SHA PREGNANCY GESTATIONAL DIABETES CLINIC

Pregnancy Diabetes Management System

Preliminary System Description

Dr. Sha is the owner and one of the practising doctors of a clinic specialising in treating patients with Pregnancy Diabetes, a form of diabetes that arises through pregnancy. While the clinic is successful, Dr. Sha believes that technology could help improve patient management, so that issues are dealt with in a timely manner rather than just at the patient's appointment.

Dr. Sha would like the new system to have the following features:
- Keep a record patient details;
- Provide patients with access to good resources to help them better manage their diabetes;
- Record patient in-person or phone appointment data;
- Allow patients to enter a range of data online for review by their doctor;
- Give patients instant feedback and support based on their data entries reducing unnecessary clinic visits;
- Provide the patient data to the doctors in a way that allows them to better monitor their patients remotely. They should be able to view patient data for a particular day and data trends for their patients so that urgent issues are highlighted, and they can take the appropriate action; and
- Ensure that all the clinic's doctors are up to date with their registration and speciality certification.

The main users of the system will be:
- **Patients:** Pregnant people who have been diagnosed with gestational diabetes.
- **Doctors**: Healthcare professionals with expertise in gestational diabetes. We currently have 10 doctors who work varied hours.
- **Administrators**: We have 3 admin staff who look after the administrative aspects of the clinic

Detailed System Description

We currently provide our patients with resources to help them manage their diabetes (See Gestational Diabetes Resource List). We give them handouts with links to websites, blogs, articles, videos, etc. However, this is very hard to keep up-to-date, and the patients often lose the handouts. So, we would really like to manage all our resources online. We would like to have all the resources available for our patients on a website, so that they can search for the resources they want, and download what they require. Our doctors also often recommend specific resources to their patients, so they should be able to access them on the resources web page, and send the list to their patients. Our admin staff should be able to add new resources, and archive resources that may no longer be relevant.

We have 10 doctors in our clinic who are all general experts in gestational diabetes, but also have other gestational diabetes related specialties. We want the system to record the following information about our doctors - their name, address, mobile no., registration no. and expiry date, and the certification no. and expiry date of all their specialties – just as we do on our current Doctor List spreadsheet (see sample). We want to be able to remind them 3 months before their registration or certification expires so they have plenty of time to go through the renewal process. If their registration expires, they cannot practice at all, while if one or more of their speciality certifications expire, they may not be able to see certain patients. We need to enter the new expiry date of the updated registration and specialty certifications into the system.

An important part of our system is our patients. When we have a new patient, we want our admin staff to record information about them that is on our Patient's List (see sample) - name, address, phone, date joined, expected delivery date, and to be able to select the patient's medical issues from a list. Based on their issues, the admin staff choose a doctor best suited to their issues. We also want to include their Medicare no, and their Private Health account no. if they have private health.

Currently, a patient has a scheduled appointment with the doctor every 2 weeks. They keep track of their readings on the Patient Data Form - Patient (see sample) which they bring to their appointment. They contact us between appointments if they think there is an issue based on the Data Feedback Checklist (see sample) we give them, and we can organise an urgent appointment with the doctor if needed. The doctor reviews all their readings on the Patient Data form, and advises them on the best way to manage any issues. They make a note of all the readings at the appointment on the Patient Data Form – Doctor (see sample) and make their own notes on the form as well.

While managing the patient's diabetes we want to minimise unnecessary visits to the clinic. We want to give them an online patient diary where they enter the following data (blood glucose reading, weight, temperature, insulin dose (if applicable)) 4 times a day at the following times:
1: Between 7am-9am
2: Between 12pm-1pm
3: Between 4pm-5pm
4: Between 8pm-9pm

We want to send them reminders 1 hour before the start time, and 15 minutes before the end time if they haven't done it yet. Once they enter the data, we want the system to provide feedback on the entry. Examples of the system feedback for the blood glucose data are as follows:
<3 - Your blood glucose is too low, please call the clinic immediately. If it is outside clinic hours, please contact Emergency.
3-5: Your blood glucose is stable.
5.1 - 7: Your blood glucose is high, please reduce your carbohydrates at your next meal.
>7 - Your blood glucose is too high, please call the clinic immediately. If it is outside clinic hours, please contact Emergency.
We have similar messages for all the other data types the patient enters.

The doctors should be able to review their patients' data whenever they wish. The data for any day should be displayed in a colour coded way to help the doctor action most urgent matters first. They should also be able to see all the details for individual patients, and order their patients readings in any way they wish. It should show data trends, and highlight any issues, such as data with issues constantly, or a patient not completing their diary regularly. If the doctor has any concerns, they will email the patient with detailed feedback or they may just request that the patient make an appointment to see them.

We are hoping that this system will reduce unnecessary visits and provide real value to our patients.

When the doctor does talk to the patient on the phone or sees them in person, they record the appointment date and time, and any notes related to the discussion with the patient. (see Patient Data Form – Doctor)

If a doctor leaves the clinic, the patient is allocated to a new doctor and a notification email is sent to them.

The following functionality will not be considered for this version of the system:
Appointment bookings
Doctors taking leave