



## Interactive Oesophageal Gastric Surgery Course for 4th and 5th year residents in partnership with the Spanish Association of Surgeons (AEC) at Hospital Universitario Torrecárdenas in Almería

### User

#### General and Gastrointestinal Surgery Unit at Hospital Universitario Torrecárdenas in Almería



Hospital Universitario Torrecárdenas in Almería is a health facility run by the Andalusian Health Service (SAS) which comes under the Andalusian Regional Ministry of Health and Consumer Affairs.

It is made up of five sites: Hospital General Torrecárdenas, Hospital Materno Infantil, Hospital de Alta Resolución (HAR) El Toyo, Centro Periférico de Especialidades (CPE) Bola Azul and the Centro de Alta Resolución (CARE) Nicolás Salmerón.

Almería has a population of 731,792 and it is the referral hospital in the province for some diseases. It serves around 338,000 people in its catchment area.

It has 836 beds, 17 operating theatres and 115 consulting rooms.

It employs over 4,000 staff, around 75% of whom are healthcare professionals.

Its surgical operations, including emergency, scheduled, major outpatient and minor outpatient surgery, came to nearly 25,000 surgical procedures in the last year.

Its General and Gastrointestinal Surgery Unit led by Dr Ángel Reina Duarte has achieved “optimum” certification from the Andalusian Healthcare Quality Agency (ACSA) and is a national benchmark in several specialities.

### Challenges

**Remote education and training of professionals.**

**Management of images generated in the operating room or in the hospital information system for local or remote viewing.**

**Case repository for diagnostic and teaching purposes.**

One of the Hospital’s key goals is to deliver professional development, qualification and skills training for in-house and third-party staff.

Every year they train over 1,800 professionals locally, but they also need to teach external healthcare practitioners who can learn from proven experience in techniques where Hospital Universitario Torrecárdenas is a recognised leader.

Its General and Gastrointestinal Surgery Unit is an expert in colorectal, oesophageal gastric, bariatric, hepatobiliary and pancreatic, endocrine, abdominal wall, breast disease and other kinds of surgery.

In partnership with the Spanish Association of Surgeons (AEC), an Oesophageal Gastric Surgery Course was scheduled for 21-23 October 2022 for 4th and 5th year residents from all over Spain. It provided onsite training coupled with e-learning for other facilities featuring interactive video collaboration between participants for their personal and professional education and development in surgical procedures and services and in performing new processes and techniques.

This involved sessions enabling user-friendly handling of any image generated in the operating theatre or from the hospital system including medical instrumentation, overhead and lamp cameras, vital signs, diagnostic tests, etc. for viewing on local screens and transmission to others in order to actively collaborate in the surgical procedure.

Finally, another goal was to build a repository of classified cases for later querying and retrieval for diagnostic or teaching purposes.

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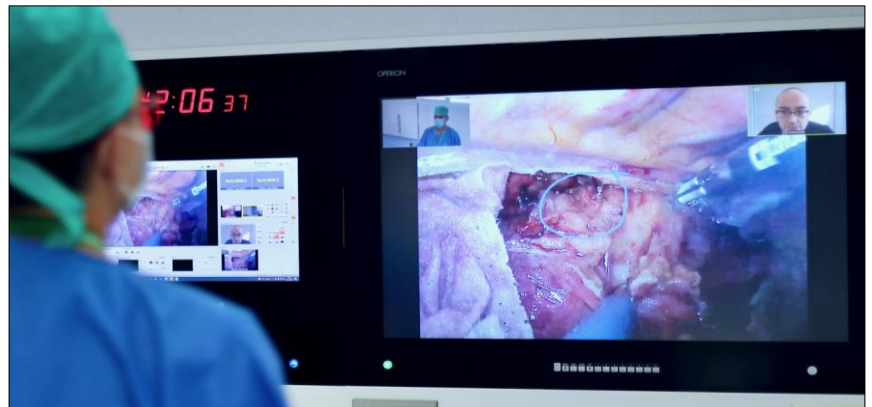
## Solution

**Operating room integration solution that allows management, teaching and interactive support for collaboration among professionals, equipped with videoconferencing in private virtual meeting rooms and interactive image additions for mentoring.**

Azinsol's operating theatre integration solution "MVM Operating Room Video Manager" has been used to capture, distribute and manage images produced in the operating theatre. It is powered by the "MVM Live Collaboration" module which allows interactive support by combining video, audio, images and relevant contextual information coupled with the application of interactive add-ons such as pointing with a laser or drawing freehand annotations on the visual field which enhances the shared and two-way real-time control of the session.

The MVM solution has been integrated with the Pexip videoconferencing platform equipped with Virtual Meeting Rooms (VMR) with managed node hosting on its own servers. This ensures the security and privacy of the meeting along with the image, video and audio quality required for clinical practice. The Pexip Infinity platform makes it possible to generate customised VMR for each event which allows the mentor to connect to a secure website and intervene using interactive tools on the images broadcast from the operating theatre, thereby combining diagnostic quality images and outstanding two-way communication.

The Pexip Infinity video communications platform has recently successfully passed the National Cryptology Centre (CCN) audit and gained LINCe security certification under the CCN's security reference framework. Critical videoconferences, such as healthcare content supported by the Azinsol + Pexip solution, thus comply with hospital information systems' statutory security and integrity obligations.



**The Interactive Oesophageal Gastric Surgery Course for 4th and 5th year residents demonstrated laparoscopic and thoracoscopic surgical techniques in different surgical sessions.**

The Interactive Oesophageal Gastric Surgery Course for 4th and 5th year residents demonstrated laparoscopic and thoracoscopic surgical techniques, including surgical sessions with benign (achalasia, reflux, hiatal...) and malignant (oesophageal and gastric cancer) GIST disease. The course teaching team was led by Dr Ángel Reina Duarte and coordinated by Dr Elisabet Vidaña Márquez, head of the Oesophageal Gastric Surgery Unit, with the assistance of Dr Ricardo Belda Lozano, Dr Pedro Antonio Sánchez Fuentes and Dr José Ruiz Pardo. Other multidisciplinary professionals also took part including oncologists, gastrointestinal specialists and pathologists from the Hospital.

## Results

**The combination of physical, logical and communication elements facilitates medical telecollaboration.**

The solution rolled out in Hospital Universitario Torrecárdenas's general and gastrointestinal surgery operating theatres is made up of physical elements meeting security and environmental standards in line with specific needs (processor, high-resolution touch control and display screens, peripheral switching, capturing and scaling devices, motorised ambient cameras and wireless audio, etc.); logical elements enabling integrated and collaborative management between professionals, and telecommunication elements delivering interactivity through videoconferencing and tools for sharing images between the operating theatre and the remote expert professional or mentor.

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## Results

**Participants interact and communicate as if they were in the room together, increasing clinical efficiency.**

Allows interactive pre and postgraduate distance teaching of other professionals and also the facility of video collaboration to support a remote surgery intervention, providing it with specific client software that includes audio and video intercommunication tools and interactive image additions for diagnostic assistance.

## Feedback

**"The system is powerful and versatile yet also user-friendly and intuitive."  
"As a reference hospital, we are considering extending the solution to other teaching and video collaboration activities among professionals."**

"We are very happy with it. The system is exceptionally powerful and versatile yet also user-friendly and intuitive."

"Given the success of this initiative for conducting interactive courses anchored in our areas of expertise, in the immediate future we are planning to expand our work as a referral hospital by drawing on this solution for:

- Training and video consultation with facilities affiliated to the hospital such as Hospital El Toyo, and with other hospitals in the province of Almería (Hospital La Inmaculada de Huerco-Overa and Hospital de Poniente).
- Training in basic surgical techniques for primary care centres.
- Interactive training in the operating theatre with medical and nursing students at the University of Almería.
- Video collaboration with professionals at other Andalusian Health Service facilities and also nationwide."

**Dr. Ángel Reina Duarte**

Head of the General and Gastrointestinal Surgery Department  
Hospital Universitario Torrecárdenas

**"Simple and effective tool for routine operating theatre procedures"  
"The solution ensure the security, reliability and confidentiality, which is essential for the healthcare sector."**

"The Azinsol + Pexip solution is a simple and effective tool for routine operating theatre procedures, including distributing medical sources, streaming, recording and mentoring."  
"Pexip's certifications earned from the National Cryptology Centre and its high availability ensure the security, reliability and confidentiality of the solution which is essential for the healthcare sector."

**M<sup>a</sup> Esther González Revuelta**

Director of IT and Information Systems  
Hospital Universitario Torrecárdenas

