

SRS Document

Introduction

Sepsis is a life-threatening condition that arises when the body's response to infection injures its own tissues and organs.

Patients who develop shock-septic have an increased risk of complication and death, and also face higher health care costs and longer hospitalization.

Purpose

The purpose of this project is to build machine learning model that can learn how to predict shock-septic event based on CVRI scale.

Intended Audience

#Our audience will be both intensive care units which can decide who of the patients need #preliminary treatment and the patients.

Access to the SRS document include:

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Intended Use

To prevent patient enter shock-septic event.

Product Scope

Users of the product will be hospitals and intensive care units

Main goal is to maybe save life with our product.

Definitions and Acronyms

CVRI – Cardiovascular Reserve Index

CVRI function will look like this:

$CVRI = f(\text{blood pressure, heart beats, respiratory rate} | \text{weight})$.

BP: Blood pressure.

HR: heart rates.

RR: respiratory rate.

Shock-septic: when patient with sepsis develop trauma.

Risk definition: device fails and may causes a fatality.

Overall Description

Early diagnosis for shock-septic condition is crucial to proper sepsis management.

Early and accurate prediction of the onset of sepsis could facilitate effective and targeted treatment which can in most cases reduce the patients death rate and lower the risk of organ damage.

The purpose of this project is to build machine learning model that know to predict shock-septic event based on CVRI scale.

This project is new product based on previous search, the previous search was to predict if the patient die from shock-septic or not.

User Needs

Primary users: hospitals and intensive care units.

Patient's needs: most of the patients doesn't know if they need to take medicines, our product can predict and tell the the intensive care units that specific patient need treatment.

Assumptions and Dependencies

List of assumption that our project relay on:

First assumption will be that our data will be of patients who already in sepsis condition and were trying to prevent shock-septic.

Second, our data include the time the patient received medicine.

Third, we should also have BR,RR,HR and weight of the patient in our data file.

For all of this, we also dependent on CVRI scale, therefor if the CVRI is uncorrect, it may effect our results.

System Features and Requirements

Functional Requirements

- * Pre-data that include BR,RR,HR and CVRI calculation so we can build our machine.
- * we should have BR,RR,HR and weight of the patient in our data file and the devices That can measure those indices.
- * device that able to run our program.
- * Subsets of risks: Without all the above, our results will be affected.

Another risk is that our data file include information that we don't know to analyze (such as "inf" field)

External Interface Requirements

Hardware and software to run the model.

System Features

Nonfunctional Requirements

One of the most important nonfunctional requirement is safety.

Meaning, it's critical that the data were getting will stay safe because the data will include medical information about a lot of people.

Also quality and safety is necessary.