CASE STUDY
NEBRASKA MEDICINE

GAMIFIED VR SOLUTION DESIGNED BY REIMAGINE WELL AND POWERED BY HP ASSISTS HEALTHCARE NETWORK PROVIDER IN EDUCATING PATIENTS ABOUT PROCEDURES

Nebraska Medicine prepares pediatric patients for radiation therapy and MRI scans using Reimagine Well's real-time 3D software platform and VR content along with HP's ZBook 17 Mobile Workstation and Head Mounted Display VR headset.

IMMERSIVE VIRTUAL REALITY HELPS YOUNG PATIENTS UNDERSTAND THEIR TREATMENT

Radiation therapy is frequently part of the treatment regimen for pediatric oncology patients. Seeing the hospital equipment and hearing the noises, along with the need for the restriction of movement, can unnerve patients of all ages.

Immersive virtual reality (VR) in simulated gaming environments is quickly becoming a way to provide patients with control, knowledge, and confidence. Nebraska Medicine is at the forefront of this technological effort to prepare patients for radiation therapy and MRI scans. Reimagine Well's real-time 3D software platform and VR content dynamically displays on both the HP ZBook 17 G5 Mobile Workstation and the HP Head Mounted Display VR headset.

Nebraska Medicine

INDUSTRY:
Healthcare

OBJECTIVE:
Allow pediatric patients to become familiar and more comfortable with treatment prior to undergoing the procedure

APPROACH:
Acclimate patients to radiation treatment and MRI scans using a real-time 3D simulation experience

Searching for a new way

Radiation therapy is often used as a primary form of treatment, or after other interventions like chemotherapy or surgery, to target cancers. The treatment requires patients to stay very still during the procedure, which can be challenging with children and teens. VR can help them focus and remain still.

Nebraska Medicine, which covers the metro Omaha area, offers residents access to more than 1,000 doctors and nearly 40 specialty and primary care health centers. An academic health network with two hospitals, Nebraska Medicine is the only location in Nebraska that offers pediatric radiation therapy. From infants to teenagers, roughly 45 patients come to the facility each year to receive treatment. Since 2015, a quality improvement initiative at Nebraska Medicine has launched several strategies to decrease the use of sedation for preschool and school-age children receiving radiation therapy.

At a conference in 2018, Wagers crossed paths with Roger Holzberg, creative director and co-founder of Reimagine Well, an HP partner that uses creative technologies to better a patient's journey. They discussed the possibility of creating an Xbox-style adventure and experiential education to help. Reimagine Well and Nebraska Medicine partnered to develop a program for radiation and MRI.

"We decided that a way to approach it would be to enable them to be acclimated to the test or procedure before they ever got to the room. They could do that through a VR 3D real-time application where they could literally play within the space that they were going to be treated in," Holzberg says.

Gaining virtual knowledge

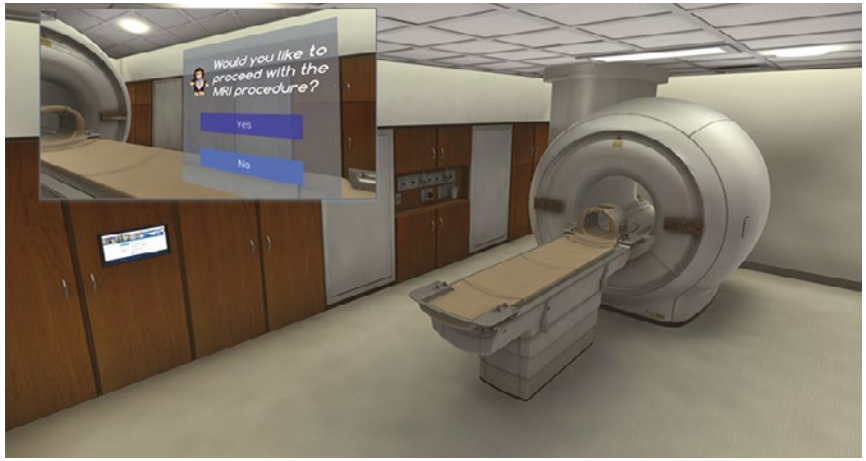
Nebraska Medicine first engaged in a foundational study using a real-time 3D software platform where children could experience hospital procedures to prepare for treatment. The platform imported precise room architecture and medical devices at Nebraska Medicine.

"I love being able to show them exactly where they're going to go," says Wagers.

The experience begins on a computer monitor. Using an Xbox controller, patients are given the opportunity to enter the procedure room and "fly" around. Once a patient is comfortable, they can transition to a VR headset for an even greater immersive experience.

"IT'S LIKE A VIDEO GAME, YOU CAN FLY AROUND AND EXPLORE THE ROOM. THAT'S ALWAYS EXCITING AND INTRIGUES THE KIDS, WHICH IS PRETTY MAGICAL TO WATCH."

Debbie Wagers, Certified Child Life Specialist, Nebraska Medicine



IT MATTERS:

Provide children with user-friendly, immersive, real-time 3D experiential education prior to radiation therapy and MRI scans

Equip child life specialists with an age-appropriate preparation tool

Install a high-performing, user friendly, mobile solution

BUSINESS MATTERS:

Empower child life specialists to engage patients more effectively, customizing the experience for each patient and family

Expand experiential education to include parents and caregivers

Empower patients to undergo radiation and MRI while remaining focused

Utilize experiential education to increase the efficiency of MRI and radiation suites by allowing greater throughput

ABOUT REIMAGINE WELL:

Reimagine Well

EVOLVING THE PATIENT JOURNEY

Reimagine Well develops creative solutions to improve the patient experience. With proprietary platforms and programs, it has compiled an extensive library of patient-directed immersive healing experiences. The company has created disease-specific Learn Guides, hosted by clinicians and medical experts, operating on the proven premise that enhanced learning has been shown to reduce hospital readmission and recurrence in certain diseases. Founded by an award-winning Disney Imagineer and a cancer specialist, Reimagine Well is focused on evolving the patient journey.

"It's like a video game, you can fly around and explore the room," Wagers explains. "That's always exciting and intrigues the kids, which is pretty magical to watch."

Parents get to share the experience as well, on the monitor, going on the journey with their child.

"That's why I really love this, because parents are seeing the exact same thing as the patient," Wagers says. "This is especially helpful when the patient is using the VR headset, parents are seeing exactly what they are seeing and gain a greater understanding of what the treatment will be like."

The gamification aspect of the tool appeals to all pediatric patients. The mobility of the tool—Wagers is able to take it with her to appointments—makes it easy to use on demand. Typically, a session takes 15 to 20 minutes, and can be repeated until a patient appears reassured, confident, and capable of staying still during treatment. Once they are ready, a patient returns for the actual therapy on another day. Wagers has used the tool to prepare patients for both radiation and MRI.

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Roger Holzberg, Creative Director and Co-Founder, Reimagine Well

CUSTOMER AT A GLANCE

Nebraska Medicine

APPLICATION:
Experiential Education tool that utilizes Simulation and Virtual Reality for pediatric patients to acclimate to procedures before an appointment

HARDWARE:
- HP ZBook 17 G5 Mobile Workstation
- HP Head Mounted Display

SOFTWARE:
Reimagine Well real-time 3D software platform targeting pediatric patients

> "KNOWLEDGE IS POWER AND TO BE ABLE TO GIVE PEOPLE THE MOST REALISTIC EXPERIENCE, PRIOR TO ACTUALLY HAVING IT, IS REALLY, REALLY POWERFUL."
>
> Debbie Wagers, Certified Child Life Specialist, Nebraska Medicine

Positive patient outcomes

So far, every suitable pediatric oncology patient at Nebraska Medicine has agreed to the immersive experience on the monitor.

Today, Wagers says about 90 percent of patients have used VR prior to undergoing radiation treatment. Most importantly, patients and their families get precious time back.

Convincing the organization to direct pediatric and oncology research funds toward the Reimagine Well Experiential Education solution was not a tough sell. Nebraska Medicine is known for its innovative approach, according to Wagers. Its success has now prompted the Radiation Department to investigate using the system with its adult patients.

"Knowledge is power and to be able to give people the most realistic experience, prior to actually having it, is really, really powerful," Wagers says.

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