

# Virtual exam rooms

deliver healthcare in many locations

- **Business Needs** - A better way to diagnose and treat patients, including many in rural and remote locations
- **Networking Solution** - Mobile connectivity and secure cloud services support Virtual Exam Room solutions
- **Business Value** - The ability to treat patients in many locations, enhanced care and convenience for patients, and to help to decrease medical costs
- **Industry Focus** - Telemedicine
- **Size** - Startup

## About Dictum Health

Dictum Health's innovative telehealth solutions connect physicians to patients around the globe, even those in extremely rural or remote locations, enabling diagnoses and monitoring with the same clinical accuracy of an in-hospital exam. Dictum Health's portfolio includes FDA-cleared telehealth medical devices, cloud services, a Virtual Exam Room (VER), clinician and administrator/analytic portals, and a VER product line that supports patients across the continuum of care from hospital to rehab to home recovery

## The situation

Connectivity is central to Dictum Health's solutions. To bring the most value, its VER and other groundbreaking technology require a strong, reliable connection between patients in the field and medical professionals who can examine, diagnose, and treat even at-risk patients almost anytime, in a multitude of locations. Dictum Health also required secure cloud storage to fully protect patient information.

## Solution

An AT&T Global SIM and AT&T Control Center enable Dictum Health to connect patients to physicians with its clinically approved, HIPAA-compliant, cybersecure, integrated telehealth solutions. Dependable global AT&T connectivity expedites clinical reach and decision-making, enabling clinicians to more effectively manage and monitor patients from any care setting, and AT&T Cloud Storage provides secure, virtualized storage for the growing company.

## The doctor will see you now

A dictum is a formal statement from an authoritative source. The California company Dictum Health is making a definitive statement these days as it changes the way healthcare is delivered. The company's integrated telehealth solutions enable physicians to treat patients in almost any setting, whether the patient is receiving remote specialist care in a rural clinic, needs emergency medical attention, is in rehabilitation, or is recovering at home.

The centerpiece of Dictum Health's portfolio is the Virtual Exam Room (VER), which consists of the FDA-cleared IDM100, an integrated medical tablet that establishes a physician-to-patient videoconferencing session. The solution enables simultaneous video conferencing and viewing of diagnostic data and medical images.

Elizabeth Keate, Dictum Health vice president for product management and development, said the company grew from a passion for using technology to transform healthcare.

"At my first meeting with Mory Ejabat, our founder and CEO, the conversation started with the application of technology to improve people's lives," she said. "Think of the challenges in the healthcare system – aging population, doctor shortages, and access to care, to name a few. Healthcare is a global issue, but it's the last area that hasn't been significantly improved or enhanced by technology."

Keate believes healthcare has been slow in embracing technology because the standard of care is that physicians treat patients. "That's a sacred relationship and you don't want to lose that," she said.

In addition, many devices could not provide accurate measurements, and the communications infrastructure wasn't as well developed. Added Keate: "You can't change the needle too fast. Physicians want to be sure they're delivering better care. That's a headwind that we've really spent time on."



## In search of a better way

Dictum Health was founded to help overcome some of the limitations of healthcare. The company's VER solutions let medical professionals see a patient's height, weight, body mass index, blood pressure, pulse, blood oxygen level, respiratory and temperature, along with cardiopulmonary data and medical images thanks to two integrated cameras.

Physicians and patients are embracing the technology, Keate said. "Clinicians are starting to get a little more comfortable with it, and the other thing that's pushing it along is that patients are much more involved with their medical decision-making."

"From a legislative perspective, the Affordable Care Act brought about a change from a fee for service to quality outcomes, so that's pushing people to look for alternatives," she added. "The time is right for adoption."

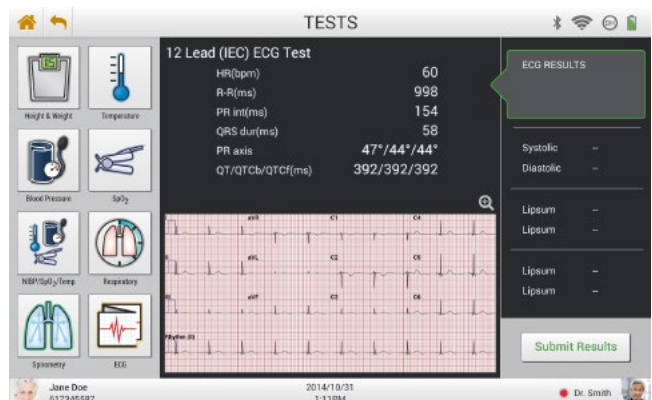
## Global connectivity, secure cloud storage

"Medical records can be more tempting targets than even credit card or social security numbers," Keate said. "The news is full of stories about hacking into medical records and even medical devices."

"Our tablet is completely cybersecure: you can't hack into ports or operating systems, and you can't add applications or games to the interface – people have asked, but it's a dedicated medical device," she said, stressing that the company's solutions are engineered to prevent breaches. "We leveraged the technology that has enabled all this to be done correctly, and so that was just part of our architecture."

With its intense focus on security, Dictum Health required a global connectivity and cloud storage provider that was equally dedicated to protecting patient information; the provider also had to be capable of helping to bring care to people who couldn't access the services they needed, including some in disaster recovery situations and in remote parts of the world.

"We had to have a secure and reliable way to connect with the patient," Keate said.







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**Elizabeth Keate**

Vice President for Product Management and Development, Dictum Health

## Delivering care to rural and remote areas

AT&T provides highly secure connectivity that supports Dictum Health’s VER product line. The AT&T global network enables high-speed wireless delivery and global roaming into more than 200 countries and territories, enabling Dictum Health to bring healthcare into Mexico, Canada and the U.S. and ultimately remote areas where there are few, if any, medical resources.

An AT&T Global SIM automatically and remotely connects the company’s devices to the AT&T network, and the AT&T Control Center enables it to launch, manage, and rapidly scale its connected devices. Dictum Health

has thus far deployed its VER system in remote settings in Costa Rica, refugee camps in the Middle East, and with infant cardiac patients in rural America.

“Our devices at refugee camps in Lebanon connected sick children with physicians in India, which broadens the meaning of delivering healthcare,” Keate said. “It’s not just connecting you with your doctor locally. It’s bringing in experts from around the globe to start managing patient populations at a whole different level.”

Some of the devices are portable enough to be carried in a backpack. Telehealth EMS physician John Baugh hiked into rural mountain villages in Haiti with a VER medical case and treated about 250 patients.

“Many patients reported that they had never been seen by a physician before,” he said. “The VER-MEDIC gave my patients in this rural area the same exam they would receive in my hospital.”

## Efficient use of health resources

Taryn Smith, director of marketing for Dictum Health, said the telehealth system is also helping communities use health resources more efficiently.

In North Huntingdon, a small town near Pittsburgh, residents with relatively minor medical problems often called the EMS/Rescue for care. The first responders had no option but to transport them to emergency rooms, which had become their default doctor’s office. North Huntingdon EMS/Rescue began using Dictum Health’s VER-MEDIC telehealth system to perform scheduled health checks on high-risk, frequent-user patients.

“The tablet helps medical personnel determine whether patients need to be transported to the hospital,” Smith said. “It’s helping them collect more complete, timely data on frequent users of emergency medical services and reduce avoidable hospital visits.”

In areas where people have limited access to healthcare, ambulances are starting to become healthcare delivery vehicles. Smith believes the Dictum Health solutions will enable EMTs to facilitate virtual exams with physicians and other clinicians. This lets them triage patients in place, provide care on site, and manage care effectively if they do have to transfer patients to the hospital. The process extends healthcare into areas where people previously had little or no ability to consult specialists.

“It can produce better patient outcomes and enable patients to remain at home,” Smith said. “It also represents a significant cost savings to our healthcare systems.”

## There’s no place like home

Preliminary results from a study of neonatal patients at UC Davis Medical center showed positive trends in reducing readmissions, improving patient outcomes, and reducing the cost of care. Families of infants with cardiac problems were given Dictum Health’s IDM100 tablet on discharge. The tablet enables them to see a physician while simultaneously streaming the infant’s near real-time vital signs.

“When you have an infant with a heart condition, you’re understandably going to be nervous and want to check in with your doctor,” Keate said.

However, some of the babies lived as far as three hours away from the hospital, which is a hardship for the babies and parents. Hospitalization in the neonatal unit is also very expensive and can expose the infants to infection. Using the tablet eliminated hours of travel for compromised infants and reduced hospitalizations.

“The tablets also improved the confidence of parents,” Keate said, “They felt empowered to take care of their infants, and it was a huge cost savings to the care team.”

The device is simple enough that even people with limited technology experience can use it. An 80-year-old who lived on a remote ranch was part of the company’s design validation.

“She had been put on blood pressure medication and the tablet enabled her to talk with experts and allowed doctors to treat her in place,” Keate said. “After the trial was over, she asked if she could keep the tablet.”

## In the air, on land or sea

Dictum Health recognizes the lifesaving possibilities of using its tablet in EMS helicopters and airplanes, but current FAA rules prohibit cell phone use in flight.

In the meantime, the company continues to find new ways to deliver services. Probably the most unusual example of the VER’s versatility came about as the Discovery Channel filmed its 30th annual “Shark Week” programs.

“The producers wanted to see if the sharks act differently as the health of people who have been in

the water a while starts to deteriorate,” Keate said. “We sent them tablets to monitor Navy Seals who floated in shark-infested waters for two days. They monitored their vital signs, blood glucose and pain levels.”

In separate episodes, the tablets were also used to track the health of celebrities Guy Fieri and Shaquille O’Neal. Producers reported that the VER solution worked perfectly, enabling paramedics to closely monitor the health of all subjects, but would not comment on the results. To learn whether the sharks behaved differently with superstars or divers who had been in the water for extended time, producers suggested tuning into Shark Week.

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## Teaming up to transform healthcare

Alliances are important, especially for new enterprises. “But start-ups have to be very careful who their collaborators are,” Keate said. “You have to find a company that understands your vision and can help you grow your business. The vision AT&T has for connected healthcare aligns with what we’re doing.”

AT&T recently connected Dictum Health with a tablet manufacturer that may make its devices more accessible for patients at home. It also assisted in discussions with the Veterans Administration about using VER solutions to improve veterans’ medical care.

“These things really drive healthcare transformation and the larger goal of adoption, and that comes from collaborating with AT&T,” Keate said.

Added Keate: “AT&T provides the road that lets us connect physicians and patients. That’s the strength of our relationship, and we benefit from their nimble thinking and flexibility. It’s been a very collaborative relationship, with interesting possibilities. Together, we’re looking to transform the state of healthcare.”