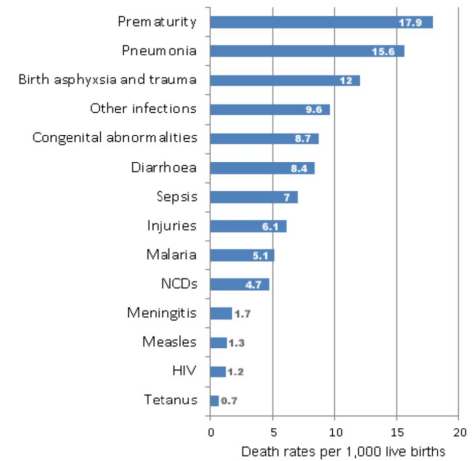


Fig 1 | Global causes newborn and under 5 mortality.^{5 10} NCD=non-communicable disease

- This figure shows the global newborn and under 5 mortality causes.
- Neonatal death means something went wrong during pregnancy, conception or immediately after birth and it constitutes 44% of the overall mortality.
- When we look at the other 56% the number one cause is pneumonia, 2nd is diarrhea, 4th is malaria. We also have meningitis, pertussis and measles,
- Most of these infections share a common ground in which most of them can be prevented by vaccination.
- **The most important message here is that 56% of death are preventable.**

❖ Emerging Issues in Child Health:

Congenital Anomalies



Mostly are related to toxins, radiations or medications.

Injuries



Such as foreign object ingestion, drowning, & caustic injuries.
The most frequent ER visit in child under 5 is foreign object ingestion

Non-communicable Diseases



Such as chronic respiratory diseases, acquired heart diseases, childhood cancers, diabetes, and obesity)

❖ Global response:

- Sustainable Development Goal (SDGs) 3.2 is the goal that reduce the neonatal death and under 5 mortality
- 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 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births

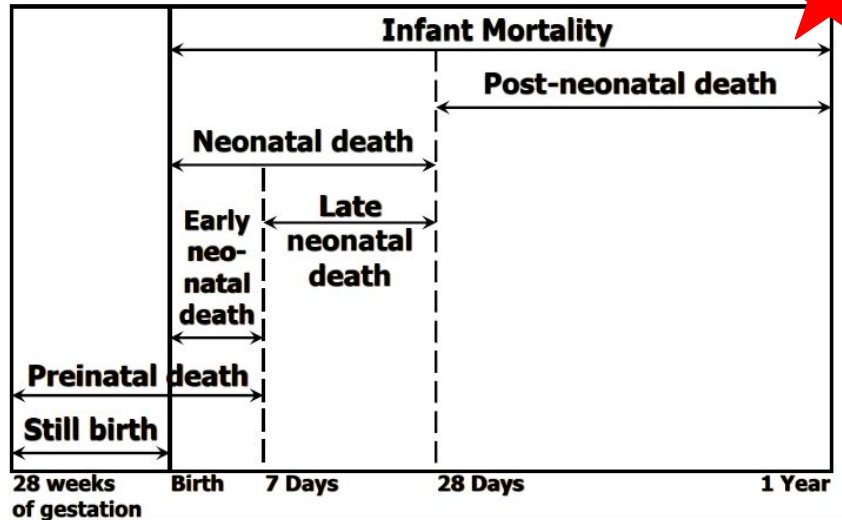
★ Indicators of Child Health

1 Prenatal mortality rate

2 Neonatal mortality rate

3 Infant mortality rate

4 Under 5 mortality rate



- Prenatal deaths include **both** stillbirth and early neonatal deaths
- REMEMBER stillbirth means they are born **dead**, if a neonate died immediately **after** delivery it's not considered stillbirth.
- We can divide neonatal deaths into early and late deaths.
- **ALWAYS** multiply by **100,000**
- It is very **important** to know the interval of each definition.

❖ Global interventions:

1 Breastfeeding promotion

2 Growth monitoring

3 Immunization

BOX 1: SUMMARY OF ESSENTIAL NEWBORN AND CHILDHOOD HEALTH INTERVENTIONS

Adolescence and pre-pregnancy

- Family planning
- Preconception care*

Pregnancy

- Appropriate care for normal and high risk pregnancies

Childbirth

- Promotion and provision of thermal care for all newborns
- Promotion and provision of hygienic cord and skin care
- Promotion and support for early initiation and exclusive breast feeding within the first hour
- Newborn resuscitation

Postnatal period

- Antibiotics for newborns at risk and for treatment of bacterial infections
- Appropriate postnatal visits
- Extra care for small and sick babies (kangaroo mother care, treatment of infection, support for feeding, and management of respiratory complications)

Infancy and childhood

- Exclusive breast feeding for six months and continued breast feeding up to at least two years with appropriate complementary feeding from six months
- Monitoring and care for child growth and development
- Routine immunisation for common childhood diseases, including introduction of new vaccines against *Haemophilus influenzae*, *Pneumococcus*, and rotavirus
- Micronutrient supplementation, including vitamin A from 6 months
- Prevention and management of childhood malaria
- Prevention and management of childhood pneumonia
- Prevention and management of diarrhoea
- Case management of severe acute malnutrition
- Comprehensive care of children exposed to or infected with HIV

Health and multisector actions

- Ensuring food security for the family (or mother and child)
- Maternal education
- Safe drinking water and sanitation
- Hand washing with soap
- Reduced household air pollution
- Health education in schools

Breastfeeding

❖ WHO Recommendations:

- Early initiation of breastfeeding within 1 hour of birth and skin to skin contact
- Exclusive breastfeeding for the first 6 months of life
- Introduction of nutritionally-adequate and safe complementary (solid) foods at 6 months together with continued breastfeeding up to 2 years of age or beyond

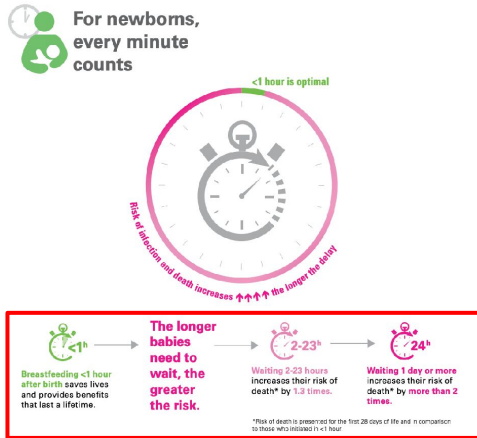


Figure 1. Visualization of the evidence about the importance of initiating breastfeeding within the first hour of life. Source: Smith Emily K, et al. 'Delayed breastfeeding initiation and infant survival: A systematic review and meta-analysis.' PLoS ONE, vol. 12, no. 2, 25 July 2017.

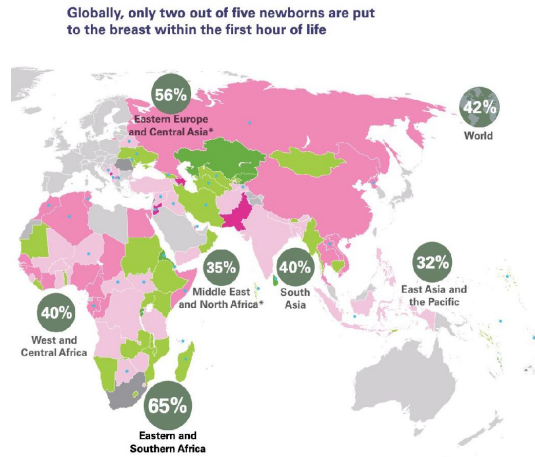
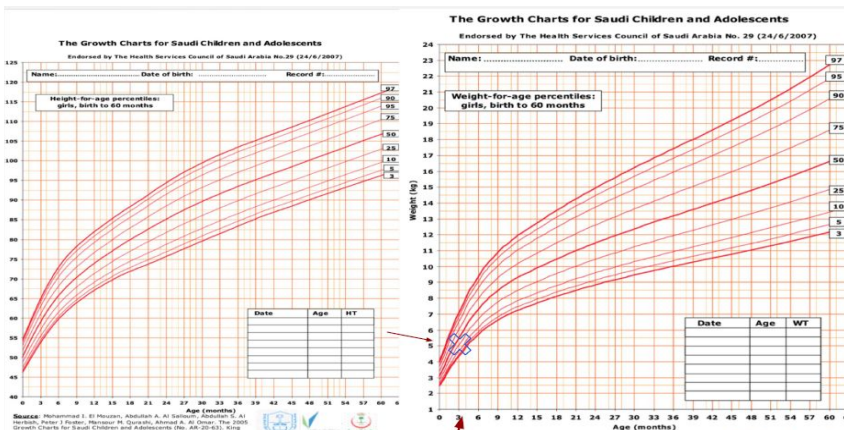


Figure 2. Per cent of newborns put to the breast within one hour of birth, by country and region, 2017. Source: UNICEF global databases, 2018. For notes on the data, see Annex 3.

❖ Breastfeeding benefits:

Benefits to the infant	Benefits to the mother
<ul style="list-style-type: none"> • bacteremia • diarrhea • respiratory tract infection • necrotizing enterocolitis • otitis media • urinary tract infection • late-onset sepsis in preterm infants • type 1 and type 2 diabetes • lymphoma, leukemia, and Hodgkin's disease • childhood overweight and obesity 	<ul style="list-style-type: none"> • decreased postpartum bleeding and more rapid uterine involution • decreased menstrual blood loss and increased child spacing (lactational amenorrhea) • earlier return to pre-pregnancy weight • decreased risk of breast and ovarian cancers

❖ Growth monitoring Very essential part in the physical and mental health of a child



The baby's height and weight should increase during early childhood. If the child's health remained the same (plateaued) it should rise some worry to the doctor and requires further investigations

"More details in breastfeeding tutorial"

Case: If you see that baby is not growing at normal rate what do you do?
first take history from mother: how often is she **breastfeeding**, for how long, and if the baby is suckling well. Also Ask about the **vaccination** & socioeconomic status. Also you should support and encourage mother if she is doing well.

Quiz

MCQ

1. Which of the following is the leading cause of death in adolescence?

- A. Injury, HIV, Self harm
- B. Injury, HIV, Depression
- C. Injury, Epilepsy, Drowning
- D. Epilepsy, HIV, STD

2. Which of the following is the MOST common leading cause of illness during adolescence?

- A. Road traffic injury
- B. Anxiety
- C. Depression
- D. HIV

3. Which of the following is TRUE about the leading cause of death in neonates and under 5s?

- A. Most of the deaths are immediately after birth
- B. Most of the deaths are due to congenital causes
- C. Most of the deaths are preventable
- D. Most of the neonatal deaths are caused by RTIs

4. A baby girl past away on the 12th day of life, At which stage she died?

- A. early neonatal
- B. Late neonatal
- C. stillbirth
- D. postnatal

5. A baby boy past away immediately after birth , At which stage he died?

- A. early neonatal
- B. Late neonatal
- C. stillbirth
- D. postnatal

6. When is it recommended to the mother to start breastfeeding the baby?

- A. After six month
- B. Immediately after birth
- C. After 24 hour
- D. After one week

Answers

Q1	Q2	Q3	Q4	Q5	Q6
A	C	C	B	A	B

Thank You and
Good Luck



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