



A holistic approach to pediatric cancer care

Children's Hospital of Orange County (CHOC Children's) spearheaded the Virtual Pediatric Network (VPN) to serve as a hub for collaboration.

“Cisco understands that everything can be connected. It's not an idle claim, it's in their DNA.”

- Dr. Leonard Sender, Medical Director, Hyundai Cancer Institute at CHOC Children's and Division Chief of Oncology, CHOC Children's

Cancer is a complex disease further complicated by the unique needs of children, adolescents, and young adults. No single institution has all the answers.

Challenges

- Simplify access to pediatric cancer experts from multiple organizations
- Bridge the distance between researchers and clinicians
- Eliminate traditional barriers to communication

A child newly diagnosed with leukemia was about to embark on a treatment plan that only had a 40 percent success rate. The boy was too sick to travel, but his family was desperate for a second opinion. They had heard about Dr. Leonard Sender, the division chief of Oncology at CHOC, and scheduled a video call with him using a basic consumer application.

“The ability to see one another was a very powerful moment for me,” says Dr. Sender, who also serves as the medical director for the Hyundai Cancer Institute at CHOC Children's. “Although we were physically separated, I was able to offer the patient another treatment option with a better outcome.”

It was a watershed moment for the renowned physician and researcher, whose vision was to create a research program focused on the genomics of cancer. But first, he needed technology that would bring together the best minds, regardless of their locations.

Case Study | CHOC Children's

Size: 2,500 Employees

Location: Orange, California

Industry: Healthcare





Cisco® collaboration endpoints and conferencing enrich collaboration between dispersed pediatric cancer experts.

Solutions

- Built the Virtual Pediatric Network (VPN) using Cisco TelePresence® solutions
- Connected oncologists and researchers with virtual and collaborative Cisco technologies
- Secure and scalable network foundation with Cisco Nexus® and Catalyst® Switches, and Cisco Integrated Services Routers (ISR)

Bridging the geographic divide

Since 1964, CHOC Children’s has nurtured, advanced, and protected the health and well-being of children through innovative care and state-of-the-art facilities. Dr. Sender followed his vision to secure private funding and a grant from Cisco Corporate Social Responsibility (CSR), and the VPN was born.



Built on Cisco TelePresence and networking solutions, the VPN hub resides at CHOC and connects the hospital with experts at five other clinical sites and one research institute. The VPN consortium aspires to link to 200 facilities currently involved in delivery of care to pediatric cancer patients nationwide.

“Everything we do is about relationships,” says Dr. Sender. “Exchanging ideas at an annual conference is nice, but seeing each other regularly enables us to strengthen professional bonds and build a collective intelligence so that we can provide the best treatment options possible to young cancer patients.”

Instead of driving or flying for hours—missing critical face time with patients—participating organizations can schedule meetings without having to leave their offices.

Transparent engagement

Prior to VPN, clinicians and researchers collaborating on complex cases relied on teleconferencing calls and email to communicate. But the lack of visual cues coupled with dropped calls and lengthy email trails often resulted in treatment delays.

“The norms of communicating are understood with Cisco TelePresence solutions,” says Dr. Sender. “It’s more efficient to have everyone simultaneously engaged on a case during a high-definition video conference. The ability to review patient data in real time, all at once, can have a great impact on the outcome.”





An easy button for increased adoption

The simplicity of using Cisco TelePresence solutions starkly contrasts with the complexity of discussions.

“We have a lot to learn about pediatric cancer, but what we continue to discover can be shared with the simple push of a button,” says Dr. Sender. He believes that practitioners who have been hesitant to try video conferencing will embrace it after they realize how easy it is to use.

“They’re already making several individual phone calls,” says Dr. Sender. “Why not bring everyone together at once over video?”

Witnessing the power of data firsthand

Translational Genomics Research Institute (TGen) is a nonprofit organization located in Phoenix, Arizona, that focuses on optimizing diagnostics and treatments based on genomics. As a VPN member, TGen conducts genetic sequencing and analysis on patient cells, identifying mutations that in turn help physicians determine which drugs to include in a patient’s treatment plan.

TGen was one of the first institutions to collaborate with CHOC, even before VPN, during monthly tumor board meetings. Here, genetic and clinical data is shared and participants—who can include oncologists, radiologists, pathologists, and lab technologists—collaborate on a treatment plan.

“It was challenging to coordinate sharing molecular genetic data with clinical data between two institutions in neighboring states and different time zones for half the year,” says Troy McEachron, Senior Post Doctoral Fellow at TGen. “We couldn’t see who was in the room and actively engaged. If someone stepped out or dropped off the call, we’d have to repeat ourselves to ensure that everyone was getting the data they needed to make a recommendation.”

As part of VPN, TGen researchers and data scientists now present their findings to other VPN members during the monthly tumor board meetings. Clinicians involved in a patient’s care eagerly await the results.

“The passion can easily get lost over the phone, but that doesn’t happen with video,” says McEachron. “Being able to see the joy or the disdain that the results cause enables us to share in those experiences and ultimately inspires us to work even harder.”

A prescription for holistic patient care

Bringing together research and patient care is just the first step in Dr. Sender’s vision. He hopes to connect more data, people, processes, and things to create a holistic approach to pediatric cancer care.

“The ability to interrogate and evaluate a tumor with new technology, coupled with the insight from patient, clinical, and genomics data will provide us with greater understanding of the disease,” says Dr. Sender.





“At the same time, it’s not just about the tumor,” he continues. “Cancer impacts patients and their families emotionally, psychologically, socially, and financially. With Cisco at the heart of our collective intelligence ecosystem, we can connect the previously unconnected for better patient care.”

Results

- Reduced travel time and costs
- Increased access to external clinical and research expertise
- Improved efficiency and collective value for the course of patient treatment

Expanding real-time connections for enhanced knowledge sharing

Dr. Sender plans to use Cisco Spark™ technology for real-time, continuous knowledge sharing. Launched in 2015, the Cisco Spark solution is a secure, virtual meeting space for institutions to manage projects, share ideas and documents, and connect and collaborate instantly through a mobile device or computer.

“The more we connect, the more we rely on Cisco,” he says. “And that’s a good thing.”

Products & Services

Collaboration

- Cisco TelePresence System
- Cisco Collaboration Endpoints

Routing and Switching

- Cisco Nexus 9000
- Cisco Catalyst Switches 4500 and 3860
- Cisco ISR



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