Disease Detectives SSSS 2014 (created by nomynameisnotkevin) Total 42 points
Quote from a regionals/state coach/test writer that wrote Disease tests:

"It ain't multiple choice. That's a good test."

True/False: (.5 points per question)

1. ____ Penicillin is most effective on gram-negative bacteria.

2. ____ Anthrax is dangerous but non-bacterial

3. ____ Odds ratios are used in cohort studies

4. ____ Relative Risks are used in case-control studies

5. ____ The three classifications of case types are confirmed, probable, and possible

6. ____ There is no difference between an experimental trial and a study.

Questions 7-15: Vocabulary (1 pt per vocab word)
Please define the following epidemiological terms:

Zoonosis - _____

Endemic Disease - _____

Pandemic - _____

Morbidity – _____

Etiology- _____

Agent - _____

 Reservoir – _____

Incubation Period - _____

Plague - _____

Total points on page: 12

Triad Time: (Questions 16-18) (.5 for each blank, order does not matter)
16. Epidemiological Triad: (Traditional model of Infectious disease causation)

_____ _____ _____

17. Chain of Transmission Triad

_____ _____ _____

18. The Third Triad that has the three components in its name, often addressed by a case definition:

__Person__ _____ _____

19. Name three most common portals of exit for disease: (1 pt each)
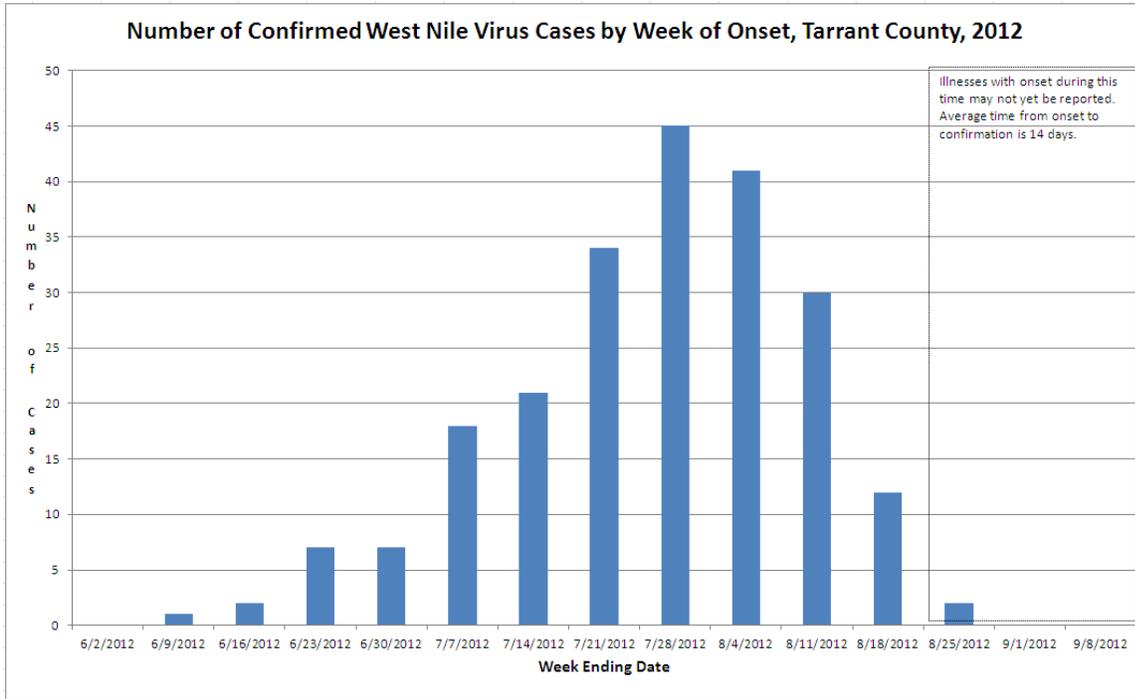
_____ _____ _____

Situation 1:

20. 2012 was a record-setting year for West Nile Virus in Texas. What are some preventive measures you can take to lessen the chance of being infected with West Nile Virus? worth 3 points, 1pt per correct response. can give up to four answers for 4 pts, aka 1 pt bonus)

_____

_____

_____

_____

_____

Total points on page: 10, possible 11.

21. Please classify the following epicurve (1 point):

Tarrant County: _____

Number of Confirmed West Nile Virus Cases by Week of Onset, Tarrant County, 2012

Illnesses with onset during this time may not yet be reported. Average time from onset to confirmation is 14 days.

Number of Cases

Week Ending Date

6/2/2012 6/9/2012 6/16/2012 6/23/2012 6/30/2012 7/7/2012 7/14/2012 7/21/2012 7/28/2012 8/4/2012 8/11/2012 8/18/2012 8/25/2012 9/1/2012 9/8/2012

22. Please explain why you chose that classification, and explain one reason why it could not be another choice (one point each, for defense of answer choice, and for attack on another answer)

Defense: _____

Eliminate Other Answer_____

_____

23. In 2013, Tarrant County had much fewer incidents of West Nile Virus, 8 to be exact. If Tarrant County has 1,809,034 people, what is the incidence rate per 100,000 people?

_____

24. In Lubbock, there were 11 cases in a population of 278,831. In Midland there were 5 cases in a population of 136,872. Which County had a higher incidence rate?

_____

Total points on page: 5

25. Please make a 2-Way Table for the following situation
El Paso had 16 cases of West Nile Virus with a population of 800,647.
Of this population, 50,000 had gone to a particular park with lots of little ponds, and 9 cases were reported amongst these 50,000 people.
(2 points, .5 for each data cell correct)

26. Please Calculate the Odds Ratio of infection from visiting the park vs. not visiting (2 points, partial credit given). Round to 2 decimal places please :)

27. The FDA wants to test SciOily, a fish oil supplement that claims to boost the performance of Science Olympiad members at competitions. However, the FDA had to test for dangerous side-effects. They give 500 test students the real pill, and give 100 students a placebo. Of those that received the real pill, 50 reported severe side-effects. Of those given the placebo, 4 reported severe side-effects. **Please construct another 2-way table, and proceed to calculate the relative risk of the fish oil supplement vs. placebo for side-effects.** (1 pt each for table, Risk)

28. Please identify the type of studies the situations outlined in #25 and #27 (.5 pt each)

Study Type #25_____ Study Type #27 _____

Total points on page: 7

(Questions 29-38) Diseases Identification: (please label the following diseases as (F) fungal, (V) viral, (P) Parasitic, (B) Bacterial. .5 point per question.

_____ MRSA

_____ Histoplasmosis

_____ Malaria

_____ Shigellosis

_____ Smallpox

_____ Tuberculosis

_____ Hepatitis

_____ Athlete's Foot

_____ Giardiasis

_____ Ebola

Questions 39-44, .5 point per question
Please Identify the following as Gram Positive/Negative Bacteria
(Pleas Write Either + or -)

_____ Campylobacter jejuni

_____ Legionella

_____ Streptococcus

_____ Listeria monocytogenes

_____ Shigella

_____ Bacillus cereus

Total points on page: 8.

For More Info, Links:
https://www.dshs.state.tx.us/idcu/disease/arboviral/westNile/graphs/
http://www.cdc.gov/training/QuickLearns/exposure/1.html
https://www.dshs.state.tx.us/idcu/disease/arboviral/westNile/