

LITERATURE SURVEY



PROJECT TITLE :

“PLASMA DONAR APPLICATION”

Team ID : PNT2022TMID39818

Team Leader : KISHORE KUMAR S

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TITLE: Instant Plasma donar Recipient connector web application

AUTHOR: Kalpana Devi Guntoju, Tejaswini Jalli, Sreeja Uppala, Sanjay Mallisetti

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.

CASE STUDY II

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 plasma-derived 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.

CASE STUDY III

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 fight 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.

CASE STUDY IV

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.

Team ID : PNT20

TITLE: International Plasma Collection Practices

YEAR: 2021

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.

CASE STUDY VI

TITLE: The Interlinkage Between Blood Plasma Donation and Poverty in the United States

AUTHOR: Analidis Ochoa, H. Luke Shaefer, Andrew Grogan-Kaylor

YEAR: 2021

ABSTRACT:

In 2019, plasma centers in the United States received a record 53.5 million blood donations, roughly triple that collected during the Great Recession. Recent ethnographic research and journalistic accounts connect plasma sales and poverty, an association that would carry important public health implications given the vulnerability of disadvantaged populations. This study is the first to examine a range of socioeconomic characteristics of communities where commercial plasma centers situate. We geocode locations of all U.S. commercial plasma centers and merge with census tract demographic data from the American Community Survey. Findings indicate greater odds that plasma centers will locate in urban tracts with high rates of deep poverty, poverty, and near poverty. There is a bivariate association with high percentages of residents identifying as Black and Hispanic. These findings indicate a clear interrelationship between persistent economic hardship and the raw material sustaining a major healthcare industry.

CASE STUDY VII

TITLE: Enhanced mobile application development for plasma

AUTHOR: Dr. S. Brindha, Ms. D. Priya, Mr. S. Ajith Kannan, Mr. D. Joyal Victor, Mr. R. Gunachandran

YEAR: 2021

ABSTRACT:

Covid-19 is currently spreading as a deadly disease and till today no medicine has been found for this disease. Alternatively, now a day's plasma transplant surgery is also being performed rapidly. At this present time plasma banks are in short supply. Not only that, but the number of plasma donors is low too. And some people do not know what plasma donation is and where to donate plasma. We have set up a system to alleviate this situation and help needy people to identify plasma donors and plasma banks. We have set up a system to encourage that action and help them. Today mobile and mobile primarily based applications became a neighborhood of our day to day life. The main objective is to develop an Android application to build a network of people (Donors, Recipients and Health care departments) who can help each other. This automation application is developed to simply explore for plasma, mother's milk and blood in near areas for emergency.

CASE STUDY VIII

TITLE: Nearest Blood & Plasma Donor Finding: A Machine Learning Approach

AUTHOR: Nayan Das, Asif Iqbal

YEAR: 2021

ABSTRACT:

The necessity of blood has become a significant concern in the present context all over the world. Due to a shortage of blood, people couldn't save themselves or their friends and family members. A bag of blood can save a precious life. Statistics show that a tremendous amount of blood is needed yearly because of major operations, road accidents, blood disorders, including Anemia, Hemophilia, and acute viral infections like Dengue, etc. Approximately 85 million people require single or multiple blood transfusions for treatment. Voluntary blood donors per 1,000 population of some countries are quite promising, such as Switzerland (113/1,000), Japan (70/1,000), while others have an unsatisfying result like India has 4/1,000, and Bangladesh has 5/1000. Recently a life-threatening virus, COVID-19, spreading throughout the globe, which is more vulnerable for older people and those with pre-existing medical conditions. For them, plasma is needed to recover their illness. Our Purpose is to build a platform with clustering algorithms which will jointly help to provide the quickest solution to find blood or plasma donor. Closest blood or plasma donors of the same group in a particular area can be explored within less time and more efficiently.