

CASE STUDY



SPAIN



HEALTHCARE

# ENHANCED CARE EXPERIENCES THROUGH INFORMATION-DRIVEN, PERSONALISED MOBILE ENGAGEMENT

Hospital Universitario 12 de Octubre is a large healthcare complex visited by more than 5,000 patients a day who come to receive various care services in complex buildings that can be hard to navigate. The hospital management wanted to improve the visitor experience with an app to guide patients. The aim was to prevent uncomfortable situations when walking between locations and improve appointment management and the information provided to families and people accompanying patients to operations.





## THE CHALLENGE OF MAKING ARRIVAL AT THE HOSPITAL LESS TRAUMATIC

Healthcare should be personal. It's obvious. But in an industrial healthcare world, it's not always possible.

Hospital Universitario 12 de Octubre is one of the most important hospitals in Madrid. 'Humanisation' of healthcare is a key component of its strategic plan.

The plan is focused on improving the health of patients through personalised, safe, integrated and continuous care. There is an emphasis on creating a pleasant and comfortable environment where patients never feel abandoned or uncertain of their situation. This should start the moment they or their visitors arrive at the hospital.

### Care from the moment of arrival

Hospital Universitario 12 de Octubre is typical of many city centre hospitals. It comprises three large buildings - inpatients, maternal-paediatric and outpatients, plus six smaller sites. Navigation can be a real challenge.

As part of its personalised care plan, the hospital has a welcome and support programme for both inpatients and unaccompanied outpatients. It wants to reduce the stress around hospital visits and also ensure patients arrive on time for appointments.

"A common misconception is that when patients arrive at a hospital, that's it. But that's not true," says Pablo Serrano, Planning Director at Hospital Universitario 12 de Octubre. "Users have to interact with many different elements, there are different moments, different places to go. Each patient has their own itinerary, contacts and appointments.



## REQUIREMENTS

- Virtually accompany patients upon arrival and when moving around the hospital
- Provide simple and visual integration of third-party applications in a single app
- Empower the digital transformation vision of the hospital
- Drive more intelligence and automation at the edge of the network

## SOLUTION

- Aruba Meridian
- Aruba BLE Beacons
- Interactive application
- Aruba Mobility Controllers
- Aruba Access Points
- Meridian Blue Dot Navigation
- ClearPass Policy Manager
- AirWave for WLAN monitoring and management
- Aruba ClientMatch / AirMatch
- Aruba Mobility Controller Firewall and AP Policies

## OUTCOMES

- Allows personalised, integrated, patient-centred healthcare
- Creates a direct information channel for patients and relatives
- Maintains security across all patient data while sharing with medical staff
- Helps reduce the number of missed appointments, improving healthcare productivity
- Simplifies the management of medical certificates
- Brings technology familiar in personal life into a healthcare setting
- Reduces strain on staff and frees up time for more patients

"We wanted to find a way to use modern technology to guide patients, orienting their access to, and contact with, the hospital."

### Technology for improving healthcare

The solution is the TGUIO app. Based on the Aruba Meridian mobile app platform, the app's development is a result of the partnership between Aruba and Madrid Digital, the



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Planning Director, Hospital 12 de Octubre de Madrid

Digital Administration Agency of the Community of Madrid. The latter is responsible for the development of IT applications, IT systems and providing infrastructure for the Autonomous Community of Madrid. Aruba is the supplier of the hospital’s Wi-Fi network.

Long term, the plan is for this high-performance, stable and secure network to cover the entire complex, with over 480 wireless access points blanketing the site. This will also allow doctors to access medical records and other health applications essential for advanced medicine on their hospital-issued tablets.

The Meridian software platform can be accessed from anywhere via the reliable and uninterrupted Wi-Fi. It provides visibility, analysis, and the scope required to provide services in any context, from a single building through to large public spaces.

### **PUSH-NOTIFICATIONS WHEN AND WHERE THEY ARE NEEDED**

Key to the Aruba Location Services solution are the 250 Aruba Bluetooth Beacons. When a mobile device with a Meridian-powered app is within range of a beacon, visitors can receive personalised proximity-aware notifications, tailoring their preferences via an opt-in mechanism. A blue-dot navigation utility indicates their real-time location on a map of the public space.

Aruba Beacons use BLE (Bluetooth Low Energy) technology to provide indoor location data for mobile devices. This data is critical for location services for routes inside build-

ings, proximity-aware push notifications and other location services on mobile apps.

The main advantages of the Aruba and Madrid Digital initiative in terms of equipment are that there is no need for additional investment in hardware beyond the beacons, the low cost of implementation, the ability to avoid an intrusive deployment and high-precision location services.

“The result of the experience is improved accessibility, guiding people’s movements and the provision of information,” explains Serrano. “Our strategy aims to simplify the life of patients and add value. We can do this thanks to integration with elements already present in the hospital through other services.”

In addition, Aruba ClientMatch ensures network users maintain uninterrupted roaming throughout the site, while AirMatch intelligently adjusts RF coverage, bandwidth and channel assignments to optimise the roaming experience. In an environment where cellular network coverage can be patchy, this seamless connectivity is essential to the effectiveness of the app. It ensures the app works every time.

### **Accessibility, guidance and information**

Phase 1 of the project sees the TGUIO app in use throughout the outpatients building. New buildings will be added in phases, eventually covering the entire site.

The primary feature of the app is a real-time map for patients. The app guides patients along optimised routes, preventing them from getting lost, taking long routes or entering unauthorised areas.

The second feature involves notifying the hospital of the arrival of patients on the premises. It can then tell visitors what to do next. The app is integrated with the existing check-in, queue management, appointment management and electronic medical records solution.

When patients check in on the app, the status of the appointment is updated on the hospital system. This allows doctors and nursing staff to see that the patient is in the waiting room, optimising the available care time. The app can also issue a certificate of the appointment, which can be downloaded to the patient’s smartphone.



Patients can also opt in to receive general notifications from the centre and healthcare news on their phones.

As an additional and third option, the app can also include information for relatives and companions on the status of a patient's treatment, and in particular the progress of their operation in the operating theatre. It allows them to view activities from their mobile devices, including the end of the operation or the time a patient entered theatre. Access is managed via a secure PIN. The app is fully secure and access to the information is purely reserved for companions authorised by the patient.

### Data security today and into the future

Beyond the app, the engagement with Aruba establishes a secure, easy to operate approach to network management. It allows staff and clinicians to access, modify and share patient records in real-time in a secure and protected manner. It also enables the hospital to provide, detect, authenticate and monitor hospital-issued mobile devices for access to the network, and to clinical applications and records.

In an age of GDPR and strict data protection requirements, Serrano says Aruba solutions, particularly Aruba ClearPass and the Mobile First Architecture, keep the hospital ahead of the industry regulators.

### Technology applied to real cases

It is at the network's edge that experiences will be made, says Serrano. The hospital is now in a position to test new, intelligent, data-enabled interactions, all built on the Aruba Edge Architecture. These experiences will be geared at improving the patient experience and reducing the strain on medical teams.



He says the success of the project is partly that it has been so visible. Staff, patients, and visitors can see progress.

"Patients and their relatives wanted to see a leap forward. We did just that, making what is normal in their daily lives normal in the hospital," explains Serrano. "We think the app will become the preferred check-in tool and that the experience will soon be rolled out in other hospitals in the Community of Madrid."

He says the support from Aruba has been fundamental in the project's success: "We had to install a large number of access points and beacons and integrate numerous tools. We hope to build on the partnership in the future by incorporating new location services using mobile technology.

José Luis Miguel, of the consultancy and project team at Madrid Digital, says the project is an example of how partnerships with key suppliers can go beyond technology: "We're extremely satisfied at being able to work with companies like Aruba, which are able to bring technology to real cases and make it genuinely useful."