WHITE PAPER

Virtualizing the Operating Room

How augmented reality telecollaboration at Glendale Surgical Center enhanced collaboration by giving device representatives a virtual presence

OPTICSURG

INTRODUCTION

In the operating room, collaboration is critical not just for the outcome of the patient on the table but for the improvement of processes and devices for the future. Medical device representatives play a critical role in guiding surgical teams for best use of their medical devices and implants as well as collecting critical feedback for the improvement of future generations of devices.

There are 137,653 medical device sales representatives

Device Representatives gave verbal support to a surgical team during surgery up to 88% of the time. (An anonymous web-based survey found) [1]

in the United States[2]. These device representatives play a critical part in the over 34 million ambulatory surgical procedures that are perfromed in the US every year[3].

Medical device representatives can ensure the proper tools and devices are present and help guide surgical teams on proper use of their devices. They are also the connection to the end users for the device companies. Device improvements are informed directly from the feedback given in the OR by surgical teams.

Due to the value, having device representatives in every OR across the country for every procedure is a desired, albeit unachievable goal. In many instances, a single device representative will often serve dozens of facilities across a region; timing and travel can limit the ability to be physically present at every procedure where the device representative could be a valuable collaborative partner.

These trends underscore the need for a high-fidelity, first-person, real-time communication tool that can facilitate collaboration between device reps and surgical teams remotely. By giving device representatives a presence in the OR without always needing to be there physically, it aleviates timing and travel complications and allows reps to participate in more procedures.

The OpticSurg Vision Beyond™ Solution is a patent-pending proprietary software, enabled by hands-free augmented reality glasses, allowing device representatives to collaborate in the OR remotely. It streams video directly from the glasses, worn by a member of the surgical team, to web-enabled screens and devices. It gives device representatives a unique chance to interact with and annotate what they see in real-time for greater collaboration with the surgical team.

The following case study exemplifies how Glendale Surgical Center, an outpatient orthopedic surgery center, used Vision Beyond with it's device representatives, to provide new opportunities for virtual collaboration in the OR.

Augmented Reality
A technology that superimposes a computer-generated image on a user's view of the real world, thus providing a mixed reality experience.

[1] Salespeople in the Surgical Suite: Relationships between Surgeons and Medical Device Representatives 2016
[2] Zippia Inc
[3] "Ambulatory Surgery in the United States, 2006" NHSR

"Patient care, at bedside and in surgery, is a team effort that requires communication, collaboration, and coordination. The OpticSurg Vision Beyond Solution is a hands-free, smart glasses enabled, augmented reality enhanced communication tool that offers seamless and efficient real-time collaboration and coordination between healthcare professionals to expedite and enhance care delivery."

— Dr. Tran Tu Huynh, President & Founder, OpticSurg

BACKGROUND

Glendale Surgical Center (GSC), located in Glendale, CA, is a leader in ambulatory orthopedic care in the Los Angeles area. Dr. Ray Raven is the Managing Partner and Chief Medical Director at GSC. Dr. Raven and his surgical team are innovators in novel practices and tools and are always looking for ways to improve their implants and procedures through their industry partners.

GLENDALE SURGICAL CENTER

glendale SURGICAL CENTER

Location: Glendale, CA

Venue: Ambulatory surgical center

Tools: Orthopedic surgery implants and toolsets

GSC works with many medical device companies to utilize the best tools and implants on the market today. These relationships are very collaborative in nature in order to best utilize the devices as well as to provide insights and feedback to inform future development.

CHALLENGE: PHYSICAL CONSTRAINTS LIMITING COLLABORATION

Historically, this collaboration occurs when a medical device representative comes to GSC to be physically present in the operating room (OR) when their products are being used for a procedure. Due to the travel and logistics required to enable that in-person communication, the touch-points are typically infrequent and costly.

The COVID-19 pandemic further challenged these collaborative relationships since GSC needed to minimize or eliminate all device representatives from the OR to limit risk of exposure.

GSC also works with some companies that have innovative solutions, but are not at a scale where they have the resources to deploy local device representatives to ORs.

To combat these challanges, GSC looked to OpticSurg to utilize the Vision Beyond to close this gap in collaboration between their team and the device companies.

SOLUTION: VISION BEYOND™

After experiencing OpticSurg's smart glasses enabled, augmented reality enhanced telecollaboration platform (Vision Beyond solution), Dr. Raymond Raven saw value in this application to remotely connect with medical device representatives in real-time. The Vision Beyond solution enriches communication and collaboration between the remote device representative and a surgical team member. A surgical team member can put on the smart glasses and contact the remote device representative via the Vision Beyond platform. With a phone, computer, or tablet the remote device representative could see the first-person view of the surgical team member wearing the glasses. In addition, the surgical team member and the remote device representative can have audio communication and the remote device representative is able to create augmented reality visual annotations that could be seen by the surgical team member. This level of communication allows for more effective collaboration.

Through the Vision Beyond telecollaboration platform, the

CHALLENGES:

Infrequent touch points

High barrier for physical presence

Lack of robust remote collaboration tools

Ray B. Raven III M.D., MBA, MHCI
Managing Partner and Chief Medical Director

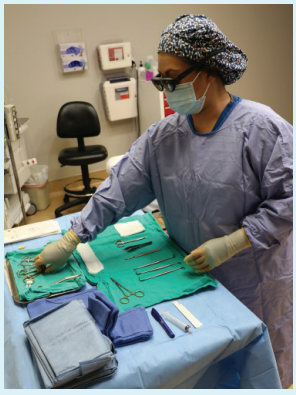
surgical team member could show the device representative their real-time experience with the tools and implants. The device representative can also observe the surgery and provide insights into recommended uses and best practices as it pertains to their company's products. These benefits could significantly improved collaboration between medical device companies and surgical teams.

IMPLEMENTATION

Dr. Raven and his surgical technician, Joan Garnica, utilized the Vision Beyond Solution with specialized augmented reality glasses to facilitate collaboration and improve their workflow in a several different ways:

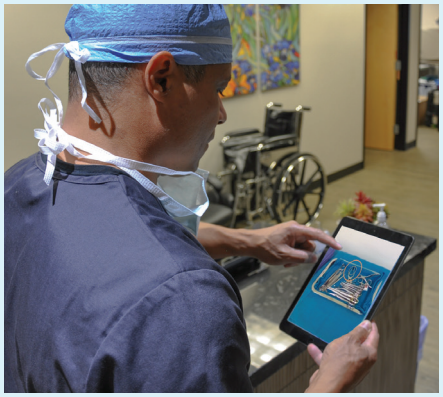
- **PREP:** Surgical techician calls surgeon to verify toolsets and preparation the day before procedures
- **VERIFY:** Surgical techician calls device representative to verify toolsets the day before procedures
- **FACILITATE:** Surgical techician calls device representative during surgery to facilitate intra-operative collaboration

Below, highlights the collaboration experience through the Vision Beyond platform, where the first-person view can be shared, along with audio communication and augmented reality annotations.



PREP

VERIFY



FACILITATE

ADVANTAGES:

First person view

Hands-free communication

Visual and audio communication

Live interoperative view

Connectivity via computer, phone, or tablet

RESULTS: ENHANCED COLLABORATION

Users were very receptive to the new technology as it enables them to collaborate at a high level, without having to travel to be physically present. Collaboration through the Vision Beyond platform was used to replace phone calls, text messages, emails, and in-person meetings. All users surveyed noted that they found Vision Beyond easy to use, saved them time, and enriches communication.

As the surgical team became familiar with Vision Beyond, they expanded their use cases from surgical tray prep within the surgical team, to surgical tray prep with the device representative, to OR collaboration with the device representative. The surgical team was able to keep the number of people in the OR to a minimum while having even more touch points with the device representatives. Without having to travel the device representatives were able to observe and provide real-time support during surgery and preparations.

"In the medical field, seeing is believing. There's nothing like being able to see, do, and teach in a real-time environment."

— Dr. Tran Tu Huynh

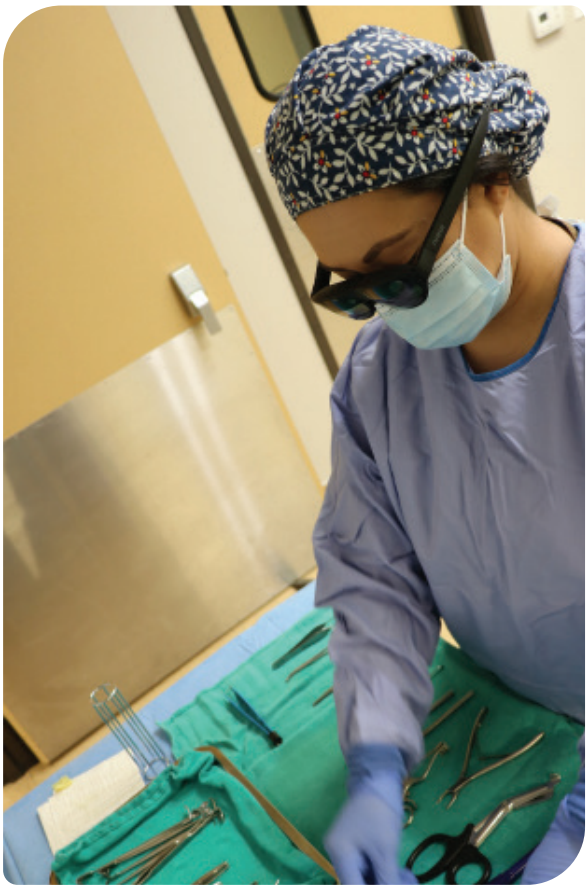
President and Founder, OpticSurg

SUMMARY: A COLLABORATION SOLUTION FOR SURGICAL TEAMS AND MEDICAL DEVICE COMPANIES

There is no replacement for live collaboration, and Vision Beyond allows surgical teams and medical device companies to collaborate and share their critical knowledge remotely. The need for telecollaboration solutions is growing across disciplines, from education, surgery, therapy, home health care, elder care, and more. Any technology positioned to fill that need must be provider-focused, addressing their specific challenges while empowering them to guide healthcare and training toward better outcomes. The potential for collaboration, iteration, and experimentation has never been greater – and only the right tools can help clinicians provide the best care for their patients.

"Vision Beyond allows team members to collaborate and share their critical knowledge in real-time more effectively and accurately than ever before."

— Dr. Raymond Raven, Orthopedic Surgeon



ABOUT OPTICSURG

We are a tech-enabled healthcare software startup. We boldly center our mission at the intersection of healthcare, deep tech, digital health, and future of work.

Our North Star is giving frontline healthcare workers and providers the tools they need to do their jobs better, minimize complications, and save lives. We are particularly driven to expand access in vulnerable and underserved communities. In short, we aim to expand capacity and extend provider reach.

We are empowered by our diverse team members who come from the trenches of healthcare including surgeons, clinicians, security experts, business leaders, and technology veterans. Our expertise in healthcare, business, technology, and design is connected through our united pursuit of improving patient care.
For more information about OpticSurg please visit www.opticsurginc.com.

Schedule your free demo today

OPTICSURG