

IMPACT!

It's a dreaded moment in any sport, one that brings play to a halt as a hush washes over the crowd — those potentially life-changing seconds when a player's head collides with something it shouldn't.

Donavon Mann plays football and basketball at William M. Raines High School in Jacksonville. He knows the pain of a concussion all too well.

"I broke my nose during basketball season and the force from the other player's elbow gave me a slight concussion. I had a bad headache."

For a long time, conventional wisdom suggested it was okay, and even admirable, to "shake off" a potential head injury and get back in the game.

But more than a decade of research has yielded a better understanding of the dangers of concussions — particularly for young, developing brains.

Perhaps the greatest sign of change is the legislative movement that has been sweeping the country to protect student athletes like Mann when they sustain a hit to the head.

In February 2011, fewer than a dozen states had student-athlete concussion laws. A year later, 36 states have such laws — including Florida. In April, Gov. Rick Scott signed a bill into law to protect the hundreds of thousands of youth participating in organized sports programs throughout the state.

In Florida, as in most states, the new laws mandate three things: educating coaches, parents and athletes about concussions; immediately removing any athlete suspected of sustaining a concussion from play; and allowing an athlete to return to play only after receiving written medical clearance.

But lost in the good intentions of the legislation is an often unrecognized need for training and resources for the doctors and nurses tasked

with evaluating whether children are ready to return to play, says Russell Bauer, a UF clinical and health psychology professor.

That's where Health IMPACTS for Florida, a research collaboration between the University of Florida and Florida State University, is stepping in to help.

New standards and new laws have created a "perfect storm of opportunities" for studying head injuries among young athletes, says Bauer, a member of the UF College of Public Health and Health Professions who is also affiliated with the UF Clinical and Translational Science Institute (CTSI).

Bauer and collaborators at UF and FSU are training primary care teams at about 20 practices in four cities — Gainesville, Jacksonville, Orlando and Tallahassee — on how to assess and manage possible concussion cases.

Nurse practitioner Susan LaJoie is one of the clinicians participating in the concussion study. An FSU College of Medicine faculty member, LaJoie runs a health clinic at James A. Shanks Middle School in Quincy. With the nearest large hospital almost

BY CLAIRE BARALT

**UF AND FSU
RESEARCHERS ARE
COLLABORATING
TO TACKLE YOUTH
CONCUSSIONS**





Colin Hackley

FSU nurse practitioner Susan LaJoie helps a student complete a baseline concussion screening at Shanks Middle School in Quincy.



“Health IMPACTS gives us a real opportunity to deliver research discoveries, improved care and better outcomes where most people get their care, which is not at the UFs, Stanfords and Harvards of the world.”

— David R. Nelson
CTSI Director



Colin Hackley

Students participating in the Health IMPACTS for Florida research studies respond to questions on iPads.

an hour away, the clinic serves many of the health-care needs for this rural and largely African-American community outside of Tallahassee.

LaJoie understands the importance of sports in rural communities like Quincy. In the South, where football is often considered “a way of life,” head injuries can seem commonplace to young athletes.

“Many of them have grown up playing football since they were little boys and thought it was par for the course,” she says. “They didn’t realize

they were at risk for long-term or serious complications.”

Because sports are a healthy outlet, LaJoie wants to encourage her young patients to continue playing while keeping them safe and opening a dialogue about risky behaviors.

The Health IMPACTS study is helping her do both.

As doctors and nurses across Florida gear up for qualifying sports physicals throughout the summer and early fall, many will perform baseline concussion screenings for students, which



Maria Helen Ferris

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UF researcher Russell Bauer administers a balance exam as part of a baseline screening at the North Florida Sports Concussion Workshop at Raines High School in Jacksonville.

they can later use to help determine the severity of a head injury.

What’s different with the Health IMPACTS effort is its research component and its use of technology to implement a standard screening tool across numerous practices in highly diverse settings.

The screening tool used by Health IMPACTS is called the Sports Concussion Assessment Tool, or SCAT-2. The SCAT-2 supplements the commonly used Standardized Assessment of Concussion, known as the SAC, with a balance test and tools that can be used on the sidelines to assess an injury immediately after it happens. Comparing a patient’s pre- and post-injury responses to the same set of questions allows health professionals to more readily assess whether the patient sustained a concussion.

LaJoie values the tool as both a nurse and a mother whose four children are active in sports.

“As a parent it’s probably one of the scariest things you see,” she says,

recalling an incident when her son suffered a head injury and had to sit out for several days. “A lot of times a head injury is difficult to diagnose. Typically adolescents are not forthcoming in sharing a whole bunch of symptoms — particularly boys. So having a discrete set of questions they answer and being able to compare that to a baseline — it’s reassuring as a mom and a clinician.”

Health IMPACTS is providing the SCAT-2 to participating practices pre-loaded as an application on iPads. Health professionals and patients complete the assessment on the iPads, which then feed the data securely back to the practices for their patients’ medical records as well as to the research team for analysis. Although iPads are being used for the study, the SCAT-2 can easily be completed on paper, which is important for practices that may not be equipped to use mobile technology.

The Health IMPACTS network will collect and analyze data from

thousands of screenings and will follow the screened kids for at least a year. The research team members also will be studying actual injuries among participating students, which they hope will lead to a better understanding of factors that make a child more or less likely to recover.

Typically fierce rivals on the football field, FSU and UF are driving toward the same end zone with Health IMPACTS, joining their unique strengths to expand clinical research and improve health throughout the state.

The UF Clinical and Translational Science Institute brings extensive clinical research expertise and resources to the collaboration. In 2009, the institute received a prestigious Clinical and Translational Science Award of close to \$26 million from the National Institutes of Health to help speed scientific discoveries to Floridians.

As the state’s only CTSA recipient, UF links Florida to the significant resources of the 60 medical research institutions supported by the CTSA program.

CTSI Director David R. Nelson views collaborations like Health IMPACTS as essential for more rapidly delivering the benefits of research to “the real world.”

“Health IMPACTS gives us a real opportunity to deliver research discoveries, improved care and better outcomes where most people get their care, which is not at the UFs, Stanfords and Harvards of the world,” Nelson says.

At the same time the UF institute was launching its work, the FSU College of Medicine was seeking to overlay a clinical research network on top of its unique medical education model, through which 2,000 faculty physicians in six regions across the state serve an estimated 2 to 3 million patients. Although there was plenty of research interest among FSU’s faculty physicians, the right research opportunity had yet to emerge.

“We had a network in search of a study,” recalls Michael Muszynski, FSU’s regional campus dean in Orlando and associate dean for clinical research, who is leading the creation of the FSU College of Medicine Clinical Research Network.

Robert Watson joined the FSU College of Medicine as executive associate dean for administrative affairs in 2008 after teaching for more than 35 years at the UF College of Medicine. He recognized the complementary efforts taking shape at both universities and brokered an initial conversation between the two medical schools. Soon leadership of both universities agreed to make it a priority.

Then, in 2010, the state announced a new cluster grant initiative and the potential for real funding spurred the idea toward reality. UF and FSU jointly received a \$600,000 grant from the state that November to launch Health IMPACTS, and an NIH grant of \$472,675 to the UF CTSI followed about six months later.

The Health IMPACTS acronym stands for “integrating medical practice and community-based translational science.” In other words, bringing health care and research together.

But what does it actually take to embed research into a medical practice? Specialized training, a secure way to share data, modifying patient flow — and lots of patience during the startup phase.

To make such operational changes worthwhile and feasible for practices, the Health IMPACTS team took care to structure its pilot studies in a way that not only satisfies an academic quest for knowledge but also meets practical needs of primary care providers.

For example, the concussion study provides participating practices with the latest training and screening tools for concussion assessment and treatment. The second Health IMPACTS pilot study, which uses iPads to survey youth about health risks and refer them to resources in their own communities, has been certified to satisfy the quality component of mandatory

re-certification by the American Board of Pediatrics.

In addition, Health IMPACTS makes locally-based research coordinators available to help practices get the studies up and running.

The goal is for Health IMPACTS to serve as a trusted conduit for disseminating the latest knowledge and tools to community-based health care providers across the state — even in the most rural areas — and at the same time study that dissemination process to continue improving and expanding the most effective and efficient ways of delivering high-quality care.

Amid shrinking budgets and a radically shifting health insurance landscape, every dollar spent delivering care matters. And every second counts for a busy practice.

Lindsay Thompson, an assistant professor of pediatrics at the UF College of Medicine, believes the commitment is worth it.

“No one likes to add steps to their patient flow process. But ultimately it has payback, primarily for the doctors,” says Thompson, who is participating in the adolescent health risk study and coordinates the study’s Gainesville practices. “In the end we’re getting better information.”

Leading the effort to put in place the Health IMPACTS infrastructure is Elizabeth Shenkman, chair of the UF College of Medicine Department of Health Outcomes and Policy and co-director of the CTSI’s Community Engagement and Research Program. Shenkman also is principal investigator for the health risk assessment study.

“We hope to create the infrastructure so when other faculty see opportunities, they don’t have to spend months and years developing them,” Shenkman says.

The graphic features the UF logo at the top, followed by a banner that reads "FLORIDA'S". Below this, the text "LAND GRANT UNIVERSITY" is displayed in a large, bold, blue font. Underneath, the phrase "Results Beyond Education" is written in a smaller, italicized blue font. A quote in blue text follows: "As a land-grant university, our sights are always on how we can apply the discoveries and expertise emanating from the UF Health Science Center to improve health throughout our wonderfully diverse state." At the bottom, the name "David S. Guzick" is written in a bold blue font, with his title "Senior Vice President for Health Affairs" in a smaller blue font below it.

Creating the infrastructure has been no simple feat. To function as a research network, Health IMPACTS must work with multiple Institutional Review Boards that govern the use of human subjects in research, maintain secure information technology systems that connect dozens of sites and deliver broad training in clinical research as well as specialized training for specific research studies.

And all of these elements have to work in the diverse types of practices participating in Health IMPACTS, which include UF, FSU and independent clinics in academic, private, pediatric, hospital, family medicine, rural and school settings.

“We’re trying to integrate sophisticated research tools with the lifestyle of medical practice,” says Bauer. “People don’t want to leaf through 50 screens to enter data. How do we achieve user-friendliness in the offices so practitioners feel it’s useful and helpful while maintaining the sophisticated data integration on the research side?”

Leaders at UF and FSU view Health IMPACTS as a springboard for new research opportunities and partnerships across the state.

The pilot studies themselves are ripe with additional research opportunities.

“With head injuries, it’s a problem that’s widespread, poorly understood and an enormous public health risk — and you can do meaningful research across the translational research spectrum,” Bauer says. “From basic knowledge of how neuronal aspects affect long-term recovery, all the way to helmet redesign and safety guidelines for how to tackle.”

Beyond specific studies, Health IMPACTS also has the potential to

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of Pediatrics

Jesse S. Jones



UF researchers Lindsay Thompson, left, and Elizabeth Shenkman demonstrate one of the iPad applications being used in the Health IMPACTS for Florida pilot studies.

influence future generations of doctors. FSU’s faculty physicians deliver primary care in community-based settings throughout Florida and train FSU’s third- and fourth-year medical students. By engaging the same faculty in clinical research, FSU helps its medical students gain research experience early in their careers — a shared goal of the UF CTSI.

Myra Hurt, professor and senior associate dean for research and graduate programs at the FSU College of Medicine, sees that as a tremendous benefit: “I think the most valuable part of that is for medical students to see how community-based physicians can be engaged in cutting-edge research ... in their offices, in their clinics, wherever health care is taking place. That’s what we really need to do to translate exciting findings out into the community and test them and change the standard of care.”

At the national level, there is keen interest in how to better disseminate evidence-based practices, and how to

improve “best” practices so they address the realities and needs of diverse patients in diverse community settings.

Health IMPACTS for Florida positions UF, FSU and the state to do just that.

“The idea is that as physicians are out there practicing — the issues they’re encountering with their patient populations, they can feed that experience back through the Health IMPACTS network,” Shenkman says. “So there’s a synergy with the practice environment and research in the academic setting to design better, stronger studies.” ✕

Nicki Karimipour contributed to this story.

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