



Neurosurgery & Neurology Institute

A PROGRAM OF SOLIDARITYBRIDGE

**Neurosurgery and Neurology Institute
Endoscopic Endonasal Transsphenoidal Surgery Course + Neurotrauma Initiative
Hospital Santa Bárbara
Sucre, Bolivia
November 9-17, 2023**



I. Introduction

On this trip, we worked to advance training, equipping, and mutual learning in neurotrauma care at the Hospital Santa Barbara in Sucre, Bolivia. This is the next step in an initiative that began with a baseline study in 2019, it was continued post-Covid in 2022, and continues this year with exchange and training in neuro anesthesia, neuro critical care, neurosurgery, and neuro rehabilitation. Other trip goals were to deliver a course on Endoscopic Endonasal Transsphenoidal Surgery (EETS) and begin implantation of a Neurotrauma Registry.

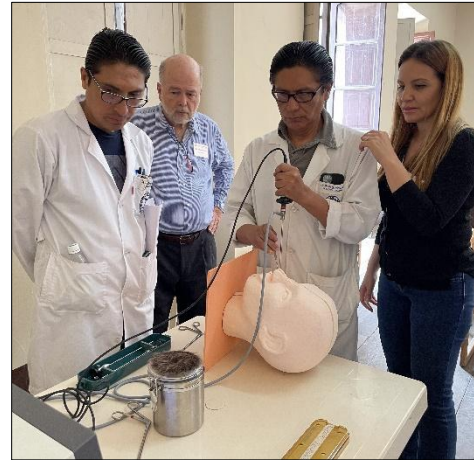
II. Goals

- a. Deliver EETS training course
- b. Exchange and provide training in neuro anesthesia, neuro critical care, neurosurgery, and neuro rehabilitation
- c. Neurosurgical care for Bolivian patients
- d. Introduction of Neurotrauma Registry

III. Summary of Activities

a. Deliver EETs training course

Endoscopic transsphenoidal surgery is a minimally invasive procedure in which a neurosurgeon and an ear, nose, and throat (ENT) doctor navigate through the nostrils with an endoscopic camera to remove tumors from the pituitary gland and skull base. The procedure offers multiple benefits over previous methods of treating these tumors. Tumor removal often restores the patient's vision and rebalances their hormones. Solidarity Bridge has been instrumental in introducing this procedure at multiple sites across Bolivia and Paraguay. This year, the neurosurgical team at the Hospital Santa Bárbara in Sucre, Bolivia, asked the Neurosurgery and Neurology Institute (NNI) of Solidarity Bridge to provide training in EETS surgery for their neurosurgeons and ENTs. In response, this past week, NNI president Dr. Richard Moser and our Bolivian ENT partner Dr. Patricia Arteaga collaborated to deliver a comprehensive, theoretical and practical EETS course for eleven doctors and residents in Sucre.



The course was well-received and the instructors were praised for the design of the course which began with theoretical lectures, then provided practical stations for course participants to practice endoscopy skills and drill techniques. During the second day of the course, participants were able to practice EETS approaches on cadaveric specimens in the hospital's amphitheater. All course participants will receive CME credit from the Medical College of Chuquisaca. The course was co-sponsored by the Neurosurgical Society of Chuquisaca, the Chuquisaca Medical College, the Hospital Santa Barbara, Puente de Solidaridad, and the NNI.

b. Exchange and provide training in neuro anesthesia, neuro critical care, neurosurgery, and neuro rehabilitation

This year, the neurotrauma medical mission team returned to continue relationships and plans in the perioperative services at the Hospital Santa Barbara. Prior to the trip, the NNI organized individual meetings with the US medical professionals and their Bolivian counterparts in neuro anesthesia, neuro critical care, rehabilitation, and neurosurgery. The NNI and PdS also met with the director of the hospital, Dr. David Gumiel in August to prepare for the trip. The team arrived with goals that were developed in coordination with the Santa Barbara team. Throughout the week, the US team members worked side-by-side with their Bolivian counterparts in professional exchange, provided training in new techniques, continued to learn about the Bolivian reality, and connected the Bolivian team virtually with colleagues both in other Latin American countries and in the U.S.

There were many things to celebrate and several firsts as a result of the collegial exchange on this trip:

- In anesthesia, performed the first wake-up test during surgery, first awake craniotomy, and provided instruction in nerve blocks for the lower extremities, discussed the possibility of pupillometry for measuring ICP.
- In neuro critical care, demonstrated how to perform a neurological exam for patients with severe traumatic brain injury.
- In neuro rehabilitation, facilitated an introductory meeting and conversation with leadership at Honduras's Centro de Rehabilitación Integral Teletón de Tegucigalpa, discussed the "train the family" model and potential for use at the Hospital Santa Barbara.

- In neurosurgery, provided instruction in use and placement of artificial discs, provided instruction in techniques for placing screws, provided guidance in proper use and maintenance of the operating microscope and surgical drill, made headway in the implementation of a neurotrauma registry.

c. Neurosurgical care for Bolivian patients

During the mission week, the U.S. and Bolivian neurosurgeons and anesthesiologists collaborated in four neurosurgeries, treating three men and one woman. The patients required treatment for a variety of neurological issues including trigeminal neuralgia, a fractured spine from a motorcycle accident, a herniated cervical disc that was treated with artificial disc replacement, and endoscopic evaluation of a patient with cysticercosis.

d. Introduction of Neurotrauma Registry

Trip medical director, Dr. Jared Ament supported two neurosurgical residents from the University of California Davis to join the trip as part of a plan to introduce and implement a neuro trauma registry in collaboration with the Hospital Santa Barbara. As part of this process, the NNI team and PdS met with the hospital’s director, Dr. David Gumiel, in August to share the research plan, receive his feedback, and obtain his support in terms of personnel in the implementation of the registry in the various hospital services that deal with trauma. During the mission week in November, the UC Davis residents spoke at length with the hospital’s neurosurgical residents and the hospital’s statistics department as well as the other services to assess what data is currently being collected and to develop a simple and feasible plan for data collection. The residents developed neurotrauma registry instruments that will be introduced at the hospital and NNI team members will continue to meet with hospital administration and staff in the weeks and months following the trip to implement and oversee next steps. If the neurotrauma registry can be successfully implemented, this will provide highly valuable data that can be used to direct and measure interventions related to neurotrauma going forward.

IV. Impact Story



Top L to bottom R:
Rehabilitation,
anesthesia, and critical
care teams worked
together to improve
neuro trauma care.

Some of the elements that were the most impactful about this trip were the relationships developed with professions from the U.S. and Bolivia in specialties outside of neurosurgery. While the Neurosurgery and Neurology Institute invests a great deal in neurosurgical and neurological training and equipping, these specialties don’t exist in a vacuum. Success in neurosurgery isn’t possible without also investing in perioperative care including anesthesia, critical care, and rehabilitation. It was wonderful to see professional relationships and exchanges happening in these areas that will hopefully continue to bear fruit both for the health professionals at the Hospital Santa

Barbara as well as their extended professional circles in Bolivia and for the patients, families, and communities they serve through neurological and neurotrauma care.

V. Future Outlook

The partnerships developed through this neurotrauma initiative will continue into the coming year through the implementation of the neurotrauma registry, virtual exchanges and training, further equipping to respond to identified needs, and additional travel to Bolivia in the fall of 2024 for further in-person training and development.

VI. Team Lists

Mission Team [*includes SB, PDS and Interpreters*]

Dr. Jared Ament
Maria Eugenia Brockmann
Dr. Jose Castillo
José Choque
Lindsay Doucette
Dr. Nicole Fuentes
Dr. Jakob Gamboa
Dr. Denise Ibañez
Victoria Harding Weaver
Liliana Melgar

Desireé Mendez
Dr. Richard Moser
Dr. Anzhela Moskalik
Dr. Juseph Peñaloza
Dr. Lucia Rivera
Dr. Joseph Sherman
Patricia Vargas
Dr. Amir Vokshoor
Dr. John Weaver

Hospital Santa Bárbara Team

Dr. David Gumiel, Director, Hospital Santa Bárbara
Lic. Angelica Renteria

Neurosurgery

Dr. David Pérez
Dr. David Gardezabal
Dr. Luis Fernando Fraija
Dr. Sergio Antonio Romero
Dr. Kevin Bayron
Dr. Cristián Jancko
Dr. Englerth Candia
Dr. Alvaro Rivera

Anesthesia

Dr. Scarleth Moore
Dr. Carmina Torres

Neuro Critical Care

Dr. Mary Montero

Physical Therapy

Dr. Inez Vilelo

Statistics

Maria Elena Ortube

University team - UMRPSFXX

Course organization

Dr. Simar Arancibia
Dr. Elias Uyuquipa