

2019

Achievements & Highlights

29,177
SIGN Surgeries
to heal patients in
developing countries



10 Programs reporting the
most **SIGN Surgeries**
in **2019**

1,000 **Cambodia:** Kossamak Hospital

627 **Pakistan:** Gilani Hospital Complex

525 **Tanzania:** Muhimbili Orthopaedic Institute

515 **Tanzania:** Dodoma Regional Referral Hospital

327 **Cambodia:** Friendship Khmer Russian Hospital

311 **Ethiopia:** Soddo Christian Hospital

307 **Cambodia:** Calmette Hospital

281 **Afghanistan:** Central ANA Hospital

269 **Tanzania:** Mbeya Zonal Referral Hospital

266 **Kenya:** Tenwek Hospital

SIGN 2019 Highlights

20th Anniversary

Thank you for supporting SIGN for the past 20 years. Your support has helped us transform orthopaedic care in developing countries over the last two decades. The SIGN Family celebrated by looking at the mountain of long bone fracture care we have climbed and looking forward to new mountains and challenges in the years to come.



Trip to Tanzania

In June, Dr. Zirkle and Jeanne traveled to Tanzania to support the surgical team at Nkoaranga Lutheran Hospital. Dr. Zirkle assisted Dr. Sam Kiwesa in a number of surgeries and taught members of the surgical team at this growing hospital.



250,812

patients healed since 1999

26 Programs

SIGN is growing! We started SIGN Programs at 22 new hospitals and reestablished SIGN Programs at 4 hospitals that had lapsed reporting, bringing the total to 359 hospitals in 53 low- and middle-income countries.

Many of these new SIGN Programs were started after surgeons graduated from orthopaedic residency at hospitals that partner with SIGN. These surgeons have already learned the SIGN Technique and know how effective SIGN Implants are, so they request a new program when they begin work at a new hospital.



SIGN Spine - Exploring & Fundraising

SIGN started the process of addressing spine injuries in developing countries with the SIGN Model of educating and equipping local surgeons. Since these are complicated injuries and require specific expertise and recovery plans, SIGN gathered a team of international spine surgery experts to explore how we can provide safe and effective surgery. Through meetings at the SIGN Conference and ongoing communication, we are identifying the best equipment to use and ways to provide effective and appropriate education for surgeons.



2019 SIGN Conference

At the annual SIGN International Orthopaedic Conference, we hosted 155 surgeons from around the world to present their research and teach each other. This conference focuses on the needs of surgeons in developing countries. It is particularly valuable for surgeons to share their experience in overcoming obstacles of operating in low-resource environments.



Procedural learning opportunities like the Bioskills Lab, with sessions led by international experts like Dr. Pierre Woolley, Haiti (pictured), are the highlights of the conference, along with workshops teaching bone deformity correction, the Ponseti method of correcting clubfoot, and more.

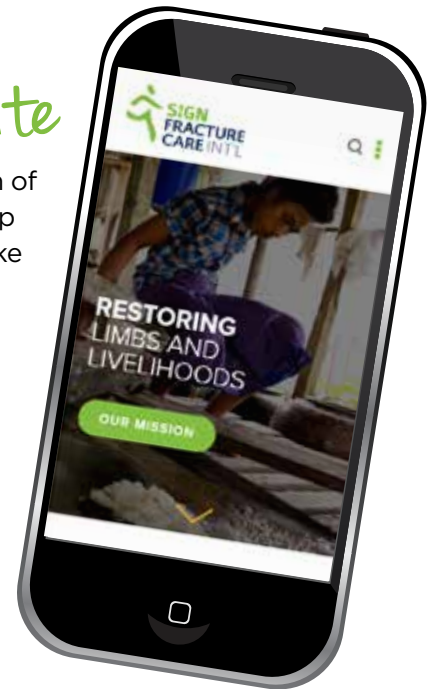
1 Patent for Compression System



After years of work from the SIGN Engineering team, SIGN received a United States patent for the Compression System. This device provides compression across a fracture line, making it easier to insert a lag screw, or screw and nut, to stabilize a fracture. This is particularly helpful in fractures in or around knee and ankle joints.

New Website

We launched a new version of signfracturecare.org to help surgeons and supporters like you learn more about the organization, see stories of patients you have helped, and even launch your own fundraising campaign for SIGN.



Regional Conferences

Dr. Richard Gellman, an orthopaedic surgeon and SIGN Board Member from Portland, OR, taught extended training sessions on bone deformity correction in the Philippines, Nigeria, and Kenya.

SIGN Surgeons are organizing regional conferences to teach their fellow surgeons. They also have established a pelvic fracture fellowship program in Ethiopia.



SIGN Corporate Partnerships

A wide range of companies and organizations partner with SIGN to expand our mission. Through their expertise and generosity, these companies are making a significant difference to educate and equip surgeons, and provide healing surgery for patients in need.



Acumed has been a corporate sponsor of SIGN for more than

20 years. They created the first prototypes of SIGN Instruments and have continued to support SIGN with surgical equipment, expertise, machines, and much more. In 2019, Acumed donated a HAAS milling machine, which will be used in the Development Cell that SIGN is creating for prototyping new instruments and implants. In addition, Acumed regularly donates orthopaedic instruments and implants for SIGN Surgeons, instrument sets for use in Bioskills Labs, and more.



The Institute for Global Orthopaedics and Traumatology at the University of California, San Francisco, holds

an annual training course, concurrent with the SIGN Conference, to teach SIGN Surgeons trauma surgery techniques, including how to prevent infections by using muscle flaps to cover wounds.



SIGN partners with Innomed to create distractor devices, and they consistently donate surgical equipment, including 40 sets of distractors, retractors, and bone clamps that were distributed at the 2019 SIGN Conference.



Leatherman donated headlamps, which surgeons in developing countries wear to augment lighting in a surgical suite and, in some cases, to continue surgery when

their hospital loses power. They also provide multi-tools for surgeons.



MasterCam is a powerful software that converts CAD drawings into code

that our manufacturing machines use to produce our product. Every instrument and implant that SIGN has fashioned was touched in one way or another by MasterCam.



Since 2003, SIGN has used a suite of software from Materialise to create 3D models of anatomy from CT scans and other images.

This enables engineers to study the subtle differences in bone structure of people from different countries and test how SIGN Implants will interact with each bone. With this information, our engineering team can refine current implants and develop new implants for treating a wider range of fractures in more parts of the body.



Oriel Stat A Matrix continues to be a valuable partner with SIGN, offering advice and resources on several areas of our Quality Management System.

They provided on-site training in Root Cause Analysis to help SIGN Staff discover and address issues in production and quality control, and they continue to provide advice on compliance with regulations and standards in medical device manufacturing.



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Use this form or text SIGN to 91999
or go to signfracturecare.org/donate

SIGN Corporate Partnerships



The Orthopaedic Implant Company (OIC) is helping SIGN establish programs for spine surgery by donating instrument sets and associated implants.



PNNL and SIGN partnered in a research project to use artificial intelligence to examine x-rays on the SIGN Surgical Database, and submitted a paper for publication based on the findings. By automatically detecting SIGN Implants in x-ray images, we will be able to more efficiently analyze large numbers of cases on the database.



Quest Integration is a long-time partner of SIGN, supplying SolidWorks software for 3D modeling of instruments and implants, which enables SIGN Engineers to rapidly design and test prototypes.



Sawbones has been an avid supporter of SIGN, providing surgical training aides to educate surgeons at our annual conference in Richland and also regional SIGN Conferences held in various countries around the world. Their contributions have

been key to developing quality training events for our surgeons, empowering them to help more patients. They have been donating all the sawbones for all the deformity correction workshops.



For many years, Smith + Nephew has donated ring

fixators and other equipment for deformity correction. Dr. Richard Gellman, a SIGN Board Member, taught a deformity course in Kenya this year. He left the surgeons with the donated equipment so they can continue to help patients with bone deformities heal.



Surgical Training Institute has quickly become an invaluable partner of SIGN. They provide the technical and staffing support of Bioskills Labs during the annual SIGN Confer-

ence and coordinate donations from other organizations to make the lab sessions possible. Through their support, we are able to give surgeons the opportunity to practice new techniques on human tissue—an opportunity not available in many countries.



ZIMMER BIOMET
Your progress. Our promise.®

Zimmer Biomet donated orthopaedic instruments and implants for trauma surgery at Black Lion Hospital, the largest teaching hospital in Ethiopia.



451 Hills Street, Suite B, Richland, WA 99354
P: 509.371.1107 | F: 509.371.1316
info@signfracturecare.org | signfracturecare.org



January 2020

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_____ Signature

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CONFERENCE
September 16-19
Richland, WA

SIGN Annual Benefits



*A Night in
Monte Carlo*

October 3

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At the Exclusive
Multnomah Athletic Club

**Tri-Cities Benefit
Friday, October 23**

Kennewick, WA
Three Rivers Convention Center

Contact SIGN

P: (509) 371-1107
F: (509) 371-1316
info@signfracturecare.org
signfracturecare.org



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