



The Power of Personalised Pathology

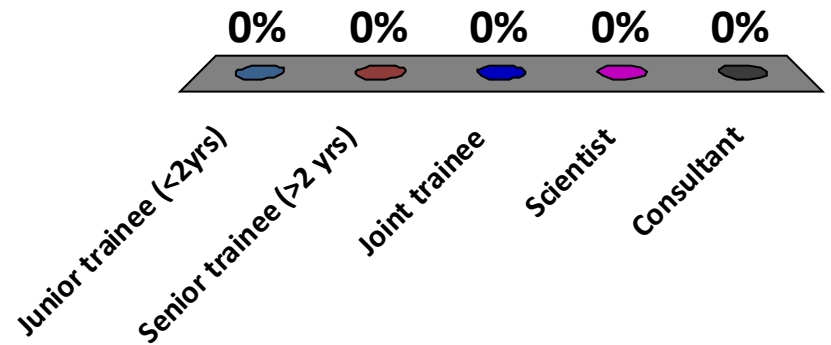
Pathology Update 2019 | 22-24 February 2019
Melbourne Convention Centre, South Wharf, Melbourne

Microbiology Quiz

Saturday 23 February 2019

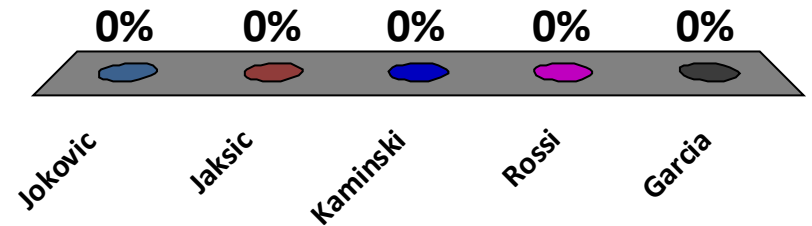
Your training/position:

- A. Junior trainee (<2yrs)
- B. Senior trainee (>2 yrs)
- C. Joint trainee
- D. Scientist
- E. Consultant

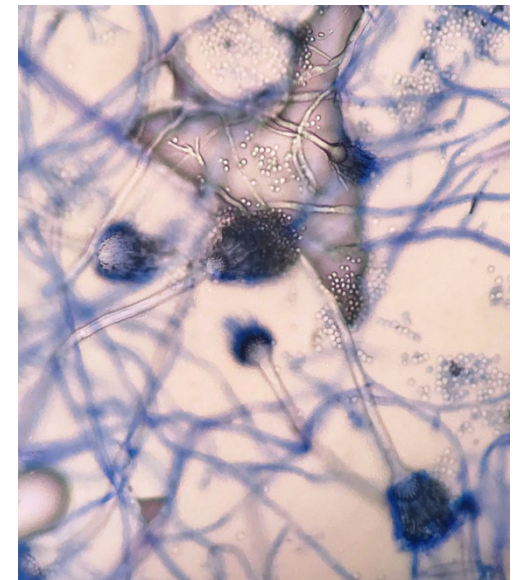
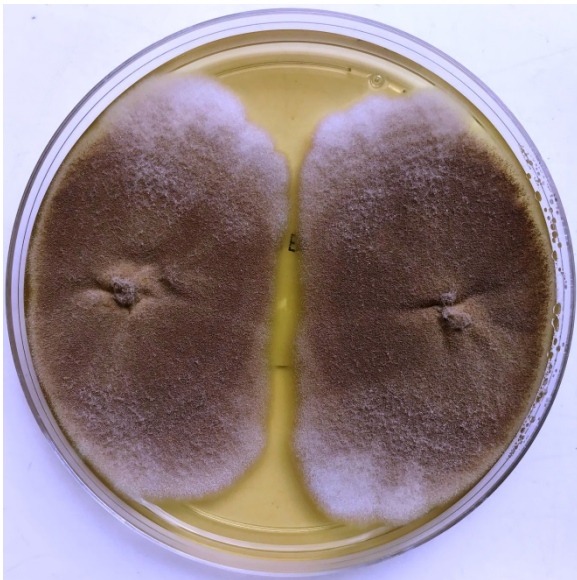


Which one of the following is best known for Mycology education in Australia?

- A. Jokovic
- B. Jaksic
- C. Kaminski
- D. Rossi
- E. Garcia

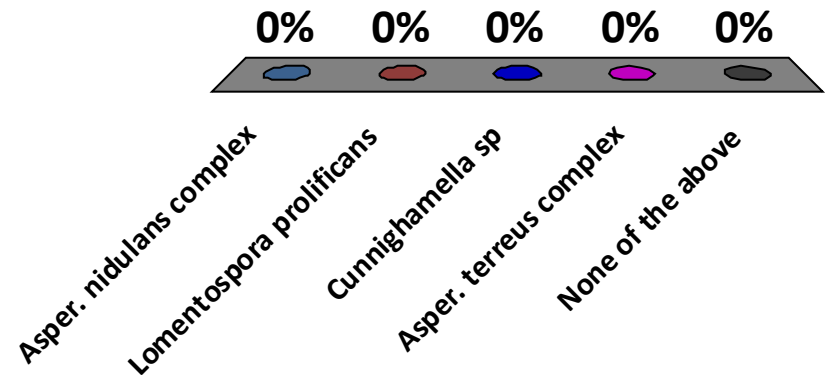


Identify this organism isolated from blood culture and aortic tissue in a farmer from country Victoria with no known risk factors for IE. The organism was found to have high MIC to Amphotericin B

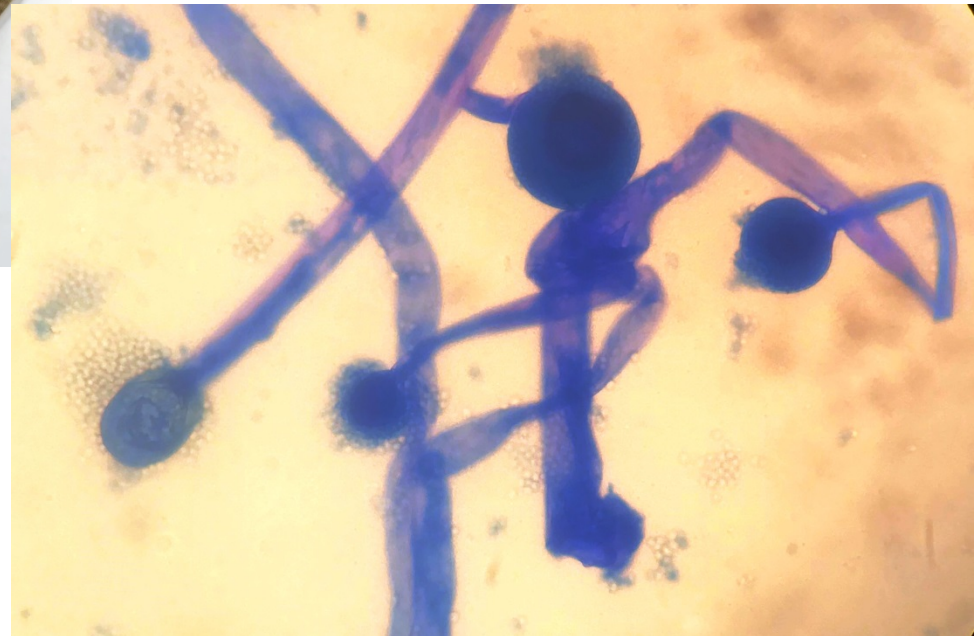


Organism isolated from blood culture and aortic tissue in a farmer from country Vic

- A. *Asper. nidulans* complex
- B. *Lomentospora prolificans*
- C. *Cunninghamella* sp
- D. *Asper. terreus* complex
- E. None of the above

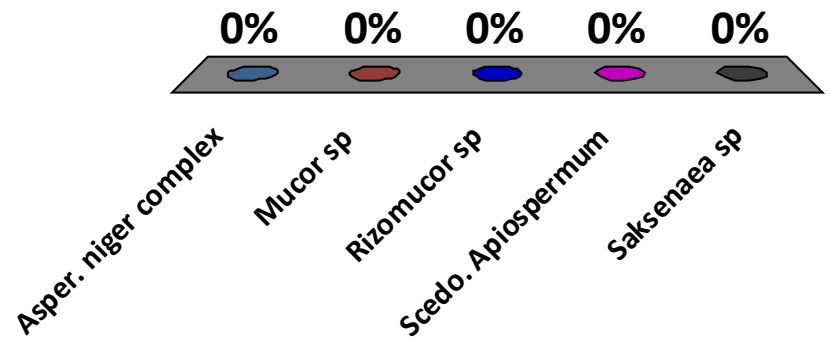


Identify this organism isolated from sputum and BAL of patient with Myeloma after 2 days.



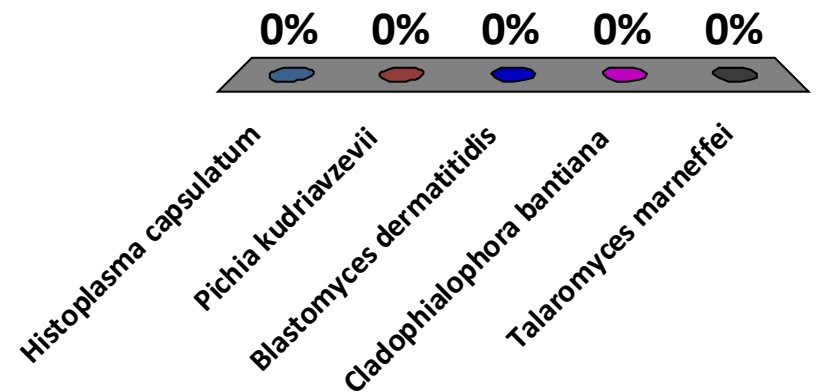
Organism isolated from sputum and BAL

- A. *Asper. niger* complex
- B. *Mucor sp*
- C. *Rizomucor sp*
- D. *Scedo. Apiospermum*
- E. *Saksenaea sp*



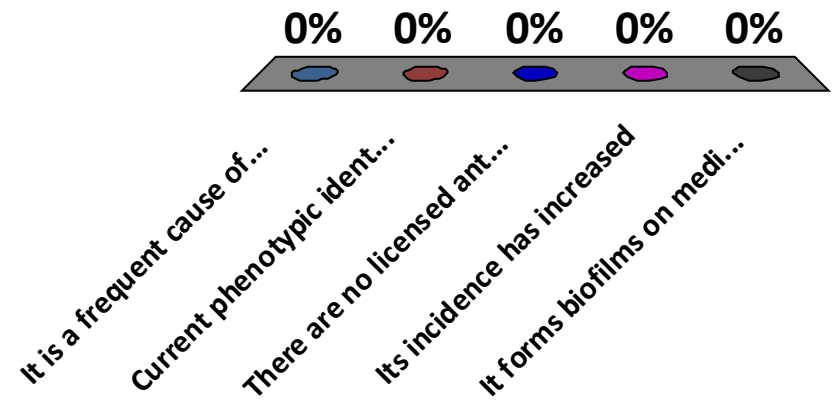
Which of these is not classified as a RG3 organism?

- A. *Histoplasma capsulatum*
- B. *Pichia kudriavzevii*
- C. *Blastomyces dermatitidis*
- D. *Cladophialophora bantiana*
- E. *Talaromyces marneffe*



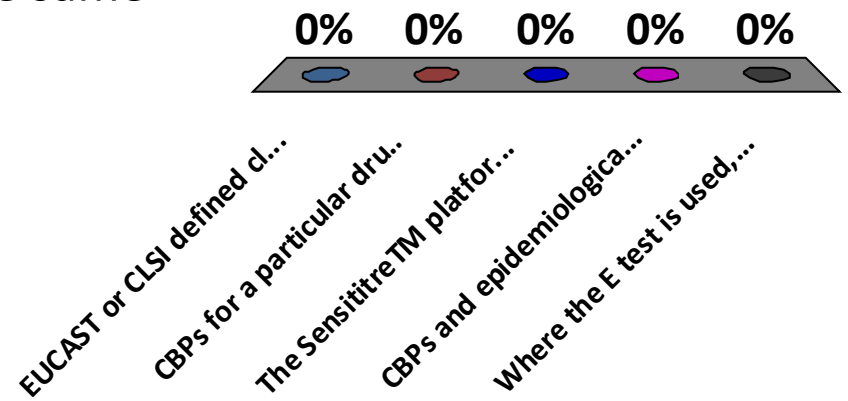
Candida glabrata is an important fungal pathogen in Australia because:

- A. It is a frequent cause of nosocomial outbreaks in Australian hospitals
- B. Current phenotypic identification methods cannot identify it accurately
- C. There are no licensed antifungal agents to treat infections caused by this species
- D. Its incidence has increased
- E. It forms biofilms on medical devices that are more sizeable (mass) than *Candida albicans*



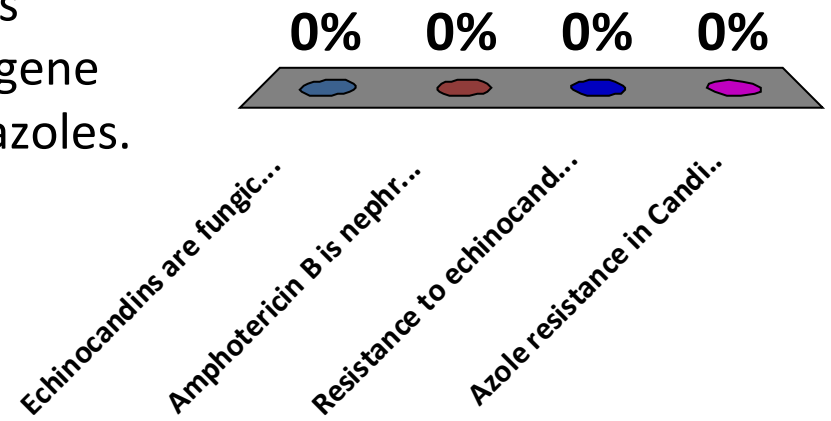
With regards to antifungal susceptibility testing for moulds and yeasts

- A. EUCAST or CLSI defined clinical breakpoints (CBPs) for MIC interpretation may be used interchangeably
- B. CBPs for a particular drug, where available, are species-specific
- C. The Sensititre™ platform (Trek Diagnostics, Thermofisher) is a EUCAST-based system
- D. CBPs and epidemiological cutoff values (ECVs) are determined on basis of the same variables or parameters
- E. Where the E test is used, CLSI-based breakpoints can be employed



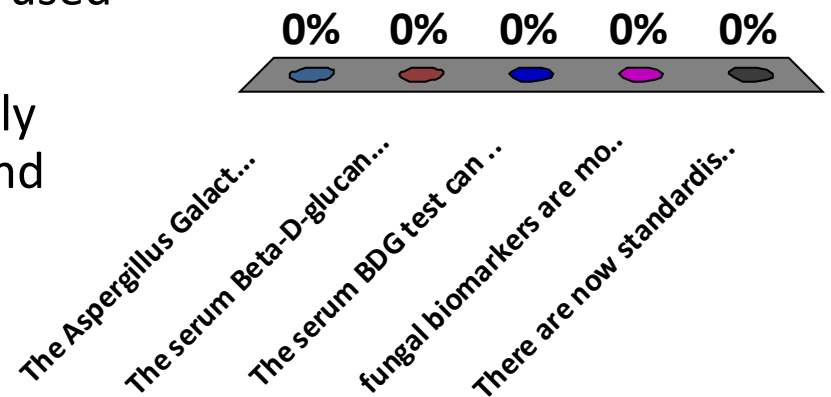
With regard to antifungal agents and their drug resistance mechanisms

- A. Echinocandins are fungicidal to both yeasts and moulds
- B. Amphotericin B is nephrotoxic and has no role in antifungal therapy in 2019
- C. Resistance to echinocandins can usually be reliably predicted by MIC measurements using the reference broth microdilution methods
- D. Azole resistance in *Candida glabrata* is mediated by mutations in the *ERG11* gene which encodes the target enzyme of azoles.



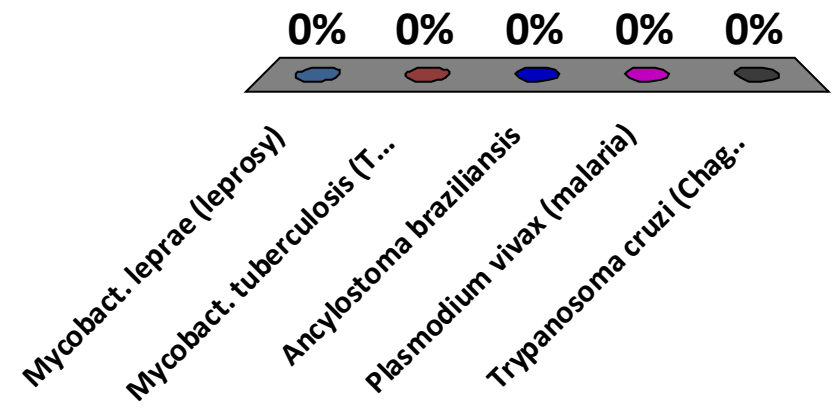
With regards to the utility of biomarkers in diagnosis of fungal infections, which statement is true

- A. The Aspergillus Galactomannan test is specific for *Aspergillus* species
- B. The serum Beta-D-glucan test (BDG) is a panfungal marker and hence is useful for diagnosis of all fungal infections regardless of genera
- C. The serum BDG test can be utilised to rule out high probability of invasive fungal disease
- D. fungal biomarkers are most optimally used as stand alone tests
- E. There are now standardised universally accepted assays for *Aspergillus* PCR and *Candida* PCR



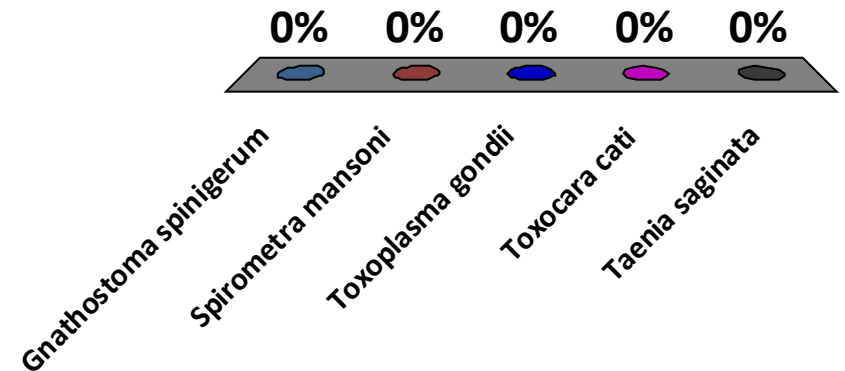
It is estimated that approximately 20% of armadillos in the Gulf of Mexico (USA) and over 60% of armadillos in the Brazilian Amazon are infected with the following organism

- A. *Mycobact. leprae* (leprosy)
- B. *Mycobact. tuberculosis* (T.B.)
- C. *Ancylostoma braziliensis*
- D. *Plasmodium vivax* (malaria)
- E. *Trypanosoma cruzi* (Chagas disease)



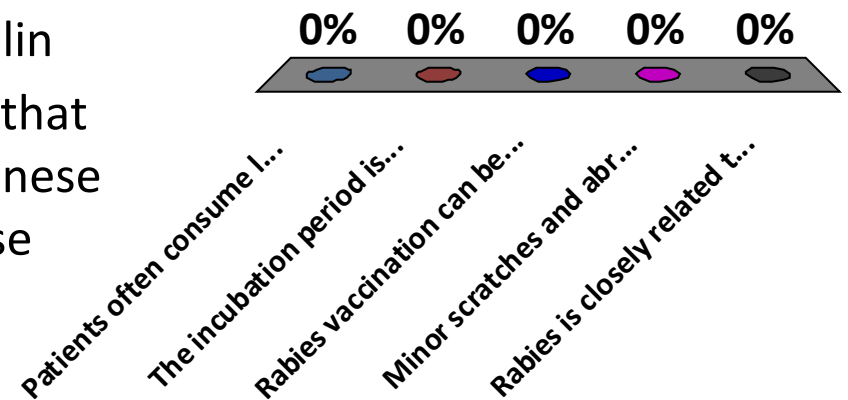
Which of these human parasitic zoonoses does not infect felines

- A. *Gnathostoma spinigerum*
- B. *Spirometra mansoni*
- C. *Toxoplasma gondii*
- D. *Toxocara cati*
- E. *Taenia saginata*



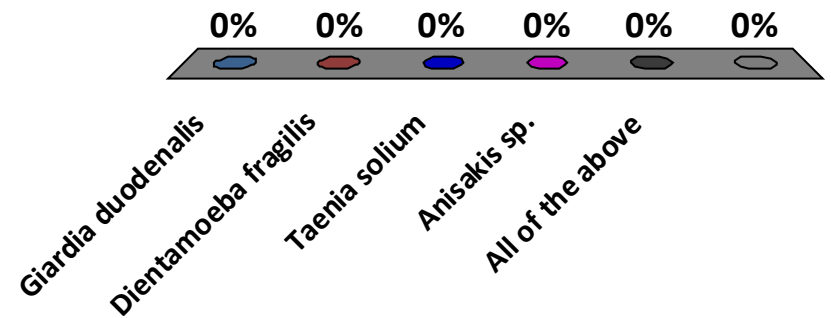
With regards to rabies, which of the following statement is true

- A. Patients often consume large volumes of water as the illness progresses
- B. The incubation period is proportional to the time it takes the virus to travel to the central nervous system from the site of inoculation
- C. Rabies vaccination can be given in the deltoid (shoulder) and gluteal area (buttock)
- D. Minor scratches and abrasions without bleeding still require post-exposure administration of rabies immunoglobulin
- E. Rabies is closely related to the viruses that cause Murray Valley encephalitis, Japanese encephalitis and West Nile virus disease



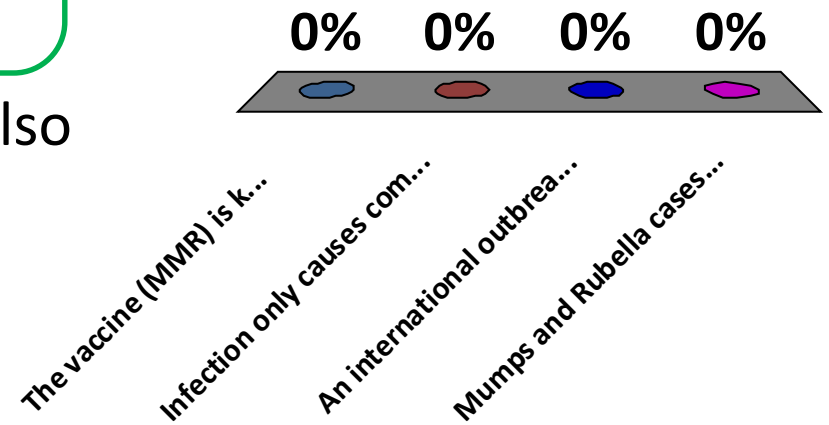
Which parasite can cause eosinophilia following ingestion of raw fish

- A. *Giardia duodenalis*
- B. *Dientamoeba fragilis*
- C. *Taenia solium*
- D. *Anisakis sp.*
- E. All of the above



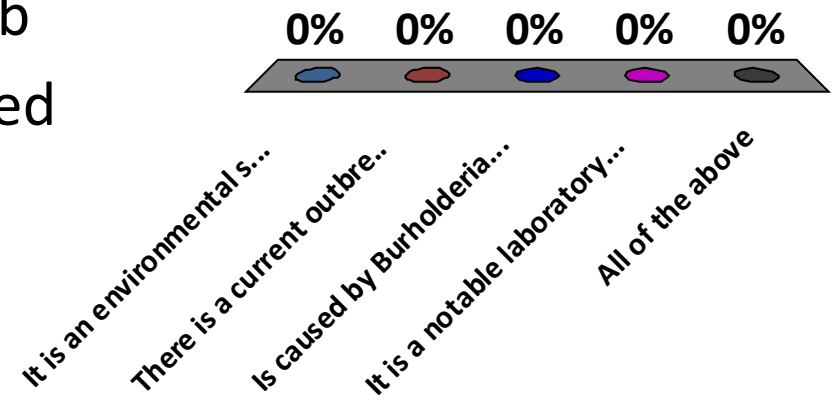
With regards to measles, which of the following statement is true

- A. The vaccine (MMR) is known to cause autism in children
- B. Infection only causes complications in adults
- C. An international outbreak is current in many countries including Australia due to vaccine rates falling
- D. Mumps and Rubella cases are also rising simultaneously



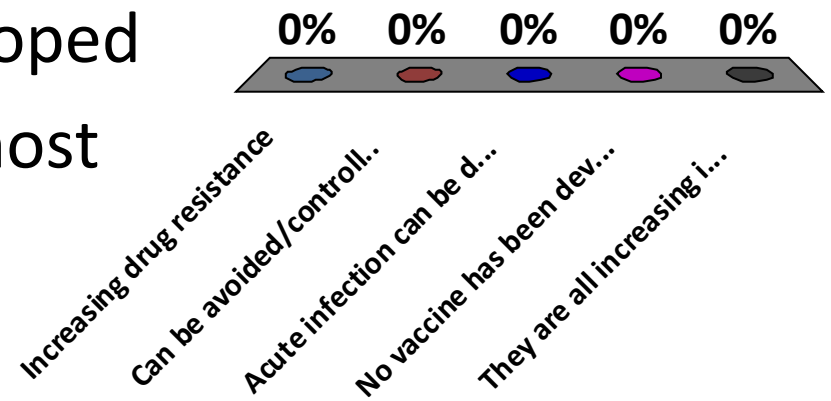
With regards to Melioidosis, which of the following statement is true

- A. It is an environmental saprophyte and commonly seen after heavy rainfall
- B. There is a current outbreak in parts of Australia
- C. Is caused by *Burholderia pseudomallei*, and can be isolated on Ashdown's medium in the lab
- D. It is a notable laboratory acquired pathogen
- E. All of the above



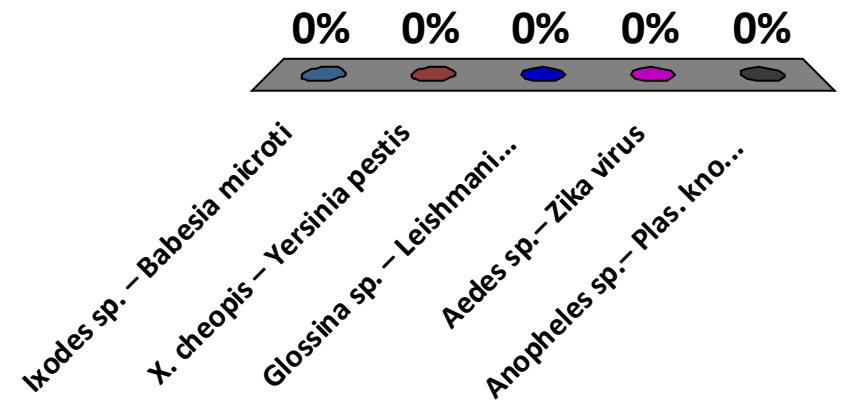
These STIs have had a recent resurgence in Oceania: Syphilis, Gonorrhoea, *M. genitalium*, *Chlamydia*, HIV. Which statement is not common to all of these?

- A. Increasing drug resistance
- B. Can be avoided/controlled by protective measures (eg safe sex)
- C. Acute infection can be diagnosed by PCR
- D. No vaccine has been developed
- E. They are all increasing in most parts of the world



Which of the following pair (vector-pathogen) is mismatched?

- A. *Ixodes sp.* – *Babesia microti*
- B. *X. cheopis* – *Yersinia pestis*
- C. *Glossina sp.* – *Leishmania donovani*
- D. *Aedes sp.* – *Zika virus*
- E. *Anopheles sp.* – *Plas. knowlesii*



Thank you all for participating

Acknowledgements:

Assoc Prof Sharon Chen

Dr Stephen Muhi (ASID ZooSIG on FB)

Josh Griffin

Assoc Prof Neil Langlois