Caring for the Future

Solidarity Bridge’s
International Pediatric Neurosurgery
Course & Mission

A REPORT ON SOLIDARITY BRIDGE’S
PROGRAM FOR THE DEVELOPMENT OF NEUROSURGERY
MISSION TRIP

September 6 - 13, 2016
Santa Cruz de la Sierra, Bolivia

Cover photos: Dr. Art DiPatri (far left) with course participants; pre-surgery review of images.
I. INTRODUCTION

Building on our emerging practice of combining mentored surgeries with professional development coursework, Solidarity Bridge conducted a Neurosurgery Mission Trip to Santa Cruz de la Sierra, Bolivia, from September 6 – 13, 2016. This mission, focused on pediatric neurosurgery, was led by the program’s medical director, Dr. Richard Moser, alongside Dr. Arthur DiPatri, experienced missioner and pediatric neurosurgeon at Lurie Children’s Hospital of Chicago. The course, Pediatric Neurosurgery and Neuro Oncology, engaged six Bolivian faculty, a neurosurgeon resident from the United States, fourteen participating neurosurgeons and residents from Bolivia and Mexico, and one medical student. Solidarity Bridge missioners performed three mentored surgeries and donated instrumentation valued at $52,500.

II. MISSION GOALS

Solidarity Bridge’s Neurosurgery Program develops and sustains relationships with the Bolivian neurosurgical community to restore health and improve the quality of life of patients through specialized surgeries.

Specific goals of this Mission Trip were to:

A. Strengthen the capacity of the Bolivian neurosurgery community in the area of pediatric neurosurgery:

B. Provide life-changing neurosurgical treatment to patients with especially complex needs, particularly those with scant economic resources, and

C. Foster international and intergenerational professional relationships that contribute to the identification of training and equipping needs for future endeavors.

Medical Director of Solidarity Bridge’s Neurosurgery Program, Dr. Richard Moser (center), performs a pituitary tumor endoscopic surgery with attending neurosurgeon Dr. Ramiro Villavicencio (left) and Dr. Patricia Arteaga. Dr. Moser has traveled with Solidarity Bridge to Bolivia on 20 missions. Dr. Villavicencio and Dr. Arteaga are also long-standing program partners.
III. MEETING OUR GOALS

A. Strengthen the capacity of the Bolivian neurosurgery community in the area of pediatric neurosurgery

The International Course in Pediatric Neurosurgery and Neuro Oncology was conducted at the Dr. Mario Ortiz Suarez Children’s Hospital in Santa Cruz de la Sierra, a public hospital that provides treatment to children with limited financial resources. The course was organized by Solidarity Bridge and Puente de Solidaridad, as part of its Program for the Development of Neurosurgery, and accredited by the Bolivian Colegio de Médicos (Bolivian Medical Association). Ten neurosurgeons, four residents and a medical student completed the course. These participants joined the course from public and private hospitals in Santa Cruz, Cochabamba and Tarija, Bolivia, as well as Mexico.

The two-day course, held September 8 and 9, 2016, combined theory, skill set development and the simulcast surgery of a child with a type of non-communicating hydrocephalus. Dr. DiPatri, who was on his seventh mission trip, and attending neurosurgeon Dr. Felix Pacheco, performed an endoscopic third ventriculostomy on a seven-year-old girl from a more remote part of the country. This successful surgery was accompanied by expert commentary by faculty throughout the simulcast, an analysis of the strategy employed and discussion of risk management.

An important part of the course was hands-on experience with equipping devices and instruments. With financial and in-kind support from Medtronic as well as in-kind support from a Bolivian company, DISMAMED, course participants visited work stations offering shunt tap devices, an ultrasonic aspirator, and a device that permitted the simulation of ventriculostomy surgery. Faculty provided guidance at each station.

![Dr. Richard Moser explains the use of the ultrasonic aspirator to course participants.](image)

Participants and faculty evaluated the course by areas such as content, method, organization, and setting. Feedback was positive, with responses averaging from very good to excellent. Significantly, participants consistently indicated that they will be able to apply their new learning professionally. Recommendations for the future included greater frequency of such courses, more surgeries and lectures in each course, and measures to provide greater access to more participants.
B. Provide life-changing neurosurgical treatment to patients with especially complex needs, particularly those with scant economic resources

The Children’s Hospital in Santa Cruz is the center for medical care for children without economic resources in this sprawling city of 2.5 million inhabitants. Nearly 59 per cent of the country’s population lives in conditions of poverty. Thus the Children’s Hospital of Santa Cruz services families from rural communities as well as the urban core of Santa Cruz. This was clearly illustrated by the case of one Solidarity Bridge patient whose family traveled nearly 300 miles so she could obtain specialized treatment. Every day some 50 children pass through the emergency room of the hospital, demonstrating the urgent nature of children’s conditions.

In addition to the endoscopic third ventriculostomy performed as part of the course, Dr. DiPatri and colleague Dr. Felix Pacheco treated a four-year-old patient with tethered cord syndrome. The surgery was successful. Unfortunately, an additional pediatric neurosurgery could not be performed due to technical difficulties at the hospital, a sobering reminder of the obstacles that neurosurgeons and their patients face, even in larger hospitals in the country.

Additionally, Dr. Moser partnered with colleague Dr. Ramon Villavicencio and Dr. Patricia Arteaga to provide endoscopic surgery for a patient with an advanced pituitary tumor at the INCOR Hospital in Santa Cruz.

C. Foster international and intergenerational professional relationships that contribute to the identification of training and equipping needs for future endeavors.

Courses led by Solidarity Bridge draw on international expertise in medicine and build understanding of global health. Solidarity Bridge and its partners seek to develop the state of the art of neurosurgery via processes of pre-course consultation and the identification of salient issues, as illustrated by the delivery of the following lectures by faculty from diverse university and hospital settings:

- Our practice of pediatric neurosurgery in Bolivia, Dr. Carlos Dabdoud, Universidad Franz Tamayo
• Advances and challenges in pediatric neurosurgery, Dr. Felix Pacheco, Children’s Hospital of Santa Cruz
• Cerebral ventricular anatomy and III ventriculostomy; Treatment of Patients with Hydrocephalus; Tumors in Children, Dr. Arthur DiPatri, Lurie Children Hospital
• Neuroendoscopy – the Bolivian experience, Dr. Mario Chavez, Hospital Japonés
• Best practices in use of shunt devices, Dr. Krista Greenan, University of California Davis
• Supratentorial tumors in pediatrics, Dr. Ramiro Villavicencio, Caja Petrolera de Salud
• Infratentorial tumors in pediatrics, Dr. Miguel Saenz, Hospital Materno Infantil
• Intraventricular tumors in pediatrics, Dr. Luis Ferrufino, Hospital de Ninos
• Surgical procedures using ultrasonic aspiration, Dr. Richard Moser, UMass Medical Center

This mission benefitted from the presence of the fifth annual Sotak Scholar on mission in Bolivia. The Sotak Scholarship is supported via the visionary contribution of the family of a neurosurgery patient in the United States. Dr. Kristin Greenan from the University of California Davis Medical Center joined the mission as a Sotak Scholar. In addition to individually guiding participants at the shunt device work station, Dr. Greenan’s lecture received high marks from participants for her use of statistics, cases studies and superior knowledge of the subject.

In commenting on her role as a Sotak Scholar in the context of the Program for the Development of Neurosurgery course, Dr. Greenan shared:

I feel that part of my responsibility as a neurosurgeon is to continue the tradition of teaching the subject. I am impressed with the philosophy of Solidarity Bridge in teaching local medical professionals and building relationships as opposed to doing surgeries and leaving. I am equally impressed with the enthusiasm of the partners and the thoughtfulness and knowledge base that they bring to discussions as well as their willingness to work with partners from the US…a good working relationship.

IV. NEXT STEPS

The Program for the Development of Neurosurgery made continued strides in building relationships with neurosurgeons throughout Bolivia. Following the course, Solidarity Bridge founder Dr. Juan Lorenzo Hinojosa accompanied Dr. Moser and Dr. Greenan to the
city of Sucre, Bolivia, where six neurosurgeons treat patients at two hospitals. The group met with two neurosurgeons from the Santa Barbara Public Hospital and with a neurosurgeon from the Caja Nacional hospital. Given limited resources and training opportunities in their service area, Sucre neurosurgeons have encouraged Solidarity Bridge/Puente de Solidaridad to expand its work to that region.

The national Society for Neurosurgery in Bolivia will meet in Tarija in southern Bolivia in April of 2017, and has invited Solidarity Bridge/Puente de Solidaridad to conduct a pre-Congress mission and course in spine surgery.

V. CONCLUSION

The Neurosurgery Mission Trip to Santa Cruz, organized and led by Solidarity Bridge and the Puente de Solidaridad Foundation, contributed to the well-being of Bolivian patients, brought new learning to Bolivian neurosurgeons, and laid the groundwork for future mission trips in neurosurgery. We cordially thank the Children’s Hospital “Mario Ortiz Suarez” for hosting the International Course on Pediatric Neurosurgery as well as the individuals, hospitals and companies who contributed to this mission with urgently-needed funding, equipment and supplies. Special appreciation is extended to Medtronic and DISMAMED for sharing valued instruments and devices for our course work stations, and to Medtronic for its financial support.

**Course faculty**

Dr. Richard Moser, *University of Massachusetts Medical Center and School*
Dr. Arthur DiPatri, *Lurie Children Hospital*
Dr. Carlos Dabdoub, *Universidad Franz Tamayo*
Dr. Felix Pacheco, *Hospital de Niños, Santa Cruz*
Dr. Mario Chavez, *Hospital Japonés, Santa Cruz*
Dr. Ramiro Villavicencio, *Caja Petrolera de Salud, Santa Cruz*
Dr. Miguel Saenz, *Hospital Materno Infantil, Cochabamba*
Dr. Luis Ferrufino, *Hospital de Niños, Santa Cruz*

**Sotak Scholar**

Dr. Krista Greenan, *University of California Davis*

**Coordination:**

Juan Lorenzo Hinojosa, *Ph.D. Founder of Solidarity Bridge and mission chaplain*
Patricia Vargas Rojas, *Executive Director of Puente de Solidaridad*
Patricia Paz, *Administrator of the Santa Cruz office of Puente de Solidaridad*
Mary McCann Sanchez, *Senior Director of Programs, Solidarity Bridge (off-site)*
José Choque, *Coordinator of Equipment and Supplies, Puente de Solidaridad (off-site)*
Ariel Montaño, *Communications, Puente de Solidaridad (off-site)*

**Benezet Intern**

Gustavo Arreguin