



inDemand: Demand driven co-creation for public entities

CHALLENGE 4: DIGITAL ACTIVA

Pitch

Tool to help the management and monitoring of physical exercise prescribed for health.

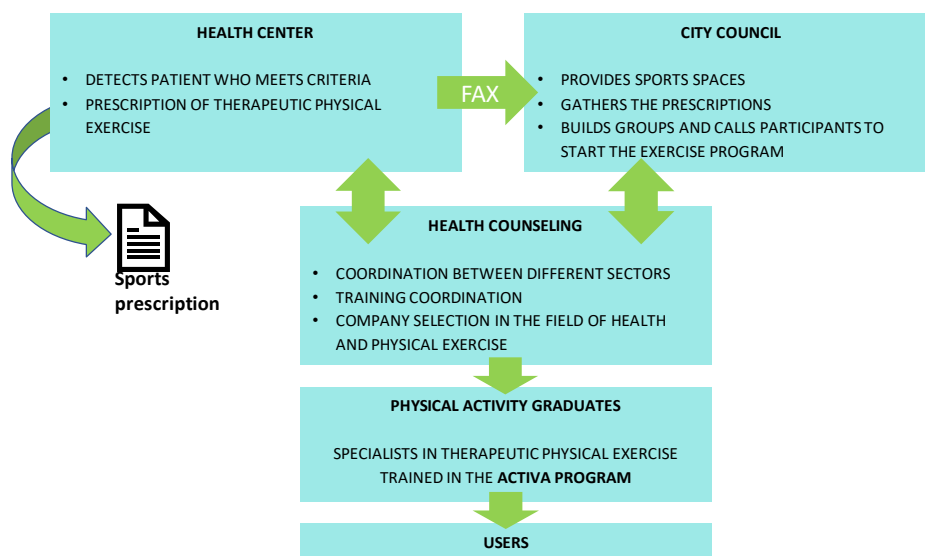
Motivation and description

Sedentary lifestyle is one of the main health risk factors in developed countries. It is related to chronic diseases as important as obesity, hypertension, diabetes mellitus type 2, hyperlipidemia, osteoporosis, ischemic heart disease and cerebrovascular disease, among the most serious¹.

Currently, the prescription of physical exercise from primary care (PC) is considered a fundamental tool in the fight against sedentarism. However, it is still a challenge to manage this prescription in an individualized way, and also to make it possible for it to be followed by the health professional.

Within this framework, the [Murcia-ACTIVA Program](#) was implemented in the Region of Murcia in 2010. Three entities collaborate in this program:

- **Murcia Health Service** -Servicio Murciano de Salud (SMS)-, whose health workers prescribe physical exercise from the PC consultations for patients with frequent pathologies.
- **The Regional Ministry of Health**, which is responsible for the program, manages collaboration agreements with town councils, trains prescribers and hires and trains graduates in Physical Activity and Sport Sciences (CAFD), who are responsible for implementing the program and analyzing the evolution of each individual's physical condition.
- The **Town Councils**, which provide timetables and sports spaces and assign a technician to receive the prescriptions via fax from the corresponding Health Centres. This technician organizes the groups and alerts each patient by telephone at the end of each month to come to the sports centre.



¹ Rodríguez Artalejo F, Graciani A, Guallar Castellón P, León Muñoz LM, Zuluaga MC, López-García E, Villar-Álvarez F. Justification and methods of the study on nutrition and cardiovascular risk in Spain (ENRICA). Rev Esp Cardiol. 2011; 64(10): 876-882

Activa-Murcia is currently implanted in 57 out of a total of 85 Primary Care Teams (PCT) in the region (67%), which means that part of the population does not have access to this physical exercise program.

Although Activa-Murcia has been a success (9,646 prescriptions, 1,083 of them in 2017) that is being exported outside our region, after 10 years of implementation there are still areas for improvement:

1. **Accessibility:** Only 66.5% of patients who receive a prescription for physical exercise do so in sports centres, mainly due to losses (33.5%) which may be due to fax connection or to incompatibility of time or place.
2. **Follow-up:** There is a lack of return of compliance with the program for all actively involved (both patients and professionals from the city council, healthcare providers or monitors), which weakens adherence (in the case of the patient) and prescription (in the case of the healthcare provider).
3. **Adherence:** Our studies show that the subjects who have carried out the program increase their level of physical activity but do not incorporate physical exercise as a lifestyle habit.

Main objective

Improve accessibility, monitoring and adherence to the prescription of physical exercise in patients within the Activa-Murcia program with a digital solution, facilitating patient empowerment as well as the control and change of workflow between entities.

Pilot functional scope

For the pilot, 2 town councils will be selected (one professional user per council) with one PCT per council (2 PCTs and 40 health advisors in total). 2 physical trainers and 100 patients will collaborate during a complete program cycle (6 months). The Ministry of Health will also be included in the pilot to manage and provide central SMS services (5 users in total).

Compulsory requirements

1. User environment will be the web for professionals (health, counseling, council and monitors) and a mobile app for the patient.
2. The user 'manager' will have a 'dashboard' that allows them to manage and monitor all programs, both individually and aggregated, facilitating the management throughout the entire program. This view will be intuitive and flexible, allowing not only statistics but also changes in the workflow of all the agents involved.
3. The solution must telematically transmit the exercise prescription (file with indicated fields provided by the SMS) from the prescribing entity (PC of the SMS) to the managing entity (Ministry of Health) so that it can administer the service to town councils and physical exercise monitors.
4. It will allow patients, healthcare professionals, town councils and monitors to consult on compliance with the exercise prescription, the study of pre and post intervention physical capacity. All this with due access, ensuring confidentiality, according to profiles to be established,
5. Gamification and socialization (facilitating the sharing of information or creating communities) or other strategies to increase adherence, during and after the activity.
6. Send messages or other motivational mechanisms to reinforce management of habit change, patient adherence and achievement of objectives, also forwarding to professionals a report of compliance and patient losses.

Optional requirements

1. Mechanisms to empower the patient, facilitating self-management of their health in a cost-efficient way, during and after the activity, in the most personalized way possible.
2. The solution must/facilitate community resources for the patient's own autonomous maintenance of the level of physical activity (self-care). For example, in large municipalities, a link to other initiatives to locate health assets at the municipal level would be of interest, as for example locate health map.
3. Integration with smartband platforms (Google Fit, Samsung Health, Fitbit, Garmin, Mi Fit, Health Mate) for measurement logs of steps and even raised floors.
4. Allow self-declared exercise calculation using IPAQ by measuring METS/week. It will also calculate the weekly MET target for each patient as well as the daily and weekly fulfillment of that target.

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 will not proceed when there is a legal provision requiring their conservation, in which case they must be returned to the data controller, who will guarantee their conservation for as long as this 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 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 guarantee of digital rights, in which it has incurred.

Technological

If solver proposes an App to be installed in smartphones, it must be called from the SMS Official App. The user identification will be then be provided through the SMS Official App, using the OAuth standard. The solution will 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

Accessibility:

- Increase the rate of realization of the exercise prescriptions, decreasing the current losses (33.5%).
 - Formula: % exercise executed = $100 \times N^{\circ} \text{ patients performed} / N^{\circ} \text{ patients with prescription}$
 - Objective: 90% (starting point = 66.5%)

Satisfaction:

- Satisfaction survey of the tool segmented by user roles (patient, health, council and monitor).
 - Objective: 8/10 in each group (role) of users.

Results in health:

- Quality of life before / after valued through the [SF12](#) short questionnaire. Goal: 20% Improvement
- Improvement of physical condition: Test before/after. Goal: 20% improvement

Business opportunity

The prescription of physical exercise from the health field is an international concern. Sweden³ is one of the pioneering countries in the use of the physical exercise prescription, but also countries such as the United States ([Exercise is Medicine](#)) are joining this new approach to health.

In Spain, more initiatives are emerging within the framework of the National [Strategy for Health Promotion and Prevention in the NHS](#), which aims to link prescription in PC with the community resources of its municipality, as is the [case of the Autonomous Community of Madrid in 2018](#).

With the pathologies or risk factors that we are currently addressing in Activa-Murcia, we estimate that the population that could benefit is 674,582 people between 35-80 years. The solution validated in the pilot must be replicable immediately in all the PCTs of the Region of Murcia, and then, with minimum adjustments, in the rest of the Spanish Autonomous Regions.