iO

innovationOchsner

A think tank, an innovation lab and
a healthcare technology company,
innovationOchsner is solving some
of healthcare's biggest problems

Introducing iO

We are at a defining moment in healthcare, and Ochsner Health System is leading the way with innovationOchsner. This innovative team uses technology and data to create precision-focused, patient-centered solutions to keep patients healthier and providers more efficient.

Here are just four of the ways iO is changing healthcare today:

01 Our Digital Medicine programs are changing the lives of people with chronic diseases through tailored care from our care team. This new care model is both convenient and proactive thanks to connected devices.

02 We're using artificial intelligence to prevent negative outcomes. As one example, during our deterioration program's 90-day pilot period, cardiac arrests and other adverse events outside of the intensive care unit were reduced by 44 percent.

03 Advanced medical visualization techniques, like 3D printing and virtual and augmented reality, allow our teams to deliver care that is more personalized and precise than ever before.

04 We're redefining what high-quality hospital care looks like with our Optimal Hospital program. From wireless vitals monitors to copper-infused bed linens, this groundbreaking model is empowering patients and improving outcomes.

But these highlights are just the beginning. At Ochsner, innovation is part of our mission and our culture — it's who we are.

Sincerely,

Richard Milani, MD
CHIEF CLINICAL TRANSFORMATION OFFICER,
OCHSNER HEALTH SYSTEM

VICE-CHAIRMAN, DEPARTMENT OF CARDIOLOGY

LEADERS IN INNOVATION

Warner Thomas
PRESIDENT AND CEO,
OCHSNER HEALTH SYSTEM

Aimee Quirk
CEO, iO,
OCHSNER HEALTH SYSTEM

Jonathan Wilt
AVP & CHIEF TECHNOLOGY OFFICER, iO
OCHSNER HEALTH SYSTEM

Welcome to the O Bar

→ The first retail experience of its kind, the O Bar offers an interactive environment that allows patients to test out the latest in health technology. All locations are staffed by technology specialists who can answer questions and give demonstrations. Plus, each O Bar is stocked with state-of-the-art medical devices ranging from wireless blood pressure cuffs to activity trackers.

At the O Bar, patients can try out more than 300 doctor-approved health apps at the iPad bar.

Each O Bar carries connected health devices, including:

- Digital glucometers
- Digital blood pressure monitors
- Digital scales
- Activity trackers

There are O Bar locations throughout the regions served by Ochsner.

COMMUNITY COLLABORATIONS

Entrepreneurial in its approach to solving healthcare's biggest problems, iO is a leader in the growing healthcare innovation ecosystem. The iO team collaborates with thought leaders around the world to bring transformative ideas and emerging technologies to Ochsner and the communities it serves.

iO is also a proud member and supporter of the local entrepreneurial community, partnering with regional innovators to advance the development of life-changing technologies. Our collaborations with GE and the NOLA Health Innovators Challenge, for example, have allowed us to find new digi al tools to improve remote monitoring.

iO's Latest Advancements

→ Today more than ever before, advances in technology have the potential to dramatically change the way care is delivered. Spearheaded by the iO team and fueled by system-wide efforts, Ochsner is rapidly accelerating the use of technology and data to develop innovative, precision-focused and patient-centered solutions.

Artificial Intelligence
Preventing Problems Before They Begin

Imagine being able to predict critical medical events before they happen. That is the goal of the newest artificial intelligence (AI) tools developed by the iO team. Combining complex machine learning algorithms and Ochsner's Epic electronic health record platform with the computing power of Microsoft Azure cloud, Ochsner has created a powerful tool that can predict patient deterioration and alert our Rapid Response Team, so they can intervene proactively to prevent adverse events.

"When an alert goes off, it tells me a patient needs my attention. Then I need to determine why the AI is alerting me to this patient and come up with a treatment plan," says Dr. Michael Truxillo, Medical Director of Rapid Response and Resuscitation. "The goal is to reduce and, ideally, prevent adverse events, and this tool allows us to get these patients to the intensive care unit (ICU) up to four hours earlier than we would have under normal clinical conditions."

Ochsner is one of the first health systems in the country to use this type of technology to improve patient care, and early results have been exceptional. During the 90-day pilot period, cardiac arrests and other adverse events outside of the ICU were reduced by 44 percent. As Ochsner continues optimizing this technology, the system expects to be able to detect health patterns, learn from its insights and develop

> " The artificial intelligence and machine learning capabilities we've developed allow us to send proactive alerts to our doctors using real-time data that could potentially save someone's life. "
>
> **JONATHAN WILT**
> CHIEF TECHNOLOGY OFFICER,
> INNOVATIONOCHSNER

more aggressive preventive measures and proactive treatment plans, ultimately preventing many adverse events before they happen.

> " A lot of what medicine in general has done has been retroactive studies, and trying to understand what happened with a patient after the fact. We're going to know before it happens. That's a total gamechanger. "
>
> **MIKE HULEFELD**, CHIEF OPERATING OFFICER, OCHSNER HEALTH SYSTEM
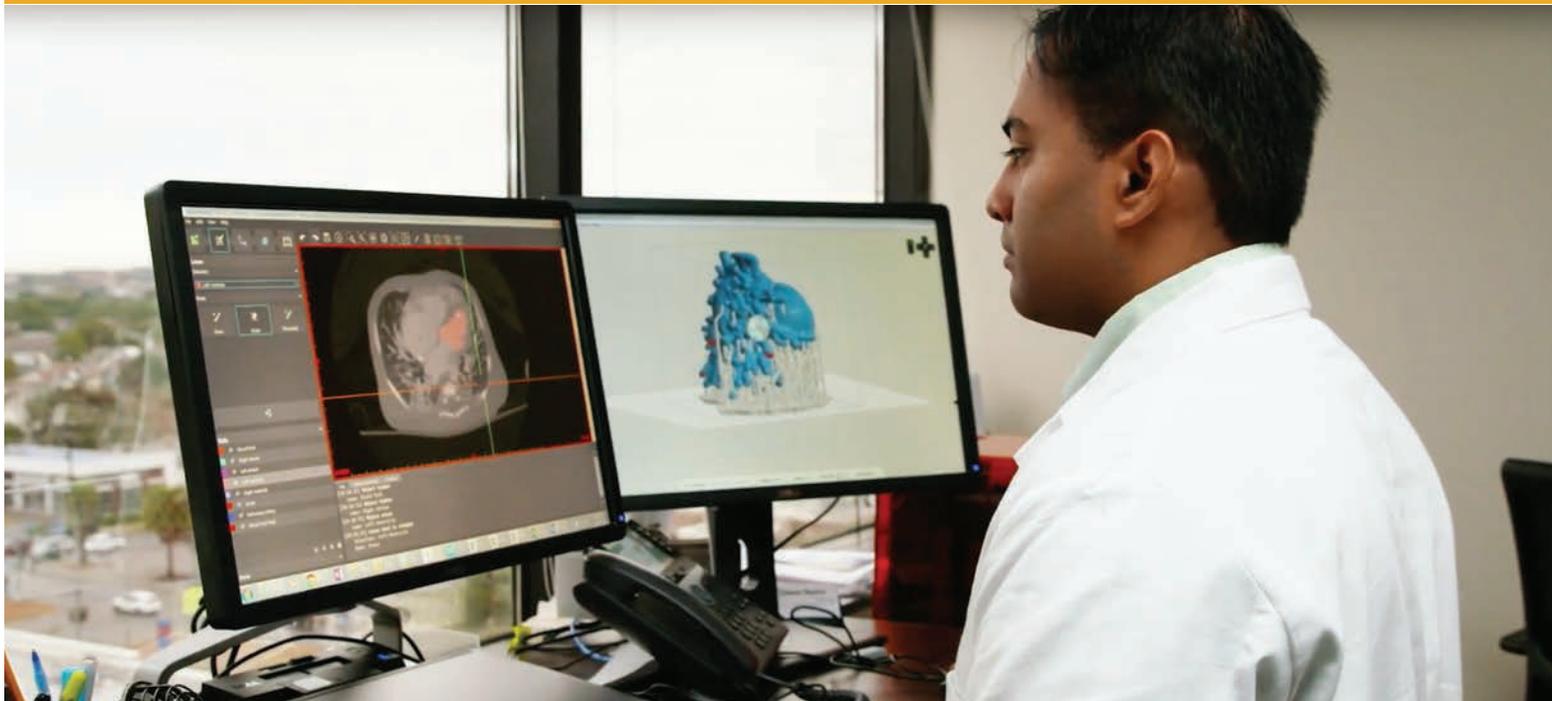
3D Printing & Virtual Reality
Using 21st Century Technologies to Provide 21st Century Care

When Jalanea Lowe was just 5 years old, she was diagnosed with a rare and life-threatening condition. The base of her skull was not properly connected to her spine, causing an instability that made it difficult for her to hold her head up. Also born with Down syndrome and receiving treatment for leukemia, Jalanea was in danger of becoming paralyzed or worse without rapid intervention.

The procedure would be a delicate one, removing a small piece of bone and using screws to stabilize the area and prevent damage to her spinal cord. In most hospitals, her surgical team would examine X-rays and use a generic model to discuss their plan. At Ochsner, 3D printing technology enabled her team to print an exact replica of Jalanea's spine and skull, so they could better prepare for the procedure.

"Being able to actually see a replica of Jalanea's spine and skull before operating gave me peace of mind that they were confident in their ability," says Jalanea's mom.

In addition to 3D printing, Ochsner has also been developing virtual reality and augmented reality technologies, which can create detailed soft-tissue models to help plan procedures like heart bypass surgeries or neurosurgical procedures.

"The goal is to leverage 21st century technology to provide 21st century care," says neurologist Dr. Korak Sarkar, director of the innovationOchsner m3D Lab, which is advancing the development of medical simulation, modeling and additive manufacturing. "Using these advanced medical visualization techniques not only helps our physicians understand a patient's condition and prepare a treatment plan, it helps patients understand their condition and treatment plan, too."

Digital Medicine Programs
Monitoring Patient Health at Home

→ Thanks to new technologies, iO's Digital Medicine programs are changing the lives of Ochsner patients. Using wireless devices, participants are able to keep tabs on their health and communicate with their care teams — all from the comfort of their own homes. Check out a couple of the ways iO is applying this model.

How it Works:

- Patients use wireless devices, such as blood pressure cuffs, scales and glucose monitors, to take the necessary readings from anywhere — at home, at the office or on-the-go.

- Device results are transmitted in real-time directly to patients' electronic medical records for the appropriate care team to review.

- The teams provide feedback over the phone, including medication and lifestyle recommendations, and send monthly progress reports.

Optimal Hospital
The Future of Care Delivery

Ochsner is always looking for innovative ways to improve the patient experience, streamline the care management process, and enable faster intervention to enhance safety and patient care. First implemented at Ochsner's flagship campus, Ochsner's Optimal Hospital program is now taking this innovation to the next level, providing a model for safe, high-quality hospital care.

"Our patients are safer, more informed and fundamentally involved in their own care, and our caregivers have been empowered to deliver better care faster," explains Dr. Milani. "Optimal Hospital is truly revolutionizing care delivery and management."

iO's combination of innovative tools, technologies and processes has been shown to decrease length of stay by 8.6 hours and improve 30- and 90-day readmission rates by 16 percent and 12 percent, respectively.

WIRELESS VITALS MONITORS

Patients' vitals, such as BP, SpO_2 and heart rate, are continuously monitored through wireless, wearable devices, increasing patient mobility, comfort and safety.

Managing Chronic Diseases

The first such program, the Hypertension Digital Medicine program, which now has thousands of participating patients, has received national attention for its success. Dr. Richard Milani, Chief Clinical Transformation Officer at Ochsner Health System, and his colleagues published their results in *The American Journal of Medicine.*

- Patients in the Digital Medicine program were more than twice as successful at achieving their target blood pressure levels within 90 days compared to a control group not enrolled in the program, outperforming traditional office-based care.
- Those in the program showed higher activity levels and less sodium consumption.
- Patients were more engaged in their health, and more likely to make lifestyle changes.

Building on the successful framework of the hypertension program, iO is launching programs to help patients manage other chronic diseases, like diabetes. For people living with diabetes, maintaining healthy blood sugar levels can be a time-consuming and frustrating task.

The Diabetes Digital Medicine program is designed to help our patients address these challenges. Using a digital glucometer, blood sugar readings are transmitted directly to the patient's electronic medical record for our care team to review. The care team educates the patient, makes treatment adjustments, assists with testing supplies and monitors completion of annual health maintenance procedures. As with all our chronic disease Digital Medicine programs, this one-on-one support makes it easier for our patients to prioritize their health.

Monitoring Prenatal Health

During Paige Entwisle's first pregnancy, she had to take off work more than a dozen times and drive 30 minutes each way to see her doctor for routine prenatal visits. While some visits included important procedures such as ultrasounds, others were just basic checkups. So when she heard about Ochsner's Connected MOM program before her second pregnancy, she was excited to participate.

With a digital scale and blood pressure monitor that send results to her care team through an app on her phone and a home protein test kit, Paige was able to skip several trips to her doctor. And, more importantly, her progress was monitored more closely than it had been before.

"If anything was off, I'd get an alert," Paige says. "And if my doctors were concerned with any of my readings, they could have me come in right away. It was all very easy to set up and use, and on top of being incredibly convenient, provided me and my baby with an extra level of safety."

COPPER-INFUSED LINENS & SURFACES

Copper is antimicrobial, shown to kill 99.9 percent of bacteria within two hours of contact, as well as many viruses and fungi. Infusing sheets, gowns, towels and surfaces, like tabletops and grab bars, with copper takes advantage of these properties, reducing the risk of hospital-acquired infections.

QUIET HOURS & RED NIGHT LIGHTING

Noise levels are continuously monitored during quiet hours to maintain a restful environment, and sleep is only interrupted when necessary. Because red light is less disruptive to circadian rhythms than blue or white light, red lights are used at night when checking on patients to prevent waking them.

PATIENT TABLETS

Patients are offered tablets equipped with the Epic MyChart Bedside app, which allows them to view their health data and daily schedule, learn about their care team, take notes, and request comfort items, as well as access select patient education and entertainment portals.

STAFF SMART DEVICES

Physicians and nurses are able to instantly review patient lists, check conditions, retrieve records, evaluate test results, confir treatments and coordinate care from their smartphones, tablets and smartwatches using apps that connect them to each other, and to our Epic EHR system.

"Ochsner is at the forefront of a fundamental **transformation** in how we think about healthcare. Using the latest developments in technology and data analytics, we are developing **connected, informed** and **tailored solutions** that put patients in control of their health, improve the experience and efficiency of care, and ultimately **save lives**."

DR. RICHARD MILANI

Ochsner®

innovationOchsner.com