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MedTech– Printing Babies Hearts, Drone Life Support, and the Resistance of the Elderly

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Have you ever done a simple Google search for your sore throat symptoms and ended up on WebMD hours later, concluding you are dying or have a rare disease? You are not alone– This is something most of today’s consumers do frequently. Times are changing and modern healthcare consumers are in charge. We now educate ourselves with the wealth of apps and websites, engage directly with doctors, and want individually driven treatment. The first thing you do when you are sick is start fixing the problem, then bring it to your doctor. Now, doctors have gone from being your teacher and coach, to your partner in healthcare.

At the Arizona Technology Council’s MedTech Conference last Thursday, some of the best doctors, healthcare advocates, and innovative companies in the medical world spoke on digital transformation in healthcare and the future of healthcare technologies. These experts from Mayo Clinic, Phoenix Children’s Hospital, WebPT, and more gave us a look into some of the challenges for doctors and patients as well as advantages for both in the future of healthcare technology.

Doug Linsmeyer (The Nerderly) moderated the first panel where experts discussed “The Digital Transformation in Healthcare.” Each panelist gave their favorite, new advancing technology.

Across the board, there was one big commonality– Consumers being in charge.

Linsmeyer talked about his favorite technology: virtual reality. He explained that in the past, patients haven't been able to relay important things to their doctor, nurse, or therapist. Putting these people into a comfortable environment changes the game. Today, however, patients are not yet adopting this readily available care option. 80 to 100 million people are covered by telehealth; That's 50% of the U.S. population covered, yet only a shocking 5% is taking advantage of this option. This, along with other recent advances in the industry, are currently happening behind the scenes. Once virtual healthcare is widely adopted, there is no going back. We have to adjust to what the consumer wants.

Kent Dicks (Life 365, Inc.) focused on aging people in their homes, as he has elderly parents. Today, patients are being properly engaged, and these new solutions need to meet a person's needs on their own time. People want to stay in their homes longer and companies are paying elderly patients to take their pills. Seniors do things on their own terms, aligning the right solutions with the right people will allow us to age in the comfort of our own homes on our terms, while getting the care we need.

In the second panel, 3D Printing: The Cutting Edge of Healthcare, Dr. Stephen Pophal ([PCH](#)) talked about the life saving work he is doing with 3D models of hearts for babies that are blue. This 3D printing technology gives surgeons time to prepare for emergency life saving surgeries. On the first day of life, a heart is printed at PCH, by the 3rd day of life the baby's heart is already in the surgeon's hand. By the time the baby is transferred to the surgeon, they know exactly what to do. Whereas, previously they didn't have a look into what they were operating on, which meant the surgery took longer and proved to be less accurate.

“This helps surgeons actually know what's wrong with the baby, and families love it.”

Although this technology is amazing, it's not always readily available. Wide adoption won't happen without costs going down. Dr. Rahmi (Mayo Clinic) gave his thoughts on making 3D printing available for more patients. The impact is tremendous, but also limited at the moment. Rahmi believes every patient should have access and the software companies should stop charging an arm and a leg. The benefits are overwhelming—saving on X-ray time, saves contrast, improves accuracy, and helps patients who can't use contrast and have kidney disease.

When patients see their model, they become engaged and empowered. They are also able to understand the prognosis and risk complications better than ever before. It's very expensive, requires special trained resources, and people to run the software. For now, 3D printing is only available to special case patients at Mayo Clinic. Dr. Rahmi hopes the price will go down and 3D models can be something they do for every patient.

All of the experts were engaging and gave great insight into the future of healthcare, but the closing keynote stood out as my favorite speaker. Dr. Nick Van Terheyden from NTT Data Inc., who spoke on genomes and the continuum of telehealth.

Countries like the Netherlands have already reached wide adoption with some telehealth options like Assisted Telehealth Invention. In the Netherlands, a person who collapses is provided with immediate Cardiac Drone Support (a defibrillator). We have seen other countries adopt similar telehealth practices for emergency aid. For example, people in areas of refuge and disaster are sent care packages with drones. These are places people would otherwise not have access and helps enable Red Cross and other organizations to help and save the lives of hundreds, if not thousands of people.

Another topic of interest Van Terheyden touched on was using genomes to get insight on a person and have the ability to adjust medication to them personally for treatment. In the future, doctors will already know about infections a person has contracted and have the ability to cross reference data with millions of other people who have the same infection and gene makeup. This will benefit those who may be resistant to medications or less receptive to normal treatment options. Genomics and Biome are changing the way we practice medicine, allowing us to turn data into knowledge at point of care and be actionable.

“Genomics and Biome will revolutionize diagnosis and treatment of disease,” Van Terheyden said.

[Learn more about how health consumerism will drive the future of healthcare here.](#)

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