

Innovations in Urology



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focused solely on children.*



PEOPLE

Dr. Chiang, university researcher team up to advance care



George Chiang, M.D.

A longtime research collaboration between [George Chiang, M.D.](#), chief of the Division of Urology at Rady Children's Hospital-San Diego, and Ruth Bush, Ph.D., M.P.H., an associate professor at the University of San Diego working in the Betty and Bob Beyster Institute for Nursing Research, has been integral to the success of the division's research program.

Dr. Chiang has a particular interest in clinical research informatics and leveraging the electronic health record for comparative effectiveness research. He also has a research and clinical interest in patients with spina bifida. Along with lecturing at both regional and national conferences on this topic, he has worked extensively with Spina Bifida San Diego, helping to organize the first annual community event to bring together patients, providers and families.



Ruth Bush, Ph.D., M.P.H.

Working with Bush, Dr. Chiang has obtained funding for research projects aimed at improving patient care, including a study on the challenges spina bifida patients encounter. In the area of clinical research informatics, they launched a project examining the effects of the patient portal and electronic health record on patient engagement. (See "[Patient portal usage linked to patient's primary language](#)," December 2016 issue.)

Bush has extensive clinical research experience that spans multiple healthcare settings, including pediatric programs. She has provided statistical consultations for projects in various research areas, including patient-centered outcomes, and has served as a consulting member of the university's Electronic Health Record implementation teams. She is currently the principal investigator of an Agency for Healthcare Research and Quality K99/R00 Research award.



PROGRAMS

Program aims to bridge gap from pediatric to adult care

The Division of Urology at Rady Children's, in collaboration with Yahir Santiago-Lastra, M.D., at UC San Diego Health, has developed a transitional urology program for adolescents and young adults with congenital urologic malformations who need help transitioning to adult care.

Care is provided for conditions including spina bifida, cerebral palsy, exstrophy and neurogenic bladder (secondary to other disease processes). The multidisciplinary team includes specialists in voiding dysfunction, sexual medicine, infertility, men's health, urogenital reconstruction, urinary stone disease and general urology.



The care team not only seeks to treat and prevent disease, but also to improve patients' quality of life and foster independence. To this end, they collaborate with experts in physical medicine and rehabilitation, neurosurgery, internal medicine, and psychology and social work.

The physicians are currently working to create best practice guidelines for transitioning this complex patient population to adult care. Additionally, they are leveraging the close affiliation between Rady Children's and UC San Diego, as well as the Epic electronic health record.



RESEARCH

Division collaborating with UC San Diego on research center

Rady Children's Urology division is partnering with UC San Diego to open a multidisciplinary neuro-urology research center at UC San Diego, with the goal of advancing treatment for bladder-related conditions in children and adults.

The center's research will be based on the work of a core group of senior scientists and clinicians, including [George Chiang, M.D.](#), chief of Rady Children's Urology division and an expert on neurogenic bladder. He is also an associate professor of surgery at UC San Diego School of Medicine. Sanghee Lee, Ph.D., of UC San Diego, is spearheading the



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development of the center. She is the recipient of an American Urological Association Research Scholar Award, and her work has been published in prominent journals.

The center seeks to develop novel methodologies and treatments, ranging from non-invasive monitoring to bladder pain associated with metastatic disease. Existing collaborations with UC San Diego specialists in anesthesia, uro-oncology, adult neuro-urology and bioengineering provide the necessary knowledge to pursue this endeavor. A future goal is to develop a neuro-urology treatment center.

Work has already begun on developing a state-of-the-art, noninvasive high-resolution bladder electromyography monitoring (HR-BEMG) system. Current monitoring for bladder dysfunction is highly invasive. Preliminary findings from the HR-BEMG show its ability to capture the propagating electrical activity pertaining to the bladder muscles with a multi-electrode array placed on the abdomen. It is well known that different spatial patterns and different temporal signatures are important signs of bladder dysfunction and can help guide clinical treatment. This advanced technology not only has the potential to benefit both pediatric and elderly patients, but could also be used on an ambulatory basis.



INNOVATIONS

Reducing opioid prescriptions in outpatient urologic surgeries

Diana Cardona-Grau, M.D., a second-year fellow in the Division of Urology at Rady Children's, is working on a quality improvement project that aims to minimize postoperative opiate use in outpatient urologic surgeries. The ultimate goal is to implement computerized physician order entry that will guide the surgeon in choosing the most appropriate number of doses for a particular procedure.



The project involves evaluating physicians' opioid prescription patterns as well as patients' actual usage of the drugs. It is



suspected that patients undergoing outpatient urologic surgery use less narcotic pain medications in the immediate postoperative period than what is prescribed.

To assess this belief, Dr. Cardona-Grau and her colleagues are measuring how much of the prescribed pain medication patients are using in the immediate postoperative period and comparing this to their pain levels in the same period. The team is also quantifying how much of the prescribed medication is used and how much is left over.

Prescription opioid medications have been identified as one of the drivers of the opioid addiction epidemic, with studies showing that the amount of prescription drugs sold in the United States nearly quadrupled since 1999 despite no overall increase in pain reported by patients. The Centers for Disease Control and Prevention estimates that 91 Americans die every day from an opioid overdose.

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