



This 18 year-old girl is ten days out from a motorcycle crash and is being visited on grand rounds by the residents. She broke both femurs and had both fixed with SIGN nails. She is walking and working on her knee motion and will be discharged soon. Photo: Dr. Neil J. White

A Progressive Partnership - SIGN in Ethiopia

By Amanda Wang

Buried in the Horn of Africa, Ethiopia is a land rich in history and natural beauty but wracked with famine, war, and poverty. Over 90 million reside in the landlocked country and the WHO reports that gross national income per capita is \$220 compared to the United States where GNI per capita is \$46,040. Like most countries that SIGN works with, Ethiopia faces an epidemic of road traffic accidents. In 2006, over 2,000 people were killed in road traffic accidents and in 2007, almost **25,000 road traffic related injuries** were reported, a number that has only continued to rise. Black Lion Hospital, located in Addis Abba, is one of only two university hospitals in Ethiopia and is the largest general public hospital in the city. They have been a SIGN program since 2009 and after garnering a reputation for quality orthopaedic care, have been inundated by a flood of patients. Upon his arrival at Black Lion Dr. Neil J. White wrote in an email to SIGN, "The head of ortho [Dr. Woubalem Zewde] at Black Lion cried when I delivered the implants. She said they had been scrambling for the last month and were on the brink of ordering cheap implants from China." An adequate supply of tools, training, and implants can do much more than just help the patients that receive them. It builds credibility and trust with patients like this young woman pictured above, who will in turn, share their experience with others in the community.

Good Orthopaedics is More Than Implants

By Dr. Lewis Zirkle

Orthopaedic surgeons, like all people, have problems whose solutions are more dramatic than others. The case of Mastwal Hailu, who had a tumor excised and avoided amputation by using allograft bone and SIGN nail, (see sidebar) was a dramatic event for all who participated. Treatment of open fractures where the soft tissues are penetrated leaving exposed bone is not included among these dramatic events. Surgery cannot be scheduled for these patients as they arrive at all hours of the day and night. Some patients arrive shortly after injury and some come days after injury. This delay compromises treatment results. Hospital facilities and personnel must be prepared for all patients.

Treatment of open fractures involves prompt surgery and long hours spent cleaning wounds to decrease infection and provide the optimal environment for healing. If infection cannot be controlled, amputation of the extremity, sepsis and death are distinct possibilities. The treatment is a long process involving multiple debridements (removing dead tissue from the wound). Patients may need flaps which means transposing tissue from one part of the body to another.

SIGN and SIGN surgeons prepare to treat open fractures by learning how to do flaps, proper debridement and stabilization using implants.

Hospitals must spend precious funds to provide operating room and hospital beds to treat open fractures. If the fractures become infected, hospital beds in isolation is the standard of care.

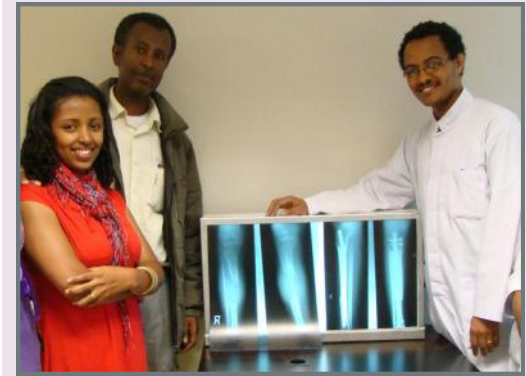
Treating open fractures is difficult, inconvenient and expensive. Patients with open fractures need advocates to facilitate optimum treatment. Orthopaedic surgeons and hospital administrators must be special people to recognize and provide facilities and take time to treat open fractures. Dr. Woubalem, chief of orthopaedic surgery at Black Lion Hospital in Addis Ababa, Ethiopia, has worked to improve care of open fractures. Her staff and the administrators at Black Lion recognize the need for available operating rooms and personnel that are prepared to treat open fractures on a timely basis.



Dr. Woubalem and the staff's expressions demonstrate their concern for a patient with complications from an open fracture



Institute for Global Orthopaedics & Traumatology (IGOT) San Francisco conducts an annual flap course for SIGN surgeons before the SIGN conference at the San Francisco General Hospital



First Bone Transplant in Ethiopia

At Black Lion Hospital, Jeanne met a remarkable 25 year-old female college student named Mastewal Hailu. She had nearly lost her tibia due to a rare malignant tumor called Adamantinoma. Her father was able to share her moving story about the troubles they initially faced and then of her extraordinary recovery.

When they first learned that her tumor was cancerous, their friends and family raised enough money for them to travel to Norway to receive treatment. They were nearly ready to purchase the airline tickets when they found out that their daughter was not eligible to receive treatment because she was not a Norwegian citizen.

They only became more discouraged when they learned that without treatment the best course of action was to amputate her leg – because leaving the tumor in her body would compromise her life. Her father's eyes filled with tears as he relived the moment when Mastewal refused to have her leg amputated. Their family, friends, and congregation turned to prayer, and asked every medical professional they encountered for alternative methods of treatment.

A year later they met Dr. Biruk from Black Lion Hospital who consulted with Dr. Erik Gocken, an orthopaedic surgeon stationed at CURE international in Addis. They removed the tumor from her tibia along with 15cm of her tibia. Dr. Gocken was able to get Ostetech to donate allograft to replace the bone that was removed and a SIGN nail held the allograft in place while her bone reformed, eventually allowing her to walk again and return to school to finish her degree.

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Graham Forward, MD, working through Australian Doctors for Africa, also recognized the need for operating rooms to treat open fractures and is providing funds to implement this. Prompt treatment of open fractures will alleviate the crowded emergency rooms where these patients await treatment. Patients will have less disability and complications due to prompt and appropriate treatment.



A long line begins to form in the Black Lion emergency room.

Neil White, MD, who just finished his trauma fellowship in Edinburgh, Scotland, is spending three months in Africa assisting surgeons who treat these difficult problems. His blog can be read at www.signblog.org.



Dr. Neil White meets with the Black Lion orthopaedics department to discuss open tibia wound care.

SIGN provides instruments, implants and other equipment as well as training related to treating open fractures as well as the dramatic surgeries. We salute the leaders mentioned and the hundreds of SIGN surgeons dedicated to proper treatment of patients globally. This process of treatment of open fractures is repeated in all SIGN programs. We appreciate donor support which facilitates this treatment. Treating open fractures is a global effort with many supporters.

SIGN SNAPSHOTS ETHIOPIA



See more of Dr. White's photographs and read more about his experiences at www.signblog.org

Meet Dr. Neil J. White

Hailing from Vancouver B.C., Dr. Neil J. White recently completed fellowships at the Royal Infirmary of Edinburgh and Columbia University before embarking on his travels to Ethiopia, Tanzania, and Kenya to conduct surgical humanitarian work. He specializes in orthopaedic trauma as well as hand and microvascular surgery. In addition to practicing medicine, Dr. White enjoys carpentry, outdoor sports and playing the guitar.

If you have SIGN Snapshots you'd like to share with us, please email amanda.wang@signfracturecare.org for more details.

Grappling With Tradition

By Amanda Wang

Despite a low average annual income per capita amid a turbulent history, Ethiopia is slowly picking itself up and beginning to thrive. The government has promoted a growing export industry in flowers and sesame seed production has begun in response to demand from China. However, poverty still blankets the vast majority of the population that resides in the countryside while traditional culture clashes with forays toward modernity.



Ethiopian village children hard at work during the harvest.

Black Lion Hospital in Addis Abba is a quintessential example of a SIGN program that has the training necessary for quality care but often lacks the tools and implants to meet the incredible demand pressing down upon them. With the incidence of road traffic accidents rising sharply, the pervasive practice of initially consulting a traditional bonesetter healer, or “Wogesha,” as they are called in Ethiopia, only serves to further complicate the cases that orthopaedic surgeons at Black Lion see. This cycle persists because bonesetters are often the closest means of treatment. By the time something is clearly wrong and patients present themselves at hospitals like Black Lion, it is often too late. However, some intervention methods have been developed. A two-year retrospective survey in southern Ethiopia revealed that one-day instructional courses for traditional healers had the potential to reduce amputations of gangrenous limbs by as much as 50%.¹ Dr. Neil J. White describes below one of the many preventable cases.

“I was asked to see an 8 year old boy today who fell and broke his elbow (type III supracondylar) 10 days ago in Ambo. A town about 125kms to the west of Addis. I hesitate to even tell this story, but I guess one is meant to blog what is on their mind. He was treated by a Wogesha (bonesetter). A tightly wrapped bamboo splint was applied. The bone was not reduced. Now, ten days later, the limb is motionless, pulseless, cold and turning black. I took clinical photos, but I honestly don't have the heart to attach them (or look at them). It really brings me down. Nothing to be done now. We take our own awareness of health and wellness for granted (even those of us that abuse ourselves). We take our access to care and to information for granted... **If you think a problem is simple - that is only because you have the knowledge to solve that problem.**”

All photos in this article except for the one directly below are provided by courtesy of Dr. Neil White

Timing is of the utmost importance when it comes to treatment of injuries. Open fractures must be cleansed and debrided within 6-12 hours of injury as Dr. Zirkle describes on page 2. Antibiotics also must be given as soon as possible after injury.



A typical splint applied by a bonesetter.

Additionally, compartment syndrome often results from fractures treated by bonesetters because the splints are applied so tightly. Compression of an extremity will cause increased pressure in the muscle compartments. This increased pressure will kill the muscles and damage the nerves if not relieved. The little boy that Neil described had unfortunately developed this condition. Neil writes, “The young boy who was treated by Wogesha with the tight bandage for his elbow fracture underwent above the elbow amputation. This is not a good thing anywhere but I do believe it is a worse situation in a developing country.”



SIGN residents at Black Lion closing after a tough case. This young woman was shot in the crossfire as her husband quarreled with another man. Note the x-ray in the window.

With your generosity, Black Lion Hospital can increase their capacity to treat more patients. As news of successful outcomes at Black Lion spreads throughout the country, fewer patients will arrive with delayed unions and infections because they trust their care to Black Lion who works in partnership with SIGN.

¹ M. Eshete, MD. “The prevention of traditional bone setter's gangrene.” *Journal of Bone and Joint Surgery* . 87. (2005) 102-3.

HOW YOU CAN HELP



Start a SIGN Program

\$25,000

Overcrowded wards become manageable within weeks of becoming a SIGN program.



Resupply

\$10,000

Your gift will supply the implants for a year's worth of surgeries to a program that performs 100 cases annually.



New Instrument Set

\$3,500

Many of our programs were started with just one instrument set. A second set will double their SIGN surgery capacity.



Orthopaedic Outreach

\$1,000

This gives SIGN surgeons a weekend's worth of implants for rural outreach. Injured patients would otherwise have to travel hundreds of miles in cramped vans like these to reach the care they need.



One Day of Surgery

\$500

Heal with steel. This will bring smiles to the faces of five patients and their families.



IRA Charitable Rollover Continues Through December 31, 2011.

The IRA Charitable Rollover has been reinstated by Congressional action through December 31, 2011. The provision allows individuals aged 70.5 years and older to donate up to \$100,000 from their Individual Retirement Accounts (IRA's) to public charities without having to count the distributions as taxable income. This is an important provision because according to the law, every year IRA owners 70.5 and older must take a required minimum distribution which if not donated would be taxable as ordinary income.

Important facts include:

- The rollover must be completed before December 31, 2011.
- You must be older than 70.5 years-old.
- You get to choose how much you want to contribute, up to \$100,000 per taxable year and per IRA account holder.
- The amount transferred is not counted towards your taxable income so you pay less taxes; however there is no charitable tax deduction associated with this gift.

Your IRA custodian, or financial or tax advisor can advise you as to what benefit this type of donation would be to your financial position.

If you decide to send SIGN an IRA Charitable rollover, please call Dee Moore at 509.371.1107 or email her at dee.moore@signfracturecare.org

Thank you for considering this option and for your continued support.



451 Hills Street, Suite B
Richland, WA 99354



Gobble gobble!
Happy Thanksgiving!

For news and updates, visit our website at www.signfracturecare.org!

DOUBLE YOUR DONATION!

\$50 becomes \$100
\$100 becomes \$200
\$500 becomes \$1,000



The Seattle
Foundation

A designated fund at the Seattle Foundation will be used to match any donation made to SIGN from now until December 31st. Seize the opportunity to make sure your contribution has twice the impact to help others.



2 × the gift of hope