1. You are preparing for an elective rotation in one of the least developed countries in Asia. You learn that the under-5 mortality rate is very high compared with industrialized countries. What are the most important causes of under-5 mortality worldwide, and how would you rank them in order of number of deaths? (ordered from highest to lowest proportion of under-5 deaths)

   A. Malaria > Diarrhea > HIV > Pneumonia > Neonatal Causes
   B. Neonatal causes > Pneumonia > Diarrhea > Malaria > HIV
   C. HIV > Malaria > Measles > Pneumonia > Neonatal Causes
   D. Pneumonia > HIV > Neonatal Causes > Malaria > Measles

2. List at least 5 interventions, preventive or curative, that have been demonstrated to decrease under-5 child mortality in developing countries:

3. You also learn that the neonatal mortality rate in that country is extremely high. Which three problems together cause the majority of neonatal deaths (deaths within the first 28 days of life) worldwide?

   A. Congenital heart disease, prematurity, birth trauma
   B. Prematurity, infections, birth asphyxia
   C. Infections, genetic disorders, congenital heart disease
   D. HIV, malaria, and neonatal tetanus
4. You are asked to consult with the country’s Ministry of Health on strategies to reduce neonatal mortality. Which of the following interventions have been shown to effectively decrease newborn mortality in the developing world? 

(circle all that apply)

- Aseptic technique at birth and cord care
- BCG vaccine at birth
- Early exclusive breastfeeding
- Hepatitis B vaccine
- Basic neonatal resuscitation with bag/mask or tube/mask
- Intubation/ventilation of premature newborns
- Genetic screening for congenital anomalies
- Prevention of hypothermia
- Early recognition and management of neonatal infection
- Birth spacing

5. During your rotation at an outpatient clinic, a family brings in their 6 ½ week infant who is due for immunizations. Which of the following sets of immunizations would most likely be offered at this age in a least developed country?

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6. You observe in this clinic that vitamin A supplementation is often given regularly in conjunction with immunization activities. All of the following are true about vitamin A supplementation EXCEPT:

A. Vitamin A deficiency is the leading cause of preventable blindness in the developing world
B. Vitamin A supplementation has been shown to significantly decrease child mortality
C. Vitamin A supplementation of children is not cost-effective and therefore has not been implemented in most countries
D. Vitamin A deficiency adversely affects the immune system
7. The three intestinal parasites that together account for the highest number of infections worldwide caused by "neglected tropical diseases" and contribute to a high burden of disease in children and adolescents are:

A. Schistosomiasis, trachoma, lymphatic filariasis
B. Hookworm, trichuriasis, ascariasis
C. Pinworm, trichuriasis, tapeworm
D. Amoebiasis, hookworm, Giardia

8. You are doing a pediatric HIV rotation in Botswana. Your first patient is a 5-month-old female infant with 2 confirmed positive DNA PCRs. She is growing well with normal height, weight, and head circumference for age. Her CD4 count is 2000 (29%). You should plan to:

A. Start antiretroviral treatment immediately after ARV counseling has been completed
B. Start antiretroviral treatment when CD4 count is < 1500 or 25%
C. Start antiretroviral treatment when she is WHO Stage 3 or 4
D. Start antiretroviral treatment when CD4 count is <200

9. During the same rotation in Botswana, you see a 19-month-old male infant who is otherwise healthy. He is still breastfeeding. He was born to an HIV-positive mother but has had 2 negative DNA PCRs at 6 weeks and 6 months, and an HIV rapid test at 18 months was negative. What should you tell his mother?

A. He has been confirmed HIV-negative
B. He has been confirmed HIV-negative and should stop breastfeeding
C. Stop breastfeeding and have him retested with an HIV rapid test at least 3 months after she has stopped breastfeeding
D. She should continue breastfeeding since he is at risk for malnutrition and retest with an HIV rapid test every 3 months.

10. In performing microscopy (thick and thin smear) to detect malaria parasites, which of the following is NOT TRUE?

A. The thick smear is more sensitive than the thin smear in detecting any malaria parasites
B. The thin smear is most useful for species identification
C. If malaria is suspected and the first smear is negative, it does not need to be repeated
D. *P. falciparum* is often recognized on the thin smear by one or multiple ring forms in a RBC
11. You are preparing to visit a village and provide education on malaria prevention. You would recommend which of the following public health measures effective in preventing malaria in endemic areas:

A) Insecticide-treated bednets (ITNs) + indoor spraying of homes with insecticide
B) Insecticide-treated bednets (ITNs) + daily use of insect repellant with DEET
C) Daily malaria prophylaxis during the rainy season + ITNs
D) Daily malaria prophylaxis + iron supplementation during the rainy season

12. You are seeing a young child in a hospital in sub-Saharan Africa who presents with fever, chills and vomiting. The malaria smear is positive for *P. falciparum*. There are **no** signs of severe or cerebral malaria. What would be the drug of choice for this patient, if available?

A. Chloroquine
B. Artemisin combination therapy (ACT)
C. Quinine
D. Sulfadoxine-pyrimethamine (Fansidar)

13. You are seeing a 3 year old previously healthy girl in the same hospital who presents with fever, tenesmus, and bloody stools. You suspect the patient has dysentery. Which medication would you choose for empiric treatment of this illness?

A. Amoxicillin to cover for Shigella
B. A fluoroquinolone to cover for Shigella
C. None, it is likely a self-resolving illness with low risk of mortality
D. Mebendazole to cover for intestinal parasites

14. Management of diarrhea in children in developing countries should include all of the following EXCEPT:

A. Oral rehydration therapy
B. Routine antibiotic treatment
C. Continued breastfeeding throughout the illness
D. Administration of IV or NG fluids for severe dehydration
E. Zinc supplementation
15-16. You are asked by a health worker to consult on a four year old child presenting with cough and fever in a remote outpatient clinic with few lab or diagnostic resources. The health worker does not have a stethoscope, but tells you he suspects bacterial pneumonia.

15. According to WHO guidelines, case detection of pneumonia is based primarily on which physical finding:

A. Height of fever
B. Respiratory rate
C. Duration of cough
D. Color of lips/fingers

16. After obtaining further history, you learn that the child has had 1 month of fever, cough and weight loss. You suspect tuberculosis. All of the following are true about diagnosing primary TB infection in a young child in this setting EXCEPT:

A. A positive AFB sputum smear is required to diagnose TB in this child
B. TB should be considered when respiratory symptoms persist for 2-3 weeks and do not respond to antibiotics
C. Chest Xray and mycobacterial culture are often not available in low-resource settings
D. PPD may be negative with co-existing HIV infection or immunosuppression

17. Mortality from Severe Acute Malnutrition (SAM) remains high, partly due to high risk of iatrogenic complications. In treating children with SAM, all of the following principles apply EXCEPT:

A. Anticipate and treat hypoglycemia
B. Anticipate and treat infection in all children
C. Use IV fluids on all patient to quickly correct dehydration
D. Start feeding with a low caloric density formula as soon as possible
18. You are counseling a pregnant woman in an antenatal clinic. Her first child is four months old. All of the following should be recommended to prevent the four-month old child from becoming malnourished EXCEPT:

A. Exclusive breastfeeding through 6 months of age
B. Twice yearly supplements with vitamin A between 6 and 59 months of age
C. Introduce complementary foods of adequate quantity and quality at 6 months
D. Improve the mother’s diet by eating more nutritious food and more times per day
E. Stop breastfeeding the first child when the next baby is born and supplement with commercial formula or animal milk

19. Which of the following is TRUE about formula feeding of infants born to HIV-positive mothers:

A. Replacement formula feeding is always recommended over breastfeeding
B. Mixed feeding (breastfeeding + other food/liquid) is recommended over exclusive breastfeeding
C. Replacement formula feeding is ONLY recommended over breastfeeding if it is affordable, feasible, acceptable, secure and safe

20. What is the birth spacing interval after a live birth to the next pregnancy recommended in order to reduce the risk of adverse maternal, perinatal and infant outcomes?

A. 6 months
B. 12 months
C. 24 months
D. At least 5 years