Carriage of the SEB gene in those who work in healthcare vs. those who do not

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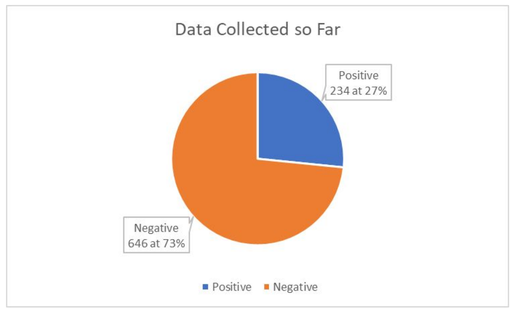
Abstract:

Staphylococcus aureus is a strain of bacteria that is found growing inside of the nasal cavity. It is a gram positive bacterium that is for the most part not harmful and can cause slight skin infection. However the reason that CSP research is doing this study is because there can be severe cases that cause organ failure or death if untreated. For this reason CSP has been conducting research on the passage and toxin production of *S. aureus* for the past number of years and have collected around 1,700 nasal swabs to test the CSP community for its positivity rate. The research done here is showing the importance of the gene SEB and how it affects the body in ways such as food poisoning.

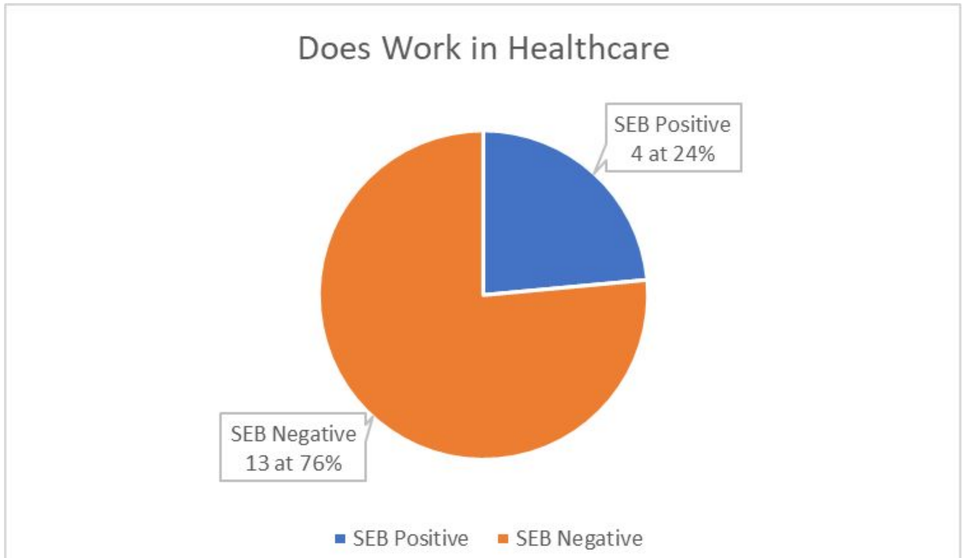


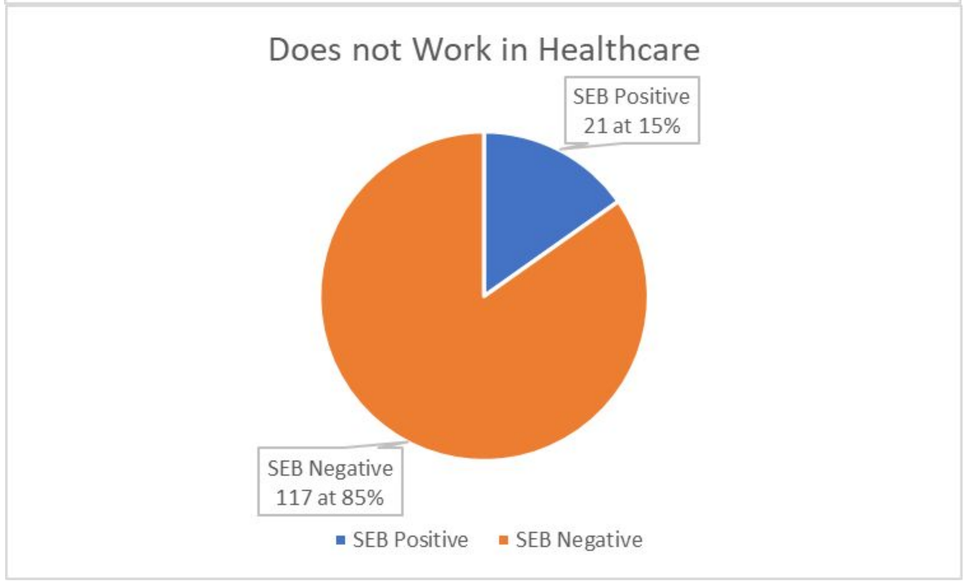
Methods:

In this class each student is given twelve strains to test whether or not they are *S. aureus* positive or negative. They are started from a nasal swab collected from campus. Once plated we are to run tests upon the strains. These tests include MSA, DNase, CNA, coagulase, gram stain, and catalase. These tests vary in importance to positivity identification alone, however when they are all run together the results can prove without a doubt whether or not a bacteria growth is *S. aureus* or not. Each test varies on how long it takes to run. They can vary from instant results like in coagulase or catalase, or up to three days like in the CNA and DNase testing.

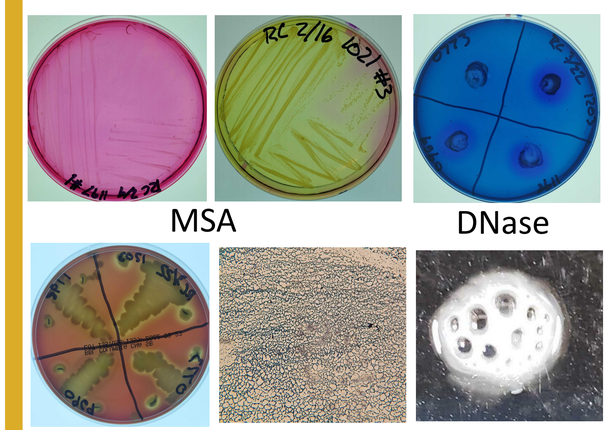
Streak Plate Method

Healthcare workers are twice as likely to be colonized with *Staphylococcus aureus* that contains the SEB gene





Results:



Conclusion:

The SEB gene has been found to be the leading cause of food poisoning and is seen in dermatitis or Eczema. Food poisoning can not be passed from person to person, but infection caused by the SEB gene found in food poisoning can be. These tables show that in those who were swabbed and tested in the CSP research lab, were two times more likely to carry the SEB gene if they worked in healthcare. The positivity rate of those that work in healthcare is 24% vs. those who do not work in healthcare only being 15%. This jump in percentage catches the eye when looking at the gene expression of the isolates being tested. This is seen due to the fact that working in healthcare puts you in situations where you are around those who carry the SEB gene that can be passed. Other studies have also shown that in their research they found that 57.7% of their 138 *S. aureus* positive isolates were carrying the SEB gene. This data only backs up what was found in our testing and that finding a prevention to the SEB gene is so important.

References & Acknowledgments

Special thanks to Dr. Patrick Schlievert (University of Iowa) for helpful conversations. This research was partially funded by several CSP Faculty Development Grants. This work has IRB approval from CSP (studies 2016_42 & 2018_37).

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