

Disease Detectives SSSS 2014 KEY (created by nomynameisnotkevin) Total 42 pts.
True False: (.5 points per question)

1. T
2. F
3. F
4. F
5. T
6. F

Vocab Questions 7-15 (1 pt per vocab word)

Zoonosis - An infectious disease that is transmissible from animals to humans.

Endemic Disease - Present at a continuous level throughout a population/geographic area; constant presence of an agent/health condition within a given geographic area/population; refers to the usual prevalence of an agent/condition.

Pandemic - *epidemic* occurring over several countries/continents & affecting large *proportion* of population. Ex: Spanish Flu in 1918 and the Black Plague in the Middle Ages

Morbidity - any departure from a state of perfect health - Do not accept death

Etiology-study of physiologic cause of a disease

Agent - microbial organism that causes disease.

Reservoir – where agents can thrive/ reproduce.

Incubation Period - Time between person contacts pathogen & when 1st show symptoms or signs

Plague - A serious, potentially life-threatening infectious disease that is usually transmitted to humans by the bites of rodent fleas. It was one of the scourges of our early history. There are three major forms of the disease: bubonic, septicemic, and pneumonic.

Triad Time: (.5 for each blank, ORDER DOESN'T MATTER, but preferred)

Epidemiological Triad:

___Agent___ ___Host___ ___Environment___

Chain of Transmission Triad (**Tie breaker: if they give both vector & Fomite in one slot) Vector and Fomite are not acceptable in two blanks, only count for one blank.**)

___Agent___ ___Vector/Fomite___ ___Host___

The Third Triad that has the three components in its name, often addressed by a case definition: (2 blanks)

Person: ___Place___ ___Time___

19. Name three most common portals of exit for disease: (1 pt each)
(**skin, GI Tract, respiratory tract**)

Case 1 - please refer to Images labeled as Case 1:

20. 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.

Your best defense is to practice these four habits:

1. Use an approved insect repellent every time you go outside. Approved repellents are those that contain DEET, picaridin or oil of lemon eucalyptus. Follow the instructions on the label.
2. Regularly drain standing water, including water that collects in empty cans, tires, buckets, clogged rain gutters and saucers under potted plants. Mosquitoes breed in stagnant water.
3. Wear long sleeves and pants at dawn and dusk when mosquitoes are most active.
4. Use air conditioning (instead of open windows) or make sure there are screens on all doors and windows to keep mosquitoes from entering the home.
5. anything else that is reasonable that would indeed reduce the exposure of skin to mosquitos or reduce the amount of mosquitos that could carry West Nile. Grader give leniency equally to all teams.

21. Tarrant County: point source (give .5 point for continuous source, as technically mosquitos are continually there to spread it during their breeding season)

22. 1pt Defense: (Answers may slightly vary, please use logic to accept answer) one peak, exposure is limited to a finite period of time, so just one exposure source is likely.

If they answered continuous source, before, please give .5 point if they give this reason: (give .5 point for continuous source, as technically mosquitos are continually there to spread it during their breeding season)

1 pt: Elimination of other answer: It is not **propagated** because there are not multiple peaks. West Nile Virus is spread through the vector of mosquitos, not through person-to-person contact, so it wouldn't have progressively growing peaks of infection.

23. 0.4 (1 pt)

24. Lubbock (1 pt)

25. (2 points, .5 for each data cell correct)

	Disease	No Disease
Exposure	9	49,991
Non-Exposure	7	750,640

Sum Columns not necessary, but should not be penalized.

26. Odds Ratio = $ad/bc = 9 * 750,640 / (7*49,991) = 19.3056 \rightarrow 19.31$

(2 points, partial credit given if work is close, etc.)

27.

	Side Effects	No Side Effects
Exposure (Pill)	50	450
Non-Exposure (Placebo)	4	96

(1 pt each for table, Risk, give .5 points if almost correct on either part)

Relative Risk = $[50 / (50+450)] / [4 / (4 + 96)] = 2.5$

28. 25 is a Case-Control Study. #27 is a Cohort Study. (.5 points for each answer)

29-38:

Disease Identification: (.5 points for each answer)

MRSA: Bacterial

Histoplasmosis: Fungal

Malaria: Parasitic

Shigellosis: Bacterial

Smallpox: Viral

Tuberculosis: Bacterial

Hepatitis: Viral

Athlete's Foot: Fungal

Giardiasis: Parasitic

Ebola: Viral

39-44 Gram +/- (.5 points for each answer)

(-) Campylobacter jejuni

(-) Legionella

(+) Streptococcus

(+) Listeria monocytogenes

(-) Shigella

(+) Bacillus cereus