DoctorCare® Service for Five Chronic Diseases

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Abstract. WHO(World Health Organization) prospected that the victims of chronic illnesses such as hypertension and diabetes mellitus will increase up to 44 millions by 2020, requiring the assertive national road map for the prevention and control. We have developed an application Doctorcare® for five chronic diseases based on android platform.

Keywords: Doctorcare®, Chronic Diseases, Medical

1   Introduction

Chronic diseases refer to persistent medical conditions that last more than six months, with periods of remission in their courses. They are characterized by the gradual appearance of symptoms and signs, with a number of risk factors involved in their pathogenesis. Chronic diseases affect daily lives as much as physical disabilities. This means that people with different chronic health problems may have invisible physical disabilities. Whilst, over the past decades, the number of people with more than one

chronic medical problems have increased, the need for systemic and technical management of those conditions has arisen using digital devices [1].

As the sorts of digital health care devices become varied, it seems possible to better record chronic diseases data such as body weight, blood pressure, fasting blood sugar, etc. At this point there is also a demand for technically more sophisticated measures enabling data analysis, and device-to-device communication and interaction.

In the current study an android-based health care application system (Doctorcare®) is proposed for five chronic illnesses (hypertension, diabetes mellitus, hyperlipidemia, kidney disease and liver disease).

2   Related research

2.1   Resource map

A Resource map is a diagram used to visually organize information. A Resource map is often created around a single concept, drawn as an image in the center of a blank landscape page, to which associated representations of ideas such as images, words and parts of words are added. Major ideas are connected directly to the central concept, and other ideas branch out from those [2]. Fig. 1 creates a Resource map with the requirements.
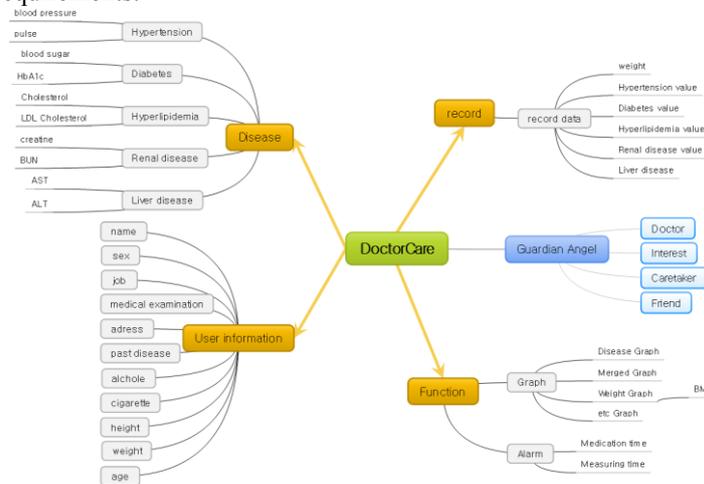

Fig. 1. Doctorcare® system Requirements ResourceMap. [3]

2.2 Five chronic diseases

An elevated arterial pressure or high blood pressure, sometimes called arterial **hypertension**, is a chronic medical condition in which the blood pressure in the

arteries is elevated. Blood pressure is summarized by two measurements, systolic and diastolic, which depend on whether the heart muscle is contracting (systole) or relaxed between beats (diastole). DM, also known as simply **diabetes**, is a group of metabolic diseases in which there are high blood sugar levels over a prolonged period. This high blood sugar produces the symptoms of frequent urination, increased thirst, and increased hunger. Untreated diabetes can cause many complications. Acute complications include diabetic ketoacidosis and nonketotic hyperosmolar coma. Serious long-term complications include heart disease, stroke, kidney failure, foot ulcers and damage to the eyes. **Hyperlipidemia (hyperlipoproteinemia)** involves abnormally elevated levels of any or all lipids and/or lipoproteins in the blood. It is the most common form of dyslipidemia (which includes any abnormal lipid levels). **Kidney disease**, also known as **renal disease**, means damage to or disease of a kidney. Nephrosis is *non-inflammatory* nephropathy. Nephritis is *inflammatory* kidney disease. **Liver disease** (also called hepatic disease) is a type of damage to or disease of the liver.

3   Doctorcare® System

3.1   Proposed system on Doctorcare®

Doctorcare® is an android-based application working on mobile devices. Server employs Windows 2008 r2 to communicate with client through ASP .net and data are stored in Database (SQLserver2008).

Guardian Angel analyzes user (patient) information by continuous monitoring and delivers the message to doctors, friends or guardian through Google cloud messaging service if there are abnormalities or risk signs, enabling the confirmation of patient conditions.
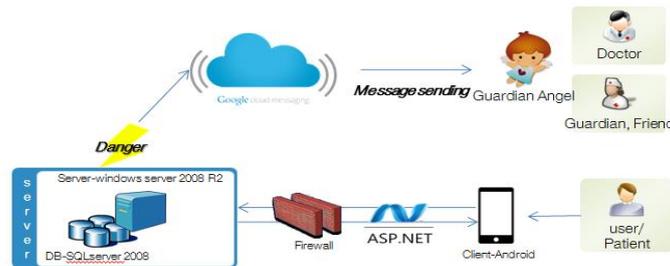

Fig. 2. DoctorCare® System. Client is an android-supporting mobile device and communicate with server. Server undertakes analysis and monitoring to provide doctors, friends or guardian with message.

4   Conclusion

The following is a DoctorCare® application. To access the system, enter user ID and Password and click on LOGIN. Users are encouraged to put data and check with graphs. Users can also make friends through the system and share the idea about the data each other. The system can provide friends or guardian with risk signs.
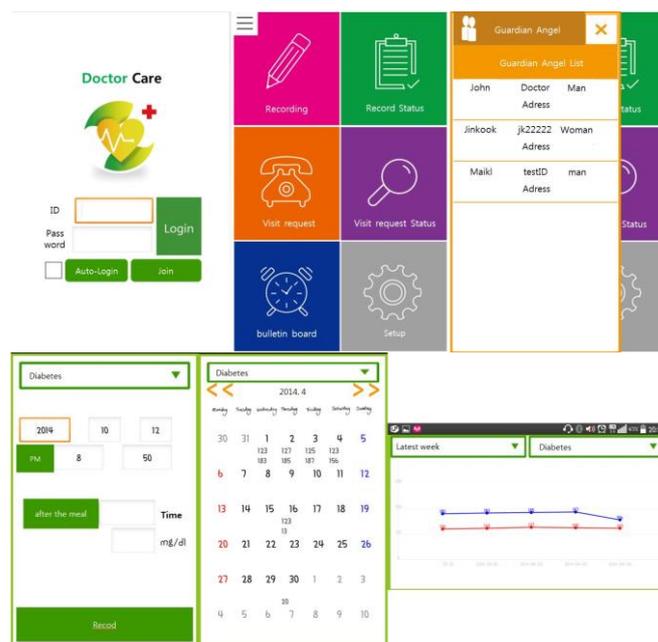

Fig. 3. DoctorCare® application.

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