Urologists address unmet global burden of surgical disease in India

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Aseem R. Shukla, MD, is a pediatric urologist at Children's Hospital of Philadelphia Credit: Children's Hospital of Philadelphia

Aseem R. Shukla, MD, a pediatric urologist at Children's Hospital of Philadelphia (CHOP), along with several of his colleagues from around the world, have created an innovative program to help address urological needs in India. The team is specifically addressing bladder exstrophy (BE), a complex, rare disorder that occurs during fetal development when the bladder does not form completely and drains onto the surface of the abdomen. If untreated, the disease raises the risk of serious infections and cancer, along with psychosocial complications.

With a population of 1.2 billion, India accounts for 21 percent of the global burden of disease. Approximately 500 babies are born there with BE each year, and the highly-specialized surgical knowledge required to treat BE is limited to a few major medical centers. The consequent lack of access is what prompted Dr. Shukla, along with Douglas Canning, M.D., chief of the Division of Urology at CHOP, and several of their colleagues from around the world, to create a multi-institutional collaborative that leverages capabilities to alleviate the global burden of this surgically treatable disease, as reported today in *JAMA Surgery*.

The article describes their project at Civil Hospital, a public hospital in Ahmedabad, India, between January 2009 and 2015. In addition to surgeons at Civil Hospital and CHOP, it joined together experts in urology from various other institutions, including Seattle Children's Hospital, Cincinnati Children's Hospital, and Sidra Medical and Research Center, in U.A.E.

"The international collaboration that we forged has transformed the care of children born with bladder exstrophy here in India and together, we are delivering care and surgical outcomes on par with the best hospitals in the world," said Dr. Rakesh Joshi, director of pediatric surgery at the Civil Hospital, and a lead author of the study. "We have seen our own surgical experience and follow-up care improve not only in the management of exstrophy, but for all complex anomalies as a result of the collaboration. This study confirms that ours is a model to emulate in reducing the surgical burden in this part of the world."

The goals of this program were to not only to address the complex surgical challenges associated with BE and deliver outcomes that would be expected in high-income countries, but also to transmit knowledge to provide long-term patient care for the future. The team accomplished this by partnering with Civil Hospital, which served as a location to train and perform surgeries. Surgeons local to India learned and participated in the procedures so that, with time, they are able to perform them on their own.

A contributor to this collaboration's success was rigorous patient follow-up, which resulted in improved patient outcomes and an accelerated surgical learning curve for participating surgeons. The results were impressive: 76 percent of patients who underwent complete primary repair of BE during the study interval returned for annual follow up in 2016. The same team that performed the surgeries was present for follow up, which helped to ensure cohesive care. Additionally, the team shared resources and infrastructure of academic research centers from higher-income countries.

"This was not simply mission work, it was an opportunity to provide long-term sustainability to our mission and deliver the highest levels of treatment," said Dr. Shukla. "I first traveled to India in 2002, and was awed by the volume and diversity of pathology. I was also moved by the

massive burden of surgical disease in children. With Dr. Joshi, we resolved to help change the staggering statistics. While the work in India has been inspiring, we hope that this team and our study will inspire others to implement a similar collaboration model in other countries so they can continue transmitting knowledge and delivering care where it is needed most."

Philanthropy greatly helped power this work. Funding was made possible by generous donors and institutional funds.

In addition to Dr. Shukla's work at CHOP, he is also an Associate Professor of Urology in Surgery in the Perelman School of Medicine at the University of Pennsylvania.

"The International Bladder Exstrophy Consortium: A Model for Sustained Collaboration to Address the Unmet Global Burden of Surgical Disease," *JAMA Surgery*, March 7, 2018

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