



CARE4VALUE

A tailored platform to healthcare instruments in a Long-Term Care (LTC) environment

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CONTEXT

The goal is to develop and implement a model of management control information system, which enhances value creation (defined as health outcomes per unit of cost) in Long-Term Care (LTC) providers.

The model was developed, and its first intervention is being carried out in a partner LTC located in Portugal that holds short-term and long-term continuous care facilities with a capacity of 100 inpatients.

The Care4Value project introduced a platform to be used by the team of health professionals (HP) that were involved in several activities of the project. Their collaboration was vital to guarantee the aim and the functionality of the applications being developed.

The project has a multidisciplinary research team including distinct profiles (management, nursing and software engineering).

BACKGROUND

LTC providers must continuously monitor and assess the physical and mental condition of every inpatient. Thus, HP apply validated clinical instruments (scales) manually, both on a paper basis or using spreadsheets.

The data gathered by the scales is the basis to achieve the outcomes of this project.

It is vital to create innovative, practice-embedded and patient-centered tools to conduct both data collection and data visualization and analysis. Mobile applications to collect data and dashboards for the HP are becoming a de facto standard to achieve this goal.

They provide an effective support to the decision making by top level management and practitioners, uncovering the relation between costs and health outcomes and aiming at the organization's quality, efficiency and sustainability.

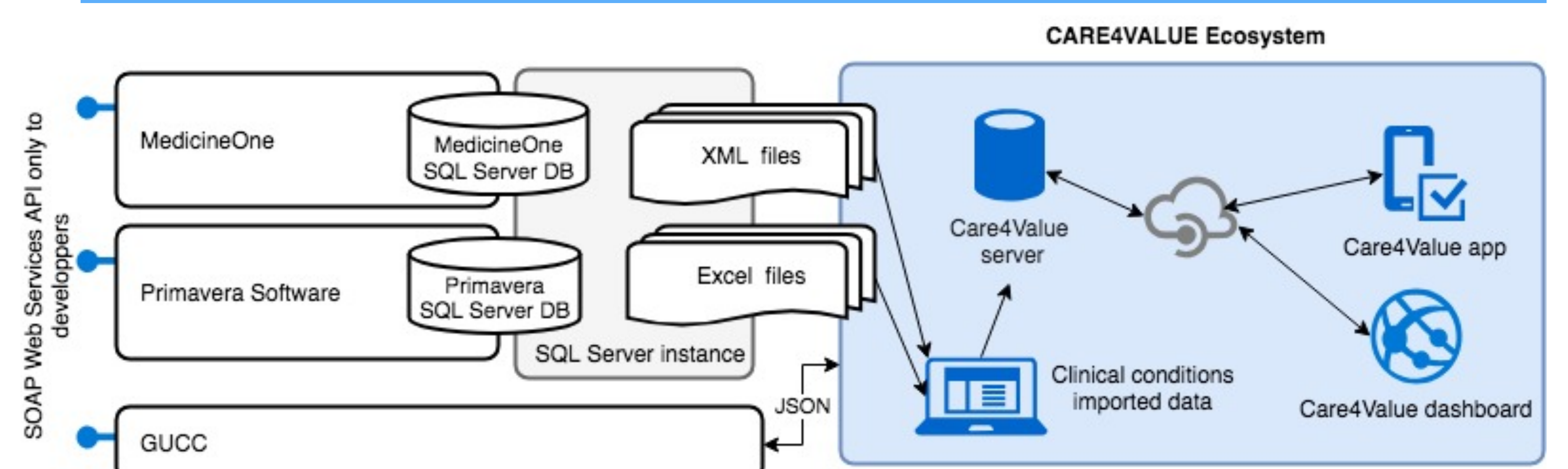
WORK

The **Care4Value** ecosystem includes: a **Mobile App** and a **Web Dashboard** that aim to provide a much-needed service for HP.

LTC units are still reliant on outdated procedures and a lot of redundancy. In the long run, Care4Value will **facilitate the work** of HP while providing **insights on the data**, allowing them to accomplish a **better management of the resources** available.

The mobile application used by HP and caregivers will, jointly with the available data from other clinical and financial information systems, allow the dashboard to show valuable insights on the clinical monitoring of patients and their caregivers.

CARE4VALUE - ECOSYSTEM



The integration between the data available in the existing clinical systems and the innovative tools, although limited, is being integrated in our platform (Figure 1).

The image shows several screenshots of the Care4Value interface. On the left, a mobile app screen displays a list of scales: Escalas, Qualidade de Vida do Cuidador Informal, Qualidade de Vida do Utente, Relacionamentos Familiares, Zarit, and Índice de Comorbidade de Charlson. In the center, a mobile app login screen shows the Care4Value logo and fields for E-Mail ou Nome, Password, and a Login button. On the right, a web dashboard shows a 'Gerir Escala' screen with a table of scales and their results. Below the dashboard, there are two QR codes.

IMPACT

The LTC professionals had to select, based on their work experience, the more **suited scales to assess a patient clinical condition**.

The **pilot** implementation started **January 2019** and it is currently undergoing.

Depending on how well received the developed project is, its **usage can be expanded to more LTC units**.

Features like visualization and predictions of patient progress based on existing data should be implemented into the dashboard, when enough data is collected.

LESSONS POINTS

Engage the team of HP in the LTC, early from the beginning - conduct a **focus group early in the process** with everyone involved. Interact and listen to everyone's opinion and collect most of the requirements to retain future users of the platform.

Start collecting your data "yesterday" – approvals and ethics committees tend to delay the data collection process that has severe impact on data treatment and analysis. Start with the data you have as soon as possible to "train" the platform.

Potentiate the data visualization features - automate part of the physical condition assessment of patients using nowadays commonly used technology like sensors (IoT).

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