



Servicio Andaluz de Salud
CONSEJERÍA DE SALUD



Indra

Appointment Scheduling in Health Systems



Making appointments through multiple channels (in person, by telephone, over the internet and by SMS) for health services accessed directly by users noticeably increases their satisfaction, as well as improving convenience and reducing operating costs. For services requiring a request from a doctor, the integration of the request management system with the appointment scheduling system is essential in order to achieve effective appointments with a reduction of delays and compliance with response periods.



Channels for Requesting Appointments

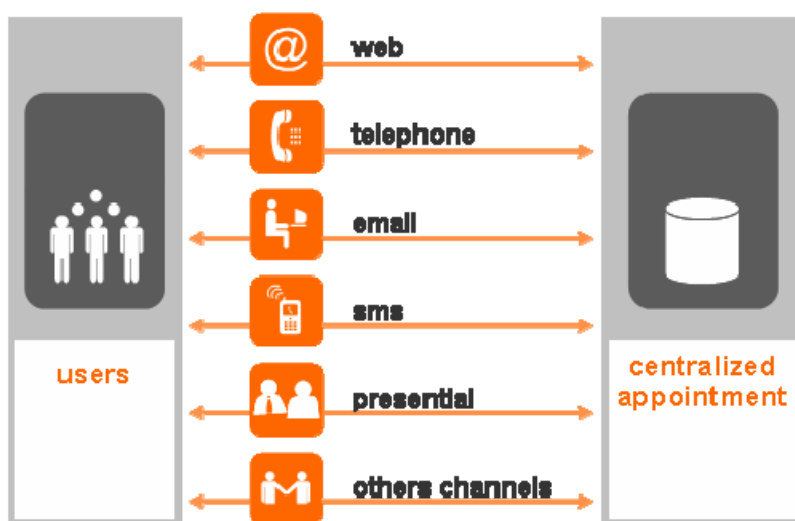
Appointment scheduling is an activity that consumes a large amount of administrative resources and, above all, the time of the users themselves. Therefore, health services must aim towards new appointment scheduling channels that facilitate more convenient services at a lower cost: appointment scheduling by telephone, by means of text messages (SMS) and appointments over the internet. These channels offer a service that is available 24 hours a day, with much shorter response times and better adapted to the user's needs.

Scheduling appointments can be considered the entry point to health services and therefore the first stage in which accessibility to these services can be measured. One of the strategic objectives of health systems consists of facilitating citizens the reception of healthcare services just when they need them, easily and without delay. Improving accessibility to these services is proof of the user-orientation of the health system in a manner that is directly perceived by society.

Once the telephone channel has been consolidated, a new challenge can be undertaken: introducing automatic response systems (Interactive Voice Response) such that response capacity and availability is increased at any time of the day. In any case, we must not forget that healthcare systems must be centred on the user, who must receive a service suiting his or her expectations.

From the point of view of the health services, the telephone system is remarkably less demanding in administrative resources thanks to centralisation and specialisation. So much so that, in our experience, 30% of the administrative staff required for attending the public in person and by telephone in the health centres themselves can be enough if the service is centralised in a single call-centre. For its part, the electronic mode embodies the concept of self-service, providing convenient advantages for the user and remarkable cost reduction.

Appointment scheduling occurs in multiple areas of care activities: visits to health centres, repeated visits requested by primary care doctors, external visits in specialized care, patient derivation, requests for diagnostic tests, etc. Clearly, it is an essential element in order to reinforce coordination between health professionals.



Appointment Requests

Appointment requests are understood as those agenda reservations for activities performed by healthcare professionals. We would like to highlight inter-consultation requests, referrals to specialists or diagnostic tests as common appointment requests among specialists. The information system that supports these requests must be equipped with a powerful tool that aids in assigning appointments according to the guarantee periods in healthcare (waiting lists).

Communication channels related to this type of appointment are also essential in user's satisfaction with their health services. Appointments made by a doctor in the presence of the patient, by directly accessing the schedules, has the fundamental advantage that both know immediately when the consultation requested to other specialist will take place. This eliminates part of the anxiety due to the delay, inevitable when there is a health problem; it noticeably increases convenience from the patient's point of view by allowing the selection of the appointment date and time according to the patient's needs, reducing the necessary time for the obtaining of appointment.

Other Mechanisms Related to Appointment Scheduling

A case deserving special attention is the massive appointments made in hospitals. This requires having automatic communication mechanisms for sending letters, emails or SMS messages to the corresponding users. SMS messages in particular have proven to be extremely efficient as reminders for appointments, reducing absences and facilitating the reassignment of cancelled time slots.

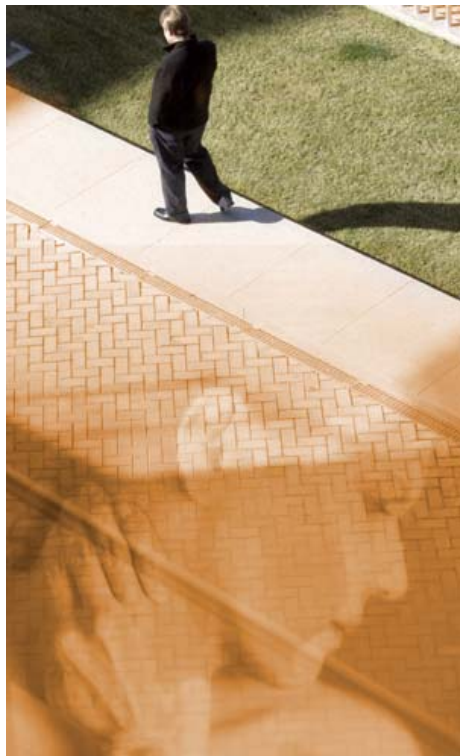
The Centralised and Integrated Appointment Scheduling Module (Request Management System)

The different modes of appointment scheduling must converge into a single centralised module that is independent from the access point: a desk at a health centre, a doctor's practice, a patient services point at a hospital, a telephone service, or the user's home. The appointment scheduling module is thus the core of a system that is completed with different specific interfaces for each type of user.

Unified access and permanent updating of the corresponding schedules is thus guaranteed as well as making maintenance easier. Despite this centralisation, administration of said schedules must continue to be the responsibility of the units in charge of them.

The request manager also presents an important characteristic, the link between the appointment and the corresponding activity, to a particular clinical context: evolution of a determined health process or episode and the clinical cause of the appointment.





Regarding connections with other systems, this module must integrate with the relevant modules of population administration (eligibility), medical histories and the hierarchical and functional structures of the health system, as well as file management. Identification of the beneficiary, access to appointment scheduling from the doctor's practice, correct assigning of the patient to required health resources and availability of the physical medical record if required at the time of the consultation would be assured.

Modalities of Health Resource Identification

Regarding the identification of the agent offering the service (specialist doctor, laboratory, medical equipment, etc.), two modalities can be considered: that in which it is not necessary to identify the resource, since any resource of the area can treat the patient, and that in which it is necessary to assign a specific resource. This translates into appointment scheduling according to two broad criteria: appointments based on activity, location and task on the one hand, and appointments based on professional/s, activity and task, on the other hand. In order to achieve this, two scheduling models must be implemented: schedules by activity and schedules by professional or group of professionals, if the task requires the presence of different specialists. Development of these modalities allows functional units to internally manage resources in a more suitable manner, something that clinical services are especially sensitive to.

On the other hand, in requests originating from one area with a destination in another area (hospital reference areas in the case of primary care centres), the request management system must display possible destination centres according to hierarchical relationship.



Schedule Configuration

As well as the ease for creating schedules by activity and by professional or team, schedules can be configured such that the duration of the appointments is flexible and in line with the nature of the service being offered, which will allow better use of the time. And this will be the case since, for instance, an appointment for prescription refills or renewing temporal incapacity reports last less than an appointment for clinical consultation. Depending on the centre's criteria, ordering the type of tasks (administrative and consultation) at different times or allowing programming both types of appointment within the same time period must be allowed. The centre can thus approximate the supply (number of appointments offered of each type) to the demand (number of appointments requested of each type) according to its own experience.





Daily schedules will be created according to weekly patterns, within which time periods will be defined for each day of the week, with the possibility of specifying the facts that usually condition appointment schedules. Among others we can state:

- Task duration
- The ability to assign appointments through external channels
- The minimum number of preferential appointments
- The number of reserved appointments

This allows, for example, specifying that on Monday afternoons the duration of appointments will be different to the rest of the week or that appointments requested through external channels, subject to other conditions to be taken into account, will not be admitted on Tuesday mornings.

Weekly patterns occasionally suffer modifications, and at certain times of the year they can be disturbed by the coincidence of holidays, vacations, the absence of the professionals, changes in schedules and other circumstances. The creation of extraordinary patterns that can be applied in a period during which the schedule structure is different must thus be allowed. Therefore, the daily schedule will be created according to the valid pattern for that day, taking into account any applicable exceptions. On the other hand, absences and substitutions of the professionals will be treated by means of links with substitution schedules.

Possible changes in patterns or the closing of schedules will require automatic relocation processes that will re-assign the appointments. A communication management system will take care of this, in the same manner as it did at the time of first assignment.



Results of Centralised Appointment Scheduling

As regards the results obtained, introduction of centralised appointment scheduling produces spectacular results in the accessibility perceived by users, remarkably increasing their satisfaction to the point of doubling the level reported prior to its introduction.

Main figures

The Andalusian Health Service introduced a centralised appointment system which provides scheduling in the in-person, telephone and internet modalities, all three converging into a single module that complies with the aforementioned features. More than 6.5 million appointments per month are scheduled through this system, 1 million of them through a telephone service centre. This telephone channel is especially efficient, since the average duration of calls for obtaining the appointments is less than one minute (50 seconds) with a response time between 4 and 6 seconds.

The Internet channel shows constant growth, currently representing 5% of the total of appointments, 10% being the target in the mid-term (data as of July 2007).

The existence of a centralised request module which is moreover integrated with appointment scheduling, allows a patient referred by his family doctor to a specialist to leave the centre on the same day as the visit having made an appointment for a day and time chosen by the patient himself.

Furthermore, from the entry into force of the Decree establishing response period guarantees in healthcare, first visits to specialised care and diagnostic procedures in the Public Health System of Andalucía, there is an additional module controlling compliance of the terms established, provided by the request management system and by the appointment scheduling module. It also generates alerts that allow detecting requests which, being within delay guarantee periods established by the decree, have not been scheduled within the stipulated period, providing the mechanisms for the appointment scheduling module to assign the appointments within the appropriate terms.

