Improving care of the injured in LMICs

Final Report submitted to the AO Alliance

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ABBREVIATIONS

AO SEC	AO Socio-Economic Committee
AOF	AO Foundation
ASIF	Association for the Study of Internal Fixation
CSR	Corporate social responsibility
DFID	Department for International Development
ECOWAS	Economic Community of West African States
ESA	English speaking Africa
FCDO	Foreign, Commonwealth and Development Office
FEP	Faculty education program
FSA	French speaking Africa
FSP	Fracture solutions program
GACI	Global Alliance for Care of the Injured
ICRC	International Committee for the Red Cross
KII	Key informant interview
KPI	Key performance indicators
KT	Knowledge translation
LMICs	Low- and middle-income countries
M&E	Monitoring and evaluation
MD	Managing Director
MOU	Memorandum of Understanding
MSK	Musculo-skeletal
OR	Operating Room
SADC	South African Development Community
SSA	Sub-Saharan Africa
TBS	Traditional bone setters
ToR	Terms of Reference
TOT	Train the trainers
WHO	World Health Organization

EXECUTIVE SUMMARY

Methods: This evaluation is a review of the strategy, instruments, approaches, and selected programs and not a detailed outcome evaluation of individual projects. Broadly speaking, it seeks to advise AOA if it is “doing the right things the right way”. A background document review, key stakeholder interviews (September – October 2021) and a field visit to observe the Ghana country initiative (November 2021) were the data collection modalities; data was analyzed by triangulation.

Key findings: There is uniform agreement of the continued relevance of the mission, vision, and objective, especially given the burden of injuries along with a sense of satisfaction at being one of the few organizations working in this space in the LMICs. There is a strong perception that progress has been made towards achieving some goals, although hard evidence is lacking. The current challenge is working within the constraints imposed by the ongoing COVID-19 pandemic. Securing funding to ensure operations beyond 2024 is recognized and steps are underway to address this issue.

The fracture solutions program (FSP) and the country initiatives are highly regarded, and universally perceived to be necessary, and are successful. The FSP is seen as an entry point to a country, especially with its mix of courses geared towards non-clinicians, healthcare providers and surgeons. The country initiatives are perceived as a more comprehensive approach based on local needs and are felt to be the way of the future. Opportunities exist to improve these programs further, especially in the area of partnerships with other organizations. There is geographical tension between English Speaking Africa (ESA), French Speaking Africa (FSA) and Asia; the current pandemic provides an opportunity to rationalize and focus programs, and where the organization wishes to focus its activities along the continuum of trauma care. There is strong buy-in for the three pilar concept, but a desire to alter this mix exists, along with increasing support for musculoskeletal (MSK) research in LMICs.

While the structure, processes and functioning of the organization are lean and responsive, support provided to the managing Director could be augmented. A clear gap was noted in the lack of an appropriate M&E system especially in documenting outcomes and impacts of the programs. The Board is committed and able but needs to address succession planning and equitable representation.

The Ghana country initiative is making an impact with its support of the orthopedic school, the National Registry, and training of the traditional bone setters (TBS) but some challenges remain.

Limitations: The scope of the evaluation was limited to the key initiatives/projects and not to all projects in all countries and the COVID-19 pandemic precluded more country field visits. Selection and memory bias in stakeholder interviews is a possibility.

Recommendations: Recommendations include developing a COVID-19 contingency plan that addresses operations and funding; securing funding to ensure operations post-2024; providing additional staff support to the MD; and developing a M&E plan to capture program outcomes and impacts. In addition, the AOA should re-examine and rationalize its geographic reach; increase focus on facility-based care; gradually increase support to MSK research, advocacy and awareness activities; increase partnerships and plan for a Board refresh and succession planning.

In light of the heightened possibility of covid related funding constraints, focus should be on preserving quality of programming, and recommended actions include decreasing the number of FSP course offerings; making greater use of national faculty; stopping country initiative expansion; limiting activities to SSA, with focus on FSA; continue funding outreach; eliminating funding for policy and awareness activities; and reducing headcount at headquarters and country levels.

1. BACKGROUND

In 1958, the Arbeitsgemeinschaft für Osteosynthesefragen (AO Foundation) – the Association for the Study of Internal Fixation (ASIF) was founded. The AO Socio-Economic Committee (AO-SEC) was created in 1990 to pay specific attention to the problem of trauma care in Low- and Middle-Income Countries (LMICs). The AO was ready for low-cost implants in LMICs, but industry was reluctant, so it refocused on educational activities, largely in conservative, nonoperative treatment of fractures, as well as some basic operative treatment (including external fixation techniques). This resulted in the building of a network of regional surgeons and institutions in 21 countries.

Over the years, trauma-related mortality and morbidity globally steadily increased; as Rossiter states "there are approximately six million deaths per year as a result of trauma…..40 million permanently injured and up to 100 million temporarily injured."[1] The vast majority of this morbidity and mortality (~ 80 - 90%) occurred in LMICs, with an estimated loss of 3% of global GDP.[1] This immense burden, coupled with the positive steps initiated by the AO SEC and the general expertise and financial strength of the AO, set the stage for a more committed engagement by the AO to further advance its mission of "promoting excellence in patient care and outcomes in trauma and musculoskeletal disorders".

Against this backdrop, the idea to create an organization with more leverage was born and eventually came into being in the form and name of the AO Alliance (AOA), with the main purpose of developing sustainable local capacity to improve care of the injured in LMICs. The experienced and institutional memory gained with AO SEC served as the scaffold for the new AOA, whose mission and vision are enabling access to timely and appropriate fracture care to all.

The AOA is legally independent from AO, which has two seats on the board of directors. The AOA focuses on three strategic areas: (1) care activities that build capacity in frontline healthcare workers (surgeons, trainees, operating room personnel, ward nurses, paramedics, etc.) to improve the care of the injured; (2) awareness to elevate death and disabilities from injury as a major global public health issue; and (3) policy advisory for actionable implementation (national trauma plans, registries, clinical guidelines adapted to local conditions).[2]

The AOA is now an international development and healthcare NGO working in over 30 LMICs across Sub-Saharan Africa and Asia to improve the care of the injured, specifically musculoskeletal (MSK) trauma.[3] It is actively involved in collaborative efforts with WHO, GACI, ICRC, amongst other global health care organizations. For more than six years, the AOA has strived to build sustainable fracture care management solutions by working with frontline healthcare workers, partners, and civil organizations. Headquartered in Switzerland, with field offices in Ghana, Cameroon, Ethiopia, Malawi, and Nepal, it designs and implements multifaceted programs to improve fracture care and prevent musculoskeletal disabilities.

Former AO SEC activities continue in the form of the fracture solutions programs (FSP) and now cover 24 programs in Sub-Saharan Africa (SSA) and 8 in Asia. The main activities under the FSP include nonoperative fracture care courses, basic operative fracture care courses, operative fracture care courses, anatomically oriented specialty seminars, and fellowship opportunities. Between 2015 and 2019 there were 419 courses for 17,882 healthcare workers, 25 train the trainer courses for 251 faculty, and 245 fellowships offered under the FSP.

The country initiatives are a country specific package of programs designed and funded for up to 5 years to improve trauma and orthopedic human resources, fracture care education, infrastructure, stimulate clinical research, and to advocate for funding. Country initiatives are underway in Malawi, Ghana, Ethiopia, the Gambia, and Burkina Faso; these countries were part of the AO SEC network already and had a solid base of reliable partners for the AOA to build upon.

The AOA has two major funders - the AO and the Hansjörg Wyss Medical Foundation. The Wyss Foundation contributions are earmarked, and it funds 2/3rd of a project's budget and expects AOA to secure matching funding for the remaining third. The AO contribution is in the form of an unrestricted grant. The AOA's budget has increased from CHF 4.2 million in 2015 to CHF 7.6 million in 2019, with 49% being devoted to country initiatives, 27% to the FSP and 24% to other activities. It has a comparatively low overhead of 13%, lower than that of similar NGOs operating in the healthcare space in LMICs.

In 2021, the AOA initialed an evaluation process to assess its strategic and operational policy towards support of MSK injury management and care in LMICs. This evaluation was conducted by external evaluators and covered all aspects of the AOA programming and functioning and was done via a participatory assessment. The aim was to provide the AOA with strategic guidance for the future.

2. METHODOLOGY

Objectives

The evaluation is a review of the strategy, instruments, approaches, and selected programs and not a detailed outcome evaluation of individual projects. Broadly speaking, it seeks to advise AOA if it is "doing the right things the right way". The emphasis is on providing AOA with guidance for the future, along with practicable and actionable suggestions to help improve its work.

The specific evaluation mandates are to:

- Assess the AOA's overall vision, mission, goals and objectives;
- Assess the AOA's instruments, approaches and organizations;
- Review the functioning and methodology of selected programs;
- Provide advice for the AOA's strategic reflection and learning; and
- Provide a practical approach for improved target setting and measurement of results (M&E).

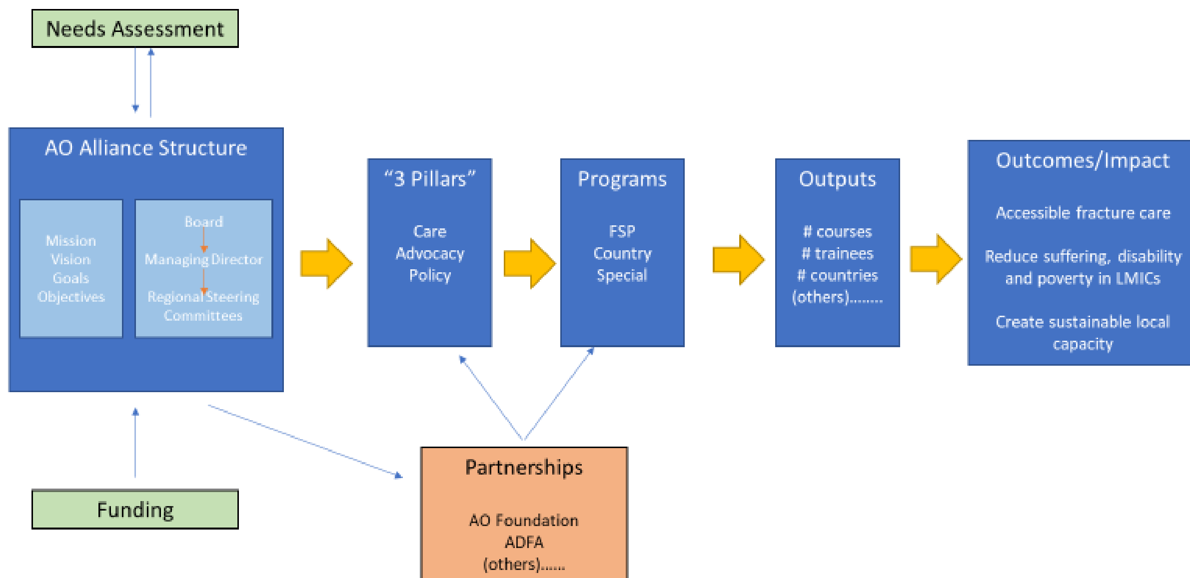
In addition, a country initiative (Ghana) was examined to:

- Assess its overall coordination;
- Appreciate partnership with key stakeholders and organizations in country;
- Assess the perceived quality of its main activities; and
- Provide recommendations on improvement.

The primary stakeholders for this evaluation are the AOA management and board, the implementing partners, and funders. Secondary audiences are the local beneficiaries, other organizations with similar interventions, and the global surgery community at large.

Figure 1 depicts the conceptual framework guiding the present evaluation.

FIGURE 1. CONCEPTUAL MODEL



Design

Since an impact evaluation is not called for, a case study was selected as the appropriate vehicle to answer the evaluation questions. This allowed us to conduct an in-depth exploration of the work of the AOA, especially in understanding the 'how and why' questions.[4,5] Case studies have been used successfully in health programs evaluations, including developing countries.[6-8] The conceptual framework (Figure 1) guided the evaluation and facilitated the development of the evaluation matrix (Appendix 5.3). An inception report was submitted and reviewed by the Managing Director. The inception report explained the approach and the evaluation matrix and presented the data collection tools (Appendix 5.4).

Desk review

Two documents provided the foundation for initiating the evaluation. These were the "Annual Report 2020 and the "Partnering to strengthen care of the injured in low- and middle-income countries" book publication. In addition to the publicly available version of this online book, we were also provided with the Annexes that are not in the public domain. These documents were reviewed along with the qualitative data collection and helped guide and complement the key informant interviews.

Qualitative data collection

We used purposive sampling to identify the respondents for the key informant interviews (KIIs). This was done to ensure that all informants who had been involved directly or indirectly in the questions pertaining to the evaluation mandate were captured to have a broad range of opinions at all levels.

An initial list of informants was developed in consultation with the Managing Director. These included members of the AOA Board of Directors, the Managing Director, regional Steering Committees, and country program personnel. As interviews progressed, additional stakeholders were added. A semi-structured interview script (Appendix 5.4) was used; this was developed in consultation with, and approved by, the Managing Director.

Interviews were conducted in English using Zoom during September and October 2021; they were not recorded but detailed notes were kept. Informed consent was obtained orally prior to the start of the formal interview, and participants were assured that their participation was voluntary and that they could withdraw at any time. The scope of the evaluation, and the process of maintaining confidentiality was described. A total of 18 key informant interviews (KIIs) were conducted by the evaluators, thus ensuring saturation.

Field visit

A field visit was conducted in Ghana in November 2021 by an evaluation team member to assess the Ghana country initiative performance and collect lessons learned as well as on the ground feedback. Accra and Kumasi were visited and a total of 11 interviews were conducted.

Data analysis

Data was analyzed by triangulation; this was done across data collection tools (desk review and KIIs) and stakeholder groups.[9] This allowed identification of substantive findings (including divergent ones), the approximate degree of support for that finding, thus minimizing bias and ensuring impartiality.

Ethical issues

The evaluators followed the norms specified by the UNEG Norms and Standards for Evaluation, especially Norm 6 (Ethics).[10] Stakeholders were recruited using a standard procedure (i.e. email of introduction presenting the evaluation) and informed consent was obtained prior to the interview. As

described above, participation was voluntary and respondent privacy and confidentiality was maintained by not reporting names and contact information in the analysis or report writing.

Limitations

- The scope of the evaluation was limited to the key initiatives/projects and not to all projects in all countries; this may limit comparisons and influence our conclusions.
- The COVID-19 pandemic limited the number of country field visits.
- Interviewees were selected in consultation with the Managing Director, so some selection bias is a possibility. However, the AOA is a relatively flat and compact organization so all key stakeholders were included in the interviews, thus decreasing this concern.
- As in any qualitative interview, a respondent’s memory bias should be kept in mind.
- Specific to the Ghana field visit:
  - There was no observation of activities of traditional bone setters to complement the information from interviews;
  - The fellowship programme had not started making it difficult to assess; and
  - Some key informants could not be interviewed (e.g. from the College of Surgeons).

3. RESEARCH FINDINGS

The research findings are reported along the three main axes of the ToR – (a) commentary on the mission, vision, objectives, and goals; (b) does the AOA do the right things? (c) does the AOA to the right things the right way? And (d) the Ghana country initiative. This section includes high level/global recommendations; suggested specific actions are listed in Chapter 4 (Conclusions and recommendations).

3.1 Mission, Vision, Objectives, and Goals

Box 1 lists the mission, vision, objectives and the five-year goals. These reflect the heritage from the AO SEC and were finalized and accepted at the Board meeting in Hamburg in May 2017.

Box 1. Mission, Vision, Objective, and Goals

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

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

Objective - to create sustainable local capacity for care often injured.

Goals - 5-years goals:

1. *Increase survivals rates and decrease disabilities from MSK injuries in LMICs in sub-Saharan Africa and Asia*
2. *Build local capacity to treat MSK injuries safely*
3. *Promote a culture of good clinical practice in MSK care*
4. *Raise awareness about the neglected epidemic of injuries in LMICs.*
5. *Secure stable and long-term funding*

Source: Annual Report 2020

Respondents at all levels were uniformly in agreement of the continued salience and relevance of the

mission, vision, and objective, especially given the burden of injuries in LMICs. There was a well-founded sense of satisfaction and purpose as being one of the very few international organizations working in this space in the LMICs.

However, the picture was a little less clear about actual five-year goals. While these were felt to be appropriate for a new organization in the first five years of its existence, these were felt to be aspirational and stretch goals. They do cover a broad waterfront, and some respondents noted the lack of concordance between the limited resources available to the AOA and these challenging goals. Nonetheless, respondents felt that the AOA had implicitly made progress towards some goals (e.g., building local capacity to treat MSK injuries locally, and promoting a culture of good clinical practice in MSK care) but they agreed that explicit metrics on their progress and outcomes were lacking. However, unless the financial situation changes significantly, there was no desire to change or revisit these goals for the next five to ten years.

3.2 Does the AOA do the right things?

Country initiatives and Fracture Solutions Program (FSP): There is absolutely no doubt that the twin initiatives – FSP and the country initiatives are highly regarded, and universally perceived to be necessary, and are successful. The FSP is seen as an entry point to a country, especially with its mix of courses geared towards non-clinicians, healthcare providers and surgeons. The country initiatives are perceived as a more comprehensive approach based on local needs and are felt to be the way of the future. Given the historical legacy of the AO SEC, the selection process, and the budgetary requirements for the country initiatives, it is no surprise that the FSP encompasses a larger number of countries than the country initiatives.

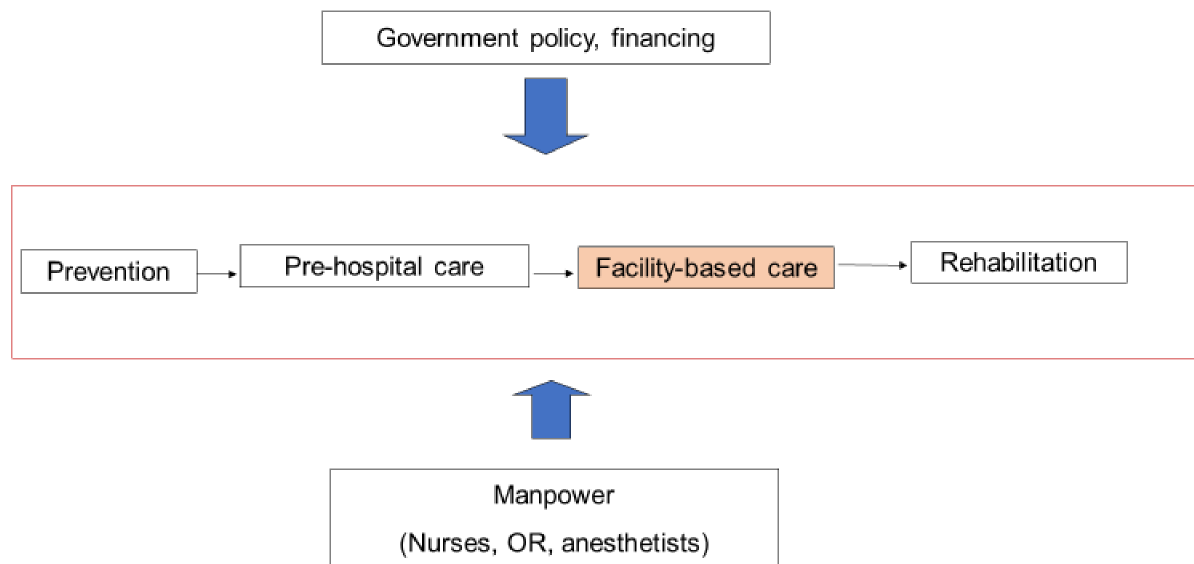
The AOA has done incredible work in maintaining the highest possible levels of outputs in spite of the travel challenges of the Covid-19 pandemic. Unfortunately, the emergence of different variants, including the latest omicron variant, do not bode well for the immediate future, and possibly even for the long term as it will take many years to achieve global herd immunity, if ever. The pandemic will morph into an endemic state of still unknown virulence. It is thus critical that the AOA sets up a robust and comprehensive Covid contingency plan with a framework that will address broadly all Covid challenges, not one variant after the other. This will also likely make fundraising more challenging, and the AOA should brace itself for a potential decrease in resources. Given this possibility, the AOA might need to reconsider their funding strategies for the country initiatives and FSPs, even decrease their number if necessary, to maintain high levels of quality in the remaining ones.

At a macro level, a point must be noted about geographical and system level concerns. Due to the historical legacy, programs in Sub-Saharan Africa, and especially in English-speaking Africa (ESA) countries, were developed earlier than other geographical regions (i.e., French-speaking Africa (FSA) and Asia). The AOA has taken steps to expand its footprint in FSA, but many respondents felt there was much to be done to achieve equivalence with ESA. Asia also presents the challenge of having many countries at a higher level of economic development than Africa, along with unique political challenges. While the AOA has dodged some bullets in the past with astute decision-making (e.g., not getting involved in Haiti) this geographical tension between ESA, FSA and Asia needs to be kept in mind for the future, especially as the fiscal situation evolves. The AOA cannot be everything to everybody everywhere, and considering budget issues, this might be an opportunity to be more geographically focused. If the funding situation requires it, the AOA should probably consider dropping their activities in Asia and focus solely on Africa. On the other hand, if the funding situation is better than expected, the AOA could consider expanding the scope of its programmes to include outside-the-box activities such as orthopedic biomedicals (tourniquets, fracture table, instrument sharpener, C-arm, etc.) which actually have a much more cross-cutting horizontal impact.

Box 2 presents a simplified trauma pathway of four steps – prevention, pre-hospital care when trauma occurs, Facility-based care and post-injury rehabilitation. This is impacted by jurisdictional policies regarding access, cost, and financing of care, along with available manpower for the healthcare system. The colored box represents the target of the bulk of the AOA FSP and country initiative activities. While the AOA does conduct some activities beyond this remit (e.g., its work on policy and raising awareness, FSP educational programs for non-clinicians, etc.), this system level analysis reveals that there are apparent gaps when the total of its activities is overlayed with the five-year goals enunciated in Box 1.

For example, a surgeon's potential is not realized unless there is trained anesthetist manpower available, along with the requisite operating room (OR) availability and capacity. While the AOA has built such OR capacity in some locations (e.g., Malawi) there is no consensus that this is an appropriate future path for the AOA to follow. One option would be for the AOA to sharpen its focus on the surgical care aspect by ensuring availability of low-cost implant options in SSA and Asia and/or investing in the associated bioengineering (e.g., ensuring optimal functioning of requisite OR equipment, etc.) which could have impacts for other surgical specialties. Should greater resources be available in the future, emphasis could be placed on the two ends of the pathway – prevention and rehabilitation, as this would further its goal of increasing survival rates and decreasing disabilities from injuries. As it nears the end of

its first five years, the AOA should re-evaluate where along this continuum of care it wishes to focus its activities, given its ambitious five-year goals. To reiterate, this analysis will be influenced by the fiscal and other available resources in the future' but having a clear focus will enable the AOA to establish metrics (especially outcomes and impact) that will be influential in expanding its donor and funding base.



The three pillar concept: In terms of its disbursements, the AOA has invested CHF 26.6 million during the period 2015 – 2019, with 95% going to care activities, and 5% being devoted to policy and awareness.[2] Of the funding devoted to care, the vast majority (85%) is allocated to fracture management education, with smaller amounts (10% and 5%) devoted to clinical research projects and infrastructure respectively.[2] This funding distribution is portrayed as the "three pillar" concept, i.e., the activities of the AOA fall under the care, awareness building and policy development arenas. Respondents were comfortable with the current allocation, and the majority supported the large percentage being devoted to care activities. The care contribution plays to the AOA background and strength and was seen as being part of its DNA. On the other hand, awareness and policy development activities were recognized as being important but challenging to undertake and being outside of AOA's 'comfort zone'.

There was an interesting dynamic among the respondents about the three-pillar concept. While all respondents agreed with the pillars, those with greater frontline development experience wanted an

increase in the resources devoted to awareness and policy activities. It was felt that these activities could serve twin purposes – of sensitizing governments to the issue of trauma and injuries in a crowded (and contested) health policy agenda to ensure buy in, potentially increasing resource allocation. This could increase government ownership of the issue and ease future sustainability of the AOA's interventions. Additionally, raising awareness would also allow preventative measures to be taken, thus decreasing the burden of injuries at the very outset. The AOA should examine its resource allocation between the three pillars considering the care pathway (Box 2) and its five-year goals and adjust them if required. This may present a challenge vis-à-vis donor expectations (who could prefer to see greater amounts devoted to care activities) but with appropriate metrics and outcomes, a suitable case could be made.

MSK Research in LMICs: Research accounts for 10% of the funding devoted to the care pillar.[2] All respondents were uniformly in favour of supporting research activities, especially given that the immense need in LMICs is compounded by the lack of expertise and time. Not only are research activities an integral part of capacity development, but their outputs are critical to policymakers and donors. The current research capacity in the AOA network is perceived as rudimentary, albeit with pockets of individual excellence. Consideration should be given to stepping up AOA's research activities and support. This could start with low hanging fruit such as developing and implementing train the trainer courses on how to conduct good clinical research, funding basic quality assurance projects, increased partnerships with educational institutions, and including research training and mentoring in the fellowship programs. Lessons can be shared across regional experts and pockets of excellence. As research capacity and experience develops, larger scale prospective studies can be contemplated. Alongside research capacity development, thought should be given to knowledge translation (KT) activities over the medium to long term as well. Research outputs should be communicated in audience appropriate methods to the AOA stakeholders, including local governments and donors.

3.3 Does the AOA do the things the right way?

Country initiatives: There is no doubt that along with the FSP, the country initiatives constitute the jewels in the AOA crown. While there does not seem to be a standardized template, country initiatives are acknowledged to be tailored to the needs of each country and are felt to be worthy and successful (except for the challenges posed by the bricks and mortar element). Till date, Malawi seems to be the flagship country initiative and has entered its second four-year funding cycle, with others still being in

their first funding cycle. The lone country initiative in Asia (Myanmar) has been put on hold due to political instability, and the AOA is not considering any further country initiatives till greater funding is secured.

Country selection is based on a 10-poitnt criteria. Countries are proposed for inclusion based on established links and connections and the strength of the network within and without the country. Once it is under consideration, various criteria (governance, health care expenditure, strength, and commitment of local partners, etc.) are considered before a formal needs assessment mission is sent to assess the situation on the ground. Based on this in-country assessment, a proposal is developed and submitted to the Board and to the donors for approval and funding. The impression is that the AOA enters a particular country only if it is confident of its success, and rightly so. This process has precluded the AOA from embarking into Haiti, where the needs are immense, but there are also enormous challenges.

While not strictly urgent, the AOA should formalize its country exit criteria and strategy. Unless necessary, AOA should stay away from large scale construction activities. But more importantly, a clear exit strategy with milestones should be enunciated, and shared with all stakeholders. Having such transparent exit criteria will enable all stakeholders to have clear expectations at the outset.

Fracture solutions program: The FSP also garners high praise and is seen to use resources optimally. The program is moving in the right direction – the offerings seem to be tailored to the local context, thus contributing to local capacity building. Additionally, for the hands-on surgical training, country hubs are being established as opposed to regional hubs in the past. Local feedback is solicited, and the calendar of offerings are planned and implemented on an annual basis.

Nonetheless, there is room for improvement in the FSP. The AOA has done an incredible job till date of implementing these courses and training local personnel. The AOA should capitalize on this trained manpower and thought should be given to increasing the representation of these trained local/regional personnel in the educational leadership of the courses. For example, non-operative courses could be conducted by national/regional faculty, allowing the AOA to focus on operative courses. If successful, the experiment of local equipment purchases and maintenance in FSA should be expanded. A train-the-trainers (TOT) model can also be initiated. This will better reflect local needs and sensitivities and may help garner government support at the country level.

However, a greater imperative is to better capture the outcomes and impact of the FSP. Till date, the only indicators used to assess the FSP are KPIs such as number of courses offered, participants trained, etc. Thought should be given to capturing the medium to long term outcomes and impacts of such trainings (e.g., knowledge retained at 1-year post-training, impact on patient care, etc.) These are not easy metrics to assess in a reliable and valid fashion but are worthy of consideration especially if they can sway government and donor interest positively.

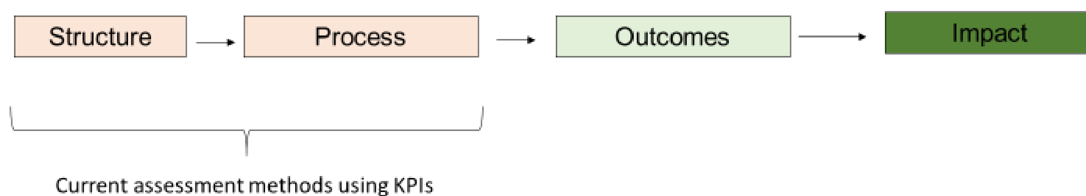
Perception of the AOA: Having the letters 'AO' in the AOA has some clear positives and negatives. On the plus side, the two letters bring instant name recognition and face validity, especially in LMICs as they connote a link between the AO and the AOA. The name opens doors and engenders trust, and the AOA is seen as an organization that cares about LMIC issues. On the negative aspect, the perceived link between the AO and the AOA in the observer's mind equates to the AOA being flush with fiscal resources. This perception is especially prevalent in the international donor community, and much work must be done to disabuse donors of this incorrect belief, sometimes leading to loss of donor interest in funding the AOA. However, all respondents felt that on balance, the positives outweigh the negatives, and there was no appetite for countenancing a name change.

Partnerships: The AOA's intention in this regard are clear – the word 'Alliance' was included in its name to reflect the spirit of, and interest in, partnerships. It has actively pursued partnerships at the global, regional, and local level, with a mixed track record. Successful examples include the Lion Hospital in Malawi (with Norwegian partners) and the Ethiopia country program (supported by Australian and Norwegian partners). <u>Partnerships are encouraged in there is a win-win for all partners, at all levels – international, regional and at country level</u>. For example, international/bilateral donors should be sought for country programs, and regional bodies (e.g., SADC, ECOWAS, etc.) should be tapped to work on regional issues. Last but certainly not the least, partners should actively be pursued in country, whether it is at the ministerial level, with local like-minded NGOs, organizations involved in the trauma care pathway (paramedics, rehabilitation professionals, etc.).

Monitoring and evaluation (M&E): If there is a clear and present danger that the AOA needs to address on an urgent basis, it is the lack of an appropriate M&E system. It was clear from all respondents that the AOA does not have a clear picture of the outcomes of its programs. Metrics used to evaluate are primarily either accounting focused (was the money appropriately spent and accounted for) or simple KPIs (number of courses offered, number of participants trained, participation satisfaction with courses,

etc.). Beyond these simple output metrics, respondents shared anecdotes about project outcomes (e.g., active surgeon WhatsApp groups, trained pharmacist acting as community resource, etc.).

Box 3. Donabedian Model



A robust M&E plan should be implemented as a priority with a focus on reliably measuring outcomes and impacts of AOA programs, especially at the community level. Box 3 presents a simple model using the Donabedian Quality model. It depicts quality as consisting of a series of interlinked steps, starting with a specific structure, which leads to specific processes, which results in outcomes, and over the long term, impacts. At present, the KPIs AOA is using in essence capture the structure and process elements of this model; a focus on outcomes and impacts is urgently called for. Keeping in mind that monitoring is an ongoing activity to which many stakeholders contribute, including headquarters, field management, external agents, etc., this activity should be formally imbedded in all projects log frames, and appropriate monitoring tools should be developed, systematized, validated, adapted, and universally applied.

This can be operationalized by using a model for each project, to see how the inputs and activities lead to outputs, outcomes and longer-term impacts. Another example is the work of Bates et. al. in developing and testing a capacity development model that has been tested in African contexts.[11,12] Such an exercise could potentially be initiated with the AOF as the common platform would accrue benefits to both. The AOA's links to educational institutions and researchers both locally and internationally should be exploited for this purpose. Having such a robust M&E system will not only help AOA in

improving its programmatic offerings but will enable it to present concrete results and outcomes to governments and donors, thus facilitating finding and ensuring long term partnerships and sustainability.

AOA structure and processes: The organizational structure of the AOA at the Board, management, regional and country levels was perceived by all respondents as lean with low running costs. Its operational processes were often described as "very Swiss" – i.e., efficient, robust, and accountable. The commitment, expertise and passion of all Board members was noted by all, as was the excellent relationship between the Board and the management. Regional and country respondents appreciated the quick responses they received from the management. Many respondents noted positively the increasing 'bottom up' approach for the courses and programs and called for more such decentralization. There were a few observations about the lack of a uniform structure at the country level, but this was not a common sentiment.

There was universal acclaim for the yeoman effort put in by the Managing Director (MD), which is a testament to his abilities. However, there was growing concern on the amount of work he shoulders, and respondents acknowledged this 'critical person' risk. This is compounded by the fact that there is little redundancy in the management structure should he have to pull back for any period; thus, the issue of succession planning also needs to be considered. It is our strong recommendation that the Managing Director be provided with an additional full-time person, to enable him to focus on the strategic issues.[a] The role of the additional hire will depend on the deliberations between the Board and the MD but should largely focus on day-to-day operational issues. S/he could be an Educational Officer, Deputy Managing Director, etc. with the idea being that this person can step in for the MD if needed, on a short term (or long term) basis.

The Board also needs to consider succession planning and a future refresh. Respondents wanted to maintain the level of passion and the unique culture of the Board for the future, along with safeguarding the institutional memory. Additionally, the Board needs to ensure diversity, whether gender based, regional or skill/experience based.

Budget: The AOA has funding agreements with the Wyss Foundation and AO to ensure its operation until 2024. Securing funding for continued operations after this date is an immediate task and should be prioritized. It is a reality of the international non-profit world that funding is increasingly competitive,

[a] A donor representative was confident that his/her organization would strongly support this position.

and organizations need to have both a good story and a good strategy to survive. Discussions should start with the Wyss Foundation as soon as possible, especially given the age-related risk at the decision-maker level.[b]

In terms of strategy, the AOA is on the right track, broadly speaking. The need for diversification of funding streams is acknowledged, and the organization has had some success in this, insofar as specific projects are concerned. There has been scenario planning done with setting up a foundation with various levels of endowment, and what programs could be supported at these different levels. Thought has also been given to prioritization of programs in case of shortfalls. A start has been made by utilizing an external consultant to help fundraise, although the results of this are not substantial yet. As funding becomes more restricted/project based, the AOA should seek to partner with like-minded funders. It should re-calibrate away from a 'health charity' to a partnership model; partners could include other NGOs, governments, bilateral agencies (e.g., UK's new incarnation of DFID – the FCDO) and local companies (e.g., oil and gas, etc.) with an interest in corporate social responsibility (CSR). In-kind contributions should also be considered.

In addition, the AOA should have a strong "story" to tell. As many respondents averred, country level priorities are often set by policymakers who are unaware of the burden of injuries due to trauma.[1] In order to facilitate outreach and partnerships, the AOA should consider developing a core set of messages about the burden of injuries, the work AOA is doing to alleviate it, and the impact it has had. These could be tailored to the international, regional, or country level. However, it is critical in this endeavour to have good metrics of outcomes (in addition to the already existing KPIs focusing on structure and processes). Development of a robust M&E system will help provide grist for this mill.

3.4 Ghana country initiative

A field visit was conducted in Ghana in November 2021 and a total of 11 interviews were conducted in Accra and Kumasi. Respondents included the Managing Director, a Senior Project Manager, the local project officer, the ESA Steering Committee chair, trained residents, traditional bone setters (TBS), project research assistants, etc. (Appendix 5.2). A brief overview of the findings is presented below.

[b] Donor representatives were confident that long term support to the AOA is not at risk, but discussions should begin, nonetheless.

Objectives: The Ghana country initiative was launched in 2017 with the following objectives:

- Establish a hub in Accra, to serve as a coordination and distribution point for AO Alliance operative courses in sub-Saharan Africa (workstations for practical exercises);
- Expand T&O residency programs, adding two certified programs;
- Increase the number of Ghanaian doctors taking up T&O residency training;
- Establish the first plaster technician orthopedic training school; and
- Fund trauma registries at four hospitals.

These objectives seem general; they could be accompanied by expected changes or results and SMART indicators to measure them. In addition, a Theory of Change should also help to better understand the global implementation model of the Ghana country initiative.

Coordination: A sub-Saharan equipment hub was established in Accra, coordinating the distribution of 30 workstations for use in the practical exercises of the AO Alliance operative courses. Four technicians are employed part-time to service the equipment and travel to support AO Alliance courses. The AOA has appointed a local project officer in Accra as a country coordinator (paid staff under full-time contract) who plays the role of liaison with the Ghana College of Physicians and Surgeons as well as other partners in the field. Despite this local officer doing a good job in the coordination of administrative tasks, he does not have a medical profile. This could be challenging in the future with the growth many projects requiring technical skills in health sciences, orthopedics, and research.

The local project officer is remotely supported and supervised by a senior project manager based in Switzerland, which helps to minimise coordination problems. The AOA should consider supplementing him with a technical assistant who will be able to support some aspects of the country initiative (e.g. research methodology, project management, monitoring and evaluation).

Partnerships and collaborations: The AOA is in the process of signing a MOU with the Ghana College of Physicians and Surgeons. The Ghana College is the training and graduating faculty, which has recognized the AOA courses as mandatory for the award of the T&O degree to residents in Ghana. The terms of collaboration between the AOA and the Ghana College of Physicians and Surgeons clearly define each party's role. The AOA has been funding the College in terms of administration support since the beginning of the initiative. The evaluators were not able to assess the financial efficiency of this arrangement, but some respondents felt that the financial management could be improved.

Till recently, the AOA did not have a formal MoU with hospitals for training in Ghana even if collaboration existed prior to the starting of the country initiative. The first formal agreement was signed in November 2021 with FOCOS Hospital for the future T&O Fellowship programme. Prior to the establishment of this partnership, a participatory needs assessment was done through brainstorming and field visit by the AOA. Respondents appreciated this as a good approach that will facilitate future collaboration and partnership.

Faculty education programme: This faculty education programme (FEP) aims to train faculty teachers on pedagogic methodologies. Till date 18 teachers have attended this training programme. During the session of November 2012, 14 trainees attended the FEP in Accra for two days. These training sessions help to improve the quality of education in T&O in Ghana. The training costs approximately USD 2500 per participant. Respondents appreciated that the AOA focuses on building local capacity by strengthening the local faculty and felt that this programme could be extended to other specialties working with surgeons such as orthopedic nurses and anaesthetists. Additionally, it was felt that local faculty could take a larger role in teaching the non-operative courses.

Resident training: T&O residency programs were created at two teaching hospitals in Cape Coast and Tamale with the support from the AOA. The courses are organized after the FEP and enable faculty teachers to practice. These courses last two days and cover theoretical and practical aspects on dummies. Curriculum content is designed by the AOA (and follows a standardized curriculum) and essential training materials are provided. Some presentations are prepared by the faculty teachers trained through the FEP who are supervised by the AOA and CMF faculties. Clinical training modules are highly interactive educational and last approximately three hours and are delivered by AOA faculty, who are surgeons and ORPs from the hosting hospitals. For practical work, the AOA has donated 50 instruments sets used in several countries (kits travel between countries) but due to the cost of these sets local hospital are enable to buy this equipment. The evaluators question the actual use of acquired skills when trainees return to their poorly equipped institutions.

The post-course evaluation is done only by questionnaire, but the impact can only be measured by assessing how acquired skills and competencies are actually applied in the field. There is the challenge of offering a breadth of learning in a short period of time – while this can be a means of acquiring a large number of competencies in a limited time, there is little linkage between individual courses.

It is important to highlight that there was no professional recognition of the Plaster Technician Training Program before the AO Alliance helped to develop one with the a cohort of 20 students in September

2019. This 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 and is recognized by the Kwame Nkrumah University of Science and Technology.

Traditional bone setting project: 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. Lacing health insurance, people continue to prefer traditional bone setters (TBS) in the community rather than T&O surgeons. 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 began in 2020 and is implemented in in Ghana in two cities - Kumasi and Tamale. 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. The training component of this project is accompanied by a research study to estimate the extent of catastrophic complications associated with traditional bone setting, especially in children.

This TBS project includes work on a referral system from TBS to T&O surgeons. TBS are trained on better handling of fractures with non-operative procedures and how to organize a patient referral. There are also taught triage to recognize what they can manage and what needs a T&O surgeon to avoid complications like gangrene. It was stated that till date, no case had been referred by a trained TBS that presented with complications due to a delay in referral.

The TBS project is very innovative as it helps the inclusion of traditional healers recognized by the community and improve the outcomes of their work but less in the health system. However, many challenges have been identified on this project:

- The significant number of TBS not included in the project limits the impact of the project to create a real change;
- Most of TBS work in informal family settings making it challenging to identify and reach them;

- The community trusts the TBS more than the T&O surgeons and the role of culture is important as the TBS do not do amputations in contrast to the T&O surgeons;
- The cost of TBS care is significantly less than a comparable visit to a T&O surgeon; and
- Referring a patient means a loss of income for a TBS.

As some TBS have stared organizing themselves in an association after they were trained by the AOA, the AOA could provide them with technical support in the process towards registration. This will have an impact on the regulation of the profession of TBS and improve the quality of their services and increase the number of references.

While the AOA is to be commended for undertaking research on the TBS, it was felt that the proposed study methods seem weak (questionnaire only, no field observation, selection bias, sample size, etc.).

Orthopedic fellowship: At the time of the evaluation, the fellowship has not yet started but an MoU was signed with the future host hospital "FOCOS Hospital". The fellowship will offer a post-graduate training and the cost of hosting a fellow was still under calculation. Some challenges this faces are that many fellows will come after years in practice and thus may not wish to spend a long period away from family and work. This could be addressed by encouraging T&O surgeons to apply to the fellowship early after the graduation from the Orthopedic School (i.e. after residency). In addition, salary support from the government needs to be built in, so that the program is not reliant on the AOA.

Awareness and policy advice: In the Ghana initiative, no specific activities for advocacy have been implemented apart from awareness campaigns towards TBS. Respondents felt that more communication and awareness campaigns should be included in the country programme, especially targeting government officials so as to advocate for lowering patient costs for injury care. A strong point that could be made is that it would not be possible to achieve the government's goal of Universal Health Coverage without a strategy for improving access to quality fracture care for the poor.

Scaling up: The AOA should scale-up its activities in Ghana as there is a formal collaboration with the College of Physicians and Surgeons and the Orthopedic Association. Nevertheless, some challenges must be addressed:

- Obtaining evidence of the impact of previous activities (training, TBS project);
- Securing funding for these new activities for extension/scaling-up; and

- Increasing advocacy for behavioral change in the community especially on perception on the relation between TBS and T&O surgeons as well as the collaboration and the referral system.

In conclusion, it is apparent from the Ghana initiative evaluation that the AOA is doing innovative activities with a remarkable long-term impact potential. Some special short-term impact is already in evidence such as the support the Ghana orthopedic school, the National Registry, and the training support for TBS. Some challenges have been identified but can be addressed by making some improvement in HR management and methodological approaches on some specific activities like the TBS project. The AOA is contributing significantly to an unmet need of fracture care in Ghana and their targeted approach of capacity building rather than surgery missions of international experts as many other organizations have been doing in LMICs without any capacity transfer. The AOA is working on building local capacity and this is to be encouraged.

4. CONCLUSIONS & RECOMMENDATIONS

It is apparent from this exercise that the AOA has had a remarkable first five years and is poised to continue making contributions in the coming years. It has identified an unmet need in LMICs and has taken concrete steps in conjunction with the affected countries to help address this. It is establishing its own identity and is well regarded and held in high esteem. As a learning organization, it has taken self-correcting steps to improve its functioning. The AOA is not oblivious to the fact that needs, and demands will always outweigh supplies, but the organization needs to be lauded for its sincere interest in improving what it is already doing quite well, and better than most. Providing reliable outcome data will be crucial in convincing present and future partners of the worthiness of this unique endeavour. The AOA understands that a horizontal cross-cutting systems' approach, as opposed to a vertical silo approach, is more conducive to successful trauma care and this should remain the best way forward.

Nonetheless, this evaluation exercise has identified some area of focus, and these are presented in the table below. These can be considered as 'aspirational' and are made keeping in mind the AOA's mission, vision and ambitious goals, and assume a best-case funding scenario.

	Recommendation	Suggested actions
1.	A robust and comprehensive COVID contingency plan be established that addresses both operations and funding.	• Focus on maintaining quality of core activities. • Decreasing number of FSP course offerings. • Greater use of national faculty. • Pausing country initiative expansion. • Limiting geographic focus to area of highest need, i.e., SSA with a focus on FSA.
2.	Secure funding to ensure continued operations after 2024.	• Focused outreach to Wyss Foundation. • Deepening links to other foundations (e.g. Johnson & Johnson, etc.).

3.	Provide the Managing Director with an additional full-time person	• Hire an Education/Curriculum Officer.
4.	A robust M&E plan should be implemented with a focus on reliably measuring outcomes and impacts of AOA programs.	• In order to develop the culture of M&E and to better understand what works and what doesn't, all new programs/projects going forward should have funding allocated for M&E activities. • A flagship programs/initiative should be evaluated, and results used for fund raising. If capacity does not exist within the AOA network, external experts should be contracted. • Based on the results, develop a narrative ("story") for stakeholder and funder outreach.
5.	The geographical tension between ESA, FSA and Asia needs to be recognized and addressed.	• If resources are limited, they should be allocated preferentially to French-Speaking Africa.
6.	The AOA should re-evaluate where along the continuum of trauma care it wishes to focus its activities, in view of its ambitious five-year goals.	• If additional resources are available, sharpen focus and activities on improving facility-based care (low-cost implants, supporting optimal OR functioning, etc.) • Expanding activities to include prevention and rehabilitation is not recommended at this stage, in view of other priorities. These should be considered only if additional resources are secured.

7.	The resource allocation among the three pillars should be re-examined considering the care pathway (presented in Box 2) and adjusted if required.	• While ensuring that the majority of funding goes to care activities, funding allocated to policy and awareness activities should be gradually increased to 10% (from the current 5%) over the next five years.
8.	Consideration should be given to stepping up AOA's research activities and support.	• Develop and implement a basic research skills course as part of the educational offerings. • Add research training and mentoring to the fellowship programs. • Facilitate research linkages between its international network of surgeons and researchers and LMIC stakeholders. • Provide seed funding for establishment of local/regional trauma registries.
9.	Country exit criteria should be formalized.	• Codify and make transparent country exit criteria. • Avoid large scale construction activities.
10.	Improve FSP functioning.	• Develop and offer non-operative courses to a wider audience in-country including policymakers, managers, etc. • Over the next five years, hand over non-operative courses to national/regional faculty; allowing AOA international faculty to focus on operative courses. • If successful, expand local equipment purchase and maintenance program.

		• Capture medium/long-term knowledge retention of courses (e.g. by using online surveys).
11.	Future programming should increase its focus on partnerships at all levels.	• Programs and activities to be shared/implemented with partners (governments, NGOs, regional bodies, etc.)
12.	The Board should consider succession planning and a future refresh.	• Ensure there is adequate LMIC, gender and non-clinical representation on the Board.

However, we recognize that the current pandemic could likely result in a constrained fiscal environment. In such a worst-case scenario, the focus should be on preserving quality of programming; the recommended actions are:

- Decrease the number of FSP course offerings;
- Make greater use of national faculty;
- Stop country initiative expansion (both second cycle and new countries);
- Limit geographic focus of activities to SSA, with focus on FSA;
- Continue funding outreach;
- Reduce/eliminate funding for policy and awareness activities; and
- Rationalize staff at headquarters and country levels.

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5. APPENDICES

5.1 Terms of Reference

External evaluation of the AO Alliance: Improving the care of the injured in LMICs

The AO Alliance is seeking an experienced consultant(s) to carry out an external evaluation of its activities and emphases after six years (2015-2020). The Term of Reference (ToR) defines the work to be carried out and deliverables.

1. Background information

The AO Alliance (AOA) is a development international healthcare NGO working in over 30 low- and middle-income countries (LMICs) across sub-Saharan Africa and Asia to improve the care of the injured, specifically musculoskeletal trauma. For more than six years, the AOA has strived to build sustainable fracture care management solutions by working with frontline healthcare workers, partners, and civil organizations. Headquartered in Switzerland, with field offices in Ghana, Cameroon, Ethiopia, Malawi, and Nepal, it designs and implements multifaceted programs to improve fracture care and prevent musculoskeletal disabilities.

Death and disability due to injury is a global epidemic not recognized:

- 30% more deaths (4.6 million annually) result from injury, than from the three well-funded communicable diseases combined;
- 50 million people are left with disabilities annually, most of which are musculoskeletal; and
- 90% of those deaths and disabilities from injuries occurs in LMICs.

The AO Alliance focuses on three strategic areas:

i. **Care** activities that build capacity in frontline healthcare workers – surgeons, trainees, operating room personnel, ward nurses, paramedics, etc. – to improve the care of the injured (85% of the budget);
ii. **Awareness** to elevate death and disabilities from injury as a major global public health issue; and
iii. **Policy advisory** for actionable implementation (national trauma plans, registries, clinical guidelines adapted to local conditions).

2. Summary of mandate

The consultant(s) will independently conduct a review of the strategy, instruments, approaches, and selected programs. It is not a detailed outcome evaluation of individual projects (impact evaluation). The consultant(s) will be responsible for designing the final evaluation methodology, carry out the evaluation, and produce the final evaluation deliverables.

The evaluation will help ascertain if the AOA is doing the 'right things in the right way' to accomplish its vision and mission. The evaluation is needed to be answerable to our current funders and to attract new ones. It is also needed to draw key lessons learned to contribute to organizational learning and design future strategy.
The main users of the final evaluation include the management and board, implementing partners, and funders. Secondary audiences are local beneficiaries, other organizations with similar interventions, and the global surgery community at large. The consultant(s) will have the possibility to react on the draft mandate. Based on possible comments by the consultant(s), the 2
AOA may amend the draft mandate. However, once the mandate is accepted, it must be fulfilled.

During the execution of the mandate, the consultant(s) may find points of interest to the AOA not covered or mentioned by the mandate. The consultant(s) will have the possibility to draw attention to such points. It will be up to the AOA to decide on possible follow-up if deemed appropriate.
The consultant(s) would arrange, if available and possible, local field work to be done by contacts already on the ground in the selected countries in sub-Saharan Africa and Asia.

3. Evaluation outline

3.1 Overall evaluation goal:
The evaluation will assess the activities and emphases of the AOA during its first period of operation (2015-2020), and identify challenges and opportunities, as well as lessons learnt to understand the scope of improvement. The emphasis should be on future guidance, practical, and actionable suggestions to improve the AOA's work.

3.2 Specific evaluation mandates:

- Assess the AOA's overall vision, mission, goals, and objectives
- Assess the AOA's instruments, approaches, and organizations
- Review the functioning and methodology of selected programs
- Provide advice for the AOA's strategic reflection and learning
- Provide a practical approach for improved target setting and measurement of results (M&E)

3.3 Evaluative criteria
The evaluation should consider and respond generally to the following questions:

- Does the AOA do the right things keeping in mind its mission and vision?
- Does it do the right things the right way?

3.3.1 Effectiveness

- Does it establish its goals correctly?
- Are the AOA's goals and objectives adequate to address its vison and mission?

The AOA three-pillar concept: Awareness, policy advice and care activities.

- Relevance of each pillar? Mutually reinforcing or competing? The inter-relationship and balance across pillars?
- Are the activities under 'Care' appropriate? Should the current emphasis on providing training and education be shifted elsewhere?
- Should the type of activities be extended or reduced? Is the AOA unique in these activities and not duplicating the efforts? Are there any other areas that are missing?
- Are the current selection criteria, processes, and methodology followed for the county needs assessment adequate to arrive at an effective country selection? Are any other important considerations for the country selection that should be considered?
- Clinical research activities: It builds capacity in musculoskeletal clinical research. Is this relevant for LMICs? Should it be reduced or expanded?

Partnerships/alliances:

- Does it have any unnecessary overlap or replication of activity with other organizations?
- Have partnerships helped to leverage activities in favour of building local capacity?
- What improvements can be made to strengthen the effectiveness of partnerships? What should be the stakeholder perspective for the AOA?
- How valuable as an organization is the AOA perceived? Is it seen as a 'preferred partner' by the others (governments, NGOs, academia, professional medical associations, WHO, healthcare institutions, fellowship centres, etc.)?
- Are any AOA structures or processes neocolonialist or unhelpful its collaboration with colleagues and partners in LMICs?

3.3.2 Efficiency: Does it do the right things 'right'?

- Are the delivery mechanisms fit to achieve the outcomes?
- The Fracture Solutions Program trains frontline healthcare workers with face-to-face fracture care education to build local capacity. Is this the best approach or are there alternate delivery models and 'best practices' that AOA could adopt to achieve better results with the same amount of committed funding, especially in the post- COVID-19 setting? Should online training be extended?
- How are the country initiative programs contributing to the overall objective to strengthen the care of the injured in those selected countries? Is the comprehensive end-to-end approach the best way to achieve the objective? What are possible improvements to be considered as additional activities? (or even dropping less relevant activities).
- What should be the balance between training for operative and nonoperative treatments?
- Are the control mechanisms fit for purpose and best practice?
- Does it get value for the money?

- What programs or activities give best value for the money spent?

4. Time period and project components

The external evaluation is due to last a maximum of **<u>four months</u>** from the date of the signature of the mandate contract. The evaluation will focus on our three pillars mentioned above and on the comprehensive assessment of selected programs:

- One country initiative program (Ethiopia) and one global program (Fracture Solutions)
- For the Fracture Solutions program: 1 country in English-speaking Africa, and 1 country in French-speaking Africa, and 1 country in Asia (to be determined, Nepal or Cambodia)

5. Available data and documents

Documents including Annual Reports 2016, 2017, 2018, 2019, and draft text for 2020, AO Alliance book 2021, About AO Alliance slide deck, AO Alliance reports to the Hansjörg Wyss Medical Foundation (narrative and PowerPoint), other project-related documentation as agreed upon between the consultant(s) and the AOA, and AO Alliance audited financial reports will be made available to the consultant(s) for review. Additional references or resources can also be provided as agreed upon.

6. Main methods or techniques to be used

The consultant(s) will be responsible for designing the evaluation methodology and developing the appropriate tools, with the concurrence of the AOA managing director. The consultant(s) will develop an inception report, detailing the objectives, the people to be interviewed, the specific methodology to adopt, the limitations and the tools adapted to each group.

Once the methodology has been reviewed by the AOA managing director, the consultant(s) will be responsible for conducting the literature review, developing tools, data collection and analysis, and drafting of the deliverables.

7. Schedule

The consultant(s) will prepare an evaluation schedule to operationalize and direct the evaluation. The schedule will describe how the evaluation will be carried out, bringing refinements, specificity, and elaboration of the terms of reference.
Tentative timeframe

Activity	Estimated due date
Evaluation planning	day/month/year
Evaluation launch	
Review of project documents	
Submission of detailed evaluation plan and methodology (Deliverable 1)	
Data collection	
Data entry and collation	
Submission of draft final evaluation report (Deliverable 2)	
Submission for final evaluation report (Deliverable 3)	

Logistical support
The AOA will provide preparatory and logistical assistance to the consultant(s), which include:

- Background materials
- Quantitative and qualitative documentation of program activities
- Assistance in identifying potential interviewees
- Meeting arrangements with local officers, stakeholders, and beneficiaries

8. Governance and accountability

The AOA managing director and audit committee will represent the AOA during the evaluation. They are responsible for:

- Guidance throughout all phases of execution
- Facilitating collection of information, including by provision of contact details of all staff, and of any partners, upon request of the consultant(s)

9. Evaluation consultant(s) key deliverables

Deliverable 1: Methodology and approach document: The proposed approach and methodology is to be submitted to the AOA managing director prior to enactment for review.

Mid-point discussion: At the mid-point in the evaluation, the AOA managing director and the consultant(s) will hold a ‘touching base’ discussion to review progress and any constraints experienced.

Deliverable 2: Draft final evaluation report: The consultant(s) will submit a draft evaluation report to the audit committee to correct any factual errors only. The audit committee will have two weeks to do so.

Deliverable 3: Final evaluation report and PowerPoint presentation
The final evaluation report will consist of a written final report in English (40 pages max in length, excluding appendices). An indicative table of content is given:

a. Abbreviations
b. Executive summary of methodology, limitations, key findings, and recommendations
c. Background information (project specifics)

d. Methodology: Objectives, data collection and analysis and limitations of the study
e. Research findings, analysis, with associated data presented (should be structured around the main objectives and should cover all indicators)
f. Indicator table showing all baseline indicators
g. Appendices, which include detailed research instruments, a list of interviewees, terms of references and evaluator(s) brief biography

A PowerPoint presentation will be provided outlining the summary of the evaluation.

10. Required qualifications

The evaluation will be carried out by a consultant(s) well-versed in healthcare projects in LMICs. Knowledge of trauma and orthopedics is an added value. The consultant(s) is expected to:

- At least have a post-graduate qualification in evaluation, social science, or related field
- A reliable and effective manager with a minimum of 5 years' experience in conducting capacity-building evaluations and a proven track record in delivering professional results
- Excellent English verbal and written communication skills
- Experience in LMICs in sub-Saharan Africa and Asia

The ideal consultant(s) will combine evaluation and technical expertise. This would entail capacity / institution building and healthcare knowledge in LMICs, and relevant experience of non-profit structures / operations. Knowledge of the local context is key for the realism and relevance of the evaluation.

11. Budget and payments

The total amount (all-in) is limited to CHF 50'000 (fifty thousand Swiss Francs), including VAT, but excluding travel expenses if applicable (field work):

- CHF 20'000 is payable on signature of the agreement contract
- CHF 20'000 is payable on delivery on the interim draft report (Deliverable 2)
- CHF 10'000 is payable on delivery of the final written report and PowerPoint presentation (Deliverable 3)

12. Structure of the proposal for the procurement process

- A job proposal: Letter of interest / intent, stating why the consultant(s) is considered suitable
- Personal CV of the consultant(s) highlighting experience in similar assignments
- A brief technical proposal (one-page) outlining a methodology for the evaluation

13. Submission rules

Deadline for submission of proposals is May 31, 2021. All candidates must submit the three required documents to cmartin@ao-alliance.org. Candidates can reach the AO Alliance on cmartin@ao-alliance.org for any clarifications. The selected consultant(s) should be available to start the evaluation no later than June 10, 2021.

5.2 List of Interviewees

Name	Position
Abdoulie Janneh	Africa representative and AOA Board member
Benis Bernice Mensah	Research Assistant, TBS Project, Ghana
Cinzia Muggiasca	Finance & Operations Manager, AO Alliance Foundation
Claude Martin Jr	Managing Director
David Helfet	Board Member, Hansjörg Wyss Medical Foundation
Doris Aknoko	Research Assistant, TBS Project, Ghana
Florent Lekina	Steering Committee Chair, French-speaking Africa
Ian Walker	Global Head, Strategic Partnerships, Johnson & Johnson Foundation
Jean-Daniel Gerber	Chair, Audit Committee and AOA Board member
Jim Harrison	Medical Director (Africa); invited guest on Board
Jonathan Sitali	Steering Committee member, English-speaking Africa
Kizito Kakra	Resident in Traumatology and Orthopedics, Kumasi, Ghana
Klaus Renner	Vice-Chair of the AOA Board
Kodwo Animabu	Resident in Traumatology and Orthopedics, Kumasi, Ghana
Konadu Yebohah	TBS Project Manager, Kumasi, Ghana
Manjul Joshipura	Asia representative and AOA Board member
Philip Mensah	Traditional Bone Setter in Kumasi, Ghana
Polly Buehler	Senior Project Manager, AO Alliance Foundation
Precious Kamange	National Consultant, AO Alliance - Malawi Initiative
Ram K Shah	Medical Director (Asia); invited guest on Board
Ramesh Singh	Steering Committee Chair, Asia
Reuben Ado	Local project Officer, AOA Ghana
Rolf Jeker	Chair of the AOA Board
Stella Minta	Principal Officer, KATH Hospital, Chairperson Orthopedic Nursing
Steve Schwartz	Board Member, Hansjörg Wyss Medical Foundation
Wilfred Addo	Steering Committee Chair, English-speaking Africa

5.3 Evaluation Matrix

CRITERIA AND EVALUATION QUESTION	SUB-QUESTIONS	INDICATORS	DATA SOURCES/ COMMENTS
Q1: Does the AOA do the right things keeping in mind its mission and vision?			
Assessment of the overall vision, mission, goals, and objectives	1.1 Are the AOA's goals and objectives adequate to address its vision and mission? 1.2 Does it establish its goals correctly?	• Documentary evidence • Stakeholder views	• Documents • Stakeholder interviews
Q2: Does the AOA do the right things the right way?			
Assessment of the instruments, approaches, and organizations	Three pillar concepts 2.1 What is the relevance of each pillar? Are they mutually reinforcing or competing? What is the inter-relationship and balance across pillars? 2.2 Are the activities under "care" appropriate? Should the current emphasis on training and education be shifted elsewhere? 2.3 Should the type of activities be reduced or extended? Is the AOA unique in these activities and not duplicating efforts? Are there missing areas? Clinical research 2.4 Is building clinical research capacity for musculoskeletal research relevant for LNICs? Should it be reduced or expanded? Partnerships 2.5 Does the AOA have any unnecessary overlap or replication of activity with other organizations? 2.6 Have partnerships helped leverage activities in favor of building local capacity? 2.7 What improvements can be made	• Documentary evidence • Stakeholder views	• Documents • Stakeholder interviews

	to strengthen the effectiveness of partnerships? What should be the stakeholder perspective for the AOA? 2.8 How valuable as an organization is the AOA perceived? Is it seen as a 'preferred partner' by others? 2.9 Are any AOA structures or processes neocolonialist or unhelpful in its collaboration with colleagues and partners in LMICS?		
Functioning and methodology of selected programs	3.1 Is training frontline healthcare workers with face-to-face care education the best approach for the FSP? Or are there alternate delivery models and best practices to adopt, especially in the post-covid setting? Should online training be extended? 3.2 What should be the balance between training for operative and non-operative treatments? 3.3 Are the current selection criteria, processes, and methodology followed for the country needs assessment adequate to arrive at an effective country selection? Are there any other important considerations for the country selection that should be considered? 3.4 Are delivery mechanisms fit to achieve the outcomes? <u>Overall</u> 4.1 Are the control mechanisms fit for purpose and best practice? 4.2 What programs or activities give best value for money spent?	• Documentary evidence • Stakeholder views	• Documents • Stakeholder interviews

5.4 Interview Script

INTRODUCTION AND CONSENT

Hello, my name is [YOUR NAME] and I am part of a team that is conducting an evaluation of the AO Alliance. We would like to ask you some questions that will aid AO Alliance in learning lessons from the past few years to help improve its future functioning.

The interview will take about one hour, and all your responses will be kept fully confidential and will not be conveyed back to AO Alliance. We will not record the interview, but I will take detailed notes. Your identity will not be used, and data will be reported only in the aggregate, so there will be no way for anyone to identify you or your responses.

Your participation is voluntary, and you may stop and withdraw from the interview at any time. If you have any questions or concerns, please feel free to contact me [GIVE CONTACT INFORMATION].

Are there any questions I can answer for you now? If you are ok, do I have your permission to begin the interview?

Date of interview:	Interviewer: Richard/Amardeep

<u>Section A</u>: Does the AOA do the right things keeping in mind its mission and vision? (Assessment of the overall vision, mission, goals, and objectives)

1. Are the AOA's goals and objectives adequate to address its vision and mission (*read out the mission and vision, goals, and objectives)*
    a. *Mission – a world where timely and appropriate fracture care is accessible to everyone*
    b. *Vision – to reduce suffering, disability, and poverty in LMICs by enhancing fracture care*
    c. *Objective - to create sustainable local capacity for care often injured*
    d. *Goals - 5-years goals:*
        i. *Increase survivals rates and decrease disabilities from MSK injuries in LMICs in sub-Saharan Africa and Asia*
        ii. *Build local capacity to treat MSK injuries safely*
        iii. *Promote a culture of good clinical practice in MSK care*
        iv. *Raise awareness about the neglected epidemic of injuries in LMICs.*
        v. *Secure stable and long-term funding*

2. How are these goals established? Can we improve on how we establish these goals? How?

<u>Section B</u>: Does the AOA do the right things the right way? (Functioning and methodology of selected programs)

3. How are countries selected for the country initiatives? (*Probe – selection criteria? Processes? Methodology of country needs assessment? What are the advantages and disadvantages? How can the process be improved/systematized?)*
4. What changes would you suggest to the country initiatives? Why? (*Probe - areas of focus or improvement? Dropping some activities? Change current model? (Which are local project officers for country initiatives and admin teams in Africa and Asia))*

5. Can you describe to me how the FSP is implemented currently? What changes do you recommend for the post-covid setting (*Probe – online training vs. F2F? Alternative delivery models? Balance between operative and non-operative treatments? Why?)*

<u>Section C</u>: Does the AOA do the right things the right way? (Assessment of the instruments, approaches, and organizations)

6. Can you tell me what you think of the 3 pillars (care activities, awareness, policy advice*)? (Probe – relevance? Mutually reinforcing? What should be relationship & balance between them?)*
7. What are the activities under the "care" pillar? What changes would you suggest? Why? *(Probe – are the activities appropriate? Shift current emphasis on training & education elsewhere? To where?)*
8. What changes would you recommend to the activities of the 3 pillars? Why? (*Probe – is the AOA unique? Any duplication with others? Missing areas?)*
9. What is your impression of AOA building clinical research capacity for MSK research in LMICs? What changes would you suggest? Why?
10. How is the AOA perceived? (*Probe – preferred partner? By NGOs? Govts? Academic? WHO? Etc.)*
11. Can you tell me about the partnerships AOA has? How can the AOA strengthen its partnerships*? (Probe – with whom should it partner? Why? Overlap with other organizations? Neocolonialist process or structures? Culturally sensitive? Respectful of local knowledge and leaving behind building blocks?)*
12. What have been the outcomes of partnerships that you are aware of? (*Probe – building local capacity*?)

<u>Section D</u>: Overall questions

13. How does AOA know it is achieving its goal? *(Probe – how is monitoring and evaluation done?)*
14. In your opinion, what programs/activities work best – why? (*Probe – what programs activities give best value for money spent?)*
15. In your opinion, what areas should AOA focus on/prioritize? (*Probe – geographic, programs, pillars, etc.; new areas to move into? Ask individual capacity building vs. system capacity building; etc. ask why?*
16. What improvements would you recommend to the structure of the AOA to improve its functioning? (*Probe – Board, management, staff, Regional Steering Committees, etc.; ask why?)*
17. What improvements would you recommend to the processes of the AOA to improve its functioning? (*Probe – selection of projects, implementation, monitoring, financial management, outcomes, etc.; ask why?)*
18. What are your thoughts on the budget? How should the activities be funded in the future? (*Probe – post 2024 budget arrangements; ideal budget, where to fundraise, corporate sponsorship policy, etc.)*
19. Is there any question I should have asked but haven't? *(Probe – is there anything else you would like to share with us?)*

5.5 Evaluator Biographies

Dr. Richard Gosselin (MD, MPH, MSc) is an orthopedic surgeon trained in Montreal, Canada, with experience as an attending in the orthopedic surgery of the Universite de Montreal, and then at the University of California in San Francisco (UCSF), where he is on faculty. He obtained a MPH in 2001 from the University of California, Berkeley, and a MSc degree in health economics from the London School of Hygiene and Tropical Medicine (LSHTM) in 2002. He has been involved in international clinical and research work since the 80s. He co-founded the Institute for Global Orthopedics and Traumatology at UCSF in 2006, which is going stronger than ever and attracts each year many pre-graduates, graduates, and post-graduate students. He has authored or co-authored over 70 peer reviewed publications and is the lead author of the Springer book "Global Orthopedics" with first edition in 2014 and second edition in 2019. He has worked in over 60 countries with many NGOs including MSF, ICRC, Emergency, Handicap International, Johanniter, Operation Rainbow, to name a few. He has participated in consultancies/evaluations in Haiti, Nigeria, Sri Lanka, and Sudan with Dr Thind. He is presently the chief orthopedic surgeon for the ICRC.

Prof. Dr Amardeep Thind (MD, PhD) is Professor of Epidemiology, Biostatistics, Family Medicine and Public Health and Director of the Schulich Interfaculty Program in Public Health at Western University (Canada). He held the prestigious Canada Research Chair in Health Services Research from 2008 – 2018. He is a head and neck surgeon trained at the All India Institute of Medical Sciences, New Delhi (India); and has a PhD in Health Services Research from the Fielding School of Public Health, University of California, Los Angeles (USA). His research focuses on issues of access to care for vulnerable populations, primary care, and information systems. Over his 25-year career, he has received close to $26 million in research funding as Principal/Co-Investigator from agencies such as Canadian Institutes of Health Research, National Institutes of Health, World Bank, Robert Wood Johnson Foundation, etc. and has more than 130 peer reviewed publications. As Director of the Schulich Interfaculty Program in Public Health, he led the development of an innovative one-year MPH program that is taught using cases, which among the first of its kind in the world. As an evaluation expert, he has consulted extensively for the Canadian Red Cross, ICRC, World Bank, European Commission, WHO, UNDP, UNICEF, Merlin, United States Surgeon General, PSI and Population Council on program evaluations in Lebanon, Somalia, Libya, Maldives, Albania, Sudan, Argentina, Rwanda, and Mexico.

Dr. Théophile Bigirimana (MD, MHCM, MA, PgDip HIV/AIDS) is a physician trained in Burundi with specialization in Healthcare Management, International Cooperation and Humanitarian Aid, and HIV/AIDS. He has an extensive experience of health systems strengthening in Africa including Burundi, Guinea, and Congo (DRC). He has worked in maternal and child health in supporting the implementation of the results-based financing in health, supported community health in improving child health with malaria rapid test implementation, tuberculosis diagnosis and treatment, HIV/ AIDS, and nutrition services management. He has managed Ebola outbreaks and Covid-19 pandemic response projects and has been author of articles on infection prevention and control during epidemics. He has national and international experience working with both public and private sectors stakeholders as well as NGOs such as Solthis and French Red Cross. As an evaluation expert, he has consulted for the Medics Without Vacation, Memisa, and Médecins Sans Frontières.