



inDemand: Demand driven co-creation for public entities

CHALLENGE 2: GRAVIDITY

Pitch

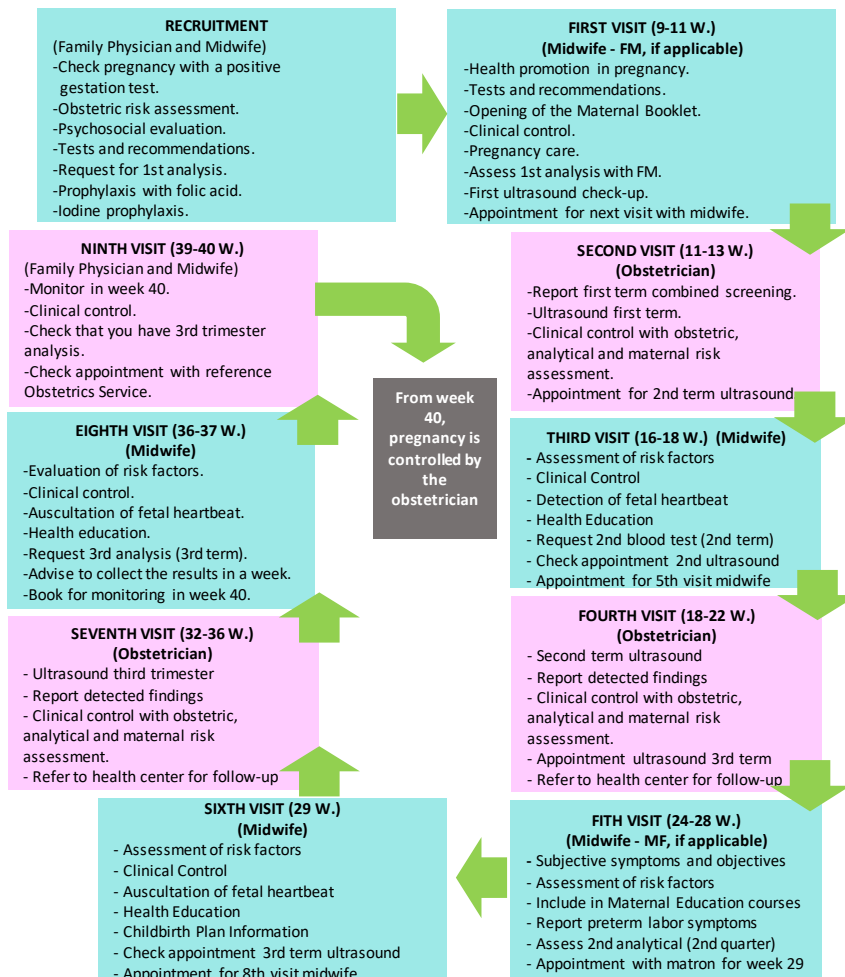
Digital card for monitoring pregnancy and puerperium of the Murcia Health Service (SMS).

Motivation and description

Pregnancy is a vital process that conditions health care for monitoring its correct evolution. During those months until the birth and also after the birth, during the puerperium, the physiological changes happen, becoming a challenge for the woman, and even for the sanitary personnel, to distinguish between the normal and the pathological.

The Comprehensive Plan of Care for Women in the Region of Murcia -*Plan Integral de Atención a la Mujer de la Región de Murcia (PIAM)*- advises 9 visits to primary care (PC) and between 1 and 3 hospitals, which means about 11 visits per pregnancy and 110,000 per year in the Region of Murcia.

The recruitment and follow-up of pregnant women is shown below



Three types of professionals from different fields are involved in the monitoring of normal pregnancy: the PC midwife, the PC doctor and the hospital obstetrician-gynecologist.

In order to guarantee continuity of care in the monitoring of pregnancy, the Pregnancy Card was created, a common register printed on paper that protects the pregnant woman and in which all the professionals involved register by hand. These records include filiation data, medical and obstetric history, analytical tests, ultrasounds, incidences, notes.

However, this format has many limitations, such as its partial completion, especially in the first 6 months postpartum -keys for breastfeeding-, problems of security and confidentiality of printed data, the proliferation of brochures for health education and the lack of proactivity in the role of women.

Implementing a digital pregnancy card, which includes the pregnant woman herself in an active way, extending its follow-up up to 6 months postpartum, would avoid duplicity of tests, unnecessary waste of paper, confusions produced by the manual text, lack of coordination among professionals. It would also be an opportunity to provide digital training resources to the pregnant woman adapted to each moment of her evolution, enabling her to be able to manage herself in most of the most frequent situations.

Main objective

Improve with a digital solution the accessibility and monitoring of pregnancy and puerperium up to 6 months for the pregnant woman, empowering her in the self-management of her process, as well as for the professionals involved in her care.

Pilot functional scope

The pilot will involve 2 Primary Care Teams (PCT) and its reference hospital with a total of 30 health professionals and 60 pregnant women.

Compulsory requirements

1. User environment will be a website for professionals (midwife, family doctor and gynecologist) and via smartphone for pregnant women. The solution will be hosted in the cloud and managed by the company with all the guarantees of privacy and security.
2. The solution will allow professionals to register via the web the monitoring of the pregnancy that is currently done on paper. The registrations made with the solution can be exploited or integrated into the corporate SMS through a web service.
3. A 'dashboard' view for health professionals where they can exploit all the information and ability to manage all women and detect abnormal situations or suggest changes, being able to configure a system of alerts to avoid them.
4. The solution will provide a printable summary view on a single page where key notes will appear in order to speed up important information in case of emergency and clarify the pregnancy situation at this time.
5. Facilitate access, intuitively and adapted to the channel, to a series of training resources provided by the Challenger that will offer women depending on their time of pregnancy or puerperium, including a list of frequently asked questions and recommendations (for example: signs of detection of a Threat of Premature Birth in week 28).
6. The pregnant woman will be able to see the result of her follow-up (filling in the card) through the app. It will also show a calendar of events/visits, helping you to plan, follow up and remind you of your appointments.
7. The solution will encourage through educational resources breastfeeding, dispelling false myths and motivating the puerperal in adherence through its monitoring.

Optional requirements

1. The solution will be able to apply Artificial Intelligence (AI) embedded in the workflow manager to alert of possible problems at the 'process' level not perceived by the actors or nodes.
2. Provide a guide for parents to help them in the procedures for registration, registration, health card, Social Security, etc. of the newborn.
3. We want technology to help in the adherence and sharing with third parties of good practices in pregnancy and breastfeeding, as well as community resources in a sustainable and cost-efficient way for SMS.

Clinical and Ethical and Data Protection

The Entity undertakes to process the personal data to which it has access as a result of the execution of the contract, observing the principles required by the legislation on data protection, in particular those relating to data quality, data security and duty of secrecy, as well as in accordance with the specific instructions received from the data controller, not using the data for any purpose other than the provision of services described in the object of the contract.

Likewise, it undertakes to observe professional secrecy, maintaining absolute confidentiality and confidentiality on any data it may come to know on the occasion of compliance with the contract, in accordance with the level of protection established in the [European data protection Regulation \(EU 2016/679\)](#) of the European Parliament and of the Council, of 27 April 2016, relating to the protection

of individuals with regard to the processing of personal data and Organic Law 3/2018 of 5 December, on the Protection of Personal Data and guarantee of digital rights, not communicating to any third party the data provided by the data controller. The data controller will determine whether, at the end of the services provided by the data processor, the personal data should be destroyed, returned to the data controller or handed over, where appropriate, to a new data processor.

The destruction of the data shall not proceed when there is a legal provision obliging their conservation, in which case they shall be returned to the data controller, who shall guarantee their conservation for as long as such obligation persists. This obligation will continue even after the end of their relationship with the person in charge.

The Entity will ensure and be responsible for its employees and / or collaborators, receive the data only to the extent that it is necessary to their knowledge for the provision of the object of the contract.

In the event that the Entity uses the data for purposes other than those stipulated, communicates them or uses them in breach of the instructions set out in this contract, it shall be liable for the infringements set out in Articles 70 et seq. of Organic Law 3/2018, of 5 December, on the Protection of Personal Data and the guarantee of digital rights, in which it has incurred.

Technological

The user identification will be then provided through the OAuth standard. The solution may notify SMS systems about certain events and situations. Ideally via 'HL7' messaging, but web services could also be an option. This information may include registration status, activity, progress and periodic (summarized) clinical information. The IT systems needed for running the solution will be hosted by the solver. If the complexity of the connections is too high or the personal data could be at risk, these systems could be hosted in local servers of the SMS. This will be established in a technical session at the beginning of the project. Anyway, the solver will provide mechanisms to guarantee that the Servicio Murciano de Salud can exploit the data.

No prior Challenger data is expected to be available, meaning all users will start as new users in the system. The repository of documents and resources to be shared with the end users will be supplied and / or validated by the SMS.

Expected impact and KPI

Register: Improved registration in pregnancy record booklet.

- Formula: Improved record = (fields completed with app - fields completed on paper) / total fields in Pregnancy Chart.
- Objective = 20%

Satisfaction: Tool satisfaction survey segmented by user roles (pregnant woman, midwife, family doctor and gynecologist).

- Objective: 8/10 in each user group (role).

Efficiency: Paper saving. Target: 20 pages printed in colour per pregnant woman.

Results in health: Quality of life compared with control (pregnant woman with paper card) assessed through the short questionnaire [SF12](#).

- Objective: 20% Improvement.

Business opportunity

The comprehensive monitoring of the pregnant woman as well as her inclusion and empowerment are difficult to guarantee without a digital and mobile solution. PIAM (*The Comprehensive Programme of Care for Women*) clearly establishes workflows and there are countless printed training documents whose digital consultation would make it easier for the pregnant woman to receive the right information at the right time and in the right place. A successfully validated solution in this pilot would be replicable throughout the Region of Murcia (10,000 pregnancies/year) and also in a very similar way to the rest of the autonomous communities of Spain, personalizing some changes in the workflow of the professionals involved.