

Southwest Surgical Center

EDINA, MN

CASE STUDY | HEALTHCARE

➔ Challenge

Provide outstanding video for surgeons and simplified video routing for OR staff during minimally invasive surgery.

➔ Solution

Build a specialized operating room video product, ORView, based on Crestron DigitalMedia™ technology and Crestron control.



Our clients have extremely high standards. They absolutely assume the video system will work properly and work every time. Yet they don't necessarily understand the nuances of digital video."

— **Rodger DeGeorge**

CompView Audio Visual

At the Top of Their Game

Crestron helps Minnesota clinic monitor instruments for minimally invasive surgery

You've torn up your knee playing softball, and now you need surgery to get back on your game.

Fortunately at the clinic you've chosen, the Southwest Surgical Center in Edina, Minnesota, minimally invasive techniques are the norm. You know the procedure will be relatively easy and recovery quick. Yet this type of surgery is video-intensive, so you hope the technology they use is the best.

Thanks to Crestron and CompView Audio Visual, it is.



The latest surgical techniques

Southwest Surgical Center is an orthopedic medical clinic affiliated with Abbott Northwestern Hospital in Minneapolis.

They provide arthroscopic joint repair and other surgical services, as well as patient consultation, X-ray and MRI scans, patient consultation, and physical therapy.

The technology in use at Southwest Surgical is part of an ongoing revolution in operating rooms (ORs) around the world. Minimally-invasive procedures are used today, not only for sports-related injuries, but also surgery of the heart, lungs, and other body systems.

Crucial to the trend is the use of the endoscope, an instrument consisting of a tiny video camera and fiber optic light source that's inserted via a flexible tube into an organ or body system. The endoscope makes it possible to monitor and guide specific, robotic instruments used for the procedure, which may be inserted separately or may be combined with the camera system.

The endoscope, in turn, is dependent on the monitoring equipment installed in the operating room. Although federal regulations enforce minimum standards for equipment safety, there's a lot of variation possible in the simplicity of the system's operation and the sharpness of the images produced.

"Our clients have extremely high standards," says Rodger DeGeorge, VP of Business Development for Medical Systems at CompView Audio Visual. "They absolutely assume the video system will work properly



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and work every time. Yet they don't necessarily understand the nuances of digital video and may put up with something less than ideal if they don't know there's something better."

Administrators are used to paying top dollar for medical systems and don't always realize that video systems can be purchased separately, work better, and be more cost-effective than those provided by medical equipment companies. Such was the case at Southwest Surgical last year.



“We had been called in for service work in one of the operating rooms,” DeGeorge recalls. “It was an older analog video system, really past its useful life. We suggested replacing that system with one of the new digital systems we offer.”

ORView and Southwest Surgical

According to DeGeorge, CompView has been working in the medical market for a number of years installing custom-designed video systems for operating rooms. Recently, however, they’ve standardized their offerings under the brand name ORView, in an effort to reduce delivery times and lower costs.

“The biggest challenge at Southwest Surgical was installation time,” DeGeorge explains. “Hospitals and clinics simply cannot afford to shut down an OR to allow us to work.”

For that reason, the CompView team began their work at Southwest Surgical on a Saturday morning and had to be finished by Sunday night, with any potential hang-ups to be solved before dawn on Monday morning. “We avoid last-minute problems by building our systems in our office and fully testing them before they go out to the client,” DeGeorge says. They also sent a technician while still in the design phase, to test the instruments at Southwest Surgical, to make sure they knew of any potential interface problems.

ORView consists of custom software written using Crestron’s SIMPL Windows programming software, plus a Crestron 3 Series Control System®, DigitalMedia™ transport and switching, medical-grade LCD displays and the hardware to attach the displays to the client’s overhead boom system. ORView also includes a high-

end sound system for those surgeons and staff who like to listen to music while they work.

“The great thing about ORView is that we’ve created the software features most useful in a surgical environment, then tested and refined them over dozens of installations,” DeGeorge explains. The result is a very flexible system that can be scaled and customized to the needs of each surgeon or each type of surgery, simply by turning features on and off and choosing the most appropriate hardware. It’s a big help that Crestron technology is scalable as well, so that CompView can size the control processor, switcher and other components with little or no change to the software.

At Southwest Surgical, CompView installed a Crestron DigitalMedia network with a 16X16 switcher, a medical-grade monitor for the surgeon’s use, another for the nurses’ use, and a video capture device to record images from the procedure. One of the nurses controls the video system and the room lighting using a 19” medical grade touch screen tied into a Crestron control processor. CompView also installed four auxiliary wall plates, so the surgical team can plug in specialized instruments that may not already be installed in the overhead boom.

Four main advantages

DeGeorge says there are four main reasons why Southwest Surgical chose ORView.

1. Reliability. “Absolute reliability is not so much a competitive advantage as a minimum requirement for entry into this market. Our use of superior hardware and software, like that provided by Crestron, allows us to be successful in this environment,” he explains.



2. Flexibility. “The combination of Crestron control and DM® technology allows us to do virtually anything the client requests. If they need five inputs or 15, we can provide them at a reasonable price.”
3. Affordability. ORView costs less than the proprietary systems offered by medical equipment manufacturers.
4. Ease of use. “We spend a lot of time on the user interface, and our medical clients tell us ours are a lot more intuitive than others,” DeGeorge adds. “Things can happen pretty quickly during surgery, and the last thing you want is someone fumbling for the right control.”

Crestron DigitalMedia technology, he adds, is especially useful because hospitals and clinics tend to have a lot of legacy instruments that may have SDI, S-video or even composite video outputs. “DM allows us to connect any medical instrument with a video output and provide the best possible images.” In addition, the twisted-pair network cable standard to DM is easy to install in the limited space in an operating room equipment boom. Its ability to transport and switch high-end audio is a big plus as well.

A nice feature of a Crestron control system, he adds, is its ability to control a Windows® based computer. That was very helpful at Southwest Surgical because they use specialized software to confirm the patient’s ID, list details of the procedure to be performed and its milestones, all of which the nurse can access and check off right from the touch screen.

“Using the Crestron software, we were also able to program the system so that when the team captures an image from the endoscope, it appears briefly, picture-in-picture on the surgeon’s monitor to confirm what was captured. Next, it is saved automatically to the clinic’s PAC [Picture/Archive/Communications] system to become part of the patient’s record.”

Some operating room systems are more complex than those at Southwest Surgical. “We can build an overhead camera into ORView, to capture video of the surgery for students or residents to watch. Some of our larger clients send feeds from OR cameras to a nurses’ station outside. That allows the nurses to see when the surgeons are finishing up and get a team in quickly to turn the room over for the next procedure.”

Often there’s a large, wall-mounted monitor, separate from the one at the nurses’ station, to display checklists, patient vital signs and other useful information. More and more ORs today include video conferencing systems, so that specialists can watch and be consulted on a procedure without the need to be there in person.

For their part, the staff at Southwest Surgical are very pleased. “Once the first OR was installed and operating, they came back and asked us to install a similar system in the second,” DeGeorge explains. “The video system worked so much better, they saw it as a major advantage for their surgeons.”

Integrator
CompView Audio Visual www.compview.com