Special Report: GlobalMed and Telemedicine ROI

Telemedicine is often praised for bringing care to the underserved. But many people don't realize that virtual health can also lower the cost of that care in multiple ways.

Telehealth can connect patients to world-class specialists in real time without emergency transportation – or any wage loss or childcare costs on the patient's part. Fewer hospital admissions and better chronic disease management can also drive down the overall cost of healthcare. One percent of the U.S. population incurs 20 percent of health care costs – and more than 90 percent of them have chronic illnesses such as high blood pressure, diabetes, and high cholesterol. Remote patient monitoring at home, with faster interventions for emerging issues, can help many of those patients avoid expensive ER visits and hospitalizations.

Organizations that understand its medical benefits and financial value are making smart investments in a future of cost-effective care.

Copper Queen Brings Specialty Care to A Small Town

At a time when small rural hospitals are increasingly closing their doors, Bisbee's Copper Queen Community Hospital is financially healthy – thanks to telemedicine. Leaders of the 14-bed critical access hospital, 10 miles north of the Arizona-Mexico border, have adopted virtual health to make sure expert medical care is available in their community – population 5,209.

The first program was with telestroke, in collaboration with the Mayo Clinic in Phoenix. Former Bisbee Mayor Jack Porter says Copper Queen's telestroke service enabled him to walk within a few hours

of a paralyzing ischemic event. Thanks to Copper Queen CEO Jim Dickson's forward-thinking vision, the hospital has added telecardiology, teleneurology, teleburn, telepediatrics and other programs, often partnering with Mayo. The hospital's teleconcussion program includes baseline studies of high school athletes so post-injury scans can be compared to diagnose concussions.

The telemedicine program has saved the small hospital significant money and allowed them to continue operations in a time when many rural facilities are closing. Because the hospital no longer has to transport patients with atrial fibrillation to hospitals in Phoenix or Tucson, for instance, their telecardiology program saved **more than $1.4 million** in its first six months.

Dickson attributes the Copper Queen's high patient satisfaction scores – a remarkable 90 percent among ER patients – in part to telemedicine. "We're becoming a virtual hospital in the specialty levels of medicine," he said. "We initially thought that a television would create a barrier, a not-so-caring environment. But it's not true. When the doctor comes on, the patient is just so happy to have a specialist like that in a small hospital."

Off-Shore Urgent Care and Cost Savings

Air transport costs can add thousands of dollars to an already high medical bill. For this reason, Brazilian petroleum giant Petrobras uses GlobalMed solutions to provide virtual care to their oil production workers off the coast of Brazil. In the past, providing medical care to these workers has been a challenge. Urgent care nurses worked on the oil platform, but they couldn't always diagnose or judge the acuity of the problem – which meant any illness or injury could involve an expensive and potentially risky helicopter evacuation to a mainland hospital.

To reduce costs and help their workers receive faster care, Petrobras works with Hospital Israelita Albert Einstein, a teaching hospital in Sao Paolo with a medical school to provide remote care to workers on five production platforms.

In one year, the hospital conducted 965 telemedicine visits using GlobalMed solutions. The results were impressive:

- **93.2 percent of those visits led to patient discharge** – often avoiding expensive helicopter evacuations. Each helicopter evacuation costs roughly R$10,000-R$15,000 Brazilian reals, or $2500-$3750 USD.
- **Of the 6.8 percent of visits requiring evacuations, 71.4 percent were able to take non-urgent flights**, which are more inexpensive than urgent medical evacuation flights. The change also minimized risk for the patient and flight crew, as some medical evacuation flights take place at night or during storms.
- Oil production workers were often able to return to work sooner.

Texas Corrections Saves $780 Million on Prisoner Healthcare

The Texas Department of Criminal Justice (TDCJ) operates more than 30 state prison facilities, most in remote areas. Using telemedicine, its Correctional Managed Health Care Committee (CMHCC) collaborates with two of the state's leading health sciences centers: Texas Tech University Health Sciences Center (TTUHSC) and the University of Texas Medical Branch (UTMB) to control costs while providing quality care to inmates.

Before deploying GlobalMed virtual health solutions, TDCJ was besieged with challenges. Few physicians were willing to see inmates in person, due to security risks and isolated prison locations. Yet many inmates enter prison with chronic health conditions, while longer sentences have created an aging population who need extensive services. Transporting inmates out of the prison to a hospital or physician's office presents considerable security risks and expense. Each one-way trip to a nearby facility along with two guards costs roughly $350.

Since beginning its corrections telemedicine program, TDCJ has reduced unnecessary medical tests and transfers to outside medical facilities; it's also boosted preventive care and successfully weeded out offenders who fake an illness or injury. Benefits include:

- 85 percent of Texas inmates stayed at the prison for their healthcare consultation
- Improved inmate health
- Saved the TDCJ **$780 million over 14 years**

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Zimbabwe Responds to Tropical Cyclone Idai with Telemedicine

In 2019, in Zimbabwe's Manicaland province, The Ministry of Health and Child Care created a telemedicine solution to the local healthcare crisis. Most rural clinics lack a resident doctor, which means patients with complex issues and chronic conditions like hypertension, diabetes and coronary heart disease go untreated. The terrain in some areas is inaccessible by road, making it almost impossible for an ambulance to reach a patient in time. They addressed the severe care gap through virtual care across 16 clinics – specifically, through GlobalMed mobile exam stations, software and devices such as HD cameras, stethoscopes, ECG, abdominal ultrasounds and vital signs monitors.

The project has brought primary and specialty care to residents, reduced the need for ambulances, and regionally transformed health outcomes for entire villages.

The telemedicine deployment also offered a massive and unexpected advantage after Tropical Cyclone Idai struck a significant part of Manicaland Province and Mozambique in March 2019. One of the worst tropical disasters on record, it caused catastrophic damage across Zimbabwe and left more than 1,200 people dead, with thousands wounded. The virtual clinics relieved pressure on overwhelmed hospitals by providing remote consultations and helping wounded patients see doctors immediately instead of waiting for care.

The program is now expanding to 96 healthcare facilities throughout Zimbabwe. Cosmas Chigwamba, principal director at Zimbabwe's Ministry of ICT & Cyber Security, predicted the program will "greatly contribute to the sustainable socioeconomic goals of our country."

Texas Tech Brings Teledermatology to the Panhandle

The Texas Panhandle has some of the highest melanoma rates in the state. Ranchers and farmers spend long hours in the sun, while the local pageant culture means many young girls begin tanning at age 10. Skin cancer is common – but many small towns are three or four hours away from the nearest dermatologist in Lubbock and appointments must be booked up to a year in advance. Alarmed by the lack of treatment options, Texas Tech University Health Sciences Center (TTUHSC) created a telemedicine program based on skin cancer education and dermatology screenings.

The team takes GlobalMed's Transportable Exam Station (TES) unit, TotalExam® 3 camera and Variable Polarizing Hood (VPH) to connect rural communities to urban dermatologists.

The program has transformed healthcare outcomes for rural communities in several ways:

- Accelerated appointment wait times from one year to one week

- Eliminated appointment travel times of four hours or more

- Partnered with school districts to teach preventive care to children age 10 to18, reducing skin cancer rates

- Increased detection rates of skin cancer, alopecia and other conditions

- Provided emergency interventions and admitted patients to hospitals for life-saving treatment

Improving Healthcare Across Cape Verde

A horseshoe-shaped archipelago of ten islands off the west coast of Africa, Cape Verde is an independent island nation of 500,000 people. Healthcare is limited, with medical facilities and medicines unavailable or in short supply; without functioning airports on the islands of Brava and Santo Antão, air evacuation for medical emergencies is nearly impossible. Ferry service between islands is limited.

All of this was delaying care for sick or injured residents, who often crowded the few available facilities or travel 1,700 miles to Lisbon for treatment. Local leaders launched a national virtual health network – the Integrated Telemedicine and e-Health Program – to increase the quality and accessibility of healthcare services in Cape Verde. The network deployed GlobalMed telemedicine solutions at 10 centers across the island.

Today Cape Verde clinicians work with remote cardiologists and other specialists in Portugal. The program has transformed healthcare across the islands in several ways:

• Residents can more easily obtain preventive care and treat conditions before they progress into more serious and costlier illnesses.

• A dramatic reduction in medical evacuation transport has driven cost savings that are funneled back into funding local medical facilities.

• Island children with heart defects can be evaluated by remote cardiologists, who determine which children can be treated virtually and which children must visit Lisbon for surgery.

Expanding Care and Reducing Costs at the Veterans Administration

Because many veterans live in rural areas, they often travel long distances for medical appointments – a major expense for the Department of Veterans Affairs. To improve access to healthcare specialists and patient outcomes, the Veterans Administration (VA) launched telemedicine programs across the country using GlobalMed's virtual care delivery solutions.

A major success has been the VA's mental health program, considered one of the largest and most sophisticated in the U.S. In 2016, about 700,000 of American's 22 million veterans used VA telehealth services. By implementing telehealth at 150 medical centers and 800 outpatient clinics, the VA's National Telemental Health Center provides veterans with access to experts on bipolar disorder, behavioral pain, schizophrenia, non-epileptic seizures and insomnia.

The VA has also used virtual care to treat the dramatic rise in poly-trauma cases (involving injuries to more than one physical region or organ system, such as head trauma and limb amputation) which can put the patient at risk for physical, cognitive or psychological impairments or functional disability. Because poly-trauma cases typically require multidisciplinary clinical care, telehealth's ability to facilitate care coordination has been able to improve outcomes.

Teleaudiology is another successful VA program. Tinnitus and hearing loss are the top two service-connected disabilities among veterans, with more than 2.7 million currently receiving disability benefits for those conditions. The VA's teleaudiology program connects veterans to specialized audiology assessment and rehabilitations even when no audiologist is available in their area.

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Accurate diagnostic testing, hearing-aid fitting and programming can help optimize veterans' residual hearing while reducing travel time for specialists and decreasing no-shows from patients who don't want to drive three hours each way for a one-hour appointment. In one year, the program saved veterans over a million miles of driving and the associated costs in gasoline. The VA now uses virtual care across many disciplines, **saving an estimated $6,500 per patient** by expanding care access and decreasing hospitalizations in these areas:

- 40 percent reduction for mental health patients
- 25-30 percent reduction for heart failure and hypertension
- 20 percent reduction for diabetes and COPD

Prison Telemedicine Increases Security and Specialty Care

California Correctional Health Care Services (CCHCS) Telemedicine Services (TMS) launched its virtual health program with GlobalMed systems in 2010 to provide better healthcare to inmates and reduce visits to outside hospitals. Today the prison system can remotely connect inmates to primary care and more than 30 medical specialties, including allergy and immunology, cardiology, dermatology, endocrinology, gastroenterology, HIV, infectious disease, nephrology, neurosurgery, obstetrics, oncology, orthopedics, podiatry, pulmonology, rheumatology, urology and many more.

As a result, the correctional system has:

- Increased public safety
- Decreased medical transportation costs

- Procured better coverage during provider military and maternity leave
- Improved staff retention and recruitment
- Increased virtual encounters from 16,000 in 2010 to 70,000+ in 2019
- Saved healthcare and transportation costs, **including $25 million in 2017-2018**

Loyola Telemedicine Saves Children

Loyola University Medical Center (LUMC) is a nationally renowned healthcare facility and one of the country's top academic medical centers. In addition to receiving industry recognition for excellence in neurosurgery, cancer and other disciplines, their neonatal intensive care and pediatric critical care specialists provide world-class care for sick children.

Whenever a resident admits a high-risk patient or when a sick child is transferred into the ICU, an attending physician must see the patient being admitted. Yet the unit has only three attending physicians on rotation, with only one present at any time. This puts considerable pressure on both physicians and residents, especially in life-threatening cases. To provide faster critical care, Loyola launched a telemedicine program that could offer real-time services – no matter where physicians were located.

Now attending physicians can care for all newly admitted patients and monitor vital signs like heartbeat and respiration in real time. They can also provide immediate guidance and assistance to residents who are treating critically ill children.

They do this through portable GlobalMed mobile carts that can move from bed to bed, equipped with HD video monitors and connective devices. After the success of the initial launch, they've since expanded the program to address pediatric emergency situations and code events outside the ICU; a Rapid Response Team, consisting of a specially trained ICU nurse and a respiratory therapist, also uses the carts to bring critical care expertise to patients whose condition is deteriorating or life threatening.

This has helped both patients and providers in many ways:

- The additional physician involvement offers critical care intervention and specialist expertise – without requiring their presence onsite.

- Doctors have saved the lives of arresting children by treating them remotely in real time instead of making a 20-minute or longer drive to the hospital.

- The mortality rate of children who are admitted to the ward or stepdown unit and subsequently transferred to the **ICU is zero percent**.

Putting the Reward in ROI

Telemedicine is going beyond changing patient outcomes to driving healthcare economics. As technology continues to intersect with medicine, and medical systems search for new innovations to reduce skyrocketing costs, providers that invest in virtual health will reap financial dividends today and tomorrow.

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GlobalMed powers the world's largest, most advanced virtual health programs by designing and manufacturing integrated software and hardware telemedicine solutions that support a patient at any point in the continuum of care.

Providers are enabled with data capturing tools to deliver evidence-based treatment and improve patient outcomes while lowering costs. Providers looking for their own technology to manage capacity, save money, and deliver responsible medicine, will get all they need from one platform. Recognizing the importance of trust and consistency in healthcare, GlobalMed also offers white-label versions of their systems so that providers can self-brand their virtual care offerings to strengthen the patient relationship with their organization.

With over 15 million consults delivered in 60 countries and specializing in both federal and commercial spaces, GlobalMed's virtual health platform deploys in its highly secure Azure environment and is used worldwide from the Department of Veteran Affairs and White House Medical Unit to rural hospitals and villages in Africa. Founded in 2002 by a Marine Corps Reserve Veteran still serving as CEO, GlobalMed is proud to be a Veteran-Owned Small Business (VOSB). **Learn more at www.globalmed.com.**

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