A Predictive Modeling of Tracheostomy Readmissions

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Abstract

Purpose: The abstract serves both as a general introduction to the topic and as a brief, non-technical summary of the main results and their implications. The abstract must not include subheadings (unless expressly permitted in the journal's Instructions to Authors), equations or citations. As a guide the abstract should not exceed 200 words. Most journals do not set a hard limit however authors are advised to check the author instructions for the journal they are submitting to.

Methods: The abstract serves both as a general introduction to the topic and as a brief, non-technical summary of the main results and their implications. The abstract must not include subheadings (unless expressly permitted in the journal's Instructions to Authors), equations or citations. As a guide the abstract should not exceed 200 words. Most journals do not set a hard limit however authors are advised to check the author instructions for the journal they are submitting to.

Results: The abstract serves both as a general introduction to the topic and as a brief, non-technical summary of the main results and their implications. The abstract must not include subheadings (unless expressly permitted in the journal's Instructions to Authors), equations or citations. As a guide the abstract should not exceed 200 words. Most journals do not set a hard limit however authors are advised to check the author instructions for the journal they are submitting to.

Conclusion: The abstract serves both as a general introduction to the topic and as a brief, non-technical summary of the main results and their implications. The abstract must not include subheadings (unless expressly permitted in the journal's Instructions to Authors), equations or citations. As a guide the abstract should not exceed 200 words. Most journals do not set a hard limit however authors are advised to check the author instructions for the journal they are submitting to.}

1 Introduction

In the medical field of Otolaryngology, preventing hospital readmissions following procedures such as tracheostomies, total laryngectomies, or mastoidectomies is significant both medically for patients as well as financially for healthcare institutions. Medically, avoiding readmissions can benefit patients' well-being as it reduces the possible distress and suffering experienced from complications from new or returning medical conditions. Financially, preventing readmissions is crucial for hospitals who are paid by capitation. Capitation is a payment system that pays hospitals a fixed amount per patient for a prescribed period, therefore incentivizing hospitals to conduct less procedures and treat patients as efficiently as possible. As a result, hospitals paid by capitation incur the costs that are associated with providing care to patients who are readmitted. Knowing if a patient might be at higher risk of a readmission would allow doctors to increase the effectiveness of their initial interventions and promote a smoother recovery process while maintaining their reputation and quality of care. Therefore, developing predictive models that can predict whether a patient will be readmitted is essential for ensuring the efficiency of healthcare.

This project aims to build a model that predicts if a patient who underwent a tracheostomy procedure is going to be readmitted within 30 days of being discharged from the hospital. For those patients who are readmitted within 30 days, this project also analyzes the number of days until they will be readmitted as well as the most common diagnoses that the patients will be readmitted with.

2 Data Preprocessing

3 Exploratory Data Analysis

4 Methods and Analysis

5 Conclusion

Acknowledgments. Acknowledgments are not compulsory. Where included they should be brief. Grant or contribution numbers may be acknowledged.

Please refer to Journal-level guidance for any specific requirements.

Appendix A

An appendix contains supplementary information that is not an essential part of the text itself but which may be helpful in providing a more comprehensive understanding of the research problem or it is information that is too cumbersome to be included in the body of the paper.