**Surrogate and Donor Management Application (SuDoMA)**

# Introduction

Infertility treatment centres (ART Clinics) require semen donors, egg (oocyte) donors and surrogate mothers as part of their treatment protocols for some specific patients. There is a need to automate this process and this Sudoma application is being built to solve this need.

# Business Need

The new ART rules mandated by the government of India clearly outlines how to manage gamete (sperm and egg) donors and surrogacy cases. This application should help automate the process while adhering to the ART rules. Some key definitions are

1. ART – Artificial Reproductive Techniques – all the medical treatment given to help infertility patients have a child.
2. ART Clinics – hospitals that can provide any form of ART treatment
3. ART Banks – organizations that are responsible for sourcing, providing and managing sperm donors, egg donors and surrogate mothers. Semen donation happens at ART banks. Oocyte donors and surrogate mothers are identified and recruited at ART Banks and then brought to ART Clinics for any treatment.
4. Oocyte donors – also known as egg donors – women who are willing to donate their eggs to another patient, at an ART clinic through an ART bank
5. Semen donors – also known as sperm donors – men who are willing to donate their semen / sperms to be used in ART treatment at an ART clinic, through an ART Bank
6. Surrogate mothers – Women who are ready to bear a child in their uterus on behalf of another couple, for nine months and deliver the child.
7. Commissioning couples – the couple who are intending to go for a donor IVF cycle or surrogacy treatment or both
8. IUI – Intrauterine Insemination – a simple form of ART treatment, where processed semen is loaded in a catheter and released close to the Fallopian tube of a lady, to help her conceive
9. IVF – an advanced form of ART treatment where the eggs are surgically taken into a lab, sperms are used to fertilize the eggs in the lab and then the resultant embryo is grown in the lab for a few days and then finally transferred into the uterus of the woman.

# Scope

The following modules are in scope for the SuDoMa application

* 1. Basic app infrastructure – Login, forgot password, change password, user management and access control module for admin
  2. Manage ART Banks – add, modify, delete and view ART Banks, with an internal approval process to onboard newer ART banks. Should also include a facility to send gamete or surrogate requests to specific ART banks
  3. Manage Sperm, Egg or Surrogacy Requirement – to be raised by branch IP in-charge people, to be managed by a central donor coordinator
  4. Manage Sperm Samples – Receive semen samples from ART Banks against specific requests from specific branches, push that workflow towards payment process
  5. Manage Egg Donors – Receive egg donors from ART Bank against specific donor requests, process them in the system and take it towards closure (acceptance or non-acceptance). This should include features to manage the legal aspects too. Should also have an option to manage stimulated donors and also ability to receive ready oocytes from ART Banks.
  6. Manage Surrogates - Receive surrogate mothers from ART Bank against specific requests, process them in the system and take it towards closure (acceptance or non-acceptance). This should include features to manage the legal aspects too
  7. Manage payments – This is a module to make payments to ART Banks against accepted donors or surrogates or semen samples
  8. Reporting module – provide various reports to the teams and to the management

**Modules and Sub Modules**

1. Manage ART Banks

* Add ART Bank
* Modify
* Delete
* View ART Bank List

* **Add ART Bank –** Pop or New Page – Shall contains the provision to enter following details

Name of the ART Bank, Director Name (as per Aadhar), Aadhar Number, ART Bank Pan Number, Registration ID Of ART Bank, Address,

Price for supply of Donor Semen, Price for supply of Oocyte Donor, Price for supply of Surrogate Mother,

Provision for attachment of Documents

SAVE, CONFIRM

* **Modify –** Pop or New Page –

Details which entered under Add ART Bank shall display. After click on Modify, it shall allow modify the details.

SAVE, CONFIRM

* **Delete –** Pop or New Page –

Details which entered under Add ART Bank shall display. After click on delete, it shall Disappear

* **View ART Bank List –** New page –

Details which entered under Add ART Bank shall display.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S.no | Name of the ART BANK | Name of the Director | Registration ID | Donor Semen Price | Donor Oocyte Price | Surrogate Mother Price |

1. Manage Donor Sperm / Oocyte and Surrogate Requirement

* Raise Requisition
* Delete Requisition
* View List Donor Sperm Requisitions
* View List Donor Oocyte Requisitions
* View List Surrogate Requisitions

* **Raise Requestion –**New Page –

Radio Buttons**: Sperm Oocyte Surrogate**

**Sperm -** New Page – Shall contains the provision to enter following details

Specifications

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**Oocyte -** New Page – Shall contains the provision to enter following details

Specifications

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**Surrogate -** New Page – Shall contains the provision to enter following details

Specifications

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* **Delete Requestion–** Pop or New Page –

Details which entered under raise requisition shall display. After click on delete, it shall Disappear

* **View List Donor Sperm Requisitions** **–** New page –

Details which entered under Donor Sperm Requisitions shall display.

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| --- | --- | --- | --- | --- | --- | --- |
| S.no |  |  |  |  |  |  |

* **View List Donor Oocyte Requisitions** **–** New page –

Details which entered under Donor Sperm Requisitions shall display.

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| S.no |  |  |  |  |  |  |

* **View List Donor Surrogate Requisitions** **–** New page –

Details which entered under Donor Sperm Requisitions shall display.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S.no |  |  |  |  |  |  |

1. Manage Donor Sperm Samples

* Add sample
* Receive Sample
* Issue Sample
* Delete Sample
* View list of Received Samples
* View List of Issued Samples
* View List of collected samples
* **Add Sample –** Pop or New Page – Shall contains the provision to enter following details

Name of the Donor, Aadhar Number (mandatory), Sample collection method( drop down), Collection place, Provision for all the characteristics which mentioned under sample requisition, Quantity of the sample, Date of collection, Stored at, Expiry date

* **Receive Sample –** Pop or New Page – Shall contains the provision to enter following details

Name of the Donor, Aadhar Number (mandatory), Sample collection method (drop down), Collection place, Provision for all the characteristics which mentioned under sample requisition, Quantity of the sample, Date of collection, Stored at, Expiry date

* **Issue Sample –** Pop or New Page – Shall contains the provision to enter following details

Page shall contain the all the requisitions placed through raise requestion – Sperm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S.no |  |  |  |  |  | Process the request |

There should be provision to click at right corner of the table against each sample like . If any one click on process the request pop or new page shall open with the list of samples (Which we entered under add sample and as well as receive sample). They will select the required sample as per the request received.

End of the page shall should have a button – **Issue the sample**

After click on Issue the sample request shall disappear from the list and as well sample from the list

* **Delete Sample–** Pop or New Page –

Details which entered under add sample and receive sample shall display. After click on delete, it shall Disappear

* **View List of Received Samples –** New page –

It show the details of received samples

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| --- | --- | --- | --- | --- | --- | --- |
| S.no |  |  |  |  |  |  |

* **View of List Issued Samples**

It shall the details of samples issued.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S.no |  |  |  |  |  |  |

* **View List of collected samples –** New page –

It shall show the details which we entered under add sample

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S.no |  |  |  |  |  |  |

1. Manage oocyte Donors

* Recruiting Donor
* Receiving Donor
* Allocation of Donor
* Delete Recruited / Received Donor
* View list of Donors Recruited
* View List of Donors Received
* View list of Donors Allotted

1. Manage Surrogates

* Recruiting Surrogate Mother
* Receiving Surrogate Mother
* Allocation of Surrogate Mother
* Delete Recruited / Received Surrogate Mother
* View list of Surrogate Mothers Recruited
* View List of Surrogate Mothers Received
* View list of Surrogate Mothers Allotted

1. Manage Payment

* Donor Semen Samples Payment
* Oocyte Donor Payment
* Surrogate Mother Payment
* List Of Payments processed

1. Reports Module

* XXXXXXXXXX

# Detailed Requirement

To be defined by GarbhaGudi team and to be documented by the development team. Every single feature with the screen design and clarity on each field in the screen has to be highlighted. Clear use cases to explain what workflow will kick-in on what user action has to be clearly explained. GarbhaGudi team has to sign off on the detailed requirement and only then development can be started.

# Testing

The application will go through 3 layers of testing

* 1. Unit Testing – to be done by the development team on a regular basis for every functionality that is built.
  2. Functional Testing – To be done by the development team where multiple features are tested together and evaluated. The guide or his representative from GarbhaGudi team will also be involved in functional testing.
  3. User Acceptance Testing – this will be done by GarbhaGudi team upon completion of the module. Post user acceptance, the project will be deemed accepted and closure process will be initiated.

# Deployment

For all unit testing and functional testing, the application will be locally deployed and tested.

For user acceptance testing and for final deployment, it will be made available on a universally accessible server. The server infrastructure will be provided by GarbhaGudi. All required software installation will also be done by GarbhaGudi. The application deployment will have to be done by the developing team.

# Process to be Followed

The following process will be followed

* 1. Once the formalities of the college and GarbhaGudi has been met, the project will commence
  2. Requirement will be explained to the team. The team has to work with the guide and detail out the requirements and take a sign-off. This includes mock screens to be developed by the team.
  3. Once signed off, the team has to prepare a database design and an application design document. These have to be submitted to the guide.
  4. Upon design document acceptance, application coding can start. The team has to provide a high-level project plan on what modules will be developed by which team member and when it will be completed.
  5. Milestone releases – the team is expected to provide a release every 3 weeks with the features that are completed. This will be used by the GarbhaGudi team for functional testing. Any identified defects will be captured in a Google sheet and will be tracked to closure
  6. UAT – upon completion of all modules, the application will be deployed in a server accessible by all branches and an UAT will be done by GarbhaGudi team. Upon completion of UAT, all identified changes and defects will have to be fixed by the team. Once all relevant issues are fixed, the application can be moved to production
  7. Go-Live – After UAT, the application will be taken into production and will be made available to all the users. Post go-live support for 12 weeks will be the responsibility of the team.

# Closure

Upon successful UAT, application will be moved to production. Once in production, the project will be deemed accepted and closed. A copy of the project report, the requirement document, the design documents, all the code, the test cases and test results have to be handed over to GarbhaGudi team. There will be a demonstration to the key stakeholders of the application at this point of time, by the team.

All required documentation for project closure will be provided at this point of time.

The Development team is requested to provide support for 3 months from the date of moving to production.