Discussion 2.1

Prior to completing this discussion forum, read the [Survival Prediction of Patients with Sepsis from Age, Sex, and Septic Episode Number Alone](https://sandiego.instructure.com/courses/1174/files/87519?wrap=1) article. Respond to the following prompt by Day 4 of the learning week. Cite resources and references appropriately in APA format.

* In Lab Presentation 2.1, you were introduced to Bayesian probability visa vie [sepsis survival minimal clinical recordsLinks to an external site.](https://archive.ics.uci.edu/ml/datasets/Sepsis+survival+minimal+clinical+records) from the UCI Machine Learning Repository. **Summarize** the cohort selection, data mining methods, and algorithms used in the [scientific paperLinks to an external site.](https://www.nature.com/articles/s41598-020-73558-3) directly connected to this dataset.

Post a thoughtful, substantive response to at least one of your classmates by Day 7. You are encouraged to post your required replie(s) early in the week to promote more meaningful and interactive discourse in this discussion forum.

To understand how your posts will be assessed, view the scoring rubric.

Click **Reply** below to respond to the discussion prompt.

Sepsis is a life-threatening condition caused by an exaggerated reaction of the body to an infection. Survival prediction for sepsis patients is crucial due to the rapid progression of the disease. Machine learning can be used to predict patient survival within minutes by analyzing easily accessible medical features. In a study, computational intelligence algorithms were applied to three patient features (sex, age, and septic episode) recorded and logged. The models achieved high prediction scores on a large dataset and its subset, with also having a validation cohort (Chicco & Jurman, 2020). When continuing and looking at the data mining methods we can see that they were only able to really Identify the patients that were able to survive and weren’t as great as detecting the people who passed at first. With that being said, they furthered their progression in the data mining process they were able to change that and were also able to successfully Identify the people who had unfortunately passed as well (Chicco & Jurman, 2020). The study used five machine learning algorithms and they were as follows: linear regression, linear SVM, radial SVM, gradient boosting, and naive Bayes, in which they were able to measure the effectiveness of each algorithm on the data set. I also really like to see that in the study they used Gradient boosting. I think gradient boost is a very good thing to use especially in this situation, as the model can capture and find more complex relationships within the data.

I think that in the medical field, machine learning algorithms and predictive algorithms could have a very large impact on the way medicine is used. I would like to think that this technology could have a much larger impact on the way healthcare is practiced within the United States.

References

Chicco, D., & Jurman, G. (2020). Survival prediction of patients with sepsis from age, sex, and septic episode number alone. *Scientific Reports*, *10*(1). https://doi.org/10.1038/s41598-020-73558-3