

Visit to the Command Center of the Sant Joan de Déu Hospital

Thanks to the kindness and long friendship with the Manager, Dr. Manuel del Castillo, and under the effective and detailed explanations of Dr. Francisco García Cuyás, I had the opportunity to visit on November 22, 2021, the Command Center of Hospital Sant Joan de Déu, from Barcelona.

Its start-up was carried out after the hospital's own development, in which healthcare professionals, bioengineers, computer scientists, data analysts, experts in artificial intelligence, etc. participated. and, of course, the management team.

This center is divided into three main components:

- Command center (monitoring of general hospital activity)
- Contact Center (a space enabled for non-face care)
- eCare (specific telemonitoring of clinical parameters of some patients)

The command center

An overview of the command center is depicted in Figure 1:

Figure 1: Command center overview



In it, we already see that this center is chaired by a large screen, in turn subdivided into 6 components, according to the scheme in Table 1:

Table 1. General screen representation of the command center

Urgencias	Plantas de hospitalización	"Facilities"
COVID	Programación quirúrgica	UCI

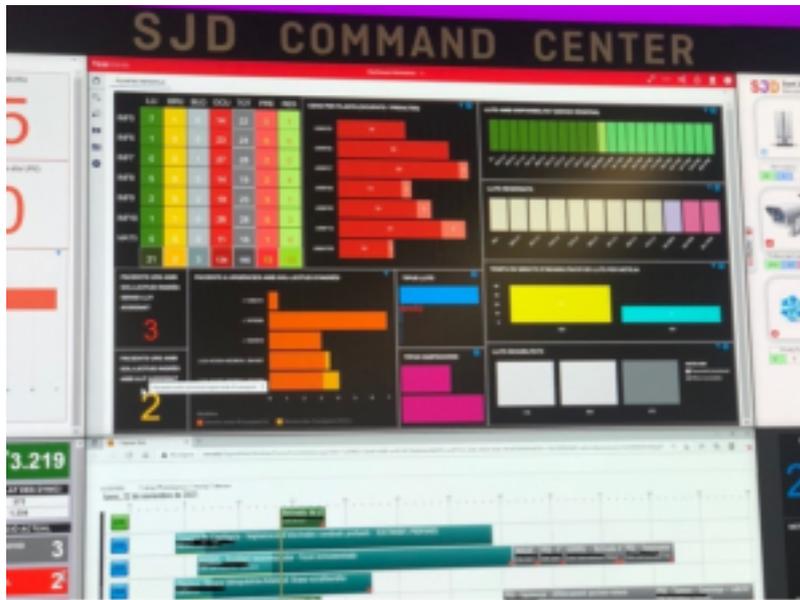
The emergency room panel is represented in Figure 2:

Figure 2. Representation of the emergency panel of the command center



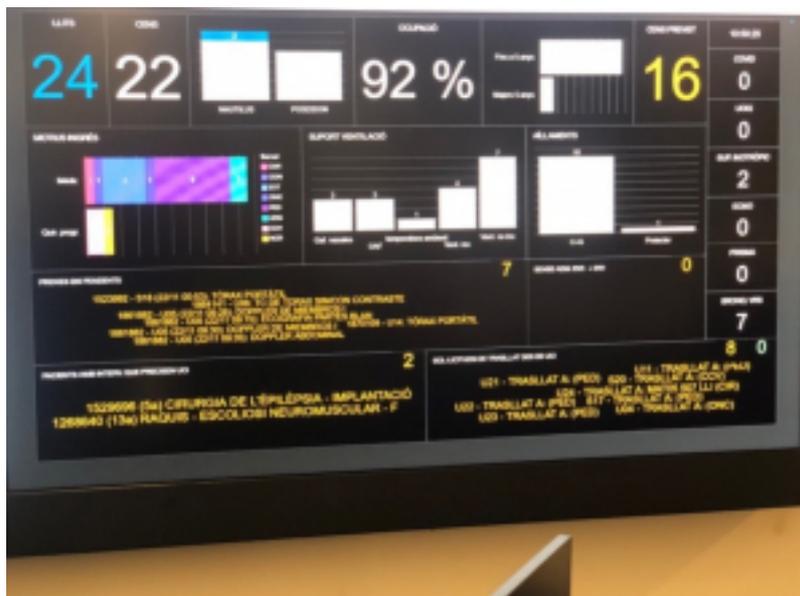
The panel of the hospitalization floor has this aspect of Figure 3, which incorporates an artificial intelligence algorithm that predicts the situation of the center for the next day, being able to see, in the lower part, a partial aspect of the monitoring of surgical activity (patient names are deleted):

Figure 3. Panel representation of the hospitalization floors



The panel with information about the ICU is represented in Figure 4:

Figure 4. Representation of the ICU panel



The COVID-specific monitoring panel is in Figure 5:

Figure 5. COVID-specific monitoring panel



In short, the command center provides a snapshot of all hospital activity. It is the evolution of the classic dashboard with real-time data and embedded AI algorithms. It is accessible to the entire steering committee and is evolving to continue incorporating predictive elements that accompany decision-making.

The contact center

Another component is the contact center, which is a place enabled to carry out visits, although each professional who is in this location of the hospital has on his computer the possibility of making visits from anywhere. What facilitates this site is an environment of privacy and adequate space so that these are developed in better conditions. It should be taken into account that the hospital performs about 100 visits / day, corresponding evisits to approximately 45% of hospital visits, having reached, at the peak of the pandemic, 80% of the percentage of visits in the hospital .

A photo of this space is represented in Figure 6.

Figure 6. Contact center vision



The eCare

Finally, the so-called eCare is possibly the most innovative element, since it monitors cardiology patients on the ward, analyzing 65 variables and using a predictive decompensation algorithm. Logically, it has the potential to monitor patients from many other specialties and not just patients admitted to the hospital.

The eCare screen is represented (with deleted patient names) in the following photo in Figure 7:

Figure 7. eCare Patient Monitoring Screen



In short, a breakthrough

The hospital's plans are to grow the Command Center, gaining in predictability and proactivity.

The challenges that the hospital had to address for this advance are those of work by processes, change management, multidisciplinary, construction of data environments, etc.

The approach is very original and the concept can be very interesting for Health Departments, private and public hospital networks, pharmaceutical and medical technology companies that need to monitor patients to pay for results, etc.

This experience is unique in Spain and extremely innovative in the world. Another thing that we learn from this excellent and cutting-edge hospital as Sant Joan de Deu, in Barcelona.