

THE FUTURE OF LEARNING:

New Technologies Influencing Clinical Development

E - B O O K



Healthcare's Leader in Workforce Development

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INTRODUCTION

New technology is starting to have a dramatic impact on how we educate and develop our healthcare workforce. Technologies such as virtual reality and artificial intelligence have until recently only been associated with gaming and other types of entertainment, but their influence in healthcare is rapidly gaining traction. In this eBook, HealthStream takes a look at some of these emerging technologies and products and the influence they may have in your organization in the not-too-distant future. You won't believe how many exciting new possibilities are just over the horizon.





REVEALING THE *HIDDEN TALENT* IN YOUR ORGANIZATION

An Interview with HealthStream's Brittney Wilson, BSN, RN, Product Manager, Workforce Analytics

According to a 2016 report published by the Society for Human Resource Management (SHRM), 68% of human resources professionals report they are currently having difficulty recruiting qualified candidates, compared to 50% in 2013. In the SHRM study, healthcare human resources professionals were more likely than those in other industries to say that job candidates do not have the needed credentials or certifications for the roles for which they are applying. In addition, 46% of those surveyed said that high-skilled medical positions are “very difficult” to fill. With an annual turnover rate of over 17%, hospitals are losing good people at an alarming rate.

But what if you could source and develop talent internally instead of always looking outside of your organization? To understand the opportunities and challenges involved in healthcare hiring, we interviewed Brittney Wilson, who is leading HealthStream's development of technology that allows organizations to tap into the skills, qualifications, and life experiences of their existing workforce.

What is HealthStream's Workforce Analytics Solution?

The Workforce Analytics Solution includes three products:

1. **HealthStream ePortfolio™**
2. **Workforce Profile Dashboard**
3. **Portfolio Assistant**

ePortfolio allows all employees—not just nurses—to document their professional achievements. The technology enables both the employee and the employer to record key information about an individual, such as education, certifications, volunteer work, authorship, articles published, research conducted, and service on a committee. For those using the HealthStream Learning Center, this information also will reside in the student profile, making it readily available.

Managers can have an aggregated view of the entire workforce, via a user-friendly control center called **Workforce Profile Dashboard**. The dashboard allows leadership to better understand the

composition of the enterprise-wide workforce, as well as the make-up of individual departments. For example, through filtering on the Workforce Profile Dashboard you can identify employees who have an advanced degree, have been published, and are preceptors. It lets you easily identify employees who may be a good fit for other positions based on their activities inside and outside of the workplace. It also allows you to pinpoint those who exhibit leadership traits or those who may warrant mentoring.

The final piece of the workforce analytics solution is **Portfolio Assistant**. This reporting tool facilitates efforts by Magnet® hospitals to collect and validate nursing demographic data required by the ANCC's Magnet Recognition Program®. In the future, ePortfolio will validate the employee profile by linking with verifying bodies to ensure the accuracy of the information.

How does Workforce Analytics Solution benefit employers?

The advantage for employers is to have all employee-specific data at their fingertips. These tools help organizations understand the configuration of their workforce and how it is evolving year over year. Healthcare organizations can use the tools to nurture and develop future leaders; they also can use ePortfolio data to mine existing staff and identify those who have the right characteristics for openings or new positions. ePortfolio makes it possible to pinpoint employees who could benefit from additional development. For example, for positions that require certifications, the Workforce Profile Dashboard would allow the identification of employees who are missing this qualification.

Why is it important for employees to document their accomplishments?

ePortfolio allows staff to show their immediate manager and leadership who they are and what they have accomplished beyond just their performance on the job. For employees who are looking to grow or who want more opportunity, this is a great way for them to showcase their activities inside and outside of the workplace. The ePortfolio becomes part of their professional resume documenting not only their educational achievements, but their involvement in committees, volunteer work, research, and even on-the-job recognition they may have received. This tool

“The future leaders of your organization are likely already on your team. We’re excited to add another dimension to the resources we offer to help our customers identify and grow those leaders, while improving their overall engagement and retention programs.”

lets engaged and motivated employees get their skills and accomplishments in front of the right people so that they can advance their careers. Prior to ePortfolio, there was never a way for employees to do this outside of knocking on the CNO's door to say “Hey look at me! I can do more!” The future leaders of any organization are likely already team members. HealthStream is excited to add another dimension to the resources we offer to help our customers identify and grow those leaders, while improving their overall engagement and retention programs.

About the Author

Brittney Wilson has embraced technology since her early days—from playing video games as a young girl to working as an electronics specialist at a big box retailer in college. As an outlet for the challenges she was experiencing as a new graduate nurse, Brittney created a popular blog called The Nerdy Nurse®. She continues to write about nursing, technology, health IT, and other healthcare topics. Her book, *The Nerdy Nurse's Guide to Technology*, was awarded first place in the 2014 American Journal of Nursing Book of the Year in the Information Technology/Social Media category. Prior to joining HealthStream she developed online communities for healthcare and lead the clinical informatics team for the home care division of a Georgia hospital. Her decision to join HealthStream was sealed after hearing about the ePortfolio product line and her opportunity to lead the development of a much-needed solution for the healthcare industry. Brittney says her love of informatics and HealthStream's culture of innovation make a perfect match.

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A VIRTUAL MENTOR GUIDING NURSES' CAREER ADVANCEMENT:

INTRODUCING VIRTUAL JANE

Talking to Dr. Kimberly Guthrie, clinical expert and product leader for AssessRx Clinical Judgment System (formerly PBDS) and Virtual Jane, HealthStream

Stephen McClure
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Looming nurse shortages and an increased need for healthcare for our aging population has made the nurse development process more important than ever.

We interviewed Kim Guthrie, PhD, MSN, RN about HealthStream's growing focus on nurse development, and specifically about the imminent introduction of Virtual Jane, our soon-to-be-launched virtual mentor for nurses.

Dr. Guthrie comes to HealthStream through PMSI, where she focused on nurses' critical thinking ability and how to meet the development requirements of nurses who need to grow in their careers, either to deepen mastery in their current roles or to advance into other areas of responsibility. Having been a nurse for 30 years, Dr. Guthrie is well aware of the development challenges inherent to the profession—either from her early years providing direct patient care or later when she worked professionally in staff development. Her answers to our questions are to the right:

HealthStream: How does your role at HealthStream, supporting Virtual Jane, allow you to respond to some big trends in healthcare?

Guthrie: The use of technology in nursing development can be pretty impersonal; I am excited to be part of an incredible product team at HealthStream that is working to change that. This team exemplifies one of my favorite Disney quotes, 'If you can dream it, you can do it!' We are using technology, interestingly enough, to add some humanity back into healthcare development. Virtual Jane is going to add an extra, personal layer onto the necessary process of career development.

HealthStream: Can you tell us more about Virtual Jane?

Guthrie: Virtual Jane is going to play the role of a virtual mentor for future generations of nurses. Imagine having a competency guru to guide your individual development journey! She'll offer a personal touch and face to each nurse that is able to participate in our competency assessment and development process.

HealthStream: Why is having a development mentor like Virtual Jane valuable?

Guthrie: Every organization wants to grow a personal relationship with its nurses. One way to do this is by cultivating a more comfortable connection to the career and skill development process. In turn this will help to create greater nurse confidence, which we all know is vital to better patient care. Virtual Jane will be the perfect vehicle for combining a consistent, machine learning-enabled assessment with a personalized experience. And unlike a human mentor, Virtual Jane will always be available, regardless of time or location, to answer a question or provide guidance.

HealthStream: What problems will Virtual Jane solve?

Guthrie: Many working in healthcare education and leadership positions have experienced resistance from staff to standardized, computer-based assessments and training. Virtual Jane is designed to provide staff support during this process and help alleviate stress, along with providing leaders instant and more comprehensive results. Given that our unique critical thinking and interpersonal assessments go beyond multiple choice into the more qualitative realm to most accurately capture one's ability to think critically, Virtual Jane will employ a higher level of sophistication through machine learning. As the healthcare workforce and environment becomes more diverse and visibility to clinical outcomes becomes more broad, Virtual Jane will help our leaders to identify areas of risk and minimize costs by using a more focused approach to development.

HealthStream: When will Virtual Jane be available?

Guthrie: Our Virtual Jane avatar will be available for selected customer pilots by Spring 2018. We intend for her to be a guide to the assessment process first, expanding her to a growing world of development and competency validation in the future.

Why Virtual and Augmented Reality Isn't Just for Gamers:

How the Latest Technology is Impacting Healthcare

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Recently Pokémon GO consumed the lives of both young and old smartphone users around the globe. Augmented reality (AR) technology was successfully accessed by the masses as the game layered the world of Pokémon over our own. For the past two years, tweens and adults alike have obsessively used the AR technology of Snapchat to modify their faces and photos on the camera in real time, making Snapchat a global leader in AR. And for years, gaming headsets like Oculus Rift and HTC Vive have engaged users in another world through virtual reality (VR).

VR and AR technology is becoming increasingly accessible with the use of smartphones and more affordable head-mounted displays (HMD). And the demand is no longer just for gaming purposes—its uses are rapidly developing and reaching a variety of industries. The overwhelming response to AR by the masses, as seen with Pokémon GO, bodes well for the continued advancement of such technologies into other industries and even has the potential to change the future of healthcare.



What is Virtual Reality?

VR allows one to “enter” an alternative reality by wearing a HMD that lets users feel as if they are in the virtual world they see. This technology has mainly been used for entertainment, but over the past decade developers have expanded the capabilities of VR headsets and created programs that are now being used in healthcare.

Khor et al. wrote on the changing digital surgical environment and its effects on training and usage in surgeries. Khor et al. (2016) defined VR as technology that “generates an immersive, completely artificial computer-simulated image and environment with real-time interaction.” Entering an artificial world for education purposes has endless possibilities that would allow medical students and professionals to better understand the conditions of their patients and learn the skills to care for them in an entirely new way.

Virtual Reality in Healthcare

Train Medical Students

One of the most popular uses of VR in healthcare is to train medical students. In 2016, Dr. Shafi Ahmed performed the first operation to be live-streamed in 360-degree video. This allowed students worldwide to watch the live procedure online or through a VR headset (Davis, 2016).

This use of VR technology allows viewers to experience the entire operating room and learn from all members on the surgical team, having the potential to significantly change the educational opportunities available for students anywhere in the world.

Understand Patients’ Conditions

A project entitled “We are Alfred” by Embodied Labs uses VR to show students and doctors what many of their elderly patients with hearing or vision loss experience. This VR simulation helps break down the disconnect between medical professionals and their patients by fostering understanding and empathy (Meskó, 5 Ways).

Similarly, the company Viscira has created a VR program that allows practitioners to experience the hallucinations of a schizophrenic patient (Geyer, 2016).

Ease Phobias and Anxiety

VR has been used to treat patients with significant phobias through exposure therapy. The Virtual Reality Medical Center in California has been offering this treatment for over ten years, and has had significant

success treating those with phobias and anxiety disorders (Wallis, 2016).

Additionally, a VR game named BraveMind was created specifically to treat soldiers suffering from PTSD. The creator, Skip Rizzo, built virtual scenarios similar to what soldiers may have experienced and explains, “I can put people in these worlds and change the time of day, lighting, ambient sounds, people walking around, insurgents popping up” (Geyer, 2016).

When commenting on the performance of VR when treating anxieties, Rizzo says, “Four meta analyses in the last six or seven years show VR outperforms traditional exposure... You can build a controlled environment, manipulate the stimuli to test, train or treat users under a range of conditions.” This ability to give immediate feedback and alter the simulation while the patient is in the environment provides an excellent option for patient therapy (Geyer, 2016).

Rehabilitate Stroke Victims

The Swiss company MindMaze has created a VR program called MindMotionPro to help patients who have suffered from a stroke practice moving their limbs (Meskó, 5 Ways).

Pain Management

The University of Washington’s HITLab collaborated with the Harborview Burn Center to create a VR program to help burn patients with pain management. Patients can enter “SnowWorld” when having their wound dressings changed in order to help distract them from the painful procedure (Wallis, 2016).

What is Augmented Reality?

AR differs from VR in that it adds an extra component to one’s existing reality rather than being completely immersed in an alternate reality while using a HMD. Khor et al. (2016) explain that AR adds “artificial information to one or more of the senses that allows the user to perform tasks more efficiently. This can be achieved using superimposed images, video or computer generated models.”

AR has the potential to be more accessible to the masses because a smartphone could be used to access this technology. For example, Pokémon Go had such great success because one could simply hold up their smartphone in their environment and see the addition of the virtual characters incorporated into their reality, like an additional layer of reality superimposed on top of what one already sees.

Augmented Reality in Healthcare

Train Medical Students

Dr. Ahmed, mentioned earlier for the surgery he performed while using VR technology, also streamed live surgeries using the AR technology Google Glass, a HMD that looks similar to glasses. This allows students to observe surgeries online from the perspective of the surgeon (Davis, 2016). Google Glass was a popular example of AR until production stopped in 2015.

Microsoft's HoloAnatomy program utilizes the Hololens AR headset to train medical students by displaying real anatomical models into the room. This allows students and instructors to engage in learning in an entirely new, interactive way (Meskó, Augmented).

Start IVs

A start-up company named AccuVein is making placing an IV easier. AccuVein uses a handheld scanning device that utilizes AR technology to project over the skin, showing where the patient's veins are. This prevents nurses from missing the vein when starting an IV (Meskó, Augmented).

The Future of Virtual and Augmented Reality in Healthcare

Surgical Observations and Simulations

Improvements and developments of VR technology could provide greater opportunities for students to observe surgeries and perform surgical simulations using VR. Some hospitals already use robotics and haptic technology for training purposes, and if this technology is joined with VR, it would create a complete surgical simulation experience. With greater worldwide access to this technology, students who do not have opportunities for quality medical training could access learning from world-renowned doctors and surgeons who are using state-of-the-art equipment (Cox, 2016).

See-through Technology

A start-up company called MedSights Tech Corp is exploring the possibility to use AR technology to create 3D reconstructions of tumors. If this could be accomplished, surgeons would be able to have real-time, x-ray views of their patients (Meskó, Augmented).

Pharmaceutical Companies

The potential use of VR or AR for pharmaceutical companies could change the way drugs are marketed. Using a VR headset or AR technology with a tablet or something similar, one could watch how the drug

works in 3D rather than reading the drug label (Meskó, Augmented).

Digital Contact Lens

Google is currently working toward the development of a digital contact lens that would use AR technology. One feature they are hoping to successfully create in the lens is the capability to check blood glucose levels from a person's tears, revolutionizing diabetes care (Meskó, Augmented).

As technological advances continue to explode around the globe, our lives are changing dramatically. As these changes affect many aspects of how we live, it is inevitable that they will penetrate the domain of healthcare and influence the way we educate and train healthcare professionals and treat patients.

VR and AR technologies have the potential to transform the way medical students learn, change how physicians understand and care for their patients, and produce an entirely different type of healthcare in the future. The rapidly changing technological advances that are occurring will require us to remain vigilant to what is on the horizon and be prepared to accept these changes and incorporate them into the practice of healthcare.

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A Virtual Reality Journey from Conception to Application:

AN INTERVIEW WITH USC'S DR. SKIP RIZZO

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Background:
*Virtual Reality
Development and Recent
Applications at ICT*

At the University of Southern California's Institute for Creative Technologies (ICT), leaders in artificial intelligence, graphics, and virtual reality (VR) advance low-cost immersive techniques and technologies to solve problems facing service members, students and society.

Established in 1999, ICT is a DoD-sponsored University Affiliated Research Center (UARC) working in collaboration with the U.S. Army Research Laboratory. UARCs were established to ensure that essential engineering and technology capabilities of particular importance to the DoD are maintained.

ICT brings film and game industry artists together with computer and social scientists to study and develop immersive media for military training, health therapies, education, and more.

Research projects explore and expand how people engage with computers, through virtual characters, video games, and simulated scenarios. ICT is a recognized leader in the development of virtual humans who look, think, and behave like real people.

ICT prototypes provide engaging experiences to improve skills in decision-making, cultural awareness, leadership, and coping, to name a few. They allow veterans to go online and speak anonymously to an interactive virtual coach who can remotely recognize signs of depression, PTSD, and suicide risk.

They provide training in how to address cases of performance or personal issues through practice with a computer-generated virtual human education system. They can simulate what goes wrong when soldiers don't consider the cultural sensitivities and indirect consequences of even their smallest interactions.

Being in Los Angeles facilitates collaboration with major movie and game makers. ICT graphics innovations help create realistic computer-generated characters in Hollywood blockbusters and also enhance virtual characters for museum and military projects.

Current ICT Research Projects

SimCoach

SimCoach is a web-based virtual human designed to provide an anonymous and accessible way to overcome some of the existing resistance to seeking care, to facilitate communication about mental health issues, and to help soldiers, veterans, and their families to realize that there are resources available for them. SimCoach asks a series of questions about the user's symptoms and provides access to relevant resources.

BRAVEMIND (Virtual Iraq/Afghanistan)

BRAVEMIND delivers virtual reality exposure therapy for treating post-traumatic stress disorder. Currently in use at over 60 clinical sites, including VA hospitals, military bases, and university clinics, the Virtual Iraq/Afghanistan exposure therapy has effectively reduced PTSD symptoms.

Stress Resilience in Virtual Environments (STRIVE)

STRIVE is a pre-deployment approach to understanding and training troops for combat stress. It includes a realistic combat experience portrayed within a virtual reality immersive and interactive narrative and supports interaction with a virtual human mentor that explains how the brain and the body react to stress and presents relevant exercises for managing it.

Games for Rehabilitation

ICT's Games for Rehab Lab focuses on the creation of VR game-based tools that can improve both assessment and training of cognitive and motor function. A sample prototype is Mystic Island, a rehabilitation therapy tool designed to motivate patients with stroke, traumatic brain, or spinal cord injuries.

Virtual Patients

This approach builds virtual standardized patient applications for clinician training that integrate models of emotion and personality into the language and state of the character, as well as investigates the use of dramatic interactive narratives involving virtual patients in order to elicit engagement in learning.

The Leading Edge:

An Interview with Dr. Albert Rizzo

In a recent conversation with Dr. Albert "Skip" Rizzo, Ph.D., Director Medical Virtual Reality-Institute for Creative Technologies, and Research Professor in the Department of Psychiatry and School of Gerontology at the University of Southern California, he shared his perspectives on the development and future promise of VR in the clinical setting.

The Initial Spark

"My interest in VR came from my work as a clinical psychologist and neuropsychologist working in the area of brain injury. VR was offering the opportunity to create simulations that systematically drill and train cognitive function under a range of very controllable conditions, but in the context of a functionally relevant environment like an office, classroom, or kitchen. The idea was compelling for me, and frankly, I was frustrated with my clinical work, particularly with the primitive nature of the tools we were using.

You could say the spark came in the early 90's when Gameboys first came out. One of my clients came in one day and he couldn't keep motivated or attentive to any kind of a rehab task for more than a few minutes. But when interacting with a Gameboy he was excited and glued to the video game for ten to fifteen minutes—totally engaged and immersed in it. And, he was becoming a "Tetris Warlord" along the way!

I felt that if we make rehab fun and engaging, people will do it more along with supporting neuroplasticity and improving function. While one could question as to how my client

showing improvements playing Tetris on a Gameboy might actually transfer to improvements in everyday functional activities, but the idea of leveraging new digital technologies to promote engagement with often repetitive and boring rehab tasks was very compelling.”

“The key, with any of these areas, is that in formulating your approach you need to look at what works in the real world and use that as your starting point... and then think about how the assets that VR provides can amplify, extend, improve, or make the treatment more accessible.”

Breaking Ground

VR went through a period of inflated expectations in the early '90s until about 1995 or 1996. It was during this time that Dr. Rizzo began his foundational work.

“After the movie *Lawnmower Man* came out, and Gimel and Leonard (the movie's writers/producers) got a platform, there was a lot of energy and enthusiasm about the concept of VR. People were making claims back then about the technology that are very similar to what people nowadays are saying. The only problem was that the technology at that time wasn't mature enough to really deliver on the vision. But I got excited about it and went to a California State University, Northridge (CSUN)-sponsored conference called VR in Persons with Disabilities. That's how I got started. The next year I wrote one of the first papers on clinical VR particularly for brain injury rehab and never looked back!

In 1995 I decided I was going to take the jump and take a university position, though it was just a post-doctoral fellowship after practicing for 10 years, just to get back into the academic environment where I could have access to computer science expertise, programming, and the necessary equipment. So, one day I went over to the computer science department, and knocked on a few doors, and finally one guy (Ulrich Neuman) said, 'Hey, some of these ideas sound good. We have equipment and some programmers who can work with you on it,' and that was the birth of it for me.”

Persistence

“Ironically,” states Dr. Rizzo, “that period also coincided with the dawn of the ‘nuclear winter’ of virtual reality, where the technological limitations of VR came to light in the popular consciousness. VR came to be viewed as an immature and even failed technology. The people who tried VR at that time saw the limitations, and there came a period of retrenchment and, frankly, disappointment in the field. But even though there was a pervading sense that VR was really limited and difficult to implement, the vision for its use for clinical applications was sound, and I along with other scientists and clinicians around the world continued to focus on it, hanging in there hoping that the technology would evolve a little bit faster than it did.

There were incremental advances in the late '90s. You could do VR on a PC rather than expensive mainframe computers. Also, interface devices got better over the years. 3D computer graphics improved (mainly due to the economic drivers in the computer games industry). The ways of sensing user performance evolved, so we just hung in there. During those years, we were able to do some good prototype development work and good clinical research, in spite of the limitations along the way and consequently we're at a point now where in mental health, rehab, and medicine we probably have the most evolved scientific literature of any VR application area. Despite the pull back in general, clinical VR efforts addressing anxiety disorders and other mental and physical health conditions began to show promise in spite of the limitations in the technology. For example, VR was observed to emotionally engage people in simulations and successfully reduce the symptoms that people experience who have phobias and PTSD.

Finally over the last 20 years, we've gotten to the point where the technology has matured and has caught up with the vision from the 90s; it still has a ways to go in some areas, but it's matured enough that in the area of healthcare you can do good things both clinically and scientifically through applications that have scientific validation to support their use to deliver evidence-based care. The key, with any of these areas, is that in formulating your approach you need to look at what works in the real world and use that as your starting point. Take what is already consensually agreed upon to be an evidence-based approach in a traditional format, and then think about how the assets that VR provides can amplify, extend, improve, or make the treatment more accessible.”

VR Applications—Data and Research-Based

“Our group has been around for over 20 years now, and we have approximately 250 peer-reviewed publications that we can highlight, all focused on various aspects of VR and always from an informed clinical perspective. We always design in ways we can evaluate, test, evolve, and expand our systems around data. And that is also the case with the many labs that have evolved over the years, aiming to push the boundaries for using VR for the pro-social purpose of improving healthcare.”

Is VR a Magical Tool?

Dr. Rizzo indicates that “There’s nothing magical about VR, although you might get that experience if you do a well-executed VR application—you may feel it is ‘magical.’ But there’s nothing magical about the technology. It’s simply a tool, which is what the term technology derives from in the original Greek words, *techne* and *logos*. In our clinical use, it’s a tool to deliver a treatment in a novel way that might engage people, that might afford more opportunities to precisely control the stimulus conditions in imaginative ways, and draw people into therapy that they may benefit from, but would never seek in the traditional format. And within the controlled and engaging stimulus environments that VR can deliver we may be able to provide better opportunities for the real time measurement of performance or behavior in response to those simulations that represent the challenges that people face in everyday realities.”

Should we “Virtualize” Everything?

“I’ll be the first one to say, our intention is not to virtualize everything about mental health, rehab, and healthcare. There are some approaches that are not suited to become ‘virtualized.’ But where the clinical approach is well-matched to the assets that VR provides, then I think there is a quantum leap just ahead. There are more VR startups in the last two years than in the previous twenty. Some of those companies will shake out, and there will definitely be wreckage along the way because, in a lot of cases, some of these companies come out of a game development ecosystem rather than a healthcare ecosystem where different forces are at play. Sometimes people see a research paper and want to start a company around it, but they don’t understand that this isn’t the game industry where you build a cool game and people pay to play it. This is healthcare—in healthcare we have a higher calling.”

“...this isn’t the game industry where you build a cool game and people pay to play it. This is healthcare—in healthcare we have a higher calling.”

Where Are We Headed? What is on the Horizon for Healthcare Virtual Reality?

“Things are still shaking out, but there’s been a renewed interest in VR since around 2012, particularly with the level of investment that’s been put into the field, again driven by the gaming and entertainment media industries. There’s still certainly a lot of over-hype right now—similar to the mentality that was around in 1993 and 1994. But when you sift through the hype and you actually look at the functional nature of what a VR simulation is, you can see more clearly than before where it can add value. VR can do some things you simply cannot do in a traditional format, and now we have a lot of research behind it. And that is essential when developing VR healthcare applications—you’ve got to be able to document that what you’re doing actually does what you claim it does. You need the research support to do that.”

In looking at the future of VR, Dr. Rizzo highlights a number of key success factors.

“Now is the time to be supporting some of the research where you can show some wins. The first win, of course, being better clinical outcomes. But you also have to think about cost. How do you reduce cost? How do you engage people in their own treatment in ways that promote wellness? I think those answers exist, but not in a straight line. You’ve got to be smart about it.

We are now at a point where we have developed some advanced research prototypes (and some products like BRAVEMIND), but these research-supported systems are now “screaming” to escape the lab for dissemination. We are always interested in partnering or collaborations to move this effort forward. That’s my mission now—to be more focused on getting things out the door and doing things on a larger scale than what we’ve been able to do in the past. The technology has caught up with the vision, and this brings us to a point where these applications are well-poised to have a wider-scale impact on public health and wellness.”

To view videos about Dr. Rizzo’s pioneering healthcare VR work, go to:
www.youtube.com/playlist?list=UUQrbzaW3x9wWoZPI4-I4GSA&feature=plcp



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