

# Creating an electronic health record in Son Dureta Hospital

With a little help, Son Dureta Hospital in Spain transformed its paper communications trail to a fully functional electronic health record system. Joan Marques Faner explains how ...

**Joan Marques Faner** BSc

Chief Information Officer

Son Dureta Hospital  
Palma de Mallorca, Spain

**S**on Dureta Hospital has about 4,000 employees, 2,000 of whom are doctors and 1,000 nurses. The hospital is 52 years old but is waiting for a new building that has been promised in the next three years. Located in Palma de Mallorca, Son Dureta is the reference hospital of the archipelago of the Balearic Islands (Spain), with around 900 beds. It is one of seven public hospitals that exist in the Balearic Islands, where 1.5 million inhabitants live but more than six million tourists visit every summer.

All our public hospitals have a very different story to tell. For example, Son Llatzer Hospital (located in Mallorca island) is about seven years old and was a fully digital hospital from the onset. Mateo Orfila Hospital (located in Menorca island) moved in 2007 to a new building with a new IT system. Inca Hospital (also on Mallorca island) is only one year old. These different experiences proved that we were an active community in healthcare and offered Son Dureta Hospital some valuable tips on how to implement a full electronic health record (EHR). One such tip was that we needed to create our EHR before we moved to our new building. The tasks associated with moving home were deemed so hard that we could not expect simultaneous adoption of a digital system to be successful.

**Deciding to go digital**

Two years ago, we decided to start the process of going digital, but first we had to realise that we were a paper-based hospital: that is, we used paper to interchange information between departments, but most departments stored their information digitally. We wanted to improve the lack of department integration that resulted from paper communications, but we also wished to

maintain what was already running well. We wanted to find an easy way to change from a paper culture to a digital culture. We wanted to work with standards, but we didn't want a closed application as we still wished to work closely with the user to match their requirements. In the end, we decided upon a single-sign-on portal, giving users a unique way to access clinical information.

**Computerising the emergency department**

We started in the emergency department (ED). One of the main characteristics of the ED of Son Dureta Hospital is that it is staffed mainly by general practitioners (GPs). The GPs first attend the patients and, if necessary, consult a specialist (cardiologist, ophthalmologist, etc). In this way, most of the clinicians work in the ED. Therefore by introducing a digital system in just one department, the ED, we were actually stealthily introducing it to the whole hospital.

Computerisation of the ED, which was carried out by Orion Health, Oracle and Fujitsu Services, required the use of three interrelated tools: a clinical web portal, a clinical data repository and an e-whiteboard for patient tracking, medical referral management and online access to test results and radiology reports. Fujitsu Spain, leader of the consortium, coordinated the project and provided the necessary hardware.

**Creating a clinical web portal**

Son Dureta is the first site in Europe to implement the joint Orion Health-Oracle Healthcare solution for an EHR and clinical applications portal.

Via the clinical web portal, which is based on the Orion Health Concerto Medical Application Portal, clinicians can search and view information pertinent to their daily tasks, such as:



Want to know more about EHRs? Visit ...  
[hospitaliteurope.com/epr\\_ehr](http://hospitaliteurope.com/epr_ehr)



**Figure 1**

Son Dureta Hospital is located in Palma de Mallorca, and is one of seven public hospitals in the Balearic Islands

- The hospital intranet.
- Existing web applications.
- Relevant patient demographics.
- New clinical applications.
- Lab results.
- Discharge letters.
- Alerts.

Once a clinician has selected a patient, he or she has access to all the above information in a single-sign-on manner.

The Concerto clinical web portal also provides access to Orion's web-based orders module, so that clinicians can also order tests electronically. These orders are sent automatically to existing laboratory, radiology and anatomy/physiology systems.

#### Storing data

In order to deal with the multiple formats in which clinical data are stored, information is inputted into the Oracle Healthcare Transaction Base (HTB), an Oracle tool that stores and manages clinical data in HL7 version 3 format, via the Orion Health Rhapsody Integration Engine, a middleware application designed for the health sector that extracts clinical data and converts it

to a standard HL7v3 format for storage in HTB. This creates a permanent central repository full of normalised data. This means that unique electronic records can be created for each patient. Clinical information that is stored and maintained in Oracle HTB at Son Dureta includes:

- Clinical orders.
- Lab test results.
- Discharge letters.
- Patient demographics.

The e-whiteboard solution makes patient management in the ED easier. This tool shows up-to-date information about patients in the ED at any given moment. The information shown includes the location of patients, the doctors assigned to them, requests made and laboratory results. Details of the time taken for each part of the process are also shown. These solutions mean that by looking at just one screen the emergency doctor can see details of all the patients who have entered the department, the length of time they have been waiting, and all processes that are still pending.

Clinical notes in the ED consist of five different structured documents that fulfil the doctors' and nurses' needs while they attend the patients. When

the patient leaves the ED, a single "click" can generate either a discharge or inpatient letter.

#### Conclusion

The Son Dureta project was a pilot that implemented the Oracle HTB and the Orion clinical manager/portal into the Balearic Health Service (IBSalut) as the Regional Electronic Health Record. ■



Have **your** say ...

Have you had a similar experience implementing an EHR? Or a completely different experience?

Email us at:  
[hitefeedback@campden.com](mailto:hitefeedback@campden.com)