



ANNUAL REPORT 2020



THE FACTS

The burden of death and disability from injury exceeds that of communicable diseases

Health impact



Almost **5 MILLION DEATHS** from injuries globally per year, **30% MORE DEATHS** than HIV/AIDS, TB and malaria combined

50 MILLION INJURY-RELATED DISABILITIES globally per year, of which 38 million are musculoskeletal

3.7 MILLION HEALTHCARE WORKERS are needed in Africa to provide universal health care by 2030¹

Demographic challenges



93 MILLION CHILDREN live with a disability from injuries and congenital conditions³

40% OF INJURIES OCCUR IN THE YOUTH (18–25)⁴

6% OF TRAUMA AND ORTHOPEDIC (T&O) SURGEONS ARE WOMEN⁵



Economic impact



USD 180 BILLION in productivity lost annually due to injury in LMICs

1% OF DEVELOPMENT ASSISTANCE FOR HEALTH GOES TO INJURY CARE vs **40% TO COMMUNICABLE DISEASES**

220 MILLION DISABILITY ADJUSTED LIFE YEARS (DALYs) lost each year in LMICs²

Local capacity challenges

WEAK infrastructure, equipment, and scarce implants

LACK OF sufficiently trained healthcare workers

Traditional bonesetters **NOT INTEGRATED** into local trauma care systems

COVER: Seamstress at Kids' World Tailoring making reusable personal protective equipment (PPE) sets
Blantyre, Malawi, May 2020

Table of CONTENTS

4

The solution

6

Message from
the Chair and
Managing Director

7

Alignment with
the UN SDGs

8

Global footprint
in 2020

9

Highlights
from 2020

10

**Fracture Solutions
Program:
Africa and Asia**

12

**Our country
initiatives**

17

**Clinical teaching
modules**

19

Special projects

22

**Health systems
change projects**

24

Partner with us

26

Key financials

27

**Audited
financial report**

34

References

35

Acronyms

THE SOLUTION

The AO Alliance strategy to address the burden of injuries in LMICs



VISION



a world where timely and appropriate fracture care is accessible to everyone

MISSION



to reduce suffering, disability and poverty in LMICs by enhancing fracture care

OBJECTIVE



to create sustainable local capacity for care of the injured

VALUES



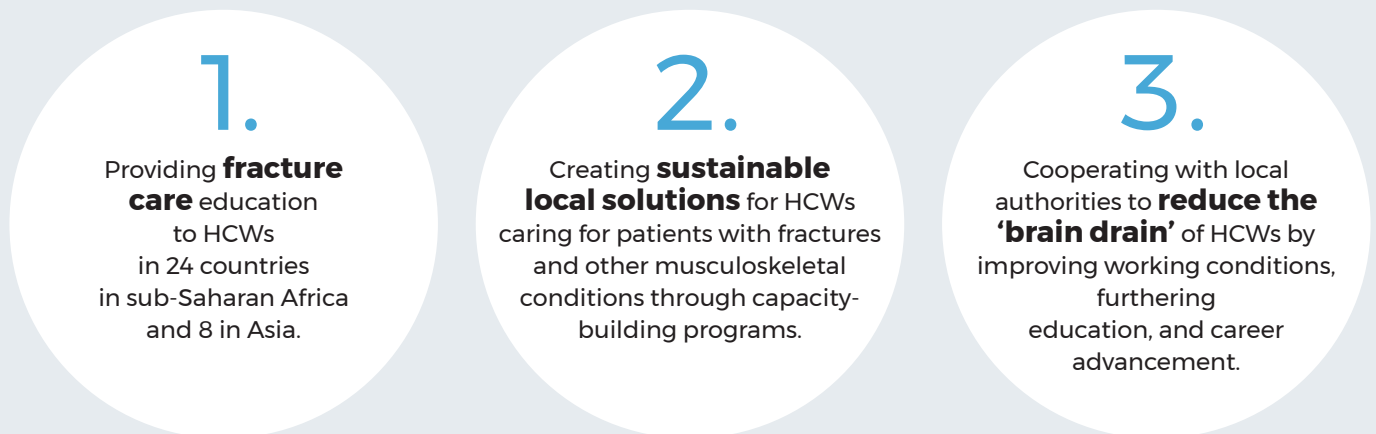
empowerment, partnership, sustainability

The AO Alliance is a catalyst in knowledge development and transfer for trauma and orthopedic care in LMICs.

We do this by:

- **IDENTIFYING** local and regional gaps through detailed needs assessments and cooperative clinical research, and adapting offerings accordingly;
- **IMPROVING** standards of care through fracture management education and curriculum development;
- **RECRUITING** talented individuals to join the AO Alliance network of 350 trauma and orthopedic (T&O) surgeons, operating room personnel (ORP) and other T&O frontline healthcare workers (HCWs); and
- **ENABLING** trained HCWs to apply their newly acquired knowledge, attitudes, and skills within their local treatment environments.

With the support of our funders, the AO Alliance Board of Directors, faculty networks and staff, we improve care of the injured guided by the following objectives:



Three AO Alliance focus areas:

- **Care** – 95% of spending, most of which goes to education and training
- **Awareness** – advocating to make access to safe, affordable, and timely fracture care a global health priority
- **Policy advisory services** – national trauma systems’ planning to facilitate the adoption and implementation of critical policies, and in support of the work of health authorities

Unlike in high-income countries, injuries, and their treatment in low- and middle-income countries (LMICs) continue to be underfunded and neglected in national healthcare budgets, relative to other healthcare priorities.

Well-organized trauma systems
reduce deaths by 20 percent



Message from the Chair and Managing Director

With millions of lives already tragically lost, healthcare systems disrupted, and economic hardship faced by many more, the coronavirus pandemic dominated the year 2020. The AO Alliance's work to improve care of the injured in LMICs was impacted.

Almost 5 million people die from injuries annually. An estimated 50 million are left with a disability, imposing suffering, affecting livelihoods, and the ability to support families. Two million lives could be saved annually with adequate trauma systems. By advancing fracture care education in LMICs, pushing for trauma registries to demonstrate injuries as a global public health issue, and advocating for the right to timely and appropriate fracture care, we make a difference alongside frontline healthcare workers, funders, and implementation partners.

As we reflect on the AO Alliance's achievements in 2020, we observe how our work, adaptation, and innovation are responding to the current challenges facing healthcare systems, as well as the changing expectations of our networks and partners. This annual report includes key areas where we have made a tangible difference in strengthening public healthcare and trauma systems.

Our capacity-building investments in local faculty and human resources since 2015 have permitted our unique in-person education and training events to take place. The pandemic forced us to innovate delivery of essential fracture care education via newly developed online modules, despite some internet challenges. More locally led delivery, harnessing in-country expertise, will support the long-term effectiveness and sustainability of our fracture care education and other programs.

As personal protective equipment (PPE) was diverted early on from operating theatres to other sectors of the hospitals, we quickly arranged funding for locally manufactured or locally sourced PPE to keep our networks safe and healthy.

We were fortunate to benefit from the generosity and flexibility of our main funders, the Hansjörg Wyss Medical Foundation, the AO Foundation, and

the Johnson & Johnson Foundation, in terms of project implementation schedule flexibility, and reallocation of funds for urgent needs. The AO Alliance Board of Directors, employees, and consultants also contributed to targeted operational savings.

The audited financial statements show operating expenses of CHF 4.1 million, 50 percent below our initial budget. While our ongoing country initiatives could continue with capacity-building activities, our Fracture Solutions Program was scaled down to smaller, national in-person events. Our education development efforts continued with revisions to our curriculum for nonoperative fracture management principles, and the creation of a new course focused on common fractures in LMICs.

While 2021 is set to be the year of vaccinations, let us ensure that caring for the injured and preventing disability from injuries in LMICs is not forgotten and that we continue to innovate.

Four healthcare systems change initiatives are in the pipeline with partners. They include training traditional bonesetters in caring for the injured; increasing gender equity and diversity in trauma and orthopedic surgery; equitable and affordable access to orthopedic equipment and implants; and the development of a comprehensive sub-specialty program for pelvic and acetabular surgery for LMICs.

We thank our funders, implementation partners, board of directors, advisors and the global AO Alliance team for their support and dedication. We look forward to contributing to a decade of transformation in care of the injured with our stakeholders.



A handwritten signature in blue ink that reads "R. Jeker".

Rolf M Jeker
Chair of the Board of Directors



A handwritten signature in blue ink that reads "Claude MARTIN".

Claude Martin Jr
Managing Director

Alignment with the 2030 United Nations Sustainable Development Goals

The United Nations Sustainable Development Goals (SDGs) are a universal call to action to end poverty and ensure prosperity and well-being for all. The AO Alliance is aligned with SDGs 3, 5, 10, 16 and 17 to build service-delivery capacity in care of the injured in LMICs and support just and sustainable communities and institutions.

Goal 5

Achieve gender equality and empower all women and girls.

The AO Alliance is working to address the low representation of women T&O surgeons.

5 GENDER EQUALITY



Goal 10

Reduce inequality within and among countries.

The AO Alliance works to develop fracture care programs in rural impoverished areas in LMICs.

10 REDUCED INEQUALITIES



Goal 3

Ensure healthy lives and promote well-being for all at all ages.

The AO Alliance develops and trains healthcare workers in LMICs.

3 GOOD HEALTH AND WELL-BEING



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



Goal 16

Promote peaceful and inclusive societies for sustainable development.

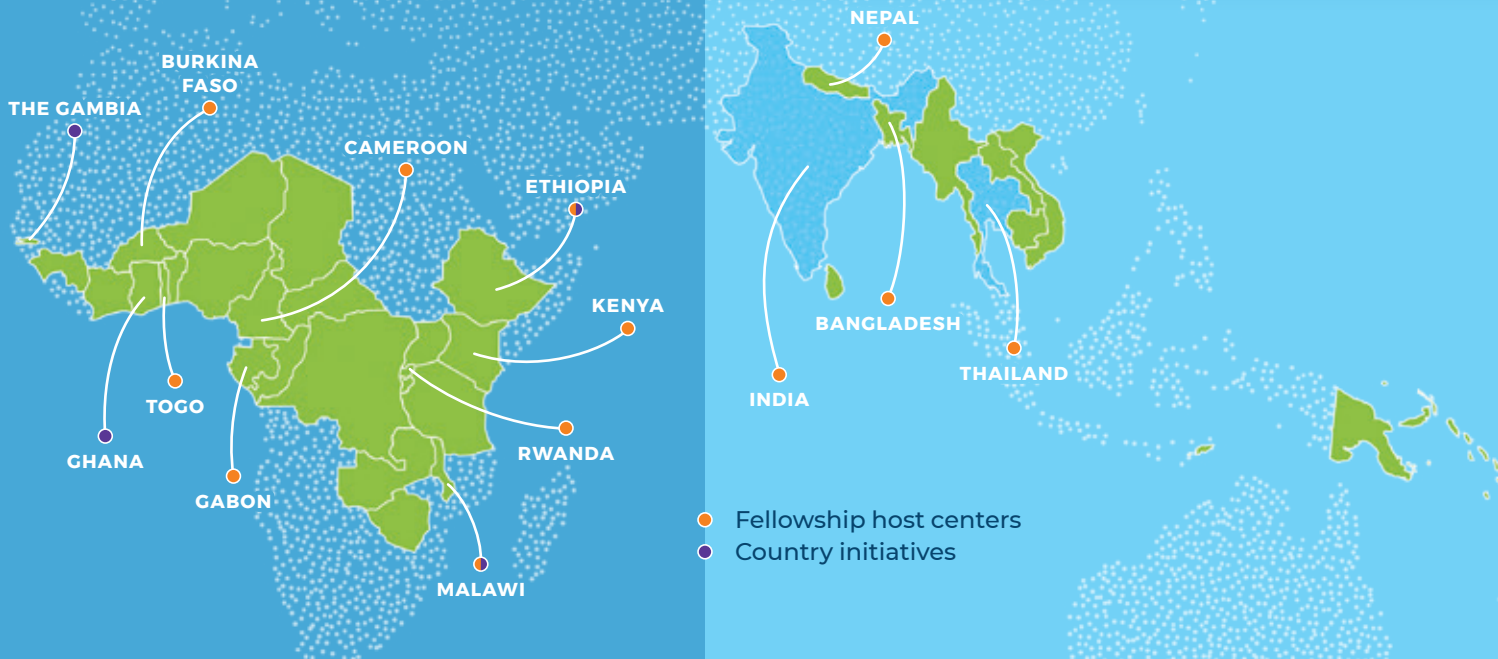
The AO Alliance assists LMICs with their trauma care development strategies.

Goal 17

Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

The AO Alliance partners to scale fracture care solutions and trauma services in LMICs.

2020 AO Alliance GLOBAL FOOTPRINT



Sub-Saharan Africa **Countries where AO Alliance is active** **Asia**

24

32

8

English-speaking

- Cameroon*
- Ethiopia
- The Gambia
- Ghana
- Kenya
- Malawi
- Nigeria
- Rwanda
- Tanzania
- Uganda
- Zambia
- Zimbabwe

French-speaking

- Benin
- Burkina Faso
- Burundi
- Cameroon*
- Central African Republic
- Chad
- Congo-Brazzaville
- Democratic Republic of the Congo
- Gabon
- Guinea-Conakry
- Ivory Coast
- Niger
- Togo

- Bangladesh
- Cambodia
- Laos
- Myanmar
- Nepal
- Pacific Islands
- Sri Lanka
- Vietnam

Highlights from 2020

67

in-person education events in sub-Saharan Africa and Asia

1,852

healthcare workers trained

31

clinical fellowships

21

COSECSA T&O residents sponsored for fellowship exams

5

new online fracture care education modules

2

education programs for traditional bonesetters

1

new country initiative: the Gambia

100,000 surgical masks

distributed in Ethiopia

USD 150,000

invested in personal protective equipment for 30 countries in sub-Saharan Africa and Asia

70 precise traction weights

distributed to district hospitals in Malawi



The AO Alliance book

To mark the first six years of existence, AO Alliance board members, under the leadership of Rolf M Jeker, and former members Jaime Quintero and Joachim Prein, elected to document the history and evolution of the AO Alliance. The book explores the contribution of the AO Socio-Economic Committee (AO SEC) to advancing fracture care in LMICs, analyzing the human and economic burden of injury and disability in these countries. The authors describe the process leading to the AO Alliance's creation, map its governance, policies, strategies, funding, and partnerships, charting its progress, and exploring its future.

FRACTURE SOLUTIONS PROGRAM: AFRICA AND ASIA



Pelvis and acetabulum course
Ho Chi Minh City, Vietnam, September 2020

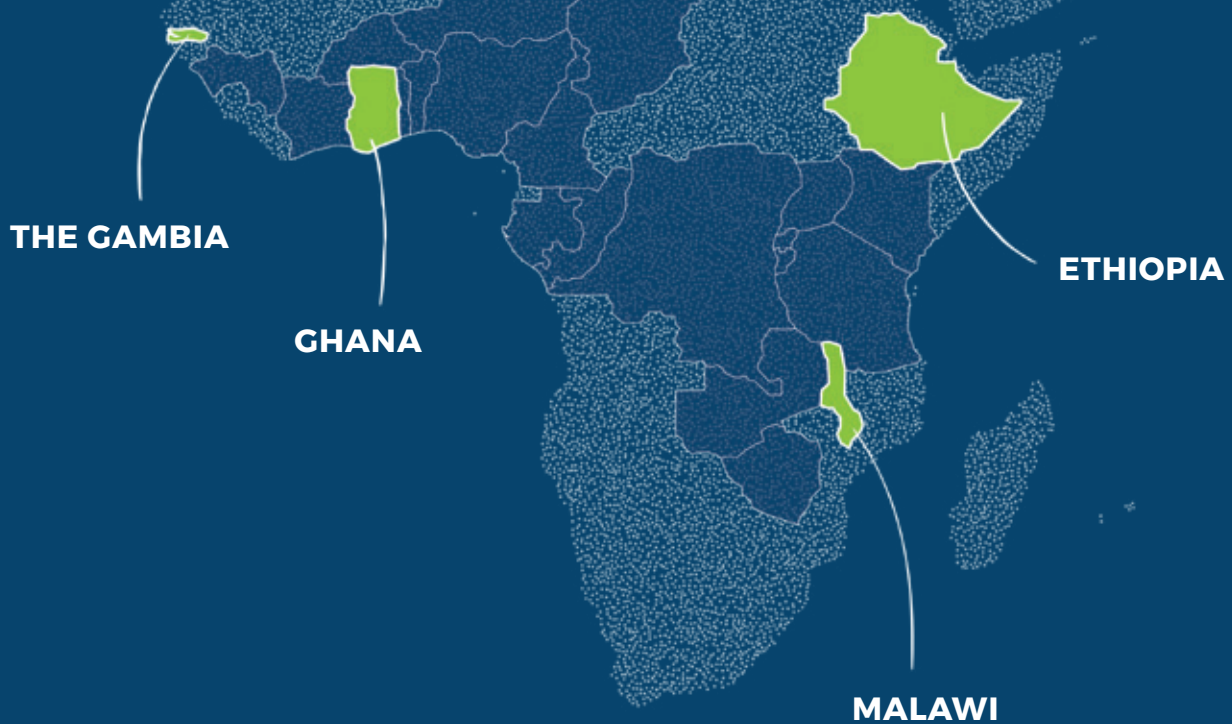
By providing locally relevant fracture care education on the principles of both operative and nonoperative treatment, and supporting local capacity-building mentorship programs, local healthcare workers can mend musculoskeletal injuries with greater confidence, leading to better patient outcomes.

The AO Alliance also invests in the professional development of healthcare workers through national fellowships.

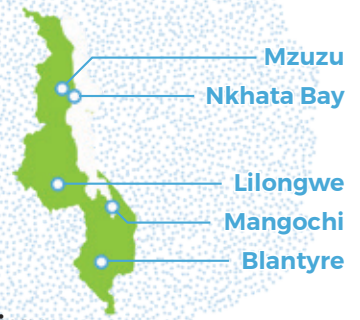
By reducing the number of participants and shortening course durations, we were able to safely continue delivering in-person education events, which are the program's core activities.



OUR COUNTRY INITIATIVES



Malawi



The Malawi Country Initiative concluded its first five-year cycle in December 2020. Following a detailed needs assessment in November 2014, it was launched in December 2015 with the support of the Hansjörg Wyss Medical Foundation.

Fracture care registry clinical research project

The project, which commenced in 2016, was completed under the leadership of Dr Linda Chokotho and her local research team. To our knowledge, this is the largest existing prospective observational study investigating the characteristics and initial management of fractures in Malawi (23,733 cases) to help better understand the burden of injuries and treatment options, and to inform policy.



Dr Linda Chokotho,
Fracture care registry project lead – Blantyre, Malawi

Main study recommendations

- To develop and improve interfacility referral protocols and systems at the hospital level. These are crucial tools for identifying which injuries can be managed at district hospitals or need to be transferred to central hospitals;
- To determine the best treatments within the confines of available resources; and
- To inform decision makers at the ministry of health about the gaps in caring for fractures and how to rectify such gaps.

MAIN FINDINGS



23,733
fracture cases recorded



15 YEARS
median patient age



69% male
31% female



Most common injury location **WRIST** (37%)

Cause of injury:
65% falls, **16%** road traffic accidents

Majority treated in **PLASTER OF PARIS**
by orthopedic clinical officers

Traction weights for district and central hospitals in Malawi

In April 2020, Emmanuel* suffered a femoral shaft fracture (thigh bone) after a car collided with his motorcycle. He was taken to the Queen Elizabeth Central Hospital (QECH) in Blantyre. Surgery is the treatment of choice, but patients often must be placed in traction due to bottlenecks in access to the operating theatre.

Traction is a technique for realigning a broken bone using weights, pulleys, and ropes. At the QECH, precise weights being unavailable, the only solution was to use rocks and makeshift weights, which do not provide for good clinical practice.

Dr Jes Bates, a T&O surgeon at the QECH, and Precious Kamange, AO Alliance Malawi country consultant, set out to find a solution. With the knowhow of Bickson Kapalamula Munelo, local cement makers, welders, and painters, they designed and manufactured 70 precise weights of 1kg, 2kg and 5kg.



Before:
old weights

After:
new weights



“There will be improvement in the patient healing process, as cases of nonunion due to the use of non-uniform weights will be reduced.”

Dr Chikumbutso Mpanga
Trauma and orthopedic surgeon – QECH, Blantyre, Malawi

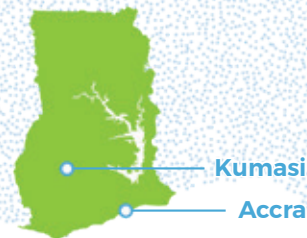


Bickson Kapalamula Munelo
and **Precious Charles Kamange**

* For privacy reasons, the patient's name has been changed.

Ghana

Each country initiative is customized to fill gaps in fracture care management. Ghana needs additional T&O surgeons, ORPs and plaster technicians. Pediatric orthopedic care requires further development. Ghana struggles to limit avoidable catastrophic complications associated with traditional healers treating fractures, especially in children and young adults.



Musculoskeletal injuries are a growing burden in Ghana. In 2020, 54 T&O surgeons served a population of 30 million, 50% of whom worked in the greater Accra metropolitan area, leaving a large rural void.

Plaster technician training program

Plaster technicians play a crucial role in proper cast application. There was no professional recognition before the AO Alliance helped develop the Plaster Technician Training Program with the first cohort of 20 students in September 2019. The three-year program leads to the plaster technician diploma at the Trauma and Orthopaedic Training School at the St John of God Hospital in Duayaw-Nkwanta, northwest of Kumasi. This qualification is recognized by the Kwame Nkrumah University of Science and Technology.










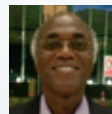




First cohort of students enrolled in the Plaster Technician Training Program Duayaw-Nkwanta, Ghana

Traditional bone setting in Ghana

Despite the use of allopathic medicine across Africa, traditional medical practices remain important. In Ghana, 60% of the population patronizes traditional medicine providers. Bone setting is one of the most commonly used forms of traditional medical practice. With the rise in injuries, there is a growing concern regarding the number of avoidable complications such as malunion, gangrene, and amputations, arising from sub-optimal bone setting practices.

A clinical research and education project in Ghana began in 2020 to estimate the extent of catastrophic complications associated with traditional bone setting

and establish the feasibility of formal training, with subsequent integration into the healthcare system. Dr Dominic Yeboah at Komfo Anokye Teaching Hospital in Kumasi is leading the project team.

 Komfo Anokye Teaching Hospital (KATH) T&O Department	 KATH Public Health Unit	 Tamale Teaching Hospital	 AO Alliance
 Dominic Konadu-Yeboah Surgeon	 Ruth Owusu Head of Department	 Alexis Dun Boib Buunaaim Surgeon	 Wilfred Labi Addo English-speaking Africa Coordinator
 Samuel Frimpong Odoom Research Officer	 Francis Adjei Osei Researcher PhD	 Tolgou Yempabe Surgeon	 Claude Martin Jr. Managing Director

The clinical research team was established to lead the initiative to reduce complications in children resulting from activities of traditional bonesetters in Ghana.

Ethiopia

Two hundred trauma and orthopedic (T&O) surgeons and over 150 residents serve a population of 117 million in Ethiopia. It is estimated that of 5 million injuries occurring annually in Ethiopia, 3.5 million are likely to result in a musculoskeletal disability.

Trauma and orthopedic surgery and training continue to make great strides in Ethiopia with newly qualified consultants driving things forward. There are now two large training centers in Addis Ababa - based out of the Tikur Anbessa Specialized Hospital (Addis Ababa University) and AaBET Hospital in Addis Ababa. There are also training programs established in Bahir Dar, Mekele, Hawassa and Gondar. The need to support these training programs, and their many trainees, continues.

Development of pelvic and acetabular (P&A) surgery

In addition to supporting the surgical education of trainees in principles of fracture management, the AO Alliance has supported the development of P&A surgery in Ethiopia. Drs Geletaw Tessema and Samuel Hailu each completed a one-year fellowship in Toronto, Canada in P&A surgery and hip arthroplasty, following their residency at the Tikur Anbessa Specialized Hospital (Addis Ababa University).



Dr Geletaw Tessema
Tikur Anbessa Specialized Hospital



Dr Samuel Hailu
Tikur Anbessa Specialized Hospital

Using their training as a springboard, Tikur Anbessa Specialized Hospital launched a P&A surgery trauma fellowship. The first two fellows were enrolled in 2019 and two additional ones in 2020.

Dr Ephrem Gebrehana spent 2020 in Assiut, Egypt. With the mentorship of Professor Osama Farouk, Chief of Orthopaedic Trauma Unit, Assiut University Hospitals, he will be returning in 2021 to Hawassa to apply his newly acquired skills. With a cooperative effort from two of the AO Alliance's partners, Australian Doctors for Africa and the Northwest Orthopaedics Trauma Alliance for Africa, a comprehensive P&A service will become operational in 2021.

The Gambia

The Gambia is the latest country initiative to be undertaken by the AO Alliance.

With cooperative funding from AO Trauma, the comprehensive program was launched in 2019 under the leadership of Dr Kebba Marenah, chief of surgery at the Edward Francis Small – Teaching Hospital and CEO, Dr Charles Roberts.

A young T&O surgeon, Dr Mariam Joof, has returned to the Gambia from her residency training in Senegal, supported by the AO Alliance Gambia Country Initiative. The Gambia thus has, in 2020, a second national T&O surgeon to serve the country's population of 2.3 million.

Dr Musa Ka, currently training in Russia, will be returning to the Gambia in 2022 to further increase the number of national T&O surgeons. Dr Mariama Suso, a promising Gambian trainee, is completing a T&O residency at an AO Alliance partner hospital in Malawi, the Queen Elizabeth Central Hospital. She is due to qualify as a T&O surgeon in 2026.



Dr Kebba Marenah, Dr Charles Roberts, and Dr Mariam Joof
Edward Francis Small – Teaching Hospital



Clinical Teaching Modules for
**OPERATING ROOM
PERSONNEL AND
TRAINEES**



4

COUNTRIES

1 in Asia,
3 in sub-Saharan Africa



22

EVENTS



218

PARTICIPANTS



74

FACULTY

With the assistance of the AO Trauma Education Commission, 22 shorter, more targeted education events were organized in four countries (the Gambia, Ghana, Malawi and Nepal) at local hospitals where course participants work. Nepal took the lead in implementing the clinical training modules (CTMs). Of the 22 events, 18 were organized in Nepalese hospitals. The other four took place in the Gambia, Ghana, and Malawi. In Nepal, junior surgical trainees benefitted, in addition to ORPs, from the CTMs, which focus on important principles of fracture fixation.

Clinical training modules are highly interactive educational sessions of around three hours each, delivered by AO Alliance faculty, who are surgeons and ORPs from the hosting hospitals.

The events were convenient, as there was no travel involved and logistic arrangements were simple. More content delivery will be developed in local languages in 2021.



Operating room personnel at the clinical training module event
Komfo Anokye Teaching Hospital in Kumasi, Ghana, September 2020

SPECIAL PROJECTS IN 2020



Personal protective equipment for our network

Our programs needed to be adjusted to respond to the pandemic.

The AO Alliance Board of Directors and management’s first response in February 2020 to the pandemic was to develop a strategy to keep our local faculty networks safe and healthy.

The AO Alliance initiated and supported local projects to procure personal protective equipment (PPE). In May 2020, the AO Alliance launched a GoFundMe campaign to raise funds to commission the production of reusable PPE sets and face masks, made in Blantyre, Malawi by a local nonprofit, Kids’ World Tailoring.

A total of 206 PPE sets and 800 reusable face masks were produced and delivered to the Kamuzu Central Hospital, Queen Elizabeth Central Hospital, Mzuzu Central Hospital, and to Beit Cure International Hospital.

Naton Medical Group, a well-established medtech company in China, has been donating implants to the AO Alliance for use in sub-Saharan Africa since 2018. Naton made a generous donation of 100,000 surgical masks to the AO Alliance for frontline healthcare workers in sub-Saharan Africa.

Generous in-kind contributions of specially coated anti-viral cloth masks have been secured from two Swiss medtech companies, HeiQ Materials AG and Livinguard AG, to be distributed in Ethiopia, Ghana, and Kenya in 2021.

“The number of COVID-19 cases continues to rise in the country. If I catch it as a surgeon, who will treat my patients? I would have to go into isolation for three weeks. The demand for these resources (PPE) is so high that the hospitals and the Ministry of Health cannot afford them. These PPE sets will help in continuity of service delivery.”



Dr Leonard Banza Ngoe
Chief of Trauma and Orthopedic Surgery
Kamuzu Central Hospital (KCH)



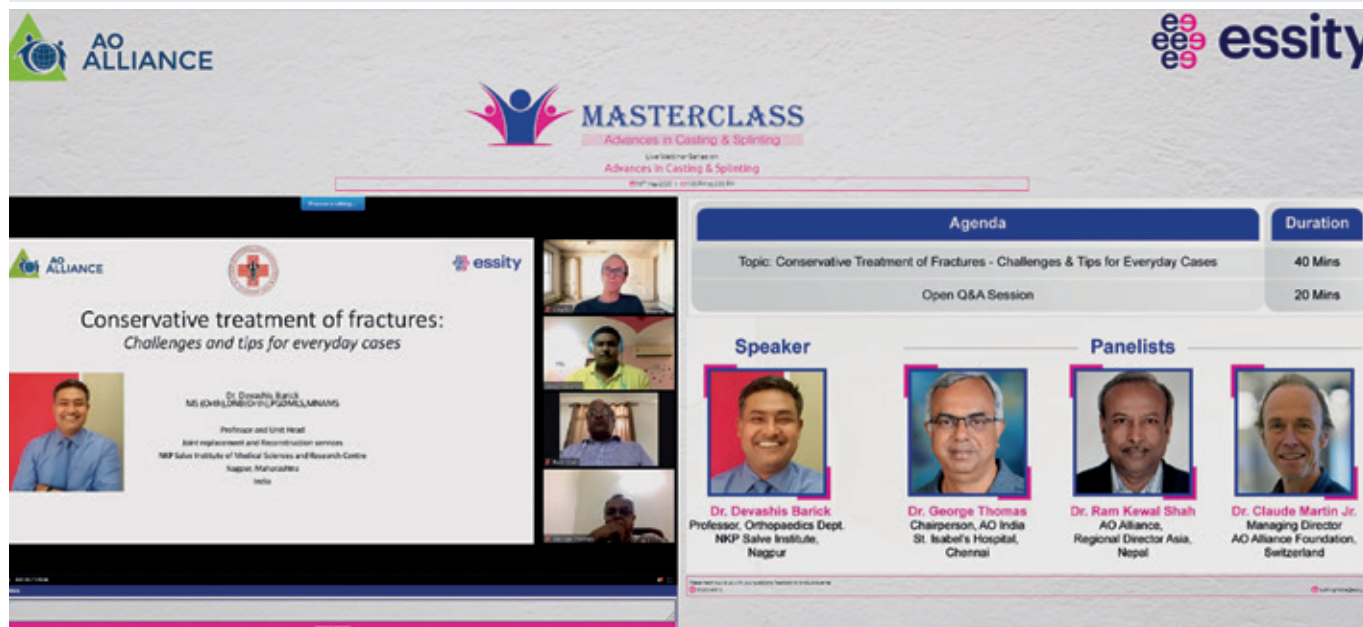
Seamstress at Kids’ World Tailoring making reusable PPE sets
Blantyre, Malawi, May 2020



Healthcare workers in PPE provided by the
AO Alliance at the Sindhuli Hospital
Kamalamai, Nepal, August 2020.

Online education development

The AO Alliance needed mechanisms for international education programming, through cross-institutional local and international partnerships to offer ongoing curricula in low-resource settings.



Virtual learning is already a component of AO Alliance fracture care education in LMICs, with online resources serving as a successful means of improving accessibility for trainees and supporting faculty. Our pre-pandemic online education used an integrated approach including in-person training, in addition to mentorship.

In response to travel restrictions, the leadership team in French-speaking Africa developed 10 online modules, covering common traumatic musculoskeletal diagnoses, five of which are live. In Asia, core country groups in Bangladesh and Nepal executed live webinars, some in local languages, also attracting participants from outside Asia.

The AO Alliance partnered with **Essity India Private Limited**, a leading hygiene and health company, to deliver four masterclasses online live webinars covering fracture care topics.

Recognizing the need for a coordinated strategy and online platform to build our virtual learning environment, the AO Alliance invested in a learning management system (LMS) and has been training personnel in its use. The scientific content experts are available in our network and are developing a new module on fracture-related infections for LMICs.

Looking ahead

HEALTH SYSTEMS CHANGE PROJECTS

Preventing disability through traditional bonesetter training

The AO Alliance launched a clinical research study in Hawassa, Ethiopia in 2020 to estimate the incidence of catastrophic complications associated with traditional bone setting, to establish the feasibility of formal training of traditional bonesetters (TBS), and their subsequent integration into the healthcare system. The pilot project aims to reduce preventable catastrophic complications causing significant disabilities, including amputations. A national rollout of the web-based platform will progress in 2021.

A similar program began in 2020 in Ghana in two cities: Kumasi and Tamale. With partnership funding from the AO Strategy Fund, an education curriculum targeting TBS to improve fracture care was developed with a multidisciplinary team of healthcare experts and social scientists. The program will begin implementation in 2021.

The AO Alliance sees this project as an opportunity to make a significant, scalable impact to reduce avoidable disabilities, especially in children and young adults.



GHANA

ETHIOPIA

Increasing equity, diversity, and inclusion in T&O surgery

Despite the trend of increasing female representation in medical school admissions, this is not reflected within surgery, particularly at the consultant level. Even greater gender inequality exists within trauma and orthopedics.

“Although, in many countries, females represent over 50% of medical graduates they still often constitute less than 10% of orthopaedic surgeons, and disappointingly orthopaedics remains the least gender diverse of all surgical specialties⁶.”

With five billion people lacking access to essential surgical care, an additional 2.2 million surgical specialists are needed to address this global challenge. We believe closing the gender gap is not only about equality for women but is the most impactful and effective way to meet the current surgical need.

With the Women in T&O Surgery initiative, the AO Alliance plans to create 10 scholarships to train inspiring women T&O surgeons in LMICs over the next three years. This campaign will help build surgical capacity in local communities and increase access to surgical care for the patients who need it most. Through these training opportunities, we will contribute to advancing women in T&O surgery.

Initiating

OrthoAccess platform to make orthopedic equipment and implants accessible

In addition to educating healthcare workers in fracture care, availability of essential fracture fixation equipment and implants is critical to achieving better patient outcomes. A key issue facing global T&O surgery is the structural inefficiency preventing the timely delivery of such products. Current distribution models in LMICs are complex: direct purchase from an external supplier; procurement from an intermediate distributor; and partnership donations.

OrthoAccess is a platform intended to facilitate access to implants and equipment in LMICs using a market-shaping approach, inspired by the success of GAVI, The Vaccine Alliance.

Previous attempts at increasing access to orthopedic implants have focused on donation of excess or expired supply from hospitals or companies through volunteer missions, non-profit coordinating organizations, and corporate social responsibility programs. The project aims to make markets work more efficiently for the benefit of patients, clinicians, and hospitals in LMICs.

Developing

integrated sub-specialty pelvic and acetabular surgery programs

The spectrum of pelvic and acetabular (P&A) injuries varies, ranging from simple, non-displaced fractures to highly unstable complex injuries that are challenging. In high-income countries, an increasing number of older patients present with fragility fractures. In LMICs, it is the young who suffer these injuries due to high-energy trauma, mainly due to road traffic accidents.

Several barriers for treatment of pelvic ring and acetabular fractures in LMICs have been identified, including the absence of trauma systems, a shortage of healthcare workers, a lack of training, and inadequate healthcare facilities, equipment, and resources.

This project goes to the root of complex knowledge transfer, including the infrastructure needed to perform these interventions. Patients travel long distances for treatment. There is a significant need to train surgeons, develop hospital resources, make available instruments and implants, and facilitate access to rehabilitation services.

Targeted programs are required to advance the care of P&A injuries in LMICs. An initial needs assessment indicates that Ethiopia, Ghana, and Malawi will be the first target countries.

ORTHOACCESS PLATFORM INITIATIVE: ETHIOPIA



GOVERNMENT

Include surgical implants in essential medicine list
Work with industry to enforce health & safety standards



PUBLIC-PRIVATE PARTNERSHIP

Expand surgeon pool
Training surgeons in latest techniques
Reduce the brain drain



MARKET ACCESS

Stronger private sector solutions
Linking healthcare services to insurance and micro-finance institutions
Local manufacture to substitute imports



PARTNER WITH US

“Hopefully, the AO Alliance can scale up its activities over the coming years. My foundation is happy to continue its involvement with this noble cause of promoting and developing solutions for better care of the injured in low-income settings.”

Hansjörg Wyss
*Global philanthropist
Founder of the Hansjörg Wyss Medical Foundation*

“The AO Foundation is honored to have been involved in the creation of the AO Alliance. As musculoskeletal trauma and disorders continue to increase in LMICs, the need for state-of-the-art education and techniques becomes paramount. The AO Alliance fills this void in helping advance care of the injured in these countries.”

Dr Robert McGuire
President of the AO Foundation

“The West Africa Trauma Education Program (WATEP), in collaboration with the Johnson & Johnson Foundation has provided frontline healthcare workers with added knowledge and skills to better care for the injured. Working in partnership, we continue to impact underserved communities and provide access to safe, essential, and timely surgical care.”

Ian B. L. Walker
*Global Program Lead – Essential Surgery at
Johnson & Johnson*

“The AO Alliance’s work is a huge undertaking, life changing and pioneering!”

Christopher A. Holder
*Philanthropist
Board member of Medicor Foundation*

Our supporters and partners are the heart of the AO Alliance

We would like to especially thank the **AO Foundation**,
the **Hansjörg Wyss Medical Foundation**,
Medicor Foundation,
the **Johnson & Johnson Foundation**,
and all our other partners and donors,
who make our work possible.

Strong governance

Fiscal responsibility, rigorous monitoring and reporting are critical aspects of the AO Alliance's stewardship model. BDO Ltd. Chur audits AO Alliance financial statements annually, and the Société Générale de Surveillance (SGS) is an independent verification partner.

Partnership opportunities

PROGRAMS AND INITIATIVES

Fracture Solutions Program (Africa & Asia)

Africa Country Initiatives:

Ethiopia, the Gambia, Ghana, Malawi

Future Asia Country Initiatives:

Cambodia, Nepal

National trauma & orthopedic fellowships

Clinical research

Trauma systems policy development

Systems change projects

CORPORATE SPONSORSHIP

AO Alliance Corporate Circle membership

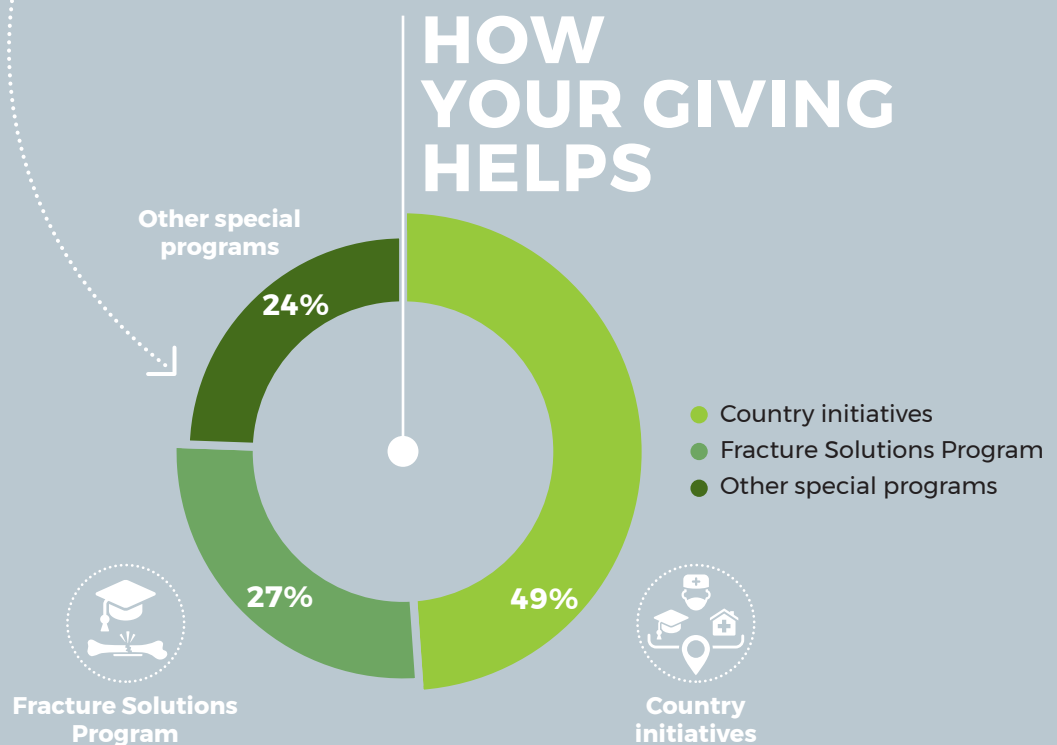
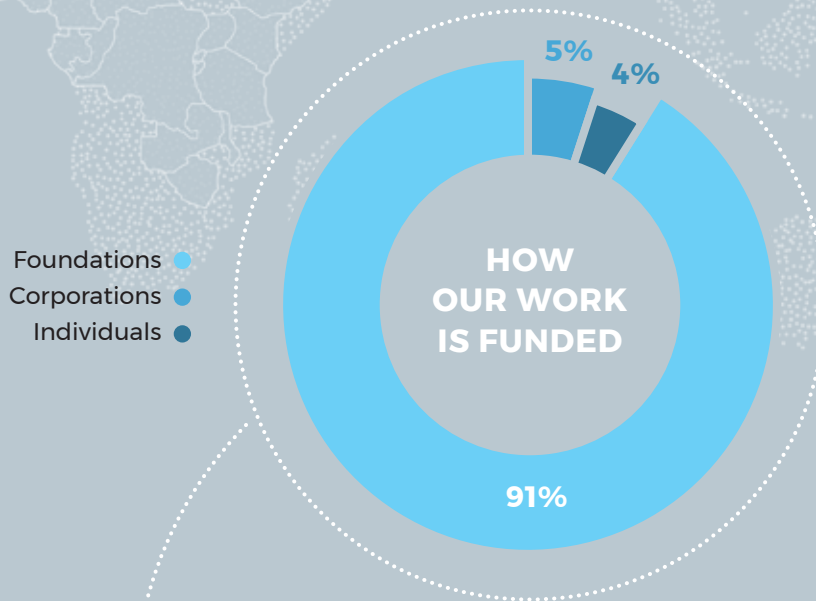
CSR program partner



DONATE

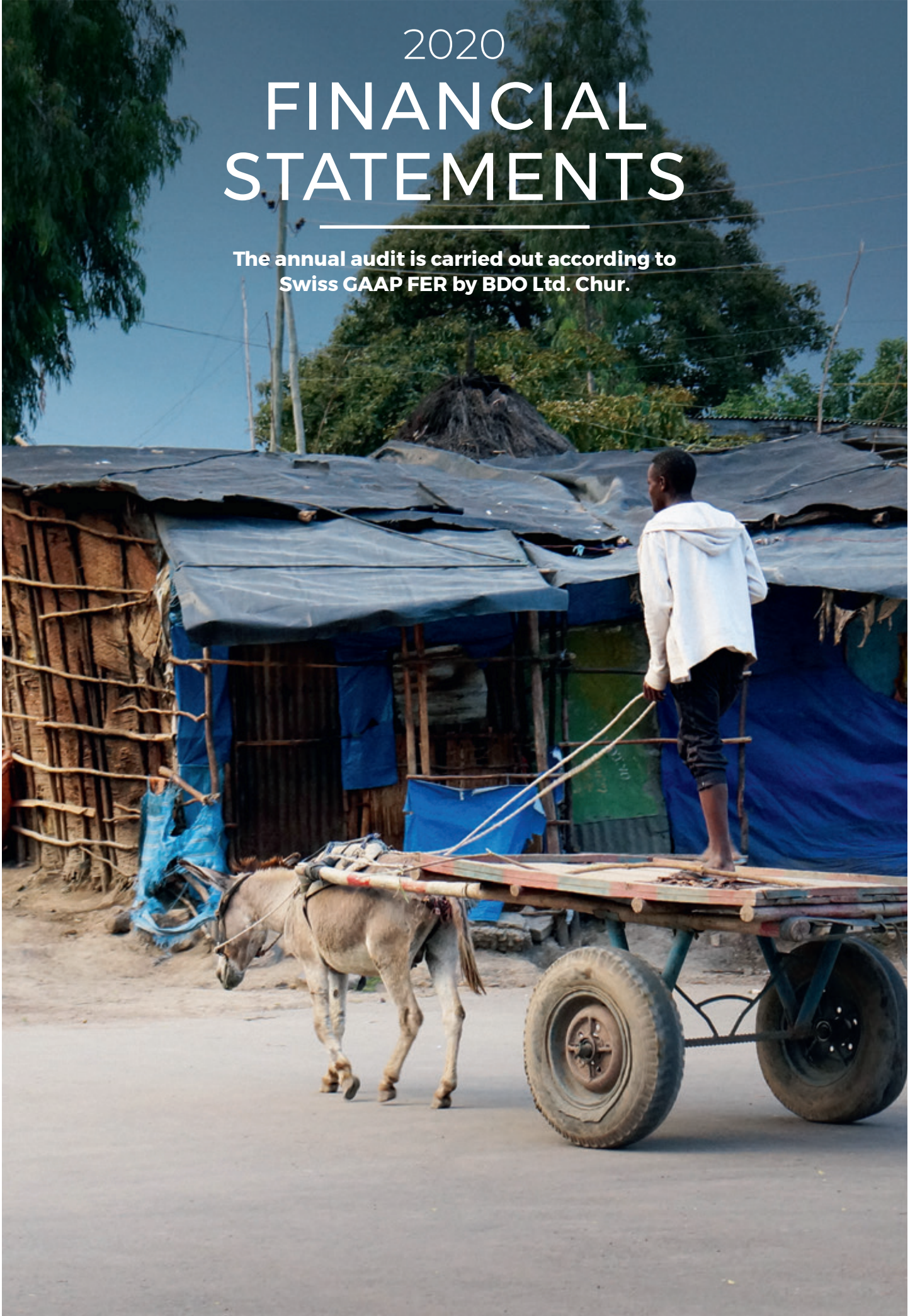
Partner with us to care for the injured.
IBAN code: CH33 0483 5114 9458 6100 0
ao-alliance.org/donate/

KEY FINANCIALS



2020 FINANCIAL STATEMENTS

The annual audit is carried out according to
Swiss GAAP FER by BDO Ltd. Chur.





Phone +41 81 403 48 48
Fax +41 81 403 48 49
www.bdo.ch

BDO AG
Comercialstrasse 32
7000 Chur
Switzerland

Report of the statutory auditor on the limited statutory examination

To the Board of Foundation of

AO Alliance Foundation, Davos

As statutory auditor, we have examined the financial statements (balance sheet, income statement, cash flow statement, statement of changes in equity and notes) of AO Alliance Foundation for the financial year ended 31 December 2020.

These financial statements in accordance with Swiss GAAP FER and the requirements of Swiss law and the articles of foundation, foundation deed and regulations are the responsibility of the Board of Foundation. Our responsibility is to perform a limited statutory examination on these financial statements. We confirm that we meet the licensing and independence requirements as stipulated by Swiss law.

We conducted our examination in accordance with the Swiss Standard on the Limited Statutory Examination. This standard requires that we plan and perform a limited statutory examination to identify material misstatements in the financial statements. A limited statutory examination consists primarily of inquiries of company personnel and analytical procedures as well as detailed tests of company documents as considered necessary in the circumstances. However, the testing of operational processes and the internal control system, as well as inquiries and further testing procedures to detect fraud or other legal violations, are not within the scope of this examination.

Based on our limited statutory examination, nothing has come to our attention that causes us to believe that the financial statements do not give a true and fair view of the financial position, the results of operations and the cash flows in accordance with Swiss GAAP FER and do not comply with Swiss law and the articles of foundation, foundation deed and regulations.

Chur, 19 February 2021

BDO

Paul Kumin
Auditor in Charge
Licensed Audit Expert

ppa. Natalie Gamper
Licensed Auditor

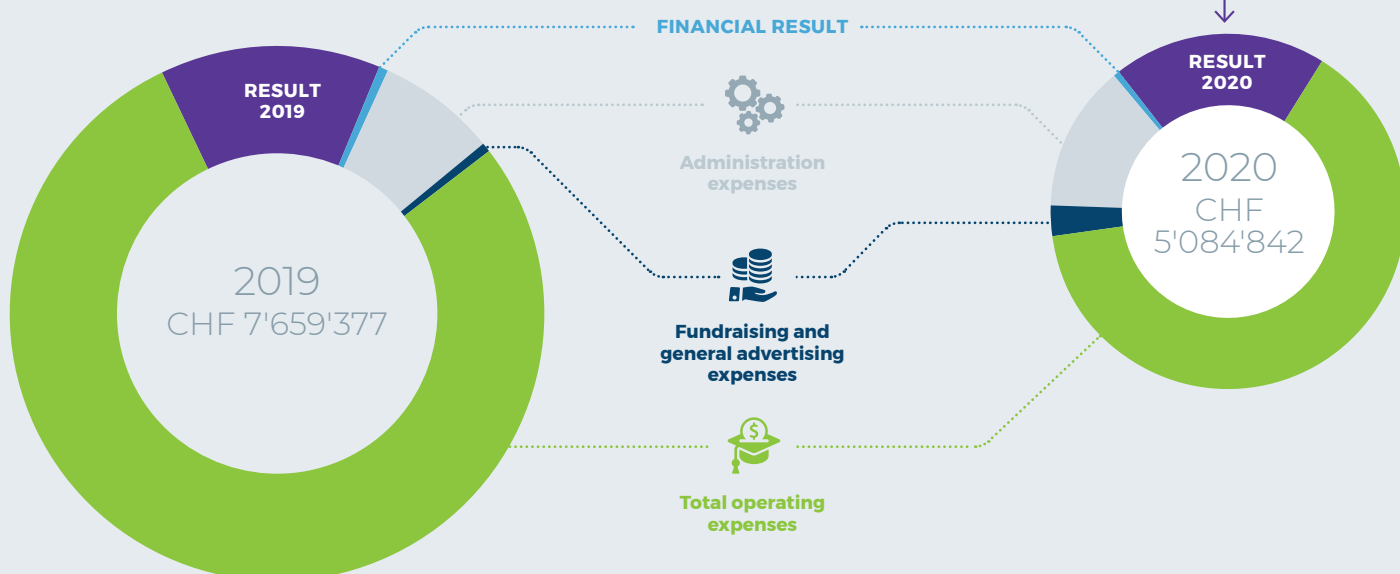
Enclosure
Financial statements

1 Balance Sheet

	Notes	31.12.2019		31.12.2020	
		CHF	%	CHF	%
ASSETS					
CURRENT ASSETS					
Cash	6.1	5'536'177	97.9	5'601'258	98.3
Receivables	6.2	40'969	0.7	50'179	0.9
Prepaid expenses & accrued income	6.3	80'392	1.4	45'146	0.8
Total current assets		5'657'538	100.0	5'696'584	100.0
NON-CURRENT ASSETS					
Financial investments		0		0	
Subsidiaries		0		0	
Property, plant & equipment		0		0	
Total non-current assets		0		0	
TOTAL ASSETS		5'657'538	100.0	5'696'584	100.0
LIABILITIES & EQUITY					
LIABILITIES					
Accounts payable	6.4	757'754	13.4	213'690	3.8
Other short-term payables (interest-free)	6.5	1'494'584	26.4	1'906'539	33.5
Accrued liabilities	6.6	1'356'466	24.0	548'253	9.6
Total short-term liabilities		3'608'803	63.8	2'668'483	46.8
Total liabilities		3'608'803	63.8	2'668'483	46.8
EQUITY					
	4				
Initial capital		55'000	1.0	55'000	1.0
Retained earnings		987'138	17.4	1'993'735	35.0
Profit for the year		1'006'597	17.8	979'365	17.2
Total Equity		2'048'735	36.2	3'028'100	53.2
TOTAL EQUITY AND LIABILITIES		5'657'538	100.0	5'696'584	100.0

2 Profit & loss

	Notes	2019		2020		Variance CHF
		CHF	%	CHF	%	
OPERATING REVENUE						
Grants	6.7	7'659'377	100.0	5'084'842	100.0	-2'574'534
OPERATING EXPENSES						
Total operating expenses	6.8	6'005'593	78.4	3'255'483	64.0	-2'750'110
Country initiatives		2'220'644		1'591'968		-628'677
Fracture Solutions Projects		2'485'010		868'410		-1'616'600
Other		1'299'938		795'105		-504'833
Fundraising and general advertising expenses	6.9	56'134	0.7	136'373	2.7	80'239
Administration expenses	6.10	551'671	7.2	682'487	13.4	130'816
Operational result		1'045'978	13.7	1'010'499	19.9	-35'480
FINANCIAL RESULT						
Other financial income		710	0.0	22'851	0.4	22'141
Other financial expense		-40'092	-0.5	-53'984	-1.1	-13'893
Financial result	6.11	-39'381	-0.5	-31'133	-0.6	8'248
RESULT FOR THE YEAR		1'006'597	13.1	979'365	13.1	-27'232



3 Cash flow statement

in CHF	2019	2020
A. OPERATING ACTIVITIES		
Profit for the year	1'006'597	979'365
Variance of provisions	0	0
Variance of deferred tax liabilities	0	0
Depreciation and amortization	0	0
Cash flow	1'006'597	979'365
Increase / decrease of receivables	38'030	-9'210
Increase / decrease of prepaid expenses & accrued income	331'531	35'245
Increase / decrease of accounts payable	393'216	-544'063
Increase / decrease of other short-term liabilities	1'036'128	411'956
Increase / decrease of accrued liabilities	380'152	-808'213
Cash flow from operating activities	3'185'654	65'081
B. INVESTING ACTIVITIES		
Investments in financial assets	0	0
Disposal of financial assets	0	0
Investments in subsidiaries	0	0
Disposal of subsidiaries	0	0
Investments in property, plant & equipment	0	0
Disposal of property, plant & equipment	0	0
Cash flow from investing activities	0	0
C. FINANCING ACTIVITIES		
Foundation capital	0	0
Cash flow from financing activities	0	0
D. NET INCREASE / DECREASE IN CASH	3'185'654	65'081
E. NET INCREASE / DECREASE IN CASH		
Cash & cash equivalents per 1.1.	2'350'523	5'536'177
Cash & cash equivalents per 31.12.	5'536'177	5'601'258
Net increase / decrease	3'185'654	65'081

4 Statement of changes in equity

in CHF	As of 1.1.	Allocation	Dividends	Result for the year	As of 31.12.
Total equity 01.01.2019					
Foundation capital	55'000				55'000
Earnings carried forward	987'138			1'006'597	1'993'735
Total equity 31.12.2019	1'042'138	0	0	1'006'597	2'048'735
Foundation capital	55'000				55'000
Earnings carried forward	1'993'735			979'365	2'973'100
Total equity 31.12.2020	2'048'735	0	0	979'365	3'028'100

5 Notes

1 General Information

The AO Alliance Foundation has its registered and principal office at Clavadelerstrasse 8, 7270 Davos Platz, Switzerland.

2 Basis of preparation

The financial statements have been prepared on the historical cost basis in accordance with Swiss GAAP FER, Swiss GAAP FER 21, and comply with the requirements of Swiss law. The principle of individual valuation has been applied to assets and liabilities. The financial statements were authorized for issue by the AO Alliance Board of Directors at its March 2021 meeting.

3 Accounting Policies

The financial statements are presented in Swiss Francs (CHF), the functional currency of the AO Alliance Foundation.

3.1 Foreign Currency

Transactions in foreign currencies are translated to Swiss Francs (CHF) at exchange rates on the dates of the transactions. At year-end, monetary assets and liabilities in foreign currencies are measured using the exchange rate valid at the balance sheet date. Exchange differences from such valuation are recognized in profit/loss.

Year-end exchange rates applied:

EUR / CHF	1.087 (2019)	1.083 (2020)
USD / CHF	0.968 (2019)	0.88 (2020)

3.2 Impairments of assets

Assets are reviewed on each reporting date to determine whether there is any indication of impairment. An impairment loss is recognized if the carrying amount of an asset exceeds its recoverable amount. The recoverable amount of an asset is the greater of its value in use and its fair value less costs to sell. No impairments are recognized per 31.12.2020.

3.3 Cash

Cash and cash equivalents comprise cash in the bank, post accounts, and petty cash. These positions are valued at nominal value.

3.4 Receivables

Accounts receivables are carried at nominal value less allowance for doubtful receivables. The allowance is based on the aging of trade receivables, specific risks, and historical loss experience. No provision for doubtful receivables is recognized per 31.12.2020.

3.5 Prepaid expenses & accrued income

Short term accruals are liabilities that are due but not yet billed on the balance sheet date, and that arise due to goods and services already received. They are assessed individually based on quotations, offers or experience. Short-term accruals also contain accrued income on projects and studies.

3.6 Revenue

Revenue is recognized at the fair value of the consideration received or receivable, net of discounts. The source of revenue of the AO Alliance Foundation is based on donations. The income recognized is either in cash or can also be as in-kind donation.

6 Details to positions of the financial statements

6.1 Cash

Cash consists of funds in the bank accounts in Swiss Francs (CHF). The increase compared to 2019 is primarily due to received restricted donations where projects will only be completed in the following year.

6.2 Receivables

This category includes value-added tax (VAT) refunds.

6.3 Prepaid expenses and accrued income

This position includes prepaid expenses for educational events that will be held in the following financial year. The decrease compared to 2019 is due to the COVID-19 pandemic which has meant that some of the events can only take place later in the year or were postponed all together due to unfavorable sanitary conditions.

6.4 Accounts payable

The decrease on accounts payables compared to 2019 reflects the direct effect and consequences of the global pandemic. Many educational events could not take place in third quarter of 2020 as most countries imposed a general lockdown.

6.5 Other short-term payables

This position includes prepayments from donors for the following financial years. This donors' prepayments are restricted and dedicated to specific programs. The 2020 restricted funds prepayments are distributed as follows: *Country initiatives*: CHF 371'347 (2019: CHF 633'245); *Fracture Solutions Program*: CHF 774'253 (2019: CHF 317'670); *other special programs*: CHF 760'939 (2019: CHF 544'345). The increase is due to delays in the execution of some programs because of the coronavirus pandemic.

6.6 Accrued liabilities

The main driver of the year-to-year variance is the release of the accrual for the financial contribution in the construction of a hospital in Lilongwe, Malawi. The amount accrued in 2019 has been released in 2020. The remaining contributions for 2020 are accruals for the training of residents in Malawi in their respective residency programs.

6.7 Grants

The source of revenue of the AO Alliance Foundation is based on donations. As of 31.12.2020, 45.5% of the donations (CHF 2'315'787) were restricted to specific programs (2019: 56% respectively CHF 4'292'283) and 55% (CHF 2'769'055) were unrestricted donations (2019: 44% respectively CHF 3'367'094). As of 31.12.2020, we received an in-kind donation in the amount of CHF 228'318 (2019: CHF 227'110). The material donated was directly

sent to support our programs in our countries.

The year-to-year decrease is mainly due to the COVID-19 pandemic which has affected many of the AO Alliance activities. The restricted donations were made to finance the following projects:

Country initiatives: CHF 1'288'649 (2019: CHF 1'658'108);

Fracture Solutions Program: CHF 582'964 (2019: CHF 1'667'955);

other special programs: CHF 460'765 (2019: CHF 966'220).

6.8 Operational expenses

This position covers the costs of 52 educational courses (2019: 120 courses) throughout sub-Saharan Africa and Asia, clinical support services, fellowships, faculty development programs, as well as grants for in-kind support of hospitals and costs for local personnel where we have substantial programs (country initiatives) that need an onsite oversight of the activities. In addition, in 2020 we have taken measures to protect our healthcare workers' community by delivering personal protective equipment (PPE) locally produced or sourced, to guarantee the care of the injured, this despite the COVID-19 pandemic, as injuries continued to occur.

6.9 Fundraising expenses

This cost increased compared to 2019 due to services provided by an external fund raising and philanthropy specialist, and the costs incurred for editing and production of a book reflecting the first five years of existence of the AO Alliance.

6.10 Administration expenses

All expenses are recorded under the accrual principle. Personnel expenses are stable compared to 2019. The year-to-year increase is due to the extraordinary COVID-19 pandemic situation.

While in the past some of the administration expenses were allocated to specific programs, in 2020 due to a significant reduction of the planned activities, the costs were kept under central general administration.

- The total amount of remuneration to the AO Alliance Board of Directors was CHF 11.5K (2019: CHF 36K). All remuneration has been donated back to the AO Alliance by the board members and guests
- The total amount of remuneration to management was CHF 410 k (2019: CHF 410 k) and is allocated between program and project expenses and general administration expenses.

6.11 Financial result

The financial result is due to foreign exchange fluctuations as the AO Alliance Foundation pays most of its costs in USD and EUR, and to the negative interests charged on bank accounts.

7 Further information*

7.1 Employee benefits (FER16)

Employees of the AO Alliance are included in a collective pension plan in accordance with the Swiss Federal Law on occupational retirement, survivors', and disability pension plan (BVG). The pension arrangement contractually excludes any deficit to be transferrable to the AO Alliance and the pension plan institution is fully reinsured concerning the arising liability from the arrangement. Any surplus of the pension plan is immediately credited to the pension plan of the insured employees. The pension contribution for the financial year 2020 was CHF 50K (2019: CHF 47K).

7.2 Number of employees (full time equivalents)

Per 31.12.2020, the weighted average full-time equivalents (FTE) are between 1 and 10.

7.3 Liabilities towards social security and pension plans

None.

7.4 Subsequent events

At the date of issue of the financial statements no subsequent events have occurred.

* in accordance with Swiss GAAP FER / Swiss Code of Obligations

Acronyms

AIDS	Acquired Immune Deficiency Syndrome
AO	Arbeitsgemeinschaft für Osteosynthesefragen (Association for the Study of Internal Fixation)
CHF	Swiss Francs
CTM	Clinical Training Module
COSECSA	College of Surgeons of East, Central and Southern Africa
COVID-19	Coronavirus Disease
HCW	Healthcare Worker
HIV	Human Immunodeficiency Virus
LMIC	Low- and Middle-Income Country
ORP	Operating Room Personnel
P&A	Pelvic and Acetabular
QECH	Queen Elizabeth Central Hospital
TB	Tuberculosis
SDG	Sustainable Development Goal
T&O	Trauma and Orthopedics
WATEP	West Africa Trauma Education Program

References

1. World Health Organisation. (2018). Global Health Observatory. <https://www.who.int/data/gho>

2. *The Economist* Intelligence Unit. (2018). *At Breaking Point: Understanding the impact of musculoskeletal injuries in low- and middle-income countries* (pp 3-11). <https://www.eiu.com/graphics/marketing/pdf/Injuries-in-LMICs.pdf>

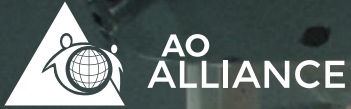
3. United Nations Human Rights Office of the High Commissioner. (2016). *Statement to mark the 10th anniversary of the UN Convention on the Rights of Persons with Disabilities*. <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=21018&LangID=E>

4. World Health Organisation. (2018). Global Health Observatory. <https://www.who.int/data/gho>

5/6. International Orthopaedic Diversity Alliance (2020). Diversity in orthopaedics and traumatology: a global perspective. *EFORT open reviews*, 5(10), 743-752. <https://doi.org/10.1302/2058-5241.5.200022>



Unsafe motorcycle ridership
Malawi, 2014. Courtesy: Nicholas Lubega



DONATE

Partner with us to care for the injured.
IBAN code: CH33 0483 5114 9458 6100 0

ao-alliance.org/donate/

ACTIVATE



Join the conversation.
Mobilize your networks.



HEADQUARTERS

AO Alliance Foundation
Clavadelstrasse 8
7270 Davos, Switzerland
info@ao-alliance.org