Towards a Clearer Vision:
Strengthening Orbis International's Partner Assessment Tool

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Executive Summary

During the 2019-2020 academic year, the SIPA workshop team was asked by Orbis International — a nonprofit organization at the forefront of fighting avoidable blindness and improving access to eye care throughout the world to build a partner assessment tool that can prepare the organization to incorporate artificial intelligence and machine learning in its global M&E practice. The SIPA Team was also tasked with providing an in-depth analysis of current trends in partner assessments with a focus on taxonomy and AI techniques and how they can be applied to Orbis International's context.

The SIPA Team's deliverables are the result of a thorough mixed-methods approach of expert interviews, field visit observations in Bangladesh, and a literature review covering artificial intelligence and taxonomy methods.. The SIPA team also reviewed existing partner assessment tools from seven Orbis International country offices and partners such as BRAC and SightSavers.

Based on its literature review, the SIPA Team discovered that classification is key — both in terms of the categorization of partners and in the development of a criteria by which they can be assessed. The SIPA team's taxonomy analysis found two distinct types of relationships that Orbis International has with other organizations: partnerships and collaborations. Partners are further divided into implementation and collaborative partners based on the balance of power, accountability mechanisms, and other needs of the partner relationship. The focus of the assessments will be on the partnerships, in particular implementation partners. These partners carry out much of Orbis International's work on the field and need to be properly assessed. The SIPA Team recommends that Orbis International adopts a rigorous taxonomy to categorize and organize its partners. Not only is it general good practice, but having an established taxonomy also sets the stage for incorporating advanced data analysis techniques which can only be fully implemented once partners are clearly labeled and categorized.

Another issue the SIPA Team discovered is Orbis International's lack of data centralization and standard processes in collecting and organizing data. This will be an obstacle for Orbis International going forward in its efforts to implement AI and machine learning. The SIPA Team's research found that having quantitative data that is uniform

and categorized in a central data location is paramount when it comes to performing advanced data analytics.

To help address these issues and concerns, the SIPA Team has created a prototype tool for Orbis International. It is still in its beginning phase, but the SIPA Team was able to test it out with dummy data and the results have been promising. The tool can help Orbis International translate its qualitative data into quantitative data points, and aid in Orbis International's efforts to incorporate AI and machine learning in the future.

Based on its findings, the SIPA team recommends that Orbis International lean on the experts — particularly in AI — to communicate best practise and rationale of the tool and data collection to project managers and other country office staff on the ground. Further, standardization of data collection and storage should be enforced, both in classification of the partnership types and criteria by which they are assessed, and in the style of survey and method of storage for the responses. Finally, Orbis International's Global M&E division should invest in a centralized data storage solution to ensure that the aforementioned standardization is enforced. These measures will not only help Orbis International improve their partner assessment process but set the stage for Artificial Intelligence and Machine Learning later on in the partner assessment process.

Acknowledgments

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Acronyms

AI	Artificial Intelligence
BRAC	Building Resources Across Communities
IAPB	International Agency for the Prevention of Blindness
LAC	Latin America and the Caribbean
M&E	Monitoring and Evaluation
NGO	Non-governmental organization
SIPA	School of International and Public Affairs
WHO	World Health Organization

Introduction

During the 2019-2020 academic year, the SIPA workshop team was brought on by Orbis International — a nonprofit organization at the forefront of fighting avoidable blindness and improving access to eye care throughout the world — to build a framework to standardize and update its assessment of partners. In addition, Orbis International tasked the SIPA team with building a partner assessment tool that can prepare the Orbis International to incorporate artificial intelligence and machine learning in its global M&E practice. The aim of incorporating these advanced data analysis methods is to eventually be able to perform quicker and more agile assessments of partnerships. The improved assessment will better inform Orbis International of the risks, needs, and parameters of the partner within the project. This information can inform Orbis International's decisions and allow it to best parse out and communicate the impact of the partnerships and projects.

To address the project's driving research questions, the SIPA Team conducted expert interviews, participated in one field visit observations in Bangladesh, and completed a literature review on artificial intelligence and typology methods. The SIPA Team also reviewed existing partner assessment tools from Orbis International and partners such as BRAC and SightSavers.

This document serves as a report of the SIPA Team's findings and observations and documents the process and assumptions behind the team's resulting partner assessment tool to be used by country project managers and the global M&E team before, during, and after partner relationships.

Background

At some point in our lives, each one of us will need some eye-related care, whether it be refractive devices like glasses and contacts or a health intervention when it comes to our ophthalmic wellbeing. For those of us in high-income countries, interventions are, for the most part, convenient and are an appointment away. The same, unfortunately, cannot be said of many developing countries.

According to the World Health Organization, at least 2.2 billion people have a vision impairment. Of that figure, 1 billion people could have had their condition prevented or are struggling to have it treated.[1] These people suffer from distance vision impairment or blindness due to unaddressed near-sightedness, astigmatism, and presbyopia, cataracts, glaucoma, farsightedness, or a host of other preventable or treatable eye conditions. [2]

> "To transform lives through the prevention and treatment of blindness."
>
> Orbis International's Vision

The cost of repairing the dearth of access to refractive and cataract care globally is US$14.3 billion according to World Health Organization Estimates.[3] Despite these costs, the benefits of reducing the prevalence of avoidable visual impairment by 25% — a goal set by the joint global initiative *Vision 2020: The Right to Sight* led by IAPB and WHO would be an immense boon for the entire world.[4] Lowering vision impairment is not only an investment in the health of the global population but also the planet's economic future. According to one study, untreated presbyopia (farsightedness), can cause

[1] The World Health Organization. (2019). World Report on Vision. Switzerland.

[2] Bourne RRA, Flaxman SR, Braithwaite T, Cicinelli MV, Das A, Jonas JB, et al.; (2017). Vision Loss Expert Group. Magnitude, temporal trends, and projections of the global prevalence of blindness and distance and near vision impairment: a systematic review and meta-analysis. Lancet Global Health. Sep;5(9):e888–97.

[3] Ibid.

[4] The World Health Organization. (2019). World Report on Vision. Switzerland.

significant losses to work productivity and therefore losses in salaries — particularly for those who work in the developing world.[5] Providing more people with better vision would help them increase their wages and achieve a higher standard of living.

Through its many country offices and partners, Orbis International provides training, public health education, eye health treatments, and other services in treating and preventing blindness worldwide. Orbis International's mission is to mentor, train, and inspire local teams to save sight in their communities. This report documents the SIPA Team's efforts to improve partner assessments, and it is a crucial contribution to the core of Orbis' mission. The SIPA Team hopes this work will assist Orbis International in best orienting itself to fulfill its vision.

Research Methodology

The goal of the project was to develop a cogent partner assessment tool for the global M&E department to gauge existing partnerships, screen potential partnerships, and build-up the data infrastructure needed to measure impact. The research was driven by the following questions:

1. What are the needs of Orbis International's Global M&E and country teams in terms of partner assessments?
2. What is the present state of Orbis International's partner assessment process and how do they fit their needs?
3. How ready is Orbis International to take advantage of advanced data analysis techniques such as Machine Learning and AI in their partner assessment process and what steps do they need to take to get to the point of easily utilizing these data analysis methods?

[5] Chan, V. F., MacKenzie, G. E., Kassalow, J., Gudwin, E., & Congdon, N. (2019). Impact of Presbyopia and Its Correction in Low- and Middle-Income Countries. Asia-Pacific Journal of Ophthalmology. doi:10.22608/apo.2018449

Beginning in November, 2019, the SIPA team began a multi-phase process beginning in investigating Orbis International's needs, which culminated in developing a prototype of a partner assessment tool. The SIPA team conducted interviews with two stakeholder groups: 15 interviews with Orbis' M&E staff, data experts and development staff and 4 interviews with Orbis International partners such as BRAC and SightSavers. To compensate for distance and travel cancellations due to the coronavirus pandemic, the team also conducted virtual interviews with country and regional teams in India, Ethiopia, China, Mongolia, Bangladesh, LAC and the iconic Flying Eye Hospital to understand the operational needs of each office. The team also gathered information on taxonomy and artificial intelligence integration through a desk review of literature from a dozen sources. To improve Orbis International's own procedures, the team analyzed the assessment tools from seven Orbis International country teams and partner organizations as well as organizations such as BRAC, MercyCorps, and UNDP.

Members of the team also traveled to Bangladesh for fieldwork where they aimed to:

- Learn from and assess one of the most standardized and efficient partner assessment frameworks implemented by a country office
- Meet Orbis International's partners and collaborators in-person
- Understand the unique needs and contexts of partners
- Gather further context for Orbis' challenges and opportunities in the due diligence sphere and considerations for clinical assessment.

Limitations

In fulfilling the deliverables of this project, the SIPA team attempted to best use the resources at its disposal to ensure that the partner assessment tool and other deliverables were useful and rigorously tested . However, many factors contributed to the limitations of this work.

First, the global coronavirus pandemic impacted the SIPA Team's ability to travel and conduct additional field work. Not only this, but the pandemic also impacted the extent to which country office staff were available for virtual interviews. Due to the

various quarantine, isolation, and lockdown orders, many of the potential interviewees had to abruptly shift to virtual office arrangements — making interviews difficult to arrange and time elicit feedback on the tool difficult to procure. Protests in India regarding the Citizenship Amendment Act made field travel to the country over Spring break uncertain. As a result, the work the SIPA Team has done may need further research as country contexts vary.

Second, the diversity of partners and contexts in which Orbis International operates meant that there is a tradeoff between standardization and nuance. Therefore, the tool cannot be used to make decisions regarding engaging in partner relationships but rather a decision-informing tool to inform Orbis International of any potential opportunities and shortcomings of engaging with a potential partner on a project.

> "The tool... is a decision- informing tool to inform Orbis International of any potential opportunities and shortcomings of engaging with a potential partner on a project. "

Third, the existing data infrastructure at Orbis International made it difficult to fully analyze and review its data. Currently Orbis International uses a mixture of Word documents and spreadsheets with inconsistent frequency of data collection. The multiplicity of Orbis International country offices and lack of standardization between how different country offices and project management staff collected, stored, and analyzed data meant that the SIPA team was constrained in how to embark upon comparison exercises between each sample document.

Finally, efforts to pursue artificial intelligence and machine learning outside of clinical contexts are difficult — particularly in the management and capacity sphere — as benchmarks are not standardized internationally and shift depending on the resources of each regional context.

Despite these limitations, the SIPA team is confident that its methods and the partner assessment tool outlined in the succeeding sections provide an apt baseline on which Orbis International's global M&E department. The tool can be a starting point for Orbis International to build a more comprehensive and improved partner assessment framework which ensures quality and demonstrates impact.

Establishing the Baseline for Orbis International's New Partner Assessment Tool

When embarking upon the project, it became clear that desk research beyond interviews was needed to understand what are the best practises in assessing partners. The SIPA team set out to find, review, and apply learnings from literature regarding evaluation techniques and paid particular attention to current literature on partnerships and taxonomy. It was also important for the SIPA team to gather information on the foundational needs of AI, particularly in a medical and NGO context. This information would inform the formatting of the prototype partner assessment tool introduced later on in the report. To apply these learnings, the SIPA team also needed to analyze Orbis International's present partner assessment infrastructure and gauge how close it is to the ideals needed to introduce advanced data analytics.

The information gleaned from this research and how it relates to Orbis International's present partner relationships is outlined in this section.

Taxonomy

Partnerships are crucial to the work of Orbis International. They reflect a growing movement in the practice of global health toward collaboration with non-state actors in addition to many pre-existing arrangements with governments.[6] The Merriam Webster dictionary defines partnership as "*a relationship resembling a legal partnership and usually involving close cooperation between parties having specified and joint rights and responsibilities*." For the purpose of partner assessment, the relationships in which Orbis International engages need to be defined further and categorized by various metrics such as the extent to which resources — both human capacity and financial — change hands between Orbis International and the partner. The resultant definitions take into account the length,

[6] World Health Organization, Sixty-Ninth World Health Assembly, "Framework of engagement with non-State actors," May 2016.

risks, and terms of the relationship.[7] The different subgroups of partner relationships also look at whether or not the engagement with that partner is in service of Orbis International's Theory of Change (the vision that requires systems level change that needs multiple players) or Theory of Action (programmatic interventions that contribute to the theory of change). Further analysis of these metrics and how they can be organized can be seen below in Figure 1.

Classification of the various partners Orbis International works with serves to facilitate the critical evaluation of these relationships, allowing for the collection of benchmark data for subsequent comparison. The assessment tool is geared toward the production of descriptive data to help inform the effective and efficient mobilization of resources for the success of a particular relationship. A specific taxonomy ensures that the insights gained from the evaluation will be relevant to the partnership or collaboration at hand.

A concrete classification of partner relationships is necessary. However, the classification should also be fluid enough to allow partners and affiliated organizations to move between categories in the taxonomy depending on how the nature of the relationship shifts over time.

	Collaboration	Partnership	
	Strategic	Collaborative	Implementation
Primary risks lie in...	Reputation, vision alignment	Reputation, vision alignment, and Capacity to fulfill project	Capacity to fulfill project
Control Unit	N/A	MoU + Organizational commitment to a shared vision	MoU + Partner Assessment + Grant agreements

[7] Allen, Ruth (2011). *Local Partnerships: A guide for partnering with civil society, business and government groups*. MercyCorps. http://www.mercycorps.org/sectors/civilsociety

Primary Goals	Theory of change: Eliminating avoidable blindness	Theory of action: Improving access to high-quality ophthalmic care	
Assessment Frame	Due diligence	Due diligence and project success	Due diligence, project success, and capacity growth
Traditional Relationship Basis	Information sharing	Collaboration, information sharing, and growth	Transactions and growth
Timeframe	Ongoing information sharing		Urgent needs but long term sustainability

Figure 1: Differentiation between partnership and collaboration types

Orbis International has two main types of relationships: **Partnerships and Collaborations**

Classifying Partnerships

Partnerships are relationships between Orbis International and another organization where the resources, obligations, and interactions with the partner are legally defined. Within partnerships there are two further sub-categories of partners:

1. Implementation Partners:

   These are organizations whose relationship with Orbis International is defined by a project and where Orbis International's role is as a provider of resources to build capacity within the partner organization. These can often be an NGO or clinical partner. Such partners are obligated to report its progress to Orbis International. A legal document governs this relationship — often a Memorandum of Understanding (MoU) or a grant agreement.

   Healthcare facilities that are in the process of building capacity to reduce preventable blindness fall in this category. Partnership with these organizations requires the input of Orbis International's resources to bring the partner's facility up to par with implementation standards. Other NGOs working toward a vision aligned with that of Orbis International, but who may

lack the medical expertise and strategic planning to do this development work also fall within this category.

2. Collaborative Partners:

   These are organizations whose relationship with Orbis International may also revolve around a project in service of Orbis' mission but where the balance of power is equal. Both Orbis and the partner organization lean on their respective comparative advantages to implementing the program, and Orbis International is under no obligation to act in a capacity-building capacity. This relationship should be governed by a legal document such as an MoU, which outlines their roles and responsibilities. Because of the more equal balance of power and because Orbis International is not transferring its resources on a large scale, there is less of an obligation for collaborative partners to 'report back' their process. Nevertheless it is a best practice for both partners to communicate and share information to each other regularly..

   Self-sustaining hospitals and medical centers (e.g., Aravind Eye Hospital in India) which do not require financial assistance or other resources fall within this subgroup. Other examples are non-governmental organizations like BRAC, VisionSpring, and the National Eye Care Project.

Defining Collaborations

These are organizations with whom Orbis International has aligned values but do not directly collaborate on any projects or share human or financial resources. These partnerships revolve around the free exchange of information and intellectual resources and there is often no legal document governing the role and responsibilities of the relationship or agreement surrounding the transfer of financial, human capital, or other resources. In terms of the partnership taxonomy, these institutions are known as strategic partners. Some examples of these partnerships are:

- When Orbis International partners with governments (whether local or national) for projects such as joint advocacy on a particular facet of eye health

where the sharing of information between Orbis and the government as well as with the primary beneficiaries is paramount.

- When Orbis International Partners with international Nongovernmental Organizations such as BRAC, WHO, or SightSavers beyond the confines of a project so share current prominent data and literature in the service of their shared goals.

Criteria for Assessment

For the purposes of the partner assessment tool, the analysis focused on partnerships as defined above, with an emphasis on implementation partners as a key audience for the due diligence process. Due diligence refers to a base-level evaluation applicable to all partners to collect data on key elements associated with standard operations. As illustrated in Figure 2, the criteria for assessment encompasses both due diligence organizational level elements and clinical considerations for a holistic quality assessment structure.

Figure 2: Partnership evaluation criteria

The different assessment criteria can be defined as:

- Alignment refers to the organization's vision, mission, and values and how they align with Orbis International.[8]

- Management/HR encompasses all leadership, governance, personnel, expertise, and human capital structures that make the organization run sustainably and efficiently.

- Financial describes the organization's financial capacity, accountability, and sustainability in reference to the activities and services.

- Capacity refers to all non-clinical, non-financial and non-human capital oriented inputs such as basic amenities, water resources, information and technology, and other elements related to project success.

- Clinical entails all capacity-related work directly tied to clinical outcomes and procedures such as medical equipment and its upkeep, capacity for growth in certain types of care.

Implementation partnerships take up the majority of the resources that Orbis International uses toward improving eye health. Due diligence elements of the assessment tool then provide information to headquarters that aids in the decision-making process regarding inputs into its projects. While the tool prioritizes partnerships (in particular with clinical institutions), due diligence also applies directly to nonclinical partners. They comprise the other major group of organizations within the category of implementation partners.

The taxonomy above creates a standardized approach for Orbis International to mobilize its data collection and analysis, derive conclusions, and inform their progress in working toward their theory of change. These elements will help incorporate artificial intelligence and machine learning in future evaluation efforts.

[8] The vision of Orbis International is "To transform lives through the prevention and treatment of blindness. Orbis International's mission: "With our network of partners, we mentor, train, and inspire local teams so they can save sight in their communities. The core values of the organization are Caring, Accountability, Commitment, Trust, and Excellence.

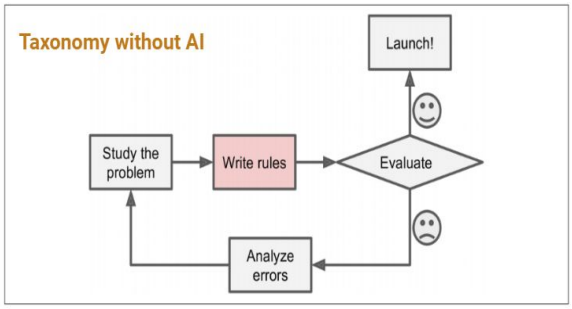
Artificial Intelligence and Machine Learning

The advancement of artificial intelligence and its applications is changing the way that companies and organizations operate. Advanced data analysis techniques facilitate and optimize tasks by predicting, forecasting, categorizing, and building relationships over a plethora of factors and criteria.

AI represents the concept of building "smart" algorithms to analyze and interpret data. Each algorithm within the system is considered a type of machine learning. Machine learning represents a series of mathematical and statistical models which use probability and mathematical approximations (averages, counting the number of occurrences of certain events, split data in different type groups and so on) to make predictions, derive causal inferences, and parse out relationships within the data itself.

Applied to this project, Orbis International can use AI to better assess its partners by evaluating their plausible potential, raising red flags as it pertains to their sustainability and capacity, and utilizing the data derived from partner assessments to communicate the direct impact of engagement between Orbis International and their partner. It would do so using data that is organized based on a taxonomy such as the one introduced earlier in the report. This taxonomy, once agreed upon by Orbis International's specialists, country offices, and global M&E team, is the first step towards making it possible for models to "read" and interpret data derived from assessments.

A comparison between Figures 3 and 4, illustrates that after Orbis International's staff agrees to the rules for conducting the taxonomy and what data they would like to gather, the implementation of machine learning will be more feasible. The one question that will remain will be: **How can the data obtained assess Orbis International's partners based on the taxonomy criterias?**



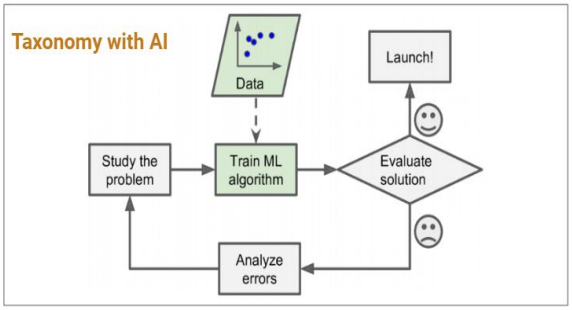


FIgure 3: Taxonomy without AI

Figure 4: Taxonomy with AI [9]

To answer this question, it is imperative that after data collection, the key characteristics about partners are built into a stable system with benchmarks that can deduce what is "good" or "bad" in terms of organizational characteristics or what is favorable to Orbis International's mission.

For some factors, it would be straightforward to determine their risks and benefits. For example, Orbis International could focus its assessment on a partner's financial condition to classify whether they have a high or low performance profile in that criteria. Orbis International could also collect data on readmissions that hospitals or clinics have or the number of, age of, and modernity of their clinical equipment Regardless of the number of features analyzed, the classification of partners could be either categorical (high, medium or low rates) or numerical (a partner's score from a specific range)[10].

However, in other cases, it will be ambiguous and hard to gauge partners` weaknesses and strengths even after collecting all the information necessary to evaluate them. For example, what is the best way to interpret the data from taxonomy categories such as Management/HR or Alignment? How should Orbis classify a partner when it has a good level of governance, but it's not strictly aligned with Orbis International values?

[9] Géron, A. (2017). *"Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems". Sebastopol : O'Reilly Media, 2017.*

[10] This will be illustrated later on this report when the prototype partner assessment tool is introduced.

Fortunately, AI can help with these two scenarios and guide Orbis International's staff in their final decisions and assist in the building of different types of machine learnings that could follow "label" or "unlabeled" data in two different major ways:

1. Supervised ML: This is the case when Orbis International's staff provides in the taxonomy the correct answers about risk assessment for each partner. That is, before machine learning can be applied, each partner will already be classified (or labeled) as high, medium and low risk by their characteristics outlined in the taxonomy. Then, the algorithm is trained to make **predictions and classifications** by using the features of these partners to produce a risk assessment. The same approach could be also applied, if, instead of a risk classification, a score was assigned to each partner.

   A very common type of supervised machine learning is linear regression. It can work either by classification (e.g. a partner will be classified with high risk) or prediction (e.g. a partner will have a certain predicted score). As illustrated below, Figure 5 represents an example of a regression where "value" is the label created (a partner score, or class) and "Feature 1" a partner characteristic

FIgure 5: Supervised ML - Regression [11]

[11] Géron, A. (2017). *"Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems". Sebastopol : O'Reilly Media, 2017.*

2. Unsupervised ML: Different from supervised, unsupervised is the opposite situation. It is when Orbis`s Staff cannot provide answers in the taxonomy about the risk assessment of the partner. In other words, it is unable to classify partners based on their characteristics and which are necessarily represented as unlabeled data. However, this is not an impediment to building an algorithm and, thus, one can build a machine learning that could at least **investigate and find relationships** among partners.

   A quite common type of unsupervised machine learning is defined as clustering. It is an algorithm that attempts to cluster and group partners based on their characteristics. For example, since partners could not be labelled, there is room to at least use some of their characteristics (i.e number of clinical equipment, and financial status) to organize them in different groups and try to find relationships among them as illustrated in Figure 6.

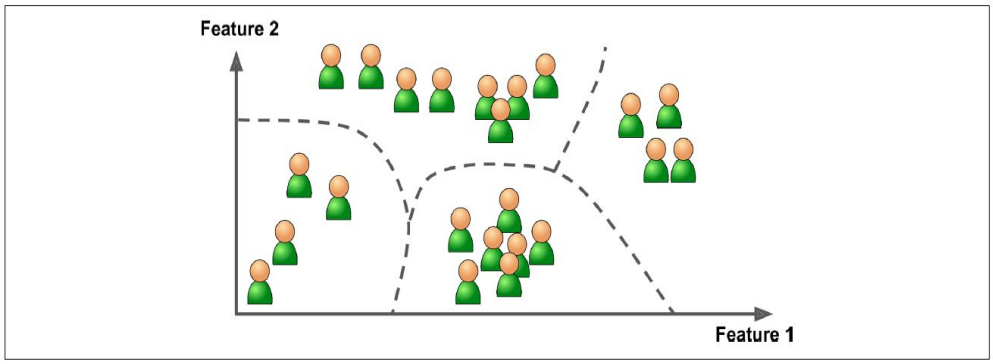


FIgure 6: Unsupervised ML - Clustering [12]

[12] Géron, A. (2017). *"Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems". Sebastopol : O'Reilly Media, 2017.*

The approaches and types of machine learning will mostly follow these two main categories ('supervised" and "unsupervised")[13]. Fortunately, there is extensive literature on artificial intelligence's role in health care and how different kinds of machine learning techniques work to different goals as elaborated on in Appendix I.

Following the examples above, there are a range of possibilities for Orbis International. This section outlined multiple approaches to AI in healthcare and assessments from the more straightforward approaches which follow supervised machine learning to more complex ones techniques.

Analysis of Existing Tools

The team reviewed seven Orbis International country offices (India, Ethiopia, Mongolia, Bangladesh, Latin America, China, and Vietnam) and HQ assessment tools. The review reveals that each office has an independent assessment tool to conduct monitoring and evaluation of its partners and projects, and there was a lack of centralized efforts. Figure 7, extracted from a 2015 Presentation[14], details each of these initiatives between 2009 and that year.

orbis

PARTNER ASSESSMENT TOOLS

Tool	Created By	Date	Notes
Assessment Form for Potential Orbis Partner	Orbis International Program Dept.	2009	• Word Document • Includes assessment of: finance, governance and basic level hospital information
Considerations for Selection of Orbis Partners	Orbis International Program Dept.	2009	• Word Document • Series of guiding questions/Framework
Partner Assessment Tool Version 1	Orbis India	2014	• Excel Document • Full assessment of all aspects of a hospital.
Partner Assessment Tools	Orbis Vietnam	2014	• Word Document • Series of tools to conduct a situational analysis & partner assessment
HReH Partner Assessment Tools	HReH Steering Committee	2015	• Word Document • Two parts • Stage 1: Finance & Governance • Stage 2: Hospital resources, training programs & clinical practices.

Figure 7: A list of different OI Partner Assessment tools, from a 2015 document

[13] There is another kind of ML called "Reinforcement Machine Learning" which is more applied for games and, therefore, it does not meet our goals with the partner assessment.
[14] Amelia Geary and Jonathan Lord (2015). Partner Assessment Tools.

The team, however, only accessed each country office adaptation, and not the original ones displayed above. The fact that there exists a multitude of tools highlights the importance of considering local characteristics when evaluating partners. The element of contextualization to partnership assessment increases the complexity of implementing a standardized tool throughout Orbis International. By analyzing each resource, one can understand the common grounds of all of them, as well as the positive and negative assessment aspects of each office assessment tool. A summary of these findings is displayed in Figure 8.

Country	Positive Aspects	Negative Aspects
India[15]	- Data is inputted in Excel; - Provides quantitative results;	- Too long: more than 470 questions; - The scoring system is not objective; - Lack of evidence
Ethiopia[16]	- Short: 23 questions; - Assess the growth on capacity;	- Mostly open-ended questions; - Formatted in a word processor
LAC[17]	- Comprehensive criteria for evaluation - Ask for evidence in all questions	- Non-objective questions - Formatted in a word processor
China and Mongolia[18]	- Very detailed clinical information, with color-coding	- The form not customized for hospitals - No financial information
Vietnam[19]	- Able to assess output	- Mainly focused on

[15] Orbis International India Team (2017). Partner Assessment Tool Template. Can be found in Microsoft Teams folder provided under Assessment Tools > India > "Partner Assessment Tool - Template.xlsx"
[16] Orbis International Ethiopia Team (2009). Partner Assessment Tool. Can be found in Microsoft Teams folder provided under Assessment Tools > Ethiopia > "Document "8200_Partner_Assessment_2009_08.doc"
[17] Document "Appendix 2_Partner Assessment Matrix [1].docx"
[18] Orbis International China Team (2019). Partner Assessment Tool Template. Can be found in Microsoft Teams folder provided under Assessment > China and Mongolia > Document "Orbis China Partner Assessment.doc "
[19] Orbis International Vietnam Team (2015). Partner Assessment Tool Template. Can be found in Microsoft Teams folder provided under Assessment > Vietnam > "2015 Partner Assessment Form.doc"

	and training results - Significant progress compared to the previous version (2012)	management, not on clinical aspects
Bangladesh[20]	- Easy to answer (Yes/No, short answers required) - Detailed criteria for each criteria	- Data is not divided based on criteria

Figure 8: Comparisons between different Partner Assessment Tools developed throughout Orbis International

The SIPA team carried out further analysis on the strengths and weaknesses of Orbis International's current partner assessment framework using two case studies: India and Ethiopia. These country offices were selected because they represent two significantly different types of assessment. As in the previous table, the SIPA Team analyzed them mainly in aspects regarding topics covered, number of questions (length), format, objectiveness (and openness to respondents' biases), scoring system, among others. This analysis can be found in Appendix III.

Findings

Drawing on the review of pertinent literature, Orbis International's existing partnership tools, expert interviews, and a field visit to Bangladesh, the SIPA team was able to deduce that the following four elements are needed for a successful partner assessment framework: Standardization, Flexibility, Classification, and Centralization.

Standardization

During their trip to Bangladesh in January 2020 (the only field trip conducted due to the coronavirus outbreak related travel restrictions), representatives from the SIPA team discovered that there are substantial differences in the types of partners and the nature of projects implemented around the world.[21] The diversity of partnerships

[20] Orbis International Bangladesh Team (2017) [Bangladesh] Partner Assesssment_list of documents_Dinajpur_QCV_Project 102900.doc

[21] In response to these objectives, the Orbis Bangladesh team orchestrated a series of meetings with a diverse sample of local offices of large NGOs such as BRAC AND

and projects across countries poses a challenge for developing a single tool. For instance, the China office works mainly with state-owned hospitals whereas NGOs and governments are the main partners in Ethiopia. Staff at different offices unanimously expressed their interest in a standardized and centralized assessment system, and are interested in receiving uniform guidelines and capacity building on the implementation of these tools. At the same time, they voiced their reservations for a digital platform, as each office has different technological infrastructure and human capacity for digitalization.

The standardization of the tool's questions answers enforces objectivity and assists in nullifying issues of bias. Most existing partner assessment tools were built using open-ended questions, which are much harder to analyze and compare. Even more quantitative-learning tools, as highlighted by the India Case Study, lacks clarity and a more detailed scoring system. The need for standardization was a dominant theme from the expert interviews and desk research.

The need to measure partners in concrete and quantifiable ways has also been repeatedly stressed to us. Currently, Orbis International mainly assesses their partners through qualitative open ended narrative questions. An improved tool should instead offer discrete, simple, and easy to understand numerical scores that can be justified with supporting evidence. Having a quantitative score is also necessary if Orbis International wishes to conduct highly advanced data analysis in the future. This finding is backed up by multiple interviews as well as the team's review of both the taxonomy and artificial intelligence literature.

The importance of standardization cannot be overstated when it comes to implementing AI and machine learning in the future. According to the SIPA Team's research and after talking with Orbis International's own data science experts, there needs to be a rigorous standard process in collecting and storing data. Without a concrete standard process to collect quantitative data, Orbis International's goal to incorporate AI and machine learning will not be possible.

SightSavers and clinical partners, such as the Dr. K Zaman BNSB Eye Hospital, Netrokona Diabetic Hospital, and a series of small vision centres.

Flexibility

Despite the need for standardization, flexibility is also crucial. The tool must reflect the country and partner contexts in which Orbis International operates. As stated before, Orbis International operates in a wide range of contexts with a diverse array of partners. Flexibility is needed for an organization like Orbis International which engages such a diverse set of stakeholders. The need for flexibility was particularly pertinent throughout the field work and expert interviews. For example, the Orbis International Bangladesh country office works with strategic partners, such as Sight Savers and BRAC, but also with many clinical partners, which range from small private clinics to large government ones. To account for all of this, the tool must be flexible enough to assess many different types of partners.

The flexibility also plays a role in preparing Orbis International to include AI and machine learning in the future. Having a flexible tool will allow Orbis International to better incorporate AI and machine learning as advanced analysis techniques propose different needs depending on the direction in which global M&E would like to study. An inflexible tool will be unable to include all of Orbis International's partners into its framework or possibly mislabel them. Advanced data analytics can only be accurately performed if the data set is correct in how it labels and categorizes its data.

Classification

During the review of Orbis International's internal partner assessments and conversations with local field staff, the need for a taxonomy to categorize each partner was often raised. Although certain country offices have their own ways of classifying and labeling partners, Orbis International has no process to label or categorize partners outside of their clinical facilities. Unless a universal standard taxonomy is created, it will be difficult to assess partners in an organized manner. Similarly, the creation of a comprehensive classification system that fits the diverse range of Orbis International's partners can help streamline data collection efforts. This in turn will help set up Orbis International in the future for AI and machine learning efforts.

Data Centralization

To provide ease of analysis to global M&E and country offices, data must be stored in a central repository. Having a central location will help enforce standardization of variable names, observation formating, collection, and digitization. These themes continually reoccured in the expert interviews and review of the literature pertaining to artificial intelligence. Having a central “data lake” is necessary when it comes to conducting advanced data analysis. Centralizing data into one main storage location will help ensure that each data point is comparable to other data points, rather than being a mixture of many different data points unrelated to each other. To accomplish this, Orbis International will need to create a storage system which can capture the data of its many partners in a uniform way. In order to do this in a sustainable way that allows for data analysis techniques in the future, Orbis International will need to increase its capacity in terms of knowledgeable staff who can create the organizational standards, train other staff to meet them, and build out a roadmap.

George-Ann Ryan, MIA ‘20 and Yina Ha, MIA EPD ‘21 (centre) with members of both the Orbis Bangladesh team and the management and staff of the Dr K Zaman BNSB Eye Hospital in Mymensingh, Bangladesh, January 2020

Partner Assessment Tool

Informed by the insights gleaned from the review of the literature, fieldwork, and interviews, the SIPA team created a partner assessment tool that fulfilled Orbis International's' need to assess a partner's readiness to engage in a project, gauge risk, and establish Orbis International's expectations of partners. Using this tool to assess the partner organization will help recognize the partner's challenges, improve the partner's effectiveness, and measure the overall impact of the project and its sustainability going forward.

Characteristics

A copy of the tool can be seen in Appendix II. It is by no means a finalized version, but rather a framework and blueprint from which to evolve. Orbis International can use the tool to guide its future AI and data collection process. The tool is an attempt to numerically score each partner based on the following categories: alignment, capacity, clinical, financial, and management. The main characteristics of the tool are described below.

Creating a Qualitative Score for Each Organization

The tool is made up of 52 questions and measures the partner's response on a numeric point system. For each question, the partner is measured on a scale from 1 to 3, with 1 being the lowest score, indicating a substandard response, and 3 being the highest, indicating an exceptional response. Due to the conditional nature of some questions, some respondents may encounter fewer questions than others. For example, question 8 in the tool asks if the partner is an NGO. If they answer yes, they can be expected to answer questions specific to the context of an NGO.

Once all the questions have been answered, the tool tabulates the total score of the responses by adding up the different points for each question.[22] The highest score a partner can get is 158, and the lowest is 49. Rarely do partners score on these extremes though, instead the average hovers around a 100 to 109 points. The actual score itself is not meant to label a partner, but rather simply summarize its ability to perform and meet Orbis International's standards. The score is a simple way to show the relative performance of each partner, and is not a comprehensive review of each organization.

Benchmarking and Corroborating

Another facet of the tool is how it sets benchmarks for each partner and asks for corroboration from the partner for each answer. Following WHO (World Health Organization) guidelines, the tool includes standards and baselines similar to that of other established international organizations. Many of the financial, clinical, and managerial sections of the tool are based on similar templates used by WHO.

Likewise, the tool asks for official documentation backing up the partner's responses. If a partner says they have certain capacities or financial capabilities, it asks that they provide a name and document corroborating their answers. This ensures the quality of the data and maintains its overall veracity.

Tool Testing

Having created the tool, the team also went about testing it in a controlled setting. Because of the coronavirus pandemic, the SIPA team was unable to test the tool in a real world setting due to scheduling complications which arose due to the coronavirus pandemic. As a result, they tested the tool internally using randomly generated data. This approach to testing is very limited, but nevertheless it can provide some insight into how the tool can measure and score Orbis International's partners.

[22] The tabulation takes into account the skip logic. For example, if the partner is not an NGO, the tool adds extra points to the final score so that the baseline is the same as that of NGO partners.

Testing Methodology

To test the tool, the SIPA team mimicked the answers of ten sample dummy organizations. To simulate the actual results Orbis International might receive, the sample included a diverse range of dummy partners which included the following types of institutions:

- small vision center
- private clinic
- small primary hospital
- secondary hospital
- large tertiary hospital

Having finalized the different types of partners, the SIPA team mimicked their possible response to the tool and then tabulated their scores.

What the Testing Data Showed

The results of the internal test showed that the average score for partners was 104.9. The highest score a partner can receive is 158 and the lowest a 49, but the majority of sample partners scored between 100 to 109, as seen in Figure 9. It is difficult to extrapolate from the limited variability in scores given that the test was conducted using random dummy data and not real world information.

Category	Avg Score	#1	#2	#3	#4	#5	#6	#7	# 8	# 9	#10
Alignment	**4.4**	6	4	4	5	5	4	3	2	6	5
Capacity	**13.2**	14	11	13	18	13	14	15	12	13	9
Clinical	**48.3**	55	49	47	45	52	41	46	50	52	46
Financial	**20.3**	17	24	20	18	19	24	22	17	23	19
Management/HR	**18.7**	23	15	20	23	20	15	14	18	18	21
Grand Total	**104.9**	**115**	**103**	**104**	**109**	**109**	**98**	**100**	**99**	**112**	**100**

Figure 9: Score Summary of Test Data

When graphed as a box and whiskers plot, as illustrated in Figure 10, few, if any, organizations scored below 100.[23] It is hard to draw much from this sample data, but using the tool shows how effective it can be in rating partners and organizing them by their numerical score. One benefit of the tool is that it can help Orbis International organize its partners into different tiers of performance and show which partners may need more support and guidance from Orbis International. For example, partners can be organized into four tiers based on the quartile of their score in order to show their relative capacity. Orbis International's M&E can also have minimum acceptable scores for each criteria as a benchmark to show when potential partner organizations have "red flags" in their criteria that may derail or make a project more difficult.

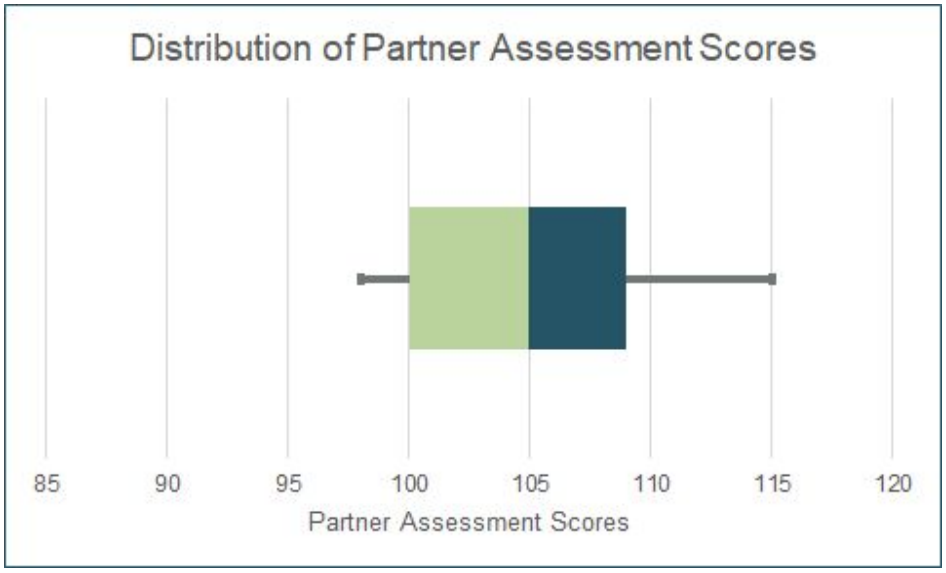


Figure 10: Distribution of Scores from Partner Assessment Tool Test

Conclusions from Test Data

Although the SIPA Team was limited in its ability to extrapolate from the testing, the test run shows that the tool can help separate the performance and capabilities of each Orbis partner. It helps categorize them into different tiers and provides Orbis a simple way to compare different partners and discover which ones may need more

[23] The box whiskers plot is the most simple and effective way to show the distribution of scores. It breaks down the scores by quartile. The middle 50% of results being within the box, and the top 25% and bottom 25% of scores being lines on the graph.

assistance. Ideally the tool will be tested in a real world environment in the near future to further validate its effectiveness. Regarding the tool, the test data is broken into quartiles to show the strengths of a partner relative to the pool of other comparable partners. However, in the future, the SIPA Team recommends that Orbis International's M&E team go through possible scores and create a rubric for the minimum standard acceptable to score partners effectively.

Conclusion and Recommendations

The SIPA' Teams research and the developed tool should be seen as the starting point of Orbis International's goal to update and standardize its partner assessments. Moving forward, the SIPA Team has the following recommendations for Orbis International:

1. **Categorize Partners Under Broad Headlines**

   Following the taxonomy of the report, Orbis International should categorize its partners in a way that is both mutually exclusive and flexible enough to change as relationships shift. Orbis International should also use the same or similar taxonomy laid out in this report for categorizing its institutional relationships. In doing so, it would allow Orbis International to best gauge their partner relationships' needs and risks through labeling them as partnerships and collaborations and assess, evaluate, and organize each partner based on the five criteria laid out in the tool: alignment, management, financial, capacity and clinical.

2. **Reduce Qualitative and Narrative Driven Assessments**

   To better assess partners in a way that is objective and conducive to advanced data analysis, Orbis International should reduce qualitative, open-ended questions in assessments. There is a benefit to transforming qualitative, long-answer responses to discrete observations. This will not only allow Orbis International to better conduct data analysis in the future, such as using AI and machine learning, but will assist Orbis International in assessing partners currently. Including more quantitative metrics will also help communicate

Orbis International's impact to donors and executive staff. As shown in the SIPA Team's research, it is difficult to use AI and machine learning unless the data is uniform and organized into discrete units. Reducing qualitative information and instead translating that into quantitative bits of data will help prepare Orbis International for advanced data analytics in the future.

> "Orbis International's vision is an admirable one and it has great potential to make it a reality with the right investments."

3. Centralize Data Collection and Align Collection Process and Efforts

One hurdle to assessments that was recurrent in the SIPA team's investigation is the decentralized layout of Orbis Interational's data infrastructure. Not only does this lead to different assessments, but differences in the quality of the data being collected and resulting conclusions from it. The data is not unified and dispersed among local country office folders— leading to a disconnect within Orbis International that hampers ease of analysis and comparison both within and outside of country contexts. To fix this, Orbis International should create a universal process to store data and collect it in a simple process. Orbis International's specialists, country offices, and M&E team must reach an agreement on how partners should be assessed. Further, the assessment should resemble how the data could be structured and be objective. More importantly, it must follow a set of rules that will determine the collection, monitoring and assessment of partners characteristics.

4. Transition to AI Requires More Capacity

Perhaps the biggest realization from the project is the extent to which the implementation of artificial intelligence and other sophisticated data analysis tools need apt preparation. Although Orbis has already begun to build that capacity, it is still far away from implementing AI and machine learning in its current state. Country offices will need help in setting up the data infrastructure and practices required to make such an investment

sustainable. Without more knowledgeable staff — or staff buy in — to integrate centralized data storage centers and train country staff, Orbis International will be unable to implement its goal of using sophisticated data analysis. Central to this is the fact that advanced data analytics requires a sophisticated data infrastructure and a unified and organized data storage system. Until Orbis International develops these requirements, implementing artificial learning and machine learning will not be possible.

Orbis International's vision to update its practices and tools for advanced data analysis is an admirable one and there is great potential to make it a reality with the right investments. The tool and research in this report is just the starting point. These recommendations and findings can help prepare Orbis International to be a leader in using modern data analytics in the world of NGOs and nonprofits.

Technical Appendices

Appendix I: Additional Considerations for Artificial Intelligence

The literature provides multiple considerations for AI that point to additional considerations that Orbis International must take into account for the future. Examples of applications for AI in clinical and other contexts from the literature include:

1. To describe the performance of hospitals in the US, based on their characteristics, demographics of the patients, and their performance on 4 popular hospital rating systems,[24]
2. To measure health care systems based on mortality rate in intensive care and the rate of potentially avoidable hospital readmissions,[25]
3. To help coordinate improved care for patients, specify the necessary follow-up for the most severe patients, and improve other hospital services that could diminish the risk of readmission for specific diseases,[26] and
4. To predict the performance-based financing in health systems through financial rewards and equipment upgrades.[27]

[24] Downing NS, Cloninger A, Venkatesh AK, Hsieh A, Drye EE, Coifman RR, Krumholz HM. Describing the performance of U.S. hospitals by applying big data analytics. Plos One. 12: e0179603. PMID 28662045 DOI: 10.1371/journal.pone.0179603

[25] Neumann, Anke & Holstein, Josiane & Gall, Jean-Roger & Lepage, Eric. (2004). Measuring performance in health care: Case-mix adjustment by boosted decision trees. Artificial intelligence in medicine. 32. 97-113. 10.1016/j.artmed.2004.06.001.

[26] Garcia-Arce, Andres & Rico, Florentino & Zayas-Castro, José. (2017). Comparison of Machine Learning Algorithms for the Prediction of Preventable Hospital Readmissions. Journal for Healthcare Quality. 40. 1. 10.1097/JHQ.0000000000000080.

[27] Grover D, Bauhoff S, Friedman J (2019) Using supervised learning to select audit targets in performance-based financing in health: An example from Zambia. PLoS ONE 14(1): e0211262. https://doi.org/10.1371/journal.pone.0211262

Examples of Artificial Intelligence Application		
01	**Describing the performance of U.S. hospitals by applying big data analytics** ***(Downing NS, Cloninger A, Venkatesh AK, Hsieh A, Drye EE, Coifman RR, Krumholz HM, 2017.)*** https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0179603	● **Type of ML:** semi-supervised machine learning algorithm and applied it to the publicly-available quality measures for 1,614 U.S. hospitals ● **Objective:** characterize hospital performance to describe hospitals with similar performance profiles and to quantify differences between hospitals ● **Evaluation method:** (1) hospital characteristics, (2) the demographics of the patients that they serve, (3) and their performance on 4 popular hospital rating systems
02	**Measuring performance in health care: case-mix adjustment by boosted decision trees** ***(Neumann, Anke & Holstein, Josiane & Gall, Jean-Roger & Lepage, Eric, 2004.)*** https://www.sciencedirect.com/science/article/pii/S0933336570400096X	● **Type of ML:** We present logistic regression, decision trees, and boosted decision trees in a unified framework (Supervised Machine Learning) ● **Objective:** To investigate boosted decision trees suitability for the case-mix adjustment (observations that have some features in common) in health care performance measurement ● **Evaluation method:** (1) Use the mortality rate in intensive care and (2) the rate of potentially avoidable hospital readmissions
03	**Comparison of Machine Learning Algorithms for the Prediction of Preventable Hospital Readmissions** ***(Garcia-Arce, Andres & Rico, Florentino & Zayas-Castro, José, 2017.)*** https://journals.lww.com/jhqonline/Fulltext/2018/05000/Comparison_of_Machine_Learning_Algorithms_for_the.3.aspx	● **Type of ML:** Logistic regression, Neural network, Support vector, Machine, Gradient-boosted model, Random forest (Supervised Machine Learning) ● **Objective:** Developed and compared predictive models using machine learning algorithms that can improve the prediction of readmission for specific diseases (patients were classified into: high risk, moderate risk, and low risk) ● **Evaluation method:** The network of hospitals includes (1) general teaching, and (2) specialty hospitals located in three adjacent counties in Florida
04	**Using supervised learning to select audit targets in performance-based financing in health: An example from Zambia** ***(Grover D, Bauhoff S, Friedman J, 2019.)*** https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0211262	● **Type of ML:** Naïve Bayes, Logistic Regression, Support Vector Machines and Random Forest (Supervised Machine Learning) ● **Objective:** Improve the prediction accuracy of PBF (Performance-based financing: form of incentive where health providers are, at least partially, funded on the basis of their performance to meet targets or undertake specific actions) ● **Evaluation method**: The pilot operated in public health centers in 10 rural districts. It comprised two core features - (1) financial rewards and (2) equipment upgrades

Appendix II : Interview Protocol

Semi-Structured Interview Guide

(Date)

OVERVIEW:

Key Informants:

Orbis International Bangladesh Country Office Staff:

Dr. Munir Ahmed

Mohammed Alauddin

Mohammad Awlad Hossain

Staff at Orbis Partners who work in Bangladesh such as BRAC, SightSavers, and Save the Children. **Individuals TBD**

Interviewers:

2 SIPA team members (Interviewer Leader; Note Taker)

Interviewer Leader: _____

Note-Taker: _____

Time estimated/Location:

Located: Orbis building, Bangladesh or Partner offices in Mymensingh / Dhaka

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INTERVIEW PURPOSE

- Assess key information/objectives for the project (“How to standardize partner assessments”)
- Identify key stakeholders (as well as main Orbis partner) and how they interact with Orbis and the project
- Distinguish the main differences and challenges (if any) for the project, considering the two main location (Orbis Bangladesh and Orbis Bangladesh) involved in the project

Mr. Awlad Hossain is our main contact inside Orbis Bangladesh. Being the project director, he is, among other tasks, responsible for conducting M&E to Orbis programs in the country. He will be crucial to answer the main questions of this project, especially with respect to how we should “standardize partner assessments”. Additionally, his insights will help to formulate and identify the key indicators to be analyzed in this project; answer who and what other stakeholders we should interact with to obtain relevant information about the project and the environment we are involved in; and understand how should we introduce and implement machine learning inside Orbis operations.

INTRODUCTION (SIPA TEAM SELF-PRESENTATION)

Hello Mr Hossain, thank you very much for being here with us today. My name is _____, and next to me is _____. Both of us are from Columbia University/New York and studying at the School of International and Public Affairs. Currently, we were selected to work with Orbis to improve the organization’s Partner assessment process. Do you consent to being interviewed for this project?

[Pause and wait for the response].

Additionally, to guarantee better recollection in analysis later on, we would like to record this interview. This recording will solely serve for our internal use and will be deleted at the end of the project in May 2020. Do we have your consent to record the interview? ?

[Pause and wait for the response].

Great! Finally, before we start the interview, please let us know at any time in case you would like to stop it. This interview and its context as a whole will be used to inform us in our project.

We may pull quotes from this interview for our presentation and/or report to Orbis International. report. Do you consent to having your remarks in this interview anonymously quoted? Or would you prefer that the interview and all quotes remain confidential - meaning you will not be identified by name or country in the report? We want to ensure that you are comfortable in answering our questions and can stop the interview at any point.

Also, do you have any questions before we begin?

[Pause and wait for the response].

Part 1. Partner Assessment and M&E performance in Orbis Program to Orbis Field Staff

(Essential part of the Interview, focused more on the project itself)

1. Tell me about the types of partners you work with?
    a. In regards to structure (e.g., Hospitals, NGOs, governments etc.), size/budget (e.g., early stage, established etc.), legal aspects (e.g., audited, formal contracts) other factors?
2. How do you define a successful partnership? Follow-Up: What specifically shows how effective a partner is? How do you measure the effectiveness of a partner?
    a. If you could make a rank, What would be the 5 more important characteristics for a successful partner (based on each type of partnership)?
3. What does a less successful partnership look like? What characteristics stand out as challenges or problematic?
    a. If you could make a rank, What would be the 5 more important characteristics for a less successful partner (based on each type of partnership)?
4. Do your Orbis office engage in partner assessments??
5. [If yes] Please describe the partner assessment you use. For example, what elements of a partnership do you assess and why? What has been working for you

in assessing your partners and the impact of partnerships?

   a. Are these assessments a good determinant of whether or not a partnership is considered successful?
   b. What challenges have you experienced in assessing potential and existing partners? And why might that be?
   c. How is the partnership assessment information used by your country office?

6. How familiar/ involved is the staff at your office with data collection on partnerships?
7. Where do assessments fit into Orbis' partnership life cycle?
8. Do you currently have any process in which we could integrate a partner assessment tool/software/process?
9. Could a new tool replace any current process that does not work accordingly and incorporate partner assessment?
10. What information does Orbis presently collect in its partner assessments?
    a. *Follow-Up:* What other indicators or partnership characteristics do you think are relevant but are not currently collected through your partnership assessment? Why are these indicators important to consider?
11. What interface have you found most useful for assessing partners? Forms, spreadsheets, a specific tool?
12. [If no] What are your reasons for not doing partner assessments? Please explain. engaging in this activity?
13. What else should the project team consider when devising a partner assessment process for Orbis International?
14. If we had a tool or software to assess partnerships, what would be the most important aspects for you? Deeper/longer or simpler/faster questions?
15. Is there anyone else we should speak with regarding partner assessment?
    a. *Follow-Up:* Could you share their contact?
16. Lastly, would you like to share anything else with us before ending this interview?

(After the last question, thanks the interviewee once more and make sure Finally, ask him if he would accept in the future to be contacted by our team, if necessary, in case we need more information for our project)

[End of the Interview]

Part 2. General Questions for Orbis Staff during non-interview/casual settings

Partnerships are an important part of Orbis International's mission and an integral tool

in following through on their theory of change. Alongside their Flying Eye Hospital, advocacy, and country programs, partnerships and collaborations play a key role in assisting Orbis in carrying out their mission. Orbis' partnerships span from engaging in trainings and capacity building with both tertiary and specialty hospitals and clinics, collaborations with like-minded NGOs such as BRAC, SightSavers, and Save The Children who may have region or mission-specific commonalities and alignments, and collaborating with governmental organizations who leverage their power to mobilize Orbis' expertise to reach public health outcomes.

(*Below are general questions to be asked to Orbis field staff to help frame our understanding of assessments and what the needs are of Orbis partners.)*

1. What do good partnerships look like? Why?
2. What do less successful partnerships look like? What are the main challenges of these partnerships?
3. What information should be collected on partnerships to assess their potential for success? Why?
4. What do you see the role of partner assessments as being for Orbis?

For Non-Orbis Staff

Semi-Structured Interview Guide

(Date)

OVERVIEW:

Key Informants:

Orbis Partners who work in Bangladesh such as BRAC, SightSavers, and Save the Children. **Individuals TBD**

Interviewers:

2 SIPA team members (Interviewer Leader; Note Taker)

Interviewer Leader: _____

Note-Taker: _____

Time estimated/Location:

Located: Orbis building, Bangladesh or Partner offices in Mymensingh / Dhaka or at Orbis Partner locations

INTRODUCTION (SIPA TEAM SELF-PRESENTATION)

Hello Mr XX, thank you very much for being here with us today. My name is _____, and next to me is _____. Both of us are from Columbia University/New York and studying at the School of International and Public Affairs. Currently, we were selected to work with Orbis to improve the organization's Partner assessment process. Do you consent to being interviewed for this project?

[Pause and wait for the response].

Additionally, to guarantee better recollection in analysis later on, we would like to record this interview. This recording will solely serve for our internal use and will be deleted at the end of the project in May 2020. Do we have your consent to record the interview? ?

[Pause and wait for the response].

Great! Finally, before we start the interview, please let us know at any time in case you would like to stop it. This interview and its context as a whole will be used to inform us in our project.

We may pull quotes from this interview for our presentation and/or report to Orbis International. report. Do you consent to having your remarks in this interview anonymously quoted? Or would you prefer that the interview and all quotes remain confidential - meaning you will not be identified by name or country in the report? We want to ensure that you are comfortable in answering our questions and can stop the interview at any point.

Also, do you have any questions before we begin?

[Pause and wait for the response].

Part 1. Partner Assessment and M&E performance

(Depending how question 3 is answered, it could serve as a follow up to understand some social/political/economic aspects in Bangladesh for the following questions)

1. How would you categorize your organization? (nonprofit, medical center, NGO, etc).
2. What are the main challenges *(refer to them if the interviewee mentioned before)* in Bangladesh's eye health sector that are related to your work? Could you describe them a little bit?
3. Please describe for us your organization's partnership with Orbis. What is your role as a partner of Orbis?
    a. [If a medical clinic/hospital] Does your partnership with Orbis directly impact patients as beneficiaries?
    b. How does your partnership with Orbis align with your organization's goals
4. Tell me about the types of partners you work with and how you define a successful partnership.
5. What are Orbis' strengths as a partner in this work?
        i. How does your partnership with Orbis compare with that of others ?
6. How can Orbis improve its role as a partner?
7. In your opinion, how can Orbis enable you to achieve or communicate better results for partners like you and your beneficiaries?
8.
    a. Do you complete a partner assessment for Orbis?
    a. **If yes**, how frequently do you complete this assessment?
    b. What does your organization like and dislike about the Orbis partner assessment? Please explain.
    c. Does it bring value to the organization? Is it an opportunity to reflect on the work with Orbis, what has worked and what has not? Do they use the information to make decisions?
    d. **If no**, does your organization complete any assessments of their partnerships?
        i. Would these kinds of assessment be of value to your organization? Please explain.
        ii. Do you think such an assessment would have been useful for you as an organization to communicate your needs as an Orbis partner?
17. What are your organization's challenges in assessing and collecting the impacts of your partnerships?

[End of the Interview]

Appendix III: Case Studies of India and Ethiopia's Partner Assessment Tools

India

Utilizing a spreadsheet for data input and storage (implemented by an Orbis India employee), Orbis International's India country office's existing partner assessment tool is certainly one of the most quantitative of the tools analyzed. First designed in 2014, its usage of a five-point scoring scale gives it a supposedly simple system of metrics with "immediate" results in terms of evaluating the quality of a partner. Each question is weighted. This makes the assessment straight-forward and allows the resulting score to take into account the relative importance of some elements in undergoing certain projects.

The tool is very comprehensive, covering ten main areas of interest in more than 470 questions: basic information, governance, human resources, service delivery, infrastructure, data management, financials, academics, research, and advocacy. While the tool is quantitative in nature, completion depends on the user's opinion and does not consider objective aspects (such as detailing, for instance, the "organizational structure" instead of only offering a subjective 1-to-5 score). Some questions are unclear or limited, lacking a more precise phrasing that may result in less biased answers.

The Governance section, for instance — as illustrated in Figure I below — serves as a good example of these previous two drawbacks (i.e., lack of clarity and objectiveness). First, a few of its questions are one- or two-word phrases (e.g., Leadership," "Reporting lines"). Second, the response categories range from "poor" to "excellent" without definitions or details to distinguish across different opinions on, for example, what is an "excellent" "leadership." The staff completing the partnership assessment is not called upon to provide evidence to substantiate the rating provided. In the end, the tool provides a quantitative assessment with limited background on how to draw conclusions.

Governance and Leadership					Scoring				
S. No.	Item	Score	Weight	Weighted Score	1	2	3	4	5
1	Formal organizational structure exists		7,0	0	poor	fair	average	good	excellent
2	Management: clarity of roles and responsibilities		10,0	0	poor	fair	average	good	excellent
3	Board/Trustees: clarity of roles and responsibilities, level of involvement		7,0	0	poor	fair	average	good	excellent
4	Reporting lines		7,0	0	poor	fair	average	good	excellent
5	Leadership		10,0	0	poor	fair	average	good	excellent
6	Succession plan		5,0	0	poor	fair	average	good	excellent
7	Strategic Plan		10,0	0	poor	fair	average	good	excellent
8	Defined mission, vision, values		7,0	0	poor	fair	average	good	excellent
9	Decision-making process: authority levels, transparency, special resolutions, etc.		10,0	0	poor	fair	average	good	excellent
10	Human resource management: department exists, policies, processes		11,0	0	poor	fair	average	good	excellent
11	Workplace policies: clear and communicated (redressal mechanism)		11,0	0	poor	fair	average	good	excellent
12	Risk management policy		5,0	0	poor	fair	average	good	excellent
	TOTAL	OK	100	0					
				0%					
	Maximum Score			500					

Figure I: India's Partner Assessment Tool, "Governance" area: straightforward system but unclear questions and unobjective scoring

Ethiopia

As seen in Figure II, Ethiopia's partner assessment tool is made up of a series of open-ended questions (even for standard "yes" or "no" questions) and without an automated "skip logic" process -- that would eliminate unnecessary questions by "skipping" them, saving time from the user and . Similar to India's tool, in most cases the staff completing the tool is not required to provide evidence, which limits the answers' credibility. Built in 2009 via a word processor, the questionnaire is short and could possibly be answered in a couple of hours or less.

13. **Community Relations and External Collaborations**

13.1 Does your organization provide outreach eye care services to poor populations?

13.2 Does your organization currently collaborate with the government?
If yes, provide details including who, why, what, brief results, and current status. (Maximum 150 words) ***If your institution is a government agency, please skip this question.***

13.3 Does your organization work with local or international non-governmental agencies?
If yes, provide details: who, why, what, brief results, and current status. (Maximum 150 words)

Figure II: Ethiopia's Partner Assessment Tool: a Word document with open-ended questions and no skip-logic

Also, it includes questions on the recent growth of the potential partner, beyond a single year. Similar tools generate valuable qualitative data, but left uncoded they

are not conducive to the implementation of machine learning in the monitoring and evaluation space.

Appendix IV: Partner Assessment Tool

On the next page, there is the detailed table outlining the partner assessment tools' questions organized by criteria, discrete responses and theirs scores, considerations for skip logic, and sources for corroboration. For a look at how the tool may look once inputted into a digital interface, please see the google form linked here.

Partner Name

Partner Type

Date of Evaluation

Total Score

* Note this color denotes a question which utilises SKIP logic -- meaning that if the answer to the question predetermine whether or not the following question will be asked.

					Responses		
Question #		SKIP		Source of Information for Due Diligence	1: Low	2: Med	3: High
1	Alignment		Does the organisation adhere to a set of internal values that guide how it operates and carries out its work? And are these values in alignment with Oris International?	- Vision and values document - Management interviews	No	There is a set of internal rules that seem to guide the organization. However, despite overlap, it is only minorly related to Orbis's values and mission	There are clear internal values which guide the organization and its work. These values are closely aligned with those of Orbis International.
2	Alignment		Does the partner aligned with the Orbis`s values, missions and goals?				
3	Management/HR		Have other partners led, or proactively and directly engaged with this specific partner? (Yes (3) or No (1) answer)	- Partner list - HR and - Personnel Records	No	N/A	Yes
4	Management/HR		Is there evidence that the partners activities outputs contributed to the achievement of its programme outcomes? (Yes (3) or No (1) answer)	- theory of change - results framework - evaluation reports	No	N/A	Yes
5	Management/HR		Is the partner's staffing structure and the capacity of its staff appropriate for the scale and nature of its operations and is there a plan for scaling up with operations	- Staffing plan - Site visits - Interviews - Staff assessment/appraisals	There is a mismatch between staff, capacity, and operations	The staffing structure and capacity meets operations but would need some work regarding scaling upward or downward if needed	The staffing structure and capacity meets operations and there is a clear plan in place for meeting growth/fluctuations as operations needs changes;
6	Management/HR		Does the partner have the capacity to provide suitable staff, with adequate time, to manage the partnership relationship with Orbis (as a minimum, a named first point of contact)?	- Site visits	There is currently no staff capacity to manage the partnership with orbis	There is a named first point of contact but more capacity building might be needed	he partner have the capacity to provide suitable staff, with adequate time, to manage the partnership relationship with Orbis
7	Management/HR		What is the attrition rate among staff (clinical/managerial)?	- Change in # of physicians and managerial staff - employee logs	There is high staff turnover with over 1/5th of trained professionals leaving	There is high, but decreasing staff turnover with efforts to attain and keep skilled staff	Staff members, particularly trained physicians and managerial staff, often stay in place for multi-year terms, even after undergoing training.
7	Management/HR		Is your organization an NGO?	Corporate filings	No		Yes
8	Management/HR	For NGOs only: Do the partners hold and maintain confidential personnel records? (Yes (3) or No (1) answer)		- Personnel records			
9	Management/HR		Are there HR policies/guidelines that govern processes, leaves, benefits etc.	- HR policy	No	There are HR policies but do not cover all processes (recruitment, management, etc.)	Yes - there are comprehensive HR policies
10	Management/HR		Does the partner have a established procurement policy/guidelines to procure equipment and services?	- procurement plan - annual report	No	No but there are plans for such policies to be established	Yes - there are procurement policies
11	Financial		Does the organization prepare periodic budgets (e.g., annual, bi-annual)?	- Budget documents for the past few periods (check that budgets are prepared as per the frequency stated in Financial Control Framework)	No	In some degree the organization prepares budget reports. However, these documents do not follow a constant and periodic timeline, which may leave some gaps regarding the organization financial condition	The organization does prepare periodic budgets that highlights the current financial situation within the organization.
12	Financial		What are the primary funding sources from which the partner derives support?	- Financial Control Framework documentation. - Financial Statements - Audits	The organization relies only on other partners and, therefore, can sustain itself to promote its activities. Also, its partners-relationship is somewhat unstable in which it does not ensure a healthy and foreseeable future for its financial condition	The organization relies only on other partners and, it may have some financial independence. Also, these partners-relationship can ensure a stable financial condition to promote projects and sustain the organization needs in a short/medium-term	The organization relies on other partners, but also it does have a robust financial independence. Also, together with these partners-relationship and it's on reserves, the organization can ensure a stable financial condition to promote projects and sustain its needs in a long-term period
13	Financial		Is the organization's budget aligned and reasonably supported with valid estimates according to the partner`s activities?	- Financial Control Framework documentation - Cost of previous and current activities	No financial information about current and/or previous activities	The project's budget is at the activity level with funding sources, when possible. Costs are supported with valid estimates based on prevailing rates.	The project's budget is at the activity level with funding sources, and is specified for the duration of the project period in a multi-year budget. Costs are supported with valid estimates using benchmarks from similar projects or activities. Cost implications from inflation and foreign exchange exposure have been estimated and incorporated in the budget.
14	Financial		Does the partner have sufficient funds to meet its current obligations?	- Financial Control Framework documentation - Budget documents for the past few periods	No, the organization does not have sufficient funds to meet current obligations and lacks long-term funding plans	The organization may have some funds to meet its current obligations, although there could be some gaps of these financial responsibilities. Also, the organization does have some long-term funding plans	Yes, the organization has both sufficient funds for current activities as well as long-term funding plans for its upcoming responsibilities
15	Financial		Does the partner have long-term funding plans with adequate reserves in place?	- Financial Control Framework documentation - Budget documents for the past few periods. - Interviews	No, the organization does not have long-term funding plans	The organization may have some perspectives to its long-term funding plans	Yes, the organization has long-term funding plans for its upcoming responsibilities

16	Financial		Does the organization have financial policies in place to ensure effective governance, management, and accountability?	- Financial Control Framework documentation	No official (and well designed) structure for its financial framework	The organization keeps accounting records, including invoices, vouchers etc. for at least the period stated in local law and donor contracts	The organization have regular independent audits;
17	Financial		Does the organization have up to date financial policies and controls that actively guide day to day operations, which are completed on a regular basis and help to prevent frauds?	- Financial Policies and Procedures documentation	The organization's internal controls are designed and operational in a way that will detect and prevent financial irregularities	Accounting records are made, and kept on a regular basis; entries into the financial system are made on a regular basis, and cut off dates are observed. However, there some evident gaps on producers which may require the need to review and update certain policies and/or guidelines	Accounting records are complete, accurate and kept on a regular basis; entries into the financial system are made on a regular basis, and cut off dates are observed
18	Financial		Does the organization use a standard computerized accounting package (or a manual/spreadsheet-based accounting system) that meets the needs of the organization?	- Review of accounting system - Site visits - Interviews	No, or a very small use to certain computerized accounting package with limited store of data about the organization's activities and other needs	Some of the organization's staff does use and have access to computerized accounting package to compile and collect information. However, not all members have access to this technology which may be relevant to their responsibilities within the organization	The accounting system accurately record all financial transactions (with all necessary fields complete), and all financial transactions are supported by invoices and other documentation
19	Financial		Are financial transactions approved by an authorized individual(s) and do such transactions follow rules, regulations and the organization's policies?	- Organogram for financial control hierarchy - Financial Control Framework documentation	No	It may happen in some specific cases in which the responsibility relies on an authorized individual. However, most of the transactions are approved through a consensus within the board members of the organization.	Yes, there are often cases where authorized individuals can approved financial transactions
20	Financial		Does the organisation have an adequate system of maintaining petty cash safely?	- Evidence of regular reconciliation and receipts	No	There is a system with a semblance of order but it can be improved	There is a system with clear documentation and responsibility
21	Capacity		What is the perception of the partner in the communities where it works?	word of mouth, media coverage, reputation amongst peer organization, propensity for alliances	The partner has either a negative reputation or no community awareness to its work	The populace has awareness of the partner but perceptions remain neutral.	The partner has a clear brand recognition, a good reputation, and many allies who can credentialize it work.
22	Capacity		Is information technology (IT) utilized to ensure the organization runs smoothly with little information asymmetry?	Orbis' description	No	Core workers have access to a computer running up-to-date operating systems with the appropriate software for office and some project functions	Beyond basic office and project functions, the organization has implemented advanced information technology solutions that manage donor relationships, customer/patient records, and all other data safely and securely.
23	Capacity		Is there a dedicated IT team?	Orbis' description	Absent	A team is is present and can support the organization adequately for basic tasks	Excellent - The organization has a dedicated information technology team who can support it in basic and advanced physical, software, and network interactions
24	Capacity		Is there a reliable internet connection?		No		Yes
25	Capacity	If yes, is there evidence that network connections are utilised to augment efficiency?		- Observance, interaction with partnership staff	The partner does not utilize internet connection for regular programming.	The partner utilizes internet for cursory research and browsing as well as email correspondence.	The partner utilizes internet for cursory research and browsing as well as email correspondence. The internet is also used for file sharing and organization, database management, and conference calling.
26	Capacity		Does the organization have access to basic utilities such as electricity, water, and waste management facilities?	- Observance, interaction with partnership staff	No	N/A	Yes
27	Capacity		Does the partner have comprehensive and costed Monitoring, Evaluation and Learning plan and frameworks to collect data and monitor its activities?	- MEL plans and framework	The partner has no regular monitoring and evaluation activities.	The partner has explicit plans for evaluation and include lesson learning during its daily activities. However, it is not uniformly applied and lacks strategy	The partner has a strategic plan to use national systems (i.e., procurement, monitoring, evaluations, etc.,) for utilizing monitoring and evaluation for gathering knowledge – particularly lessons learned (i.e., what has worked and what has not) – and uses this knowledge to inform management decisions and improve performance of its activities.
28	Clinical		Is the partner a clinical provider? Yes/No				
29	Clinical		Is practice of eye care service governed by a standard clinical and functional assessment protocol?	- Guiding Protocol documentation - Patient assessment forms	No	-	Yes
30	Clinical		Does the partner have clinical audit system in place?	- Internal clinical audit report	No clinical audit system in place.	Yes, a system is in place but the audit is not completed on a regular basis.	Yes, and the partner routinely conducts a clinical audit.
31	Clinical		Does the partner have relevant policies in place for minimizing risk?	- Policy documents	No	N/A	Yes
32	Clinical		Is there a Health Information and Management System (HIMS)?	Orbis' description	No	N/A	Yes
33	Clinical	Is the HIMS in use across all facilities operated by the partner?			No	N/A	Yes
34	Clinical	Is the HIMS subjected to routine evaluation?			A system is in place but is not routinely evaluated.	A system is in place and under improvement to match health standards, subject to routine evaluation.	System is in place and operating at current national / international standards, verified through routine evaluation.
35	Clinical		Is there an Electronic Medical Record (EMR)?	Orbis' description	None	Average	Excellent

36	Clinical		Is available equipment functional and in sufficient numbers to meet population need? (at the facility in case of eye care establishments; at facilities managed by the organisation for NTDs, education etc) For eye care establishments is equipment in compliance with the Vision 2020 standard list?	- Inspection of equipment - Equipment maintenance records	No	N/A	Yes
37	Clinical		How many Outreach Sites (Vision Centers, Community Screenings, School Screening, Mobile Clinics, Surgical Camps) are offered by the partner?	List of Activities	Only 1	3	5 or more
38	Clinical		Number of surgical patients referred from outreach center (compared with previous year)	- # Surgical patients (Current vs. Previous year)	Low (#)	Medium (#-#)	High (>#)
39	Clinical		Number of Outpatient treated (Adults)	Impact report	< 30,000	30,000 - 100,000	> 100,000
40	Clinical		Number of Outpatient treated - Pediatric (0-16 yrs.)	Impact report	< 6,000	6,000 - 30,000	> 30,000
41	Clinical		Does the partner have a defined cataract coverage area?	Self-report	No	-	Yes
42	Clinical		What is the number of cataract surgeries performed by the partner over the past year?	Self-report	Poor	Average	Excellent
43	Clinical		Cataract Surgery - Visual Outcomes (% good outcome @ 4-6 wks or later; >6/18 BCVA; adult cataract surgery)	Impact report	< 50%	50% - 90%	> 90%
44	Clinical		Cataract Surgery - Follow-up rate (follow-up @ 6 weeks; adult cataract surgery)	Impact report	< 50%	50% - 90%	> 90%
45	Clinical		Is the quality of cataract surgery services monitored?	Quality assurance framework	No	Average	Yes
46	Clinical		What is the complication rate for cataract surgeries administered by the partner?	Self-report	Poor	Average	Excellent
47	Clinical	Are wait times for cataract surgeries tracked?		- Time	No		Yes
48	Clinical		What is the average wait time for care?	Monthly tracking	Long (more than 110 days)	Medium (between 80 and 110 days)	Short (less than 80 days)
49	Clinical		Do wait times widely differ between paid and unpaid/discounted patients?	Monthly tracking	Yes, more than 10-day difference	Yes, 5-10 days	No difference in wait time
50	Clinical		Does the partner implement a satisfaction survey to patients?	- Satisfaction survey	The partner does not administer a satisfaction survey.	The partner has a satisfaction survey subject to at least one of the following conditions: A. irregular implementation B. limited data collection	Yes, the partner routinely administer a satisfaction survey to patients and collects data centrally.
51	Clinical		Is there an infrastructure in place to cater to paid and free patients so that the poor are not excluded from care?		No	-	Yes