

LITERATURE SURVEY

PROJECT TITLE : "PLASMA DONAR APPLICATION"

Team ID : PNT2022TMID43155

TITLE: Instant Plasma donor Recipient connector web application

AUTHOR: Kalpana Devi Gontijo, Tejaswini Jalil, Sreeja Uppala, Sanjay Maliseet

YEAR: 2022

ABSTRACT:

The world is suffering from the COVID 19 crisis and no vaccine has been found yet, but there is another scientific way in which we can help reduce mortality or help people affected by COVID19 by donating plasma from recovered patients. In the absence of an approved antiviral treatment plan for a fatal COVID19 infection, plasma therapy is an experimental approach to treat COVID19-positive patients and help them faster recovery. Therapy is considered competent. In the recommendation system, the donor who wants to donate plasma can donate by uploading their COVID19 certificate and the blood bank can see the donors who have uploaded the certificate and they can make a request to the donor and the hospital can register/login and search for the necessary things. plasma from a blood bank and they can request a blood bank and obtain plasma from the blood bank.

TITLE: Determinants of plasma donation: A review of the literature

AUTHOR: A.Beurel , F. Terrade, J.-P.Lebaudy, B. Danic

YEAR: 2017

ABSTRACT:

The major contribution of Human Sciences in the understanding of the whole blood donation behavior has been through the study of individuals' motivations and deterrents to donate. However, if whole blood donation has been very widely studied in the last sixty years, we still know very little about plasma donation in voluntary non-remunerated environments. Yet, the need for plasmaderived products has been strongly increasing for some years, and blood collection agencies have to adapt if they want to meet this demand. This article aims to review the main motivations and deterrents to whole blood donation, and to compare them with those that we already know concerning plasma donation. Current evidence shows similarities between both behaviors, but also differences that indicate a need for further research regarding plasma donation.

TITLE: Developing a plasma donor application using Function-as-a-service in AWS

AUTHOR: Aishwarya R Gowri

YEAR: 2020

ABSTRACT:

A plasma is a liquid portion of the blood, over 55% of human blood is plasma. Plasma is used to treat various infectious diseases and it is one of the oldest methods known as plasma therapy. Plasma

therapy is a process where blood is donated by recovered patients in order to establish antibodies that fights the infection. In this project plasma donor application is being developed by using AWS services. The services used are AWS Lambda, API gateway, DynamoDB, AWS Elastic Compute Cloud with the help of these AWS services, it eliminates the need of configuring the servers and reduces the infrastructural costs associated with it and helps to achieve serverless computing. For instance, during COVID 19 crisis the requirement for plasma increased drastically as there were no vaccination found in order to treat the infected patients, with plasma therapy the recovery rates were high but the donor count was very low and in such situations it was very important to get the information about the plasma donors. Saving the donor information and notifying about the current donors would be a helping hand as it can save time and help the users to track down the necessary information about the donors.

TITLE: A Multiclass, Multiproduct Covid-19 Convalescent Plasma Donor Equilibrium Model

AUTHOR: Anna Nagurney & Pritha Dutta

YEAR: 2021

ABSTRACT:

In this paper, we develop a multiclass, multiproduct equilibrium model for convalescent plasma donations in the Covid-19 pandemic. The potential donors are situated at different locations and the donor population at each location can be separated into different classes based on their motivation and the product for which they provide donations at a collection site. The model captures the competition between non-profit and for-profit organizations seeking convalescent plasma donations, which is a characteristic of this new market. A variational inequality formulation of the equilibrium conditions and qualitative properties of the model are provided. We also present a capacitated version of the model. Numerical examples of increasing complexity are presented and solved using the modified projection method. The results reveal multiclass, multiproduct donor behavior under different scenarios which can inform policy makers during this pandemic and beyond.

TITLE: International Plasma Collection Practices

AUTHOR: Sirjana Pant, Rupinder Bagha, Sarah McGill

YEAR: 2021

ABSTRACT:

Plasma, collected from donors, is used to manufacture life-saving plasma-derived medicinal products (PDMPs). While the WHO promotes self-sufficiency in plasma supply from non-renumerated donors as a key national goal, Canada still relies heavily on plasma that is imported from paid US donors. The reliance on foreign plasma supply may lead to shortages as a result of market disruptions caused by events such as the COVID-19 pandemic. Hence, it is important for Canada to identify models to improve its self-sufficiency on plasma supply while ensuring the safety of both patients and donors. This Environmental Scan (ES) provides a summary of findings on the models used by international jurisdictions for plasma collection — from paid and non-renumerated plasma donors or a mix of both — to improve their self-sufficiency on the supply of plasma to manufacture PDMPs.