Introduction

- OUCRU studies antimicrobial resistance (AMR) in gram-positive bacteria to improve the state of public health in Vietnam

Objective of Internship

- Utilize literature review to build database of genes and mutations that are associated with antimicrobial resistance of different bacteria
- Statistically analyze database data to find mutations mediating antimicrobial resistance

Methods

- Scraped through PubMed publications that have researched antimicrobial resistance
- Used Excel and R packages to run statistical analysis and find statistically significant differences in genes of AMR strains versus susceptible strains

Results

- **pbp2x** T371S, R384G, T338A, N605T, L364F, I371T mutations confer antibiotic resistance against all 3 antibiotics studied
- **pbp2b** S449E, M454S mutations confer antibiotic resistance against penicillin and cefotaxime
- Analysis on ceftiofur may be limited due to small sample size of ceftiofur-resistant strains (n = 13)

Looking ahead

- As a future doctor, I am looking forward to bringing this clinical research experience with me in my future career

Questions

- How can we use this research to find drugs and other novel treatments that can combat AMR?

Conclusion

- There exist some gene mutations and motifs that are significantly more prevalent in AMR strains than susceptible strains.

Acknowledgements

Thank you to CHW and the Internships in Global Health Program for sponsoring my project and giving me this opportunity. Thank you to Truong and the OUCRU for making this internship possible.