The Prevalence and Antibiotic Susceptibilities of Potential Human Pathogens in Nasal Secretions of a Chicagoland Equine Population

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The purpose of this study

was to determine the prevalence of drug resistant staphylococci in the nasal cavities and secretions of a horse population in the greater Chicagoland area in order to gauge the risk for human/horse zoonotic exchange.

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Our Study

- Staphylococcal species are common in the nasal passages of horses & humans
- Several cause opportunistic infections in humans & horses
- Prevalence of drug resistant staphylococci
- Risk of exchange
- Nasal secretions of 73 local horses sampled and tested to determine presence & resistance.

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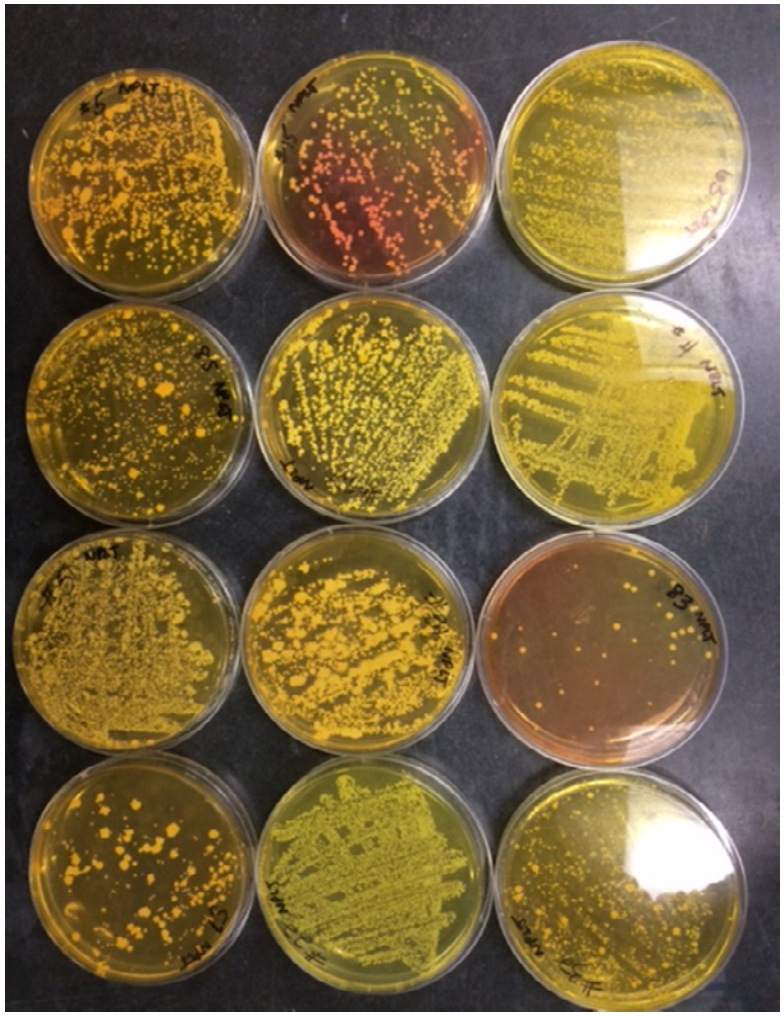
Methods and Tests

- Samples streaked onto selective & differential media
- Yellow Colony = Mannitol positive Staphylococcal Species
- Coagulase test for virulence performed
- Antibiotic zones of inhibition were measured for resistance.



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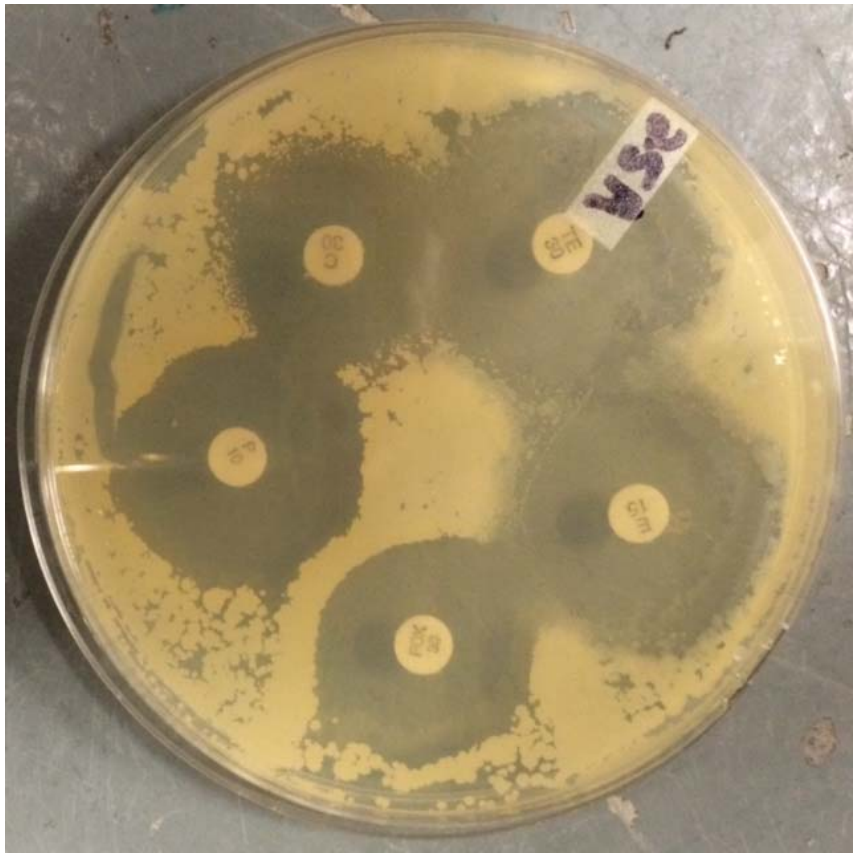
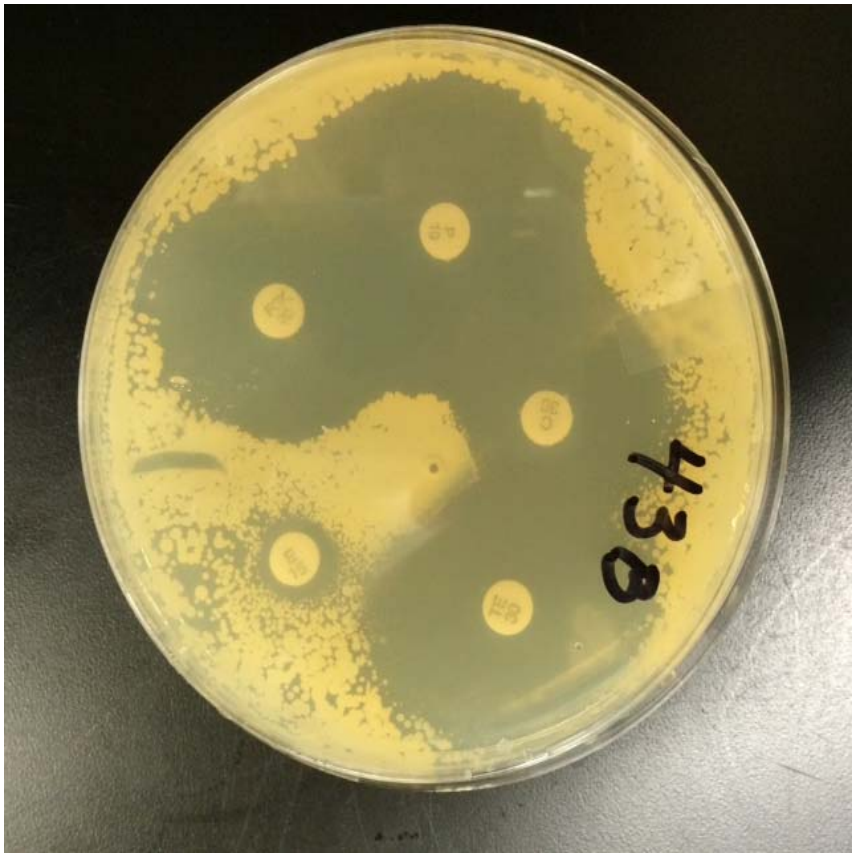
Zones of Inhibition





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Results

- Penicillin: greatest resistance
  - 43.5%
- Erythromycin: second highest resistance
  - 17.7% and an additional 16.1% for intermediate resistance
- Three isolates were cefoxitin resistant.
  - One isolate of these considered methicillin-resistant

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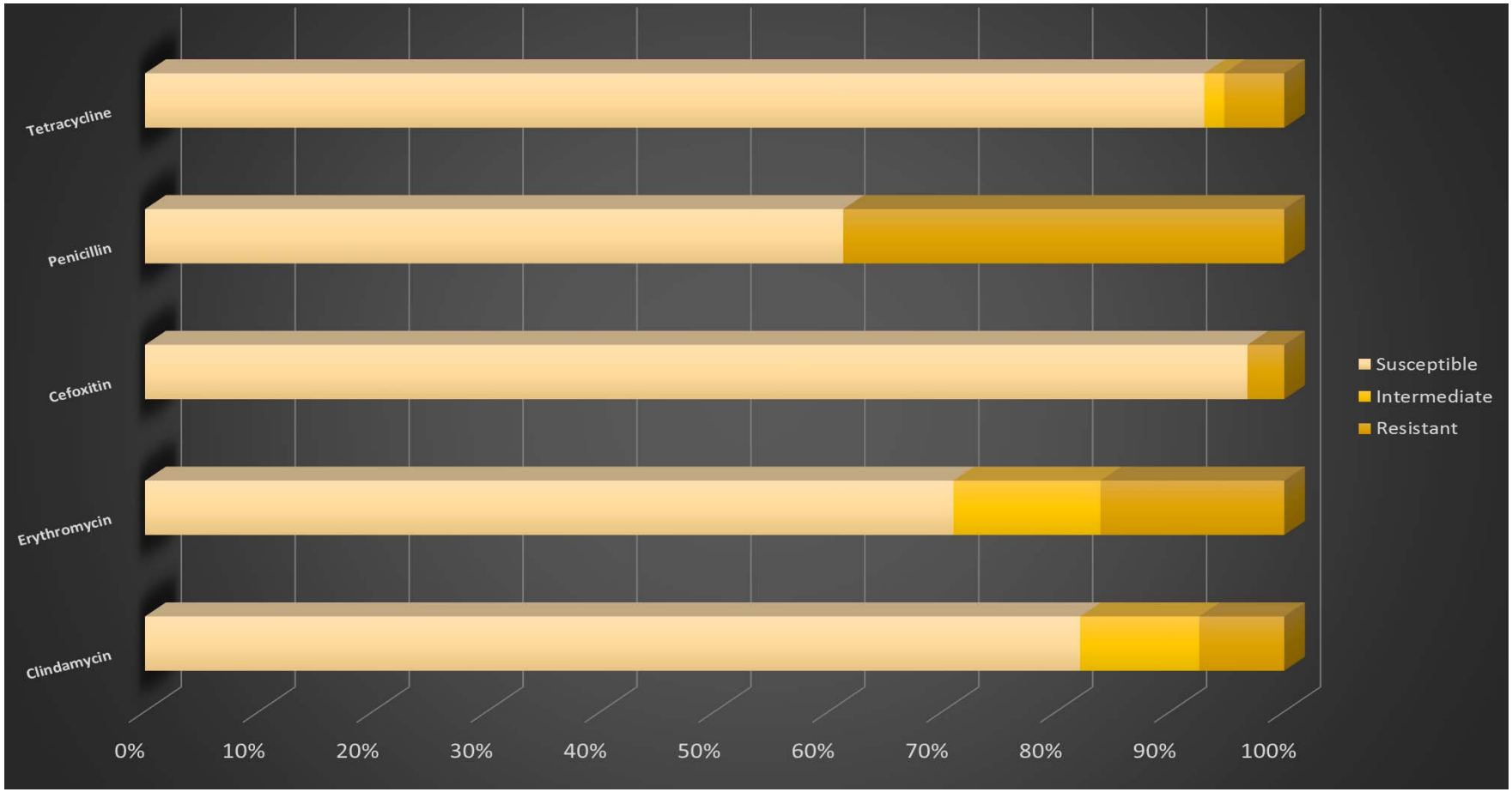
Antibiotic Susceptibilities



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All antibiotics had at least 3 isolates that showed resistance

ANTIBIOTIC	Susceptible	Intermediate	Resistant
Clindamycin	53	5	4
Erythromycin	41	10	11
Cefoxitin	59		3
Penicillin	35		27
Tetracycline	58	1	3

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24.2% Resistant/Intermediate to two or more Antibiotics

Antibiotics	% Isolates Resistant
P + E	8.1
P + C	3.2
P + E + C	3.2
P + Fox	1.6
P + Te	1.6
E + C	3.2
E + Fox	1.6
E + Te	1.6

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Conclusions

- Chicagoland area horses carry and/or are colonized by antibitiotic-resistant strains of *Staphylococci*
- Horses may, indeed, act as vectors of pathogenic, antibiotic-resistant species of staphylococci to humans
- It is the obligation of veterinary and medical professionals to temper the use of antibiotics to prevent the rise in antibiotic resistance.
- Horses may very well act as conduits of **Community Acquired Antibiotic Resistant Pathogenic *Staphylococci*** in humans

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THANK YOU!!

- Dr. John Peters
- Rob Smith
- Rachel Lohmann
- MCC Faculty and Administration who help make projects like this available to students
- Jenne LeFevre and the local horse community
- MCC microbiology lab staff for their help and support

Most importantly, a sincere thank you to ***Marla Garrison*** *who made every phase of this project possible*

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