

**REPORT
NEUROSURGERY MISSION TRIP**

October 6 - 9, 2015
Tarija, Bolivia

I. INTRODUCTION

In early October 2015, Solidarity Bridge conducted a Neurosurgery Mission Trip to Tarija, Bolivia. Three neurosurgeons and an otolaryngologist (also known as an ear, nose and throat specialist or ENT), complemented by technical support, Solidarity Bridge staff, and the executive director of Puente de Solidaridad, worked side-by-side with Bolivian neurosurgeons at the Tarija public hospital, San Juan de Dios, which serves patients from throughout southern Bolivia. A total of five surgeries were performed. Solidarity Bridge provided instrumentation valued at \$120,000, of which \$70,000 was used in the mission's surgeries.

II. MISSION GOALS

Solidarity Bridge's Neurosurgery Program works with Bolivian neurosurgeons throughout the country to offer complex surgeries and training on an ongoing basis and to serve as a link to technical support through industry. The Mission Trip had three primary goals:

- A. To provide high-complexity surgeries to patients who do not have access to such medical treatment, due to financial limitations or because the type of surgery or surgical materials are not readily available.
- B. To foster a relationship of professional development among U.S. and Bolivian medical professionals and provide training.
- C. To be alerted to neurosurgery equipment and supply needs with a view to maintaining and advancing the program through future missions.



Dr. John Weaver performed four spinal surgeries in Tarija.

III. MEETING OUR GOALS

- A. *To provide high-complexity surgeries to patients who do not have access to such medical treatment*

The San Juan de Dios Hospital in Tarija is the destination of patients throughout southern Bolivia who seek medical care. The hospital offers some medical services at no cost to patients and has recently added a patient advocate, a type of ombudsman who fields patient complaints or observations, as a channel for enhancing the quality of care. The flow of patients and their families in the waiting room of the hospital is continuous, and the hospital staff faces the daily challenge of responding to the multiple needs of men, women and children seeking medical care.

The complex specialty of neurosurgery is particularly subject to a series of challenges. The three neurosurgeons currently practicing in the Tarija region face serious limitations in

terms of basic equipment, such as microscopes and grafting materials.

These neurosurgeons are in high demand to care for conditions that arise from accidents to the spine and head that occur among the population. Similarly, ongoing needs include diagnosis and treatment of excruciating lumbar



Dr. John Weaver and Bolivian colleague, Dr. Marco Antonio Fernandez, relieved the chronic pain of a patient through a successful spinal fusion.

pain and chronic headaches that could be indicative of tumors.

The Solidarity Bridge mission worked side-by-side with Bolivian colleagues in the following surgeries related to the spine:

- Dr. John Weaver of the University of Massachusetts at Amherst worked with Bolivian colleague Dr. Marco Antonio Fernandez to perform spine surgery for a 53-year-old truck driver who suffered radicular pain in his neck and arms. The patient's severe pain had jeopardized his capacity to continue to work and support his family. Drs. Weaver and Fernandez realigned the patient's spinal column by inserting a needed plate and supportive screws.

- The same team repaired spinal damage recently suffered by a 29-year-old man in a highway accident. . Because the hospital did not have the necessary grafting material to realign his spine, the patient was immobilized until the Solidarity Bridge mission arrived with the necessary instrumentation. In this case, material donated by Globus and Atlas Medical and the technical assistance provided by Zachary Kaufman, a member of the mission, made possible this spinal fusion. *(See this patient's story in section IV, below.)*
- Drs. Weaver and Fernandez also operated on a 68-year-old man who suffered displacement of the cervical spine. This individual indicated that the intense pain interfered with his capacity to function on a daily basis.
- These same two specialists, with the support of hospital staff, performed spinal fixation surgery to stabilize the spinal column of a patient suffering from instability and stenosis. The procedure was particularly difficult as previous surgeries and health complications had resulted in scar tissue.

The mission also responded to the needs of individuals for neuro-endoscopic treatment:

- Missioner and neurosurgeon Dr. Richard Moser and Bolivian neurosurgeon Dr. Ivan Castillo worked with Dr. Alec Vaezi, ENT, in the transnasal removal of a pituitary tumor. The patient, a 39-year-old woman, responded well to the use of neuro endoscopy.



A surgical nurse assists Dr. Richard Moser in preparation for transnasal pituitary surgery.

B. To foster a relationship of professional development among U.S. and Bolivian medical professionals

Solidarity Bridge missionaries worked closely with two Tarija neurosurgeons, Drs. Ivan Castillo and Marco Antonio Fernandez. This collaboration initiated with clinical sessions and case reviews on October 6th and included the introduction of surgical techniques. Additionally, the U.S. neurosurgeons met with these two young doctors to discuss possible means of continued specialization in and outside of Bolivia.

Dr. Alec Vaezi, ENT, joined Bolivian otolaryngologists in professional development sessions held in Tarija during the week of our mission. Dr. Vaezi discussed with these medical professionals the importance of teamwork between ENT specialists and neurosurgeons, particularly to expand transnasal surgeries.

The following week, Bolivian neurosurgeon Dr. Fernandez joined colleagues from throughout the country and from Chile, Argentina, Peru, and Ecuador at the first neurosurgery Boot Camp in Bolivia, held in Santa Cruz on October 12 and 13. Solidarity Bridge organized and led this historic training event in collaboration with the Bolivian Society of Neurosurgery, the Foundation for International Education in Neurological Surgery (FIENS), the University of Massachusetts Amherst, Puente de Solidaridad, and the emerging Institute for the Development of Neurosurgery.



Dr. Alec Vaezi discusses future collaboration with his Bolivian colleague and fellow ENT, Dr. Marcelo Ugarte.

C. To be alerted to neurosurgery equipment and supply needs with a view to maintaining and advancing the program through future missions

Our neurosurgery mission team came to Bolivia equipped with instrumentation that contributed invaluable to the surgeries performed on the mission: instrumentation and implantable materials for four surgeries, valued at \$10,000 each, as well as \$30,000 worth of micro-instruments destined to the Tarija San Juan de Dios Hospital. Solidarity Bridge also donated five pacemakers. Industry representative Zachary Kaufman contributed technical support and translation services to the mission.

Solidarity Bridge's founding director, Juan Lorenzo Hinojosa, Ph.D., met with Dr. Marcelo Zenteno, a prominent Tarija neurosurgeon and current president of the Bolivian Society of Neurosurgery, to discuss options for possible future specialized in-kind material aid and stewardship on the part of the hospital. Dr. Hinojosa and colleagues also met with the governor of the state of Tarija, Dr. Adrian Oliva, and the head of Neonatal Pediatrics, Dr. Marcos Oliva, regarding potential models of inversion that would permit stronger cooperation among government and industry to procure the instrumentation needed to meet health needs in the region.



Zachary Kaufman of Globus and Atlas Medical worked alongside Dr. Marco Antonio Fernandez in a surgery that required grafting materials provided by Globus.

Solidarity Bridge missionaries also tracked instrumentation needs on the mission, with the purpose of identifying potential contributions for the future. This information is particularly important as Solidarity Bridge works with Bolivian neurosurgeons to launch the Institute for the Development of Neurosurgery in Santa Cruz, Bolivia, in 2016.

IV. PATIENT STORY

Alfredo Mamani suffered severe injuries to his spine when the vehicle in which he was riding flipped over. Alfredo was traveling from the rural area of Chuquisaca to visit family in Tarija. He was taken to the San Juan Dios Hospital where Dr. Marco Antonio Fernandez assessed the need for a spinal fusion. However, the hospital lacked the instrumentation needed for Alfredo's complex surgery. Dr.



Dr. John Weaver and Dr. Marco Antonio Fernandez provide post-op care to Alfredo Mamani following a successful spinal fusion.

Fernandez immobilized the patient and, knowing that the Solidarity Bridge mission would bring materials as well as experienced colleagues, prioritized Alfredo's procedure for early October. Within 12 hours of his arrival to Tarija, Dr. John Weaver performed the surgery with Dr. Fernandez, using material provided by Globus and Atlas Medical. Puente de Solidaridad director Patricia Vargas communicated regularly with Alfredo's family throughout the process.

V. CONCLUSION

The Neurosurgery Mission Trip to Tarija, organized and led by Solidarity Bridge, contributed to the well-being of Bolivian patients, enhanced our organization's capacity to effectively link highly specialized medical professionals, and laid the groundwork for future mission trips in neurosurgery. Solidarity Bridge cordially thanks the individuals who contributed to this mission. A special thank you is extended to Globus and Atlas Medical for their invaluable contribution of spine surgery materials and instrumentation.

Missioner Team:

Dr. Richard Moser, *Neurosurgeon*
Dr. John Weaver, *Neurosurgeon*
Dr. Roberta Glick, *Neurosurgeon*
Dr. Alec Vaezi, *ENT*
Zachary Kaufman, *Globus, Atlas Medical*
Mateo Hinojosa, *Woven Path Media*
M'wende Haesy, *Woven Path Media*

Coordination:

Juan Lorenzo Hinojosa, *Ph.D. Founder of Solidarity Bridge and trip coordinator*
Patricia Vargas Rojas, *Executive Director of Puente de Solidaridad*
Mary McCann Sanchez, *Senior Director of Programs, Solidarity Bridge*