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Data Guides

The AR-CDR Team Reaches Cohorts Beyond UAMS

As a head and neck endocrine surgeon, Brendan C. Stack Jr., M.D., noticed an unsettling pattern among breast cancer survivors at his UAMS clinic.

"After their breast cancer treatment, the PET scans they received as part of their surveillance would often find cancer in the thyroid," he said.

Meanwhile, the American Thyroid Association recently issued guidelines for physicians not to screen for thyroid cancer because there are too many false positives and very small, inconsequential thyroid cancers.

Stack wondered, could breast cancer patients be an exception to the association's guidance? He needed data.

Only a few years ago, he wouldn't have made it far in his quest for clinical data, especially outside of UAMS. A data warehouse was established in 2011 with major support from TRI. It was a big step in providing researcher access to de-identified clinical data. Still, significant silos of data remained inaccessible, such as

The AR-CDR team (l-r): Shariq Tariq, senior business intelligence analyst/developer; Mahanaz Syed, M.S., senior data warehouse analyst/developer; Sohrab Syed, M.S., senior data warehouse analyst/developer; Ahmad Baghal, M.D., director, AR-CDR; Kim Gates, project manager; Shaymaa Al-Shukri, Ph.D., business intelligence analyst/developer; Annu Kumari, M.S., data quality analyst.

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TRI AR-CDR Collaboration Bears Fruit for UAMS Researchers

Dear Colleagues,

Two years ago we announced some exciting developments making it easier for UAMS investigators to generate and answer research questions using the Arkansas Clinical Data Repository (AR-CDR).

In this issue, you will see that TRI's collaboration with the AR-CDR team continues to bear fruit. Since announcing the UAMS Research Cohort Estimation Tool with a more user-friendly interface in February 2017, we have added resources and services that advance our goal of making Big Data more accessible.

Notably, we have been leaders in the development of the collaborative framework for the Southeastern SHRINE (Shared Health Research Informatics Network). We also recently joined the Accrual to Clinical Trials (ACT) CTSA-initiated nationwide network of sites that share electronic health records data. ACT has more than 30 institutional members, enabling cohort queries of their databases.

Led by Dr. Ahmad Baghal, the AR-CDR team has streamlined its processes, added data content and overcome barriers to data silos. The team has also adopted a strong customer service approach, remaining connected with researchers to learn their study outcomes and follow through with any additional services they may need. Their work is paying off, with more than 100 researcher requests for AR-CDR services in 2017 and increasing to nearly 150 service requests in 2018.

Learn more at tri.uams.edu.

Sincerely,

Laura James, M.D.
Director, UAMS Translational Research Institute
Associate Vice Chancellor for Clinical and Translational Research

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the UAMS Regional Campuses and biospecimen repositories. It also featured a challenging user interface for researchers trying to query potential cohorts, and there was no way to access clinical data from other institutions.

DATA WAREHOUSE 2.0

Much has changed. Now called the Arkansas Clinical Data Repository (AR-CDR), this version of the TRI-supported data warehouse has the wherewithal to help researchers like Stack pursue their research questions.

Led by Ahmad Baghal, M.D., the AR-CDR team added data content by creating links to data silos, adopted data sharing tools, and established collaborations with clinical research institutions across the United States. TRI, working with the AR-CDR team, helped establish a regional consortium made up of institutions that are part of the NIH National Center for Advancing Translational Sciences (NCATS) Clinical and Translational Science Award (CTSA) Program. Its members are UAMS, Medical University of South Carolina, University of Alabama, Birmingham, Emory University and the University of Kentucky. Together they constitute the Southeastern Shared Health Research Informatics Network (SE SHRINE) consortium.

New tools with more user-friendly interfaces are helping researchers query potential cohorts at dozens of institutions:

- TriNetX, a federated clinical data network of providers, including pharmaceutical companies and contract research organizations (CROs), as well as CTSA institutions.
- Accrual to Clinical Trials (ACT), a CTSA-initiated nationwide network of sites that share electronic health records data.

Learning he could access such an expanded universe of data was great news for Stack.

"It's exciting," he said. "We're now able to hopefully make some scientific judgments based on a larger scope of data than we've ever had before. This is definitely one of the trends in medicine, so I'm excited that I get to play with it in an area that interests me."

Baghal's team is also working with John Arthur, M.D., Ph.D., on a study seeking to understand why the mortality rate for patients with dialysis-dependent acute kidney injury is nearly 40 percent, and Bradley Martin, Pharm.D., Ph.D., on a study assessing what happens to people when their opioid prescriptions are either reduced or discontinued.

Each researcher is using data sharing agreements with the SE SHRINE institutions to strengthen their UAMS findings. They started first with the University of Alabama, Birmingham, and from there will branch out to other consortium members.

Arthur's and Martin's studies are also using the SMART IRB (a CTSA initiative) reliance agreement, which requires only a single IRB review for their multi-site studies.

While analyzing numerous factors, Arthur said he's found an association between acute kidney injury deaths and changes in patients' blood pressure during dialysis. He and the AR-CDR team are also working to link the SE SHRINE institutions' data with the United States Renal Data System (USRDS).

"By linking the hospital information with the USRDS, we can create a more complete picture of all the things associated with adverse outcomes in this population," Arthur said. "That will give us enough data to tell which treatment modifications could make a difference."

Researcher Profile

John Arthur, M.D., Ph.D.

Professor, Director, Division of Nephrology
UAMS College of Medicine
Associate Director, UAMS Translational Research Institute

What inspired you to become a clinical researcher?

As a physician, you have the opportunity to help patients one at a time and I love this. As a physician-scientist, however, you have the opportunity to impact the lives of many more people.

What do you like most about your area of research?

The thing that I like most is trying to figure out better ways to treat patients. This involves being observant in the clinical setting, asking questions in my basic science lab as well as analyzing clinical samples and data that we get from patient volunteers

What career would you have chosen if not a clinician and research?

Until the start of my third year in college, I couldn't decide if I wanted to be an actor with my dream of performing in Broadway musicals or a large animal veterinarian. A conversation with my father that year helped convince me to apply to medical school.

What current or former biomedical researcher (from anywhere) do you admire most? Why?

There are so many choices, but Dr. John Raymond had the biggest direct impact on my career after my parents. Now president of the Medical College of Wisconsin, he was my mentor and adviser during my fellowship training at Duke University and my mentor when I was on the faculty at the Medical University of South Carolina. John taught me a solid approach to research and guided me as I tried to apply what we learned in basic science to benefit patients. He was also a great career mentor.

Have an Early Stage Innovation?

UAMS Has a Great Course for You

Applications are being accepted for the second annual UAMS fastPACE Course, which will begin March 29.

The 4-week biomedical commercialization course is designed for busy faculty and post-doctoral fellows with an early stage project. It was developed by FastForward Medical Innovations at the University of Michigan. Modeled after the successful National Science Foundation I-Corps program, the fastPACE Course blends in-person and online education on the basic components of biomedical commercialization.

Why enroll?

- Learn how to secure funding and attract collaborators
- Determine the commercial viability of your innovation
- Expand your network of innovation partners, mentors and potential investors

The course offers expert instruction from a team from academia and industry. More information and a link to the application can be found at bioventures.uams.edu/fastpace. If you are a graduate or medical student interested in entrepreneurship and wish to simply join a team, please fill out the fastPACE Intake Survey.

Questions? Contact Nancy Gray, Ph.D., president, BioVentures LLC, nmgray@uams.edu.

Nancy Gray, Ph.D., president of BioVentures LLC, brings more than 30 years of experience in biomedical industries, including pharmaceutical research and development, to her leadership of the fastPACE course.

Research on the Horizon: New TRI Study of the Month

Sumant Inamdar, M.D., meets with Diana Gregory, R.N., TRI research coordinator.

- **UAMS Principal Investigator:** Sumant Inamdar, M.D., MPH, Assistant Professor, Division of Gastroenterology and Hepatology, Department of Internal Medicine, College of Medicine.
- **Summary:** Phase 1 dose-ranging study to evaluate the safety and efficacy of Camostat mesilate (NI-03) compared to placebo as pain therapy in patients with chronic pancreatitis.
- **Significance:** Chronic pancreatitis is inflammation of the pancreas that does not heal and eventually impairs a patient's ability to digest food and make pancreatic hormones.
- **TRI Services:** Medicare coverage analysis, study budget review and negotiation, IRB submission, completion of sponsor's regulatory startup packet, training for study staff/investigators, oversight of enrollment startup, and research nurse coordinator services.
- **Sponsor:** Stason Pharmaceuticals Inc.

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TRIbutes

The following UAMS researchers cited the Translational Research Institute (TRI) in publications after utilizing TRI resources or funding:

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Thank you for remembering to cite TRI in your publications resulting from studies that receive TRI support.
Find the appropriate citation language at **tri.uams.edu/about-tri-2/cite-tri.**

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