

Examples of Community Medicine

1. **In order to compute the incidence rate of depression in a community, an investigator took as numerator the total number of patients admitted to the psychiatry ward of a large university hospital over a period of time. Which of the following factors is not a likely source of bias that invalidates the findings?**
  - A. The population served by large university hospitals is usually so difficult to define that rates cannot be calculated
  - B. Patients admitted to a university hospital are more likely to be more seriously ill than those admitted to a community hospital
  - C. Most patients who have depression are managed in ambulatory settings
  - D. Patients with depression may be admitted to a hospital more than once
  - E. Diagnosis of depression cannot be established with certainty \*\*
  
2. **All of the following disorders are believed to be solely the result of genetic factors EXCEPT:**
  - A. Epilepsy \*\*
  - B. Hemophilia
  - C. Fibrocystic disease of the pancreas
  - D. Multiple polyposis of the colon
  - E. Xeroderma pigmentosum
  
3. **The most important nutrients group for a pregnant woman is:**
  - A. Sugar, unsaturated fat, iron and calcium
  - B. Calcium, folic acid, protein, and iron \*\*
  - C. Vitamins A, D and the B group
  - D. Iron and calcium
  - E. Starch, calcium, iron and low density lipoprotein
  
4. **All the following techniques of early detection of asymptomatic cancer are considered to be justified EXCEPT:**
  - A. Mammography
  - B. Breast self-examination in younger women
  - C. Papanicolaou (Pap) smear
  - D. Fecal occult blood testing
  - E. Chest radiography to detect lung cancer \*\*

5. **When experimental studies cannot be performed, the determination of whether or not an association between two events is causal must rest on observational data. Which of the following types of evidence is essential in judging whether or not a cause-and-effect relationship exists?**
- A. Dose-response relationship
  - B. Strength of the statistical association
  - C. Proper time sequence in which cause precedes effect \*\*
  - D. Consistency of the observation in independent studies
  - E. Relative rarity of one or both of the events
6. **Assuming that a mammography has a sensitivity of 90 percent and a specificity of 98 percent, and that consecutive tests are independent, what is the probability that a woman with breast cancer will have a negative screening mammography for two consecutive years?**
- A. 1/10
  - B. 2/10
  - C. 4/10
  - D. 1/100 \*\*
  - E. 4/100
7. **Which group of nutrients is most important for an infant?**
- A. Juice, calcium, phosphorous, and sugar
  - B. Fat, vitamin A, protein and iron
  - C. Protein, fluoride, vitamin D, and iron \*\*
  - D. Chloride, sodium, sugar, and water
  - E. Vitamin B complex, iron, sodium and protein
8. **Which of the following statements concerning occupational medical examinations is correct?**
- A. Doctor-patient relationship in pre-employment and periodic medical examinations is the same as in the clinical medical practice
  - B. Periodic medical examinations aim at detecting the less fit employees to terminate their services
  - C. The structure of pre-employment and periodic examinations should be the same for all occupations
  - D. Occupational physicians should design the pre-employment and periodic examinations to make them cost-effective and group-oriented \*\*
  - E. Post-sickness examinations are used to jeopardize the employee's position

- 9. The most frequent cancer site in Middle-East women is:**
- A. Lung
  - B. Breast \*\*
  - C. Colorectum
  - D. Uterus
  - E. Ovary
- 10. The oligo-element that is said to have the greatest influence in inhibiting the formation of free radicals which can cause cancer is:**
- A. Iron
  - B. Selenium \*\*
  - C. Copper
  - D. Zinc
  - E. Mercury
- 11. Which of the following statements about child abuse is correct?**
- A. Child abusers are most often unrelated to the child
  - B. Most child abusers have psychotic or antisocial personalities
  - C. More than 95% of all serious head injuries of children under the age of one are due to physical abuse \*\*
  - D. It is unnecessary to report child abuse in most countries
  - E. None of the above
- 12. Which infectious agent is associated with high incidence of stomach cancer?**
- A. Hepatitis B Virus (HBV)
  - B. Human Papilloma Virus (HPV)
  - C. Helicobacter pilorii \*\*
  - D. Aflatoxins
  - E. Malaria species
- 13. The weight of high-school students who engage in competitive sports is compared to that of students who do not. The best way of testing whether differences are statistically significant between the two groups is to use:**
- A. Chi-square test
  - B. Correlation coefficient
  - C. Unbiased distribution
  - D. T-test \*\*
  - E. Multivariate analysis

**Q. 14-16:**

This table shows data from a British study conducted by Doll and Hill in 1966 on smoking and age-specific mortality among male British male physicians

Age (years)	Cigarette Smokers		Non-Smokers	
	Coronary deaths	Person-years	Coronary deaths	Person-years
35-44	32	52,407	2	18,790
45-54	104	43,248	12	10,673
55-64	206	28,612	28	5,710
65-74	189	12,663	28	2,585
75-84	102	5,317	31	1,462
Total	633	142,247	101	39,220

14. Using these data, calculate the incidence rate of coronary death among smoking British male doctors in the age range 55 to 64 years:
- A. 44/10,000
  - B. 44/10,000
  - C. 72/10,000 \*\*
  - D. 72 person-years
  - E. 44 person-years
15. Based on the table, compute the rate ratio of coronary death for smoking male doctors relative to non-smoking male doctors in the age range 55 to 64 years:
- A. 21/person-years
  - B. 12
  - C. 4/person-years
  - D. 1.47 \*\*
  - E. 0.7/person-years
16. Based on the table, calculate the risk of coronary mortality per 10,000 attributable to cigarette smoking for doctors in the age 55 to 64:
- A. 83
  - B. 23 \*\*
  - C. 2.9
  - D. 1.47
  - E. 0.22

- 17. Exposure to occupational hazards...**
- A. Varies with individual susceptibility to the harmful effects of the hazardous agent
  - B. May be measured or assessed by an occupational hygienist\*\*
  - C. Is most reliably measured by placing sampling devices in the working areas
  - D. Will result in irreversible effects on health if the legal occupational exposure limit is exceeded
  - E. Levels below the legal limit cannot result in adverse health effects
- 18. An incidence rate cannot be calculated in a case-control study because**
- A. Only prevalence rates are available
  - B. It is not known how large is the population from which those cases arise \*\*
  - C. The exposure and the disease are measured at the same time
  - D. The odds-ratio does not require the measure of the incidence rates
  - E. The recall bias makes it impossible to determine which cases are new ones
- 19. Which of the following statements about domestic abuse is correct?**
- A. Most cases where a spouse is abused are isolated incidents
  - B. Among married women, less than 2% are beaten by their husbands over the course of a year
  - C. The majority of cases of battering of women are caused by alcohol or drug abuse
  - D. Presenting complaints among abused women seeking medical attention are often non-specific \*\*
  - E. None of the above
- 20. On a hot summer day in a large urban center, the emergency room department reports an increase in admission for asthma in children and young adults but not among patients suffering from chronic bronchitis. The most likely air pollutant responsible for exacerbation of asthma is:**
- A. CO
  - B. Ozone \*\*
  - C. NO<sub>2</sub>
  - D. Particulate matters
  - E. Lead

## SECTION D

- 1- We ask a technician to test 100 specimens of urine, of which 50 are known to us to contain sugar, the remaining 50 are free. In the 100 specimens the technician labeled 65 with sugar, 45 of which were known by us to contain sugar:
  - A. Complete a frequency distribution table to compare the technician's findings with the known correct results
  - B. If the technician works in a screening program to identify individuals for clinical work up. What are the implications of this validity scores(sensitivity and specificity) for the health status system?
  - C. What is the relevance of validity for epidemiological studies?
  - D. For some characteristics, the determination of validity may be difficult when an objective standard or set of criteria is not available. Consider health and related characteristics that you feel may be of this sort.
  - E. What can be done to determine or improve the validity of the measurement of these characteristics?
  
- 2- In an actual study in which two physician observers were used to determine cases, an investigation of their reproducibility was carried out. In this investigation, 183 persons were examined independently by both observers and rated as "normal", "Grade 1 byssionsis", or "Grade 2 byssionsis".  
(Byssinosis, a chronic lung disorder due to inhalation of cotton fibers, is an occupational hazard of textile workers). The results in the table below:

		Observe			
		r A			
		Normal	Grade 1	Grade 2	Total
Observer B	Normal	72	6	1	79
		Grade 1	6	47	17
		Grade 2	1	14	20
		Total	67	37	183

- 1- Calculate the inter observer reliability for the three-way classification, and also for presence (Grade 1 and 2) or absence (normal) of byssinosis
- 2- What is the importance of reproducibility? (Just think logically and about life's examples)
- 3- What can be done about these sources of non reproducibility
- 4- From your own experience, can you think of health or other characteristics that are "more reliably" and "less reliably" categorized?