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Project Concept

for

A Consumer Health Portal

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1. Business Requirements

1.1. Background

Chronic conditions presently comprise the major health burden in developed countries, and developing countries forecast a similarly concerning situation. Heart disease, stroke, depression, and cancer will likely be the largest contributors. These conditions require lengthy and expensive treatment plans to ensure patient quality of care.

Chronic conditions are most common amongst older age groups and require more care, are more disabling and are more costly to treat than the conditions that are more common for younger age groups. By 2020 New Zealand's population is forecast to have 800,000 people over the age of 65, representing 24 % of the population. Of these 125,000 will be 85 or older. This aging population trend is consistent with other developed nations. There will be an ever increasing number of people requiring treatment for chronic conditions. The challenge facing health care providers is to provide quality health care within financial and workforce resource constraints.

Caring for those suffering from chronic conditions represents an increasing challenge for health providers. Current New Zealand health spending is around 8% of GDP and will require significant increases each year to keep pace with the increasing demand.

The New Zealand healthcare strategy is to encourage people to age at home rather than in aged care facilities. To be effective this means that older people need to be actively involved in the management of their health condition and engaged.

Also many older persons live alone and are forgetful about their medication and appointment regime and the need to undertake diagnostic testing on a regular basis. This can lead to poorer health outcomes.

1.2. Problem statement

Patients need to be better empowered so that they can take a more active part in the management of their health. It can be hard for older people to keep track of their appointments and medicine schedule. This leads to missed appointments and medicines not taken correctly.

Clinic appointments are usually set up weeks in advance, often without reminders about the time of the appointment beforehand. Clinic appointments typically have a 15% no show rate; this may be because the patient simply forgot or because they need special assistance to get to the appointment. There is often no easy way for the patient to signal that they need assistance to get to their appointment.

Patients in a self care environment can also struggle to follow their medication regime. If they forget to take their medication at the required time they can experience an acute onset of symptoms and require urgent medical treatment. Patients may also need reminding when their prescription needs renewing.

For those patients who are visited by healthcare professionals in their home, their appointment schedule is set several weeks in advance. However the schedule can change at short notice due to emergencies or cancellations. There is often no precision about the time of the appointment as some health care providers make up their own schedule of visits. So the most granular level of appointment is the day or half day rather than a specific time. Patients can be uncertain about the time of the visit and left waiting about for the health care provider to arrive. This can create disharmony and result in some people not being at home at the time the health care provider visits. These missed opportunities lead to poorer health outcomes and increased costs to the health care providers.

1.3.Business Objectives and Success Criteria

This project focuses on improved health outcomes through patient-centric long term condition management and well-being programs through the development of a personal healthcare portal. Through engagement with the portal healthcare consumers will have access to information to make better healthcare decisions and assume greater control over their wellbeing. This will be evidenced by:

- Provide information to health care consumers about:
 - Their condition so they can understand what is happening to them and the objectives of their care plan.
 - Their care plan, its objectives and the treatments. Allow people to indicate how they feel they are progressing and any difficulties they are encountering. Provide reminders to health care consumers about what activities they need to undertake to complete their care plan. Encourage health care consumers to create their own goals that following their care plan will allow them to achieve.
- Increase adherence to medicine regimes
 - Via access to prescription schedule, reminders and feedback about medicines taken.
 - Identification and escalation for patients that do not confirm adherence to treatment plan
 - Early identification of people at risk will facilitate early intervention and so reduce emergency acute health incidents
- Reduce missed clinic and in home appointments
 - Provide patients a personalised appointment schedule, reminders of appointments, notification of changes to appointments and opportunity to request special assistance.
 - Provide health care workers with an up to date visit schedule that can be amended in real time to cater for emergencies and is synchronised with the overall appointment schedule.
- Improved connectedness and wellbeing for health care consumers, through better engagement with healthcare providers, friends and family.

2. Vision of the Solution

2.1.Solution Context

To empower patients to take an active role in managing their condition they need information and support. This should include:

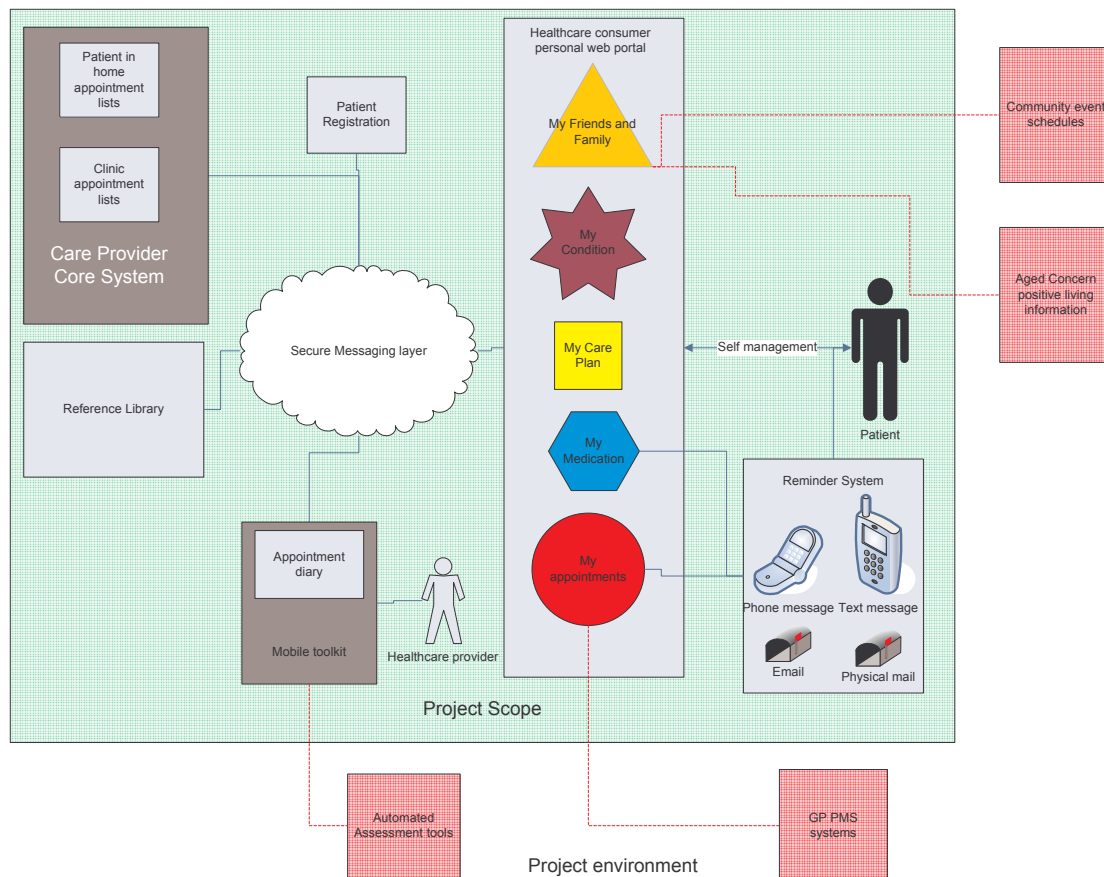
1. Access to a current appointment schedule. Ideally including appointments, from all care providers.
2. A mechanism to indicate whether they need special assistance to attend their appointment.
3. Information about their condition and their care plan.
4. Reminders about when to take their medicines, when to attend diagnostic testing and when their appointments are due.
5. A feedback mechanism to measure their compliance with their healthcare plans.

2.2.Major Features

The solution needs to address these processes;

1. To allow healthcare providers to confirm and amend appointment schedules dynamically to take into account emergencies. This should generate an update to the patient advising them of the change.
2. Provide patients with a personal web portal that provides them with access to:
 - a. “My Friends and Family” Connects them with their family and friends.
 - b. “My condition” provides access to information about their condition.
 - c. “My Care Plan” provides details of their care plan, types of treatments and personal health goals.
 - d. “My Medication” provides a schedule of medication to be taken in accordance with their care plan.
 - e. “My Appointments” Allows them to check their own appointment schedule and optionally allow patients to reschedule appointments.
3. Provide patients with automated reminders of the appointments over a variety of mechanisms, e.g. voice call or text message or email or physical mail. The user should be able to specify which mechanism is used for their reminders.
4. Allow patients to identify any special requirements to attend appointments.
5. Provide patients with automated reminders to follow their medication regime.
6. Allow patients to confirm their adherence to their care plan i.e. whether medicines were taken.

Solution Overview



Healthcare consumers would be registered into their personal web portal by their health provider. The personal web portal would contain information about their condition, their care-plan, their medication schedule and appointment diary. Authorised friends and family can be included as part of the support network.

Patients will be supported by a multimedia reminder system and can use the reminder system to indicate compliance with their medication plan and acknowledgement of upcoming appointments.

Healthcare provider staff would be provided with a mobile appointment diary, synchronised with the master appointment diary in the care provider's core system. Changes in either diary would then update the patient's personal web portal and generate reminders as appropriate.

The healthcare provider would be able to create and maintain a reference library on medical conditions. This would be the data source for the personal web portal. The secure messaging layer ensures robust communications between the care providers core system and the other system components. This allows for rapid replications of updates and early detection of non compliance with care plans and appointment schedules. The healthcare providers staff can then contact the patient to investigate.

2.3. Research and Development Component

In order to achieve the business objectives and project success criteria several new components will have to be developed or enhanced.

Currently there are no automation tools to support health providers in the field. A mobile solution that allows integration between the healthcare provider's core systems appointment schedule and the individual field care providers needs to be developed. This system needs to allow for real time adjustment of an appointment.

A web front end will need to be developed that will allow patients to be registered into the system. Information from the healthcare providers system about the patient's treatment plan, appointment schedule and medicines needs to be uploaded from the healthcare providers system into the website. The integration between the core system and the web front end will also need to be developed.

Integration between the website and the provision of multimedia reminder and acknowledgement systems needs to be developed.

Feedback from the patients about special requirements to attend appointments or to change appointments needs to be able to be uploaded to the healthcare provider and be linked to business processes.

A reference library that can serve documents on demand from the website needs to be integrated into the solution. This needs to be able to be maintained by the healthcare provider.

3. Project Context

3.1. Project Resources

The following organisations have shown an interest in collaborating in this project.

Organisation	Capability
Medtech	Web site development and integration with PMS systems.
Telemessenger	Interactive reminder calls
University of Canterbury	Development of care plan adherence monitoring protocols.
Nurse Maude	Customer site and customisation of PIS system

Other organisations are invited to register their interest to participate in this collaborative project. We are especially interested in organisations that can provide these capabilities:

- Mobile communications
- Secure messaging
- Mobile healthcare provider solutions.
- Reference library document management
- Systems integration
- Hosting provider.
- Hardware, mobile devices and server infrastructure.

3.2. Project environment

The ability to upload information about upcoming community events into the website and the ability to load information from other groups, such as aged concern, involved in provision of health and wellbeing services to older persons into the website needs to be considered.

In the development of the mobile toolkit for the healthcare providers in the field, future integration with assessment packages and the ability to capture visit details should be considered. Results of visits can the update the care providers core system and the payroll system.