

Gaps Assessment within the Seeing is Believing (SiB) Intervention Health Facilities in Nigeria



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Abstract

The baseline study for Comprehensive Child Eye Health in Nigeria (CCEHiN), was conducted to investigate and establish the benchmark that will be used in measuring the impact of the project in addressing the avoidable, preventable and treatable causes of childhood blindness and visual impairment in the target population in need of child eye services in Nigeria. The project and the baseline study was conducted across 11 states in four clusters across Nigeria.

A quantitative survey methodology was used for the study, and a purposive sampling technique method was adopted. All 276 health facilities participating in the project were sampled for the baseline study, comprised of 248 Primary Health Care (PHCs), 24 Secondary and 4 Tertiary facilities. Two (2) standardized questionnaires were used for data collection from the facilities. Graphs and descriptive statistics were used to analyse and visualize the data and test the relationship between relevant variables.

The findings present a weak eye health services system across the implementing regions with an inadequate number of eye health professionals relative to the population. Furthermore, there is a paucity of eye health service data, particularly in the PHCs, which is occasioned by non-availability of data collection tools for eye health services and weak referral networks among facilities. Promising opportunities identified within the system include the robust community outreach systems being run by most of the secondary and tertiary health facilities studied. Various levels of government carry out an oversight function for the health facilities, with the highest number of supervisions carried out by the LGA Teams; these are closest in proximity to the facilities.

The study recommends that a follow-up assessment is carried out to include the assessment of institutional frameworks such as health financing, governance, operations, policies and capacities of the relevant Ministries Departments and Agencies (MDAs) responsible for providing oversight to the delivery of eye health services in supported states. This would allow the capacity of relevant stakeholders to sustain and consolidate changes made through the project to be strengthened. In addition, establishment of coordination systems amongst the various levels of health facilities is necessary to improve the referral system, bridge human resource gaps and improve the quality of services.

KEYWORDS: Record Keeping, Service Data, Supervision, Diagnosis, Management.

Introduction

Nigeria is the most populous country on the African continent, and is the 7th most populated country in the world, with an estimated population of 186 million. 42.8% (79.5 million) are within the age bracket of 0-14years.¹ The country has the largest proportion of out-of-school children (age 6 and above), at 29.6% nationally.²

About the Seeing is Believing (SiB) Comprehensive Child Eye Health in Nigeria Project

Seeing is Believing is a collaboration between Standard Chartered and the International Agency for the Prevention of Blindness (IAPB) to tackle avoidable blindness and visual impairment Asia, Africa, the Middle East and Latin America. The flagship Seeing is Believing (SiB) programme in Nigeria aims to reduce avoidable blindness and visual impairment through the provision of comprehensive child health services to about 1.5 million children aged 0-14 years in selected States of Nigeria. The specific objectives of the project are to:

1. Develop skilled and adequate manpower to provide comprehensive child eye health services at various levels of health care in the targeted project areas.
2. Improve the quality, accessibility and scope of eye health services to children.
3. Embed child eye health in the policies and programme work of the Ministries of Health and Education.
4. Pilot strategies for inclusive eye health.
5. Establish the school eye health programme as a sustainable model to deliver eye health services to children.
6. Improve the quality of early intervention and education of blind children and children with severe visual impairment

¹ Index Mundi. (2017). Nigeria Demographics Profile 2017. https://www.indexmundi.com/nigeria/demographics_profile.html (Accessed 10/12/2017).

² Federal Ministry of Education (2015). Education for All 2015 national review report: Nigeria.

Literature review

The Nigerian national survey of blindness and visual impairment documented blindness prevalence of 0.6% in children aged 10-15, although the sample was not representative. Females had a higher prevalence of blindness (0.89% than males (0.33%). Blindness prevalence among illiterate children in the survey was 1.53%, suggesting the lack of education for blind children in Nigeria. A recent study in Cross River State documented childhood blindness and severe visual impairment prevalence of 0.09-0.22 per 1000 children³ while another study in Sokoto state documented prevalence of blindness of 0.02%.⁴

While data on the prevalence of childhood blindness in Nigeria is sparse, a number of studies have documented the common causes of childhood blindness in some parts of the country. In the northwest region, a study documented that 58.6% of the blind children were blind due to avoidable causes; 38.4% were preventable and 19.2% treatable.⁵ Another study in Cross River State identified the causes of childhood blindness by three most common anatomic areas as lens related (35%), whole globe (19.4%), and cornea (15.7%), which are mostly avoidable.⁶

In all the studies, the leading causes of blindness in children were cataracts, cornea scaring resulting from trachoma, measles, Vitamin A deficiency, eye injuries, neonatal infections and harmful traditional practices. Other most common causes of blindness found among the children studied included congenital and developmental glaucoma, retinopathy of prematurity, hereditary factors, and refractive errors. Many of these causes are preventable and treatable.

³ Duke, R. et al (2013). Using key informants to estimate prevalence of severe visual impairment and blindness in children in Cross River State, Nigeria. *Journal of the American Association for Pediatric Ophthalmology and Strabismus*, 17(4):381-4.

⁴ Nasiru Muhammad, Nuhu M. Maishanu, Aliyu M. Jabo, Mansur M. Rabi (2010). Tracing Children with Blindness and Visual Impairment Using the Key Informant Survey in a District of North-Western Nigeria in children aged 0-15, *Middle East African Journal of Ophthalmology*, Volume 17, Number 4, October - December 2010.

⁵ Olatunji FO, Kirupanathan S, Ayanniyi AA, Abuh S. Causes of childhood blindness at ECWA Eye Hospital, Kano, Nigeria. *Afr J Med Med Sci*. 2009;38:29-32

⁶ Duke RE, Lewallen S, Courtright P. Estimated Prevalence of Monocular Blindness and Monocular Severe Visual Impairment in Children of Cross Rivers State, Nigeria. *Niger J Ophthalmol* [serial online] 2014 [cited 2017 Dec 12];22:66-8. Available from: <http://www.nigerianjournalofophthalmology.com/text.asp?2014/22/2/66/154610>.

The study done in Sokoto State (northwest region) found corneal opacity/phthisis bulbi (75%), and cataracts (15%) were major causes of childhood blindness. The cause of irreversible blindness in children was also noted to be largely preventable (80%) as it was due to childhood-related illnesses, such as vitamin A deficiency and measles.⁷

Methodology

Research Design

The research method used was a descriptive survey of health care facilities to allow for investigation of some of the factors (staffing, health records, services, disability inclusiveness and child protection policy implementation in the facilities) that could influence the provision of comprehensive child eye health services in Nigeria.

Sample and Sampling Technique: A purposive sampling method was used to sample all 276 health facilities to be supported by the project. The 276 health facilities comprised of 248 PHCs, 24 Secondary facilities and 4 Tertiary facilities. The sampling technique employed allowed a focus on the characteristics of the population of health facilities of interest to the project.

Study Location: The SiB programme is being implemented in eleven (11) states of the federation divided into four clusters as follows: Cluster 1: Oyo, Ogun and Osun States, Cluster 2: the Federal Capital Territory, Nasarawa and Plateau States, Cluster 3: Kano, Katsina and Jigawa States, and Cluster 4: Cross River and Akwa Ibom States. The study was conducted in all the clusters, though the facilities are not evenly distributed across the clusters. Cluster 1 has 86 facilities surveyed, Cluster 2 has 40, Cluster 3 has 101 while Cluster 4 has 49. In each cluster, six Secondary facilities and one Tertiary facility participated.

Data Collection Instrument: In each facility, a standardized facility assessment tools was administered in paper format by SiB staff supported by government

⁷ Nasiru Muhammad, Nuhu M. Maishanu, Aliyu M. Jabo, Mansur M. Rabiu (2010). Tracing Children with Blindness and Visual Impairment Using the Key Informant Survey in a District of North-Western Nigeria in children aged 0-15 , Middle East African Journal of Ophthalmology, Volume 17, Number 4, October - December 2010.

officials, to collect data from respondents selected from the management cadre in each of the facilities; they were supported by other relevant staff. Two different assessment tools were administered based on the level of the facility: one for the Primary Health Care (PHC) facilities; and the other for the Secondary and Tertiary Health Care facilities. The tools were tailored to obtain data on the kind of services and operational structure applicable to the level of the health facility. The two instruments were validated with reliability coefficients of 0.68 and 0.83 respectively, which shows that the data generated was adequately reliable for the study.

Data Analysis: Epi-Data software was used to enter the data, while SPSS version 22 was used to analyze the data based on the overall objective. The analysis was conducted on the different sections of the assessment tool and at cluster and facility level based on need and relevance. Relevant graphs and tables were generated for the data analysis.

Ethical Considerations

Ethical approval for the survey was obtained from the various State Ministries of Health and the National Eye Centre in Kaduna, which provides oversight and leadership in eye health human resource development in Nigeria.

Results

Facility Profile: The majority of primary health care facilities (46, 58.2%) in cluster 1 are located in urban areas, while the remaining proportion (33, 41.8%) are located in rural areas. The picture is a bit different in cluster 2 (48.4% are rural while 51.6% are urban) and cluster 4 (47.4% are rural while 52.6% are urban), where facilities are more evenly distributed between urban and rural areas. In cluster 3, the majority of the PHC facilities (68, 70.8%) are in rural areas, while the remaining proportion (28, 29.2%) are located in urban settlements. Most Secondary & Tertiary health facilities are however located in urban area in all clusters except for cluster 1, which has a sizeable proportion (42.9%) in rural areas. This information has implications for referral networks programming, the

establishment of linkages amongst these facilities, and the development of clear mechanisms for tracking and ensuring referral completion.

The majority of the facilities (97%) in all the clusters are owned by the public sector (Government of Nigeria- Federal, State and LGA levels). 17% of the Secondary and Tertiary Health Facilities are owned by religious organizations (mission), with the largest proportion of these found in cluster 1. Cluster 4 is the only cluster where all participating facilities from Primary to Tertiary are government-owned. Missionary health facilities usually bridge the gap for continuous provision of eye health services (especially emergency eye conditions) in the event of industrial action by health workers in government-owned health facilities.

Staff Profiling

A complete team of paediatric eye care specialists (paediatric-oriented optometrists, paediatric ophthalmologists, ophthalmic nurses, and paediatric low vision practitioners etc.) are available within each of the clusters, though a complete team may not be available in each individual Secondary and Tertiary health facility (HF). Cluster 1 has the highest number (67) of doctors assigned to or employed in PHCs while cluster 3 has the highest number (88) of Community Health Extension Workers (CHEWs) in PHCs. Ophthalmic nurses in the PHCs are relatively scarce with the highest (7) found in cluster 3 serving 94 PHCs.

Table 1: PROPORTION OF STAFFING IN PHC.

Staff	Assigned/Employed								Part Time							
	Cluster 1		Cluster 2		Cluster 3		Cluster 4		Cluster 1		Cluster 2		Cluster 3		Cluster 4	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Doctors	67	86.5	6	18.2	21	21.4	10	25.0	2	2.5	4	14.8	31	34.5	3	7.5
Registered Nurse	23	26.6	14	42.4	31	31.6	7	17.5	2	2.5	3	12.0	10	11.3	1	2.5
Registered Midwife	14	17.7	14	42.4	36	36.7	3	7.5	3	3.8	9	34.6	26	31.0	1	2.5

Registered Nurse/ Midwife	60	76.0	29	87.9	48	48.9	25	62.5	3	3.8	3	44.5	6	55.6	2	40.0
CHEW	72	89.9	33	100.0	88	89.8	37	92.5	14	17.7	23	69.7	28	28.6	1	2.5
CHO	33	41.8	17	51.5	38	38.8	22	55.0	2	2.6	5	15.1	7	7.2	--	--
Ophthalmic Nurses	2	2.6	5	15.1	7	7.2	--	--	1	1.3	10	30.3	9	9.2	--	--
Equipment Technician	3	3.8	1	3.0	7	7.2	--	--	1	1.3	9	27.2	11	11.2	1	2.5

*f= Frequency of occurrence

Table 2: Proportion of Staffing In Secondary and Tertiary Health Facilities

Staff	Assigned/Employed								Part Time							
	Cluster 1		Cluster 2		Cluster 3		Cluster 4		Cluster 1		Cluster 2		Cluster 3		Cluster 4	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Doctors	4	57.2	4	80.0	2	50.0	5	100.0	1	14.3	1	20.0	1	25.0	--	--
Registered Nurse	4	57.2	4	80.0	4	100.0	4	80.0	-	--	--	--	--	--	--	--
Registered Midwife	2	28.6	2	40.0	2	50.0	1	20.0	-	--	--	--	--	--	--	--
Registered Nurse/ Midwife	3	42.9	3	60.0	2	50.0	3	60.0	-	--	--	--	--	--	--	--
Paediatric Ophthalmologist	2	28.6	1	20.0	2	50.0	1	20.0	1	14.3	--	--	1	25.0	--	--
Paediatric Oriented Ophthalmologist	2	28.6	2	40.0	2	50.0	1	20.0	1	14.3	--	--	1	2.5	--	--
Ophthalmic Nurses	4	57.2	5	100.0	4	100.0	2	40.0	-	--	--	--	--	--	--	--
Paediatric Optometrist	2	28.6	1	20.0	1	25.0	-	--	-	--	--	--	--	--	--	--
Paediatric Oriented Optometrists	2	28.6	2	40.0	2	50.0	1	20.0	-	--	--	--	--	--	--	--
Paediatric Oriented Low Vision Practitioners	2	28.6	1	20.0	3	75.0	1	20.0	-	--	--	--	--	--	--	--

Optician	2	28.6	2	40.0	1	25.0	1	20.0	-	--	--	--	--	--	--	--
Equipment Technician	4	57.1	1	20.0	1	25.0	1	20.0	1	14.3	--	--	--	--	--	--

- F = Frequency of occurrence

Service Data

From the results of the service data collected over a one-year period (May 2016-June 2017) in figure 1 and 2, cluster 3 has the highest number overall (69,706. 49.6%) and the highest number of paediatric (13,151. 58.1%) eye health conditions screened and managed within the period under review in both PHCs and Secondary and Tertiary HFs. Cluster 1 has the 2nd highest service data for both paediatric and overall total. This service data reflects the population profile of the different clusters, with cluster 3 having the highest population followed by cluster 1. Cluster 4 has the highest number of refractive errors diagnosed and managed, and of minor and major surgeries conducted in the secondary and tertiary HFs (figure 3 and 4). This result is attributed to a coordinated community eye health service programme funded by the state and development partners in one of the states within the cluster. Cluster 2 has the lowest service data output, except in retinoblastoma diagnosis and management in secondary and tertiary HFs, and in cataract diagnoses in PHCs; in both cases, the data reported is slightly higher than that of cluster 4. (See Figure 1)

Figure 1

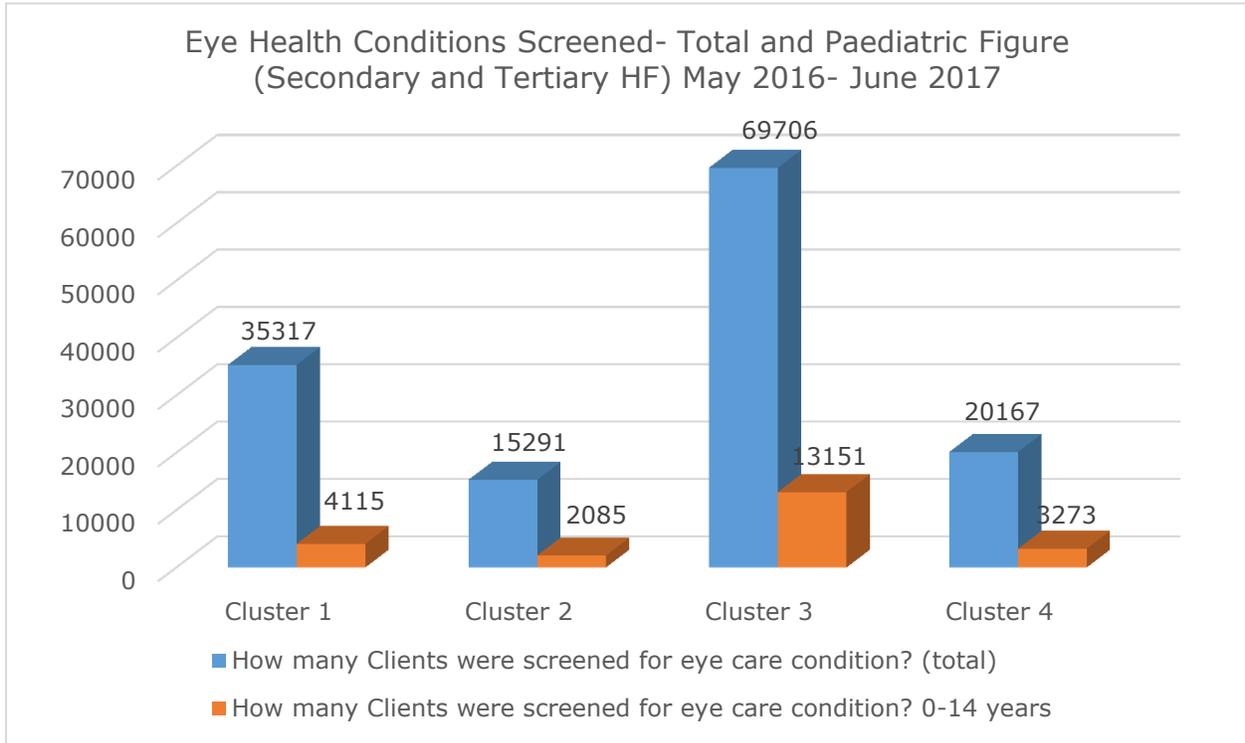


Figure 2

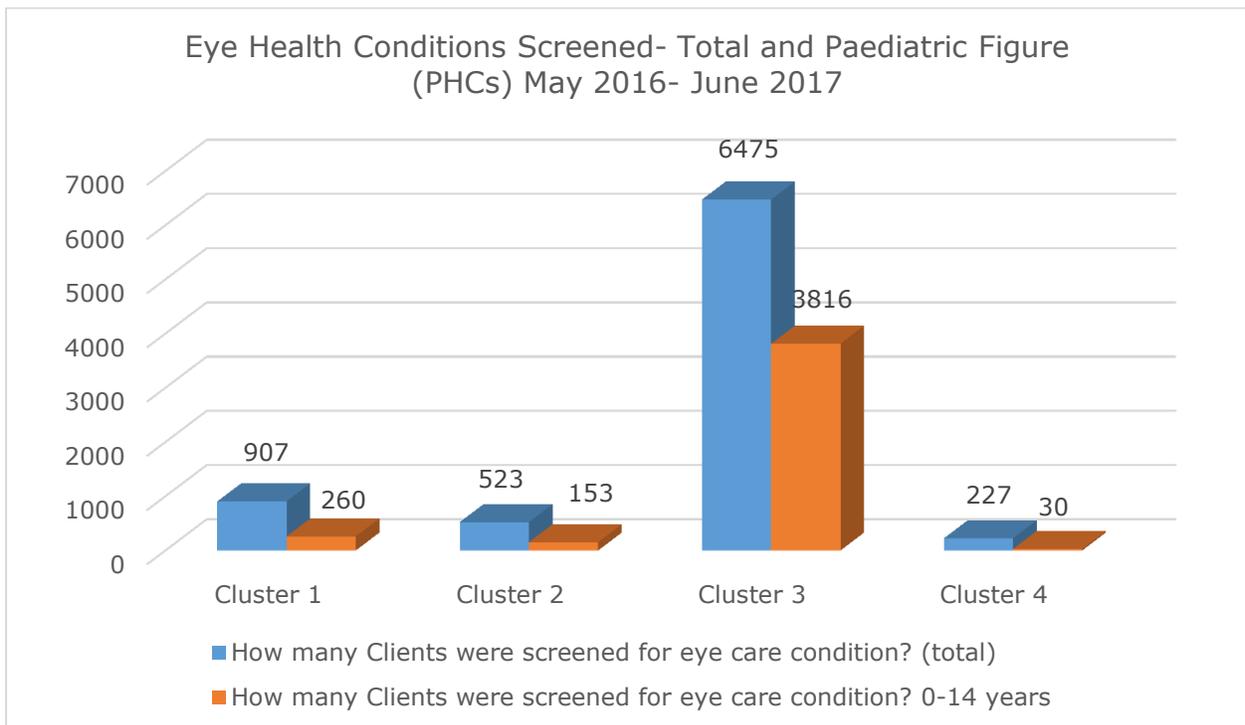


Figure 3

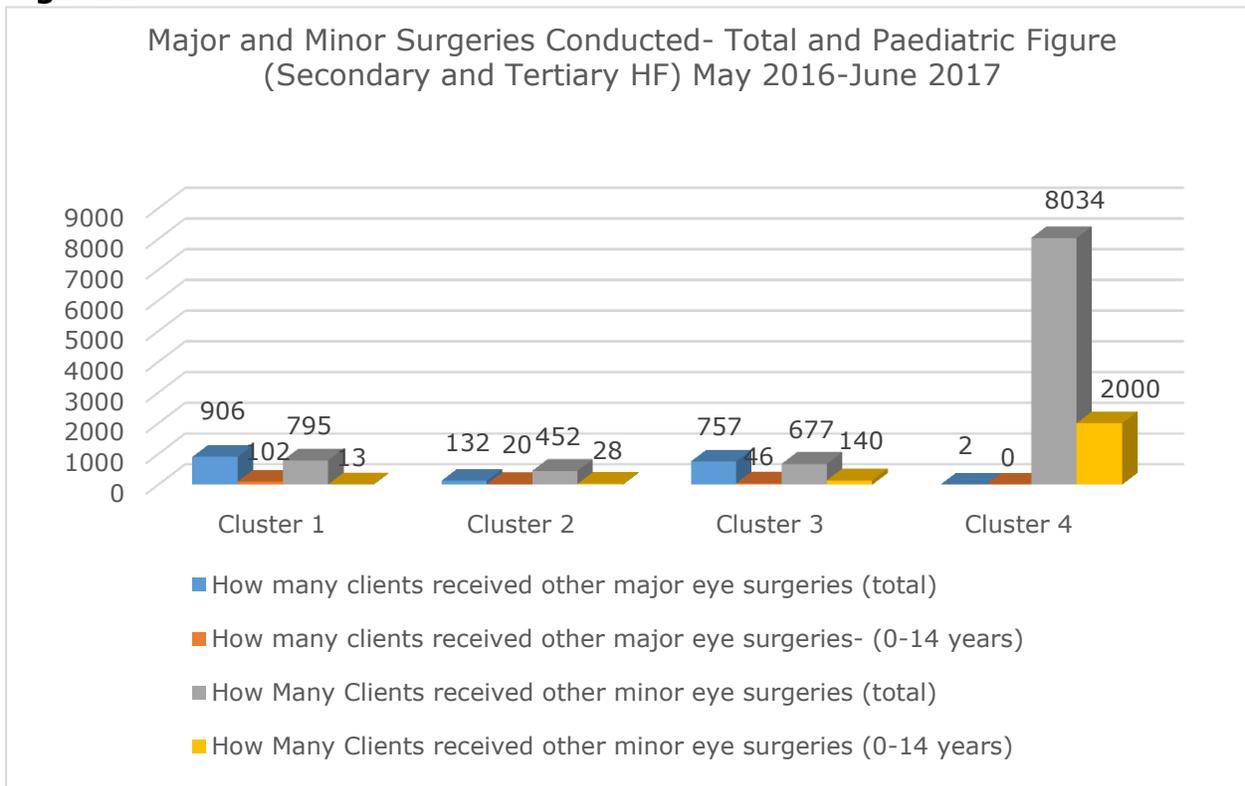


Figure 4

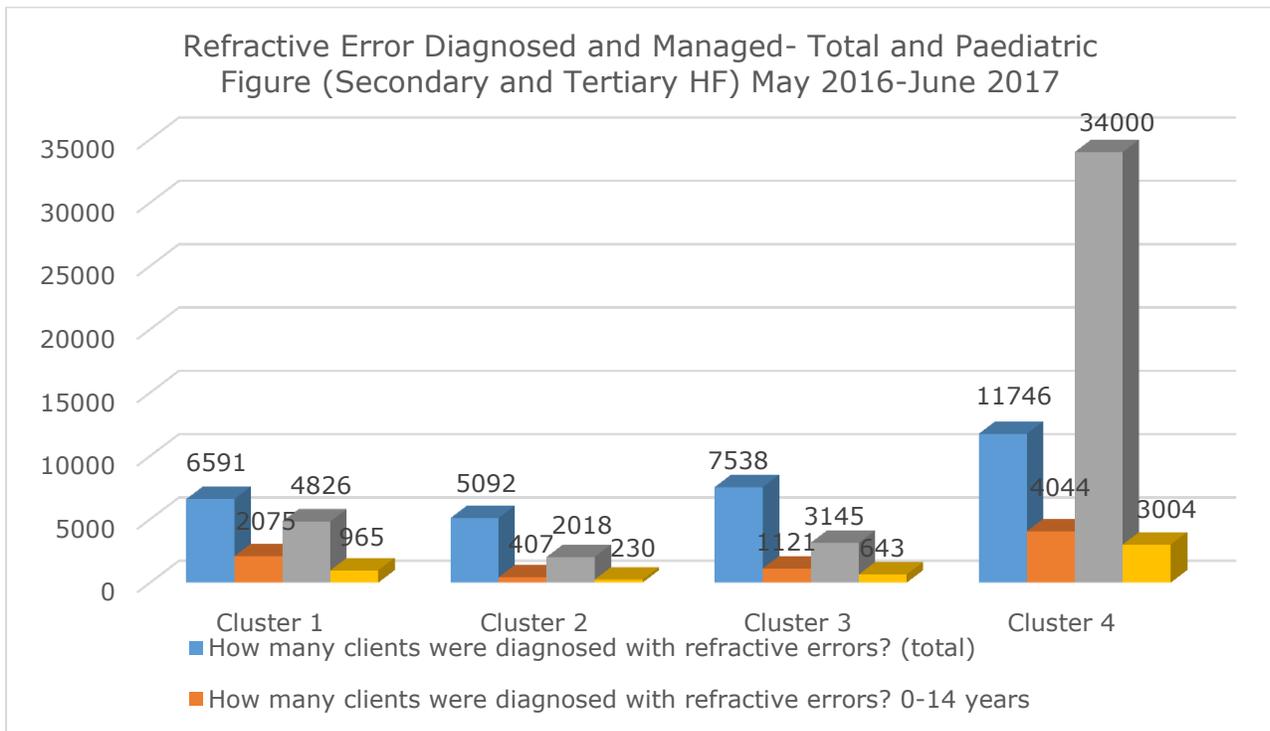


Figure 5

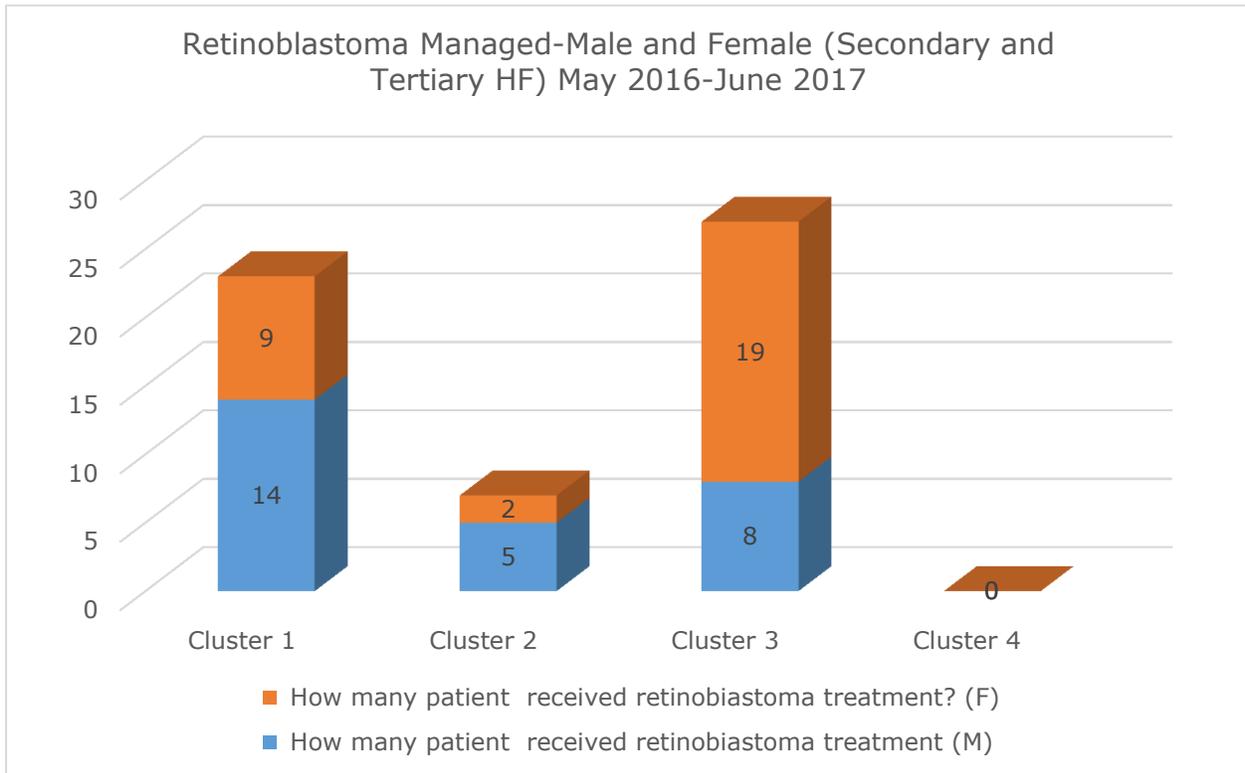


Figure 6

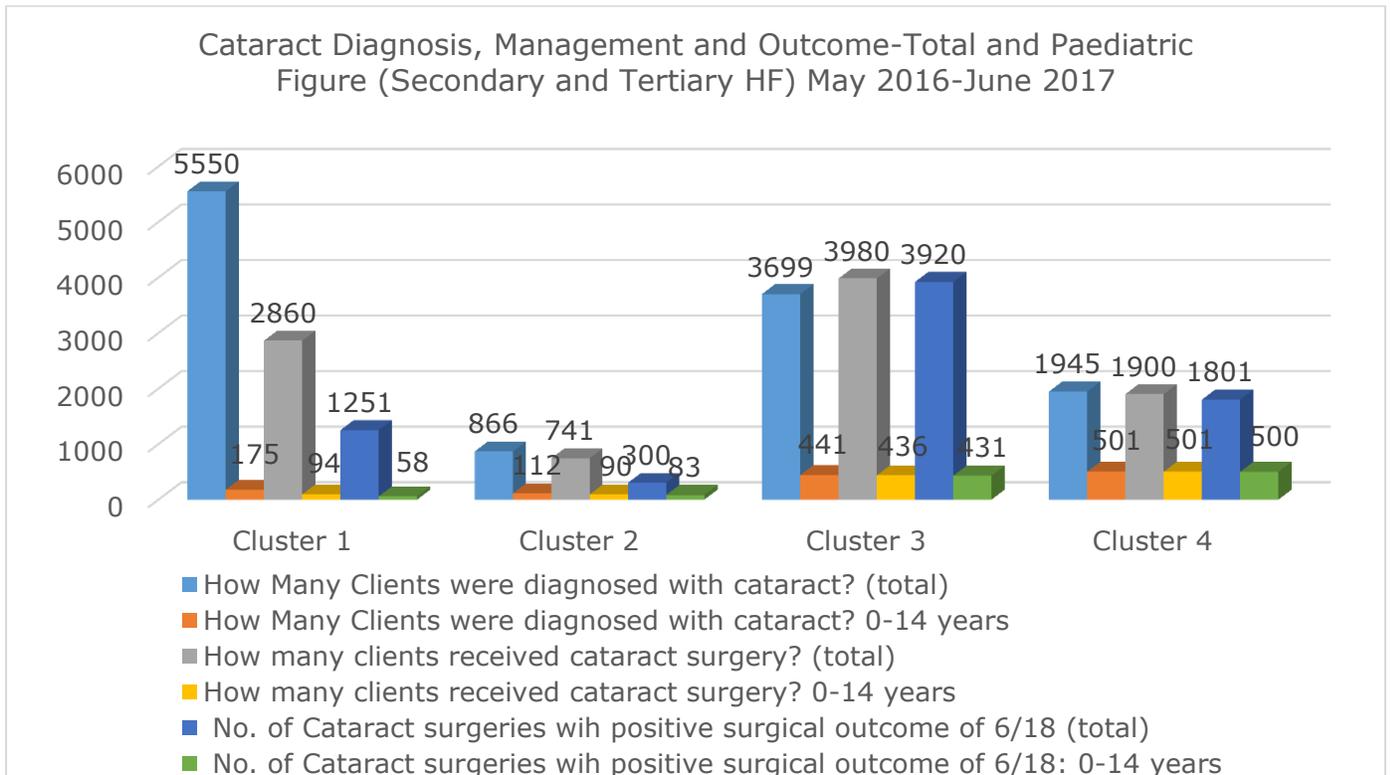
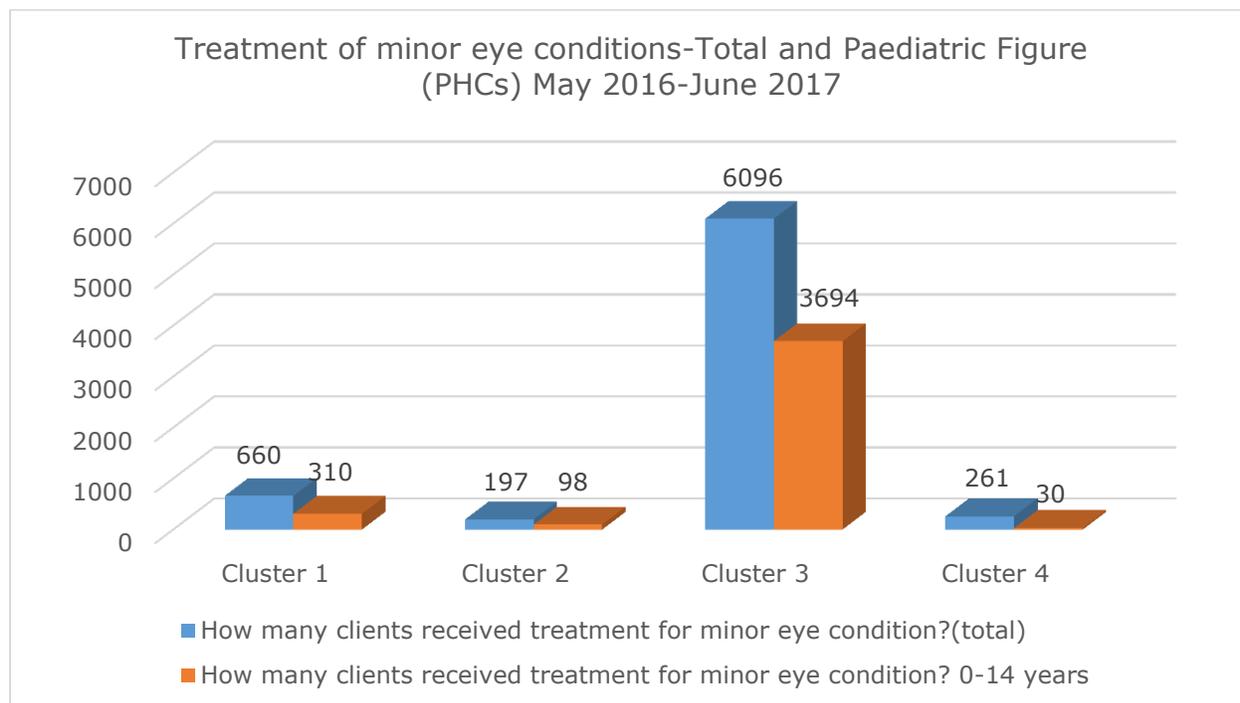


Figure 7



Supervision

The results in Table 3 show that most supervisory visits to PHCs were conducted by the Local Government Areas (LGAs), except in cluster 1, where the State Ministry of Health (SMoH) conducted more visits than the LGAs (54.4% against 30.4%). Similarly, the Secondary and Tertiary facilities received more supervisory visits conducted by the SMoH, except in cluster 3, where LGAs conducted more visits (60% against 25%). Across the clusters, the Federal Ministry of Health (FMoH) conducted the smallest number of supervisions. The pattern of supervision reflects the oversight functions expected to be provided by the SMOH and the LGA department of primary health care, in line with the National policy.

Table 3: Supervision Conducted by Different Level of Government

Clusters	Who Conducted the Supervision	PHC n=248		Secondary & Tertiary Health Facility n=28	
		Frequency	Percent	Frequency	Percent
Cluster 1	LGA	54	30.6	1	14.3
	SMoH	43	54.4	4	57.1
	FMoH	6	7.6	--	--
	Other Development Partners	23	29.1	1	14.3
Cluster 2	LGA	27	81.8	--	--
	SMoH	18	54.5	2	40.0
	FMoH	5	15.2	--	--
	Other Development Partners	12	36.4	--	--
Cluster 3	LGA	77	78.6	3	60.0
	SMoH	50	51.0	1	25.0
	FMoH	6	6.1	--	--
	Other Development Partners	35	35.7	--	--
Cluster 4	LGA	33	77.7	1	20.0
	SMoH	26	65.0	3	60.0
	FMoH	12	30.0	--	--
	Other Development Partners	24	60.0	1	20.0

Community Engagement and Referral System

The study revealed that only three (10.7%) out of the 28 Secondary and Tertiary facilities have a map of their catchment areas showing the PHCs or Secondary health facilities supported. Similarly, though (12-42.8%) of Secondary and Tertiary facilities claim to have referral linkages with PHCs and Secondary health facilities, referral protocols were only available in nine (32.1%) and referral records available in ten (35.7%) only.

In addition, 17 (60.7%) Secondary and Tertiary facilities claim to be involved in outreach activities but only 11 (39.3%) have an outreach plan. The gaps observed in both the referral system and the outreach activities assessment signify a lack of proper documentation and an absence of standard operating protocols (SOPs) to guide planning and implementation of outreach activities in most of the facilities.

Table 4: Availability of Referral Tools in HFs by Cluster

		PHC n=248				Secondary & Tertiary HF n=28			
		Yes		No		Yes		No	
Clusters		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Cluster 1	Referral Directory	19	26.4	53	73.6	2	40.0	3	60.0
	Two ways referral Forms	47	58.8	33	41.3	1	25.0	3	75.0
	Referral Protocol	15	21.1	56	78.9	1	25.0	3	75.0
	Box for referral slips	10	14.1	61	85.9	1	25.0	3	75.0
Cluster 2	Referral Directory	3	9.4	28	87.5	--	--	5	100.0
	Two ways referral Forms	24	72.7	8	24.2	1	20.0	4	80.0
	Referral Protocol	15	46.9	16	50.0	2	40.0	3	60.0
	Box for referral slips	2	6.3	29	90.6	--	--	5	100.0
Cluster 3	Referral Directory	63	68.5	29	31.5	3	100.0	--	--
	Two ways referral Forms	86	92.5	5	5.4	2	100.0	--	--
	Referral Protocol	54	58.7	36	39.1	4	100.0	--	--
	Box for referral slips	16	17.4	74	80.4	2	66.7	1	33.3
Cluster 4	Referral Directory	3	2.6	17	97.3	1	20.0	4	80.0
	Two ways referral Forms	21	21.1	8	3.5	2	40.0	3	60.0
	Referral Protocol	10	50.0	10	50.0	1	20.0	4	80.0
	Box for referral slips	7	18.4	25	81.6	--	--	5	100.0

Record Keeping

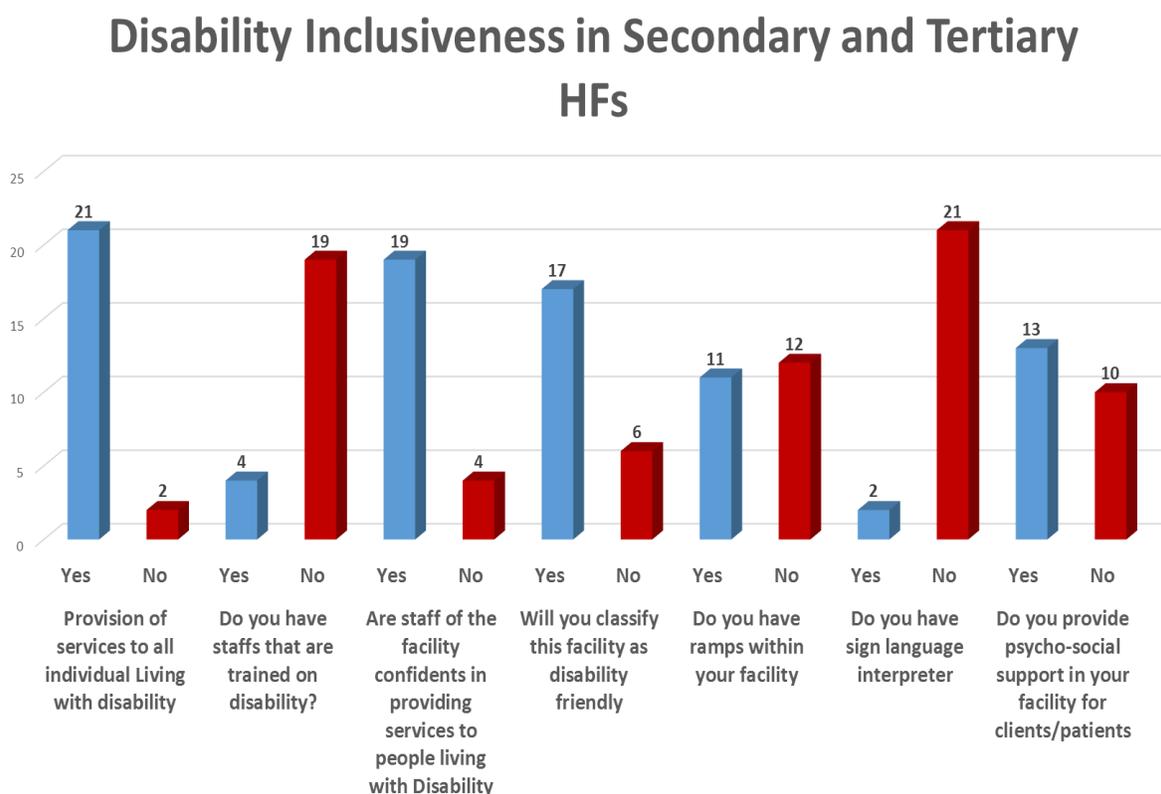
National Health Management Information System (NHMIS) tools are not available in some of the facilities. In addition, the tools do not have provision for collating and reporting eye conditions. Even though monthly submission of NHMIS data is widespread across the PHCs and this is commendable (the lowest being 88.6% of PHCs submitting data monthly in cluster 1), service data on eye conditions were not readily available since it is not being reported. A sizeable proportion of the PHCs ($\geq 70\%$) across the clusters stated they were not reporting on eye health services. On the other hand, the monthly submission of NHMIS data is poor in the Secondary and Tertiary HFs across the clusters (lowest being cluster 4 with 40% while cluster 3 is exceptional with 100% submission rate), but service data on specific eye conditions were readily available from other records. There is a direct relationship observed between the availability of designated staff for collection, collation and submission of the NHMIS data, and the actual submission rate. Most Secondary and Tertiary HFs do not have designated staff except in cluster 3.

Disability Inclusiveness

The survey revealed significant gaps in disability inclusiveness. Though most Secondary and Tertiary HFs (82.6%, 19 out of 23) reported that their staff have not been trained on disability, the same proportion of HFs reported confidence in providing services to people living with disability.

Similarly, 91.3% of HFs (21 out of 23) reported not to have a sign language interpreter, yet 73.9% (17 out of 23) classified the facility as disability friendly.

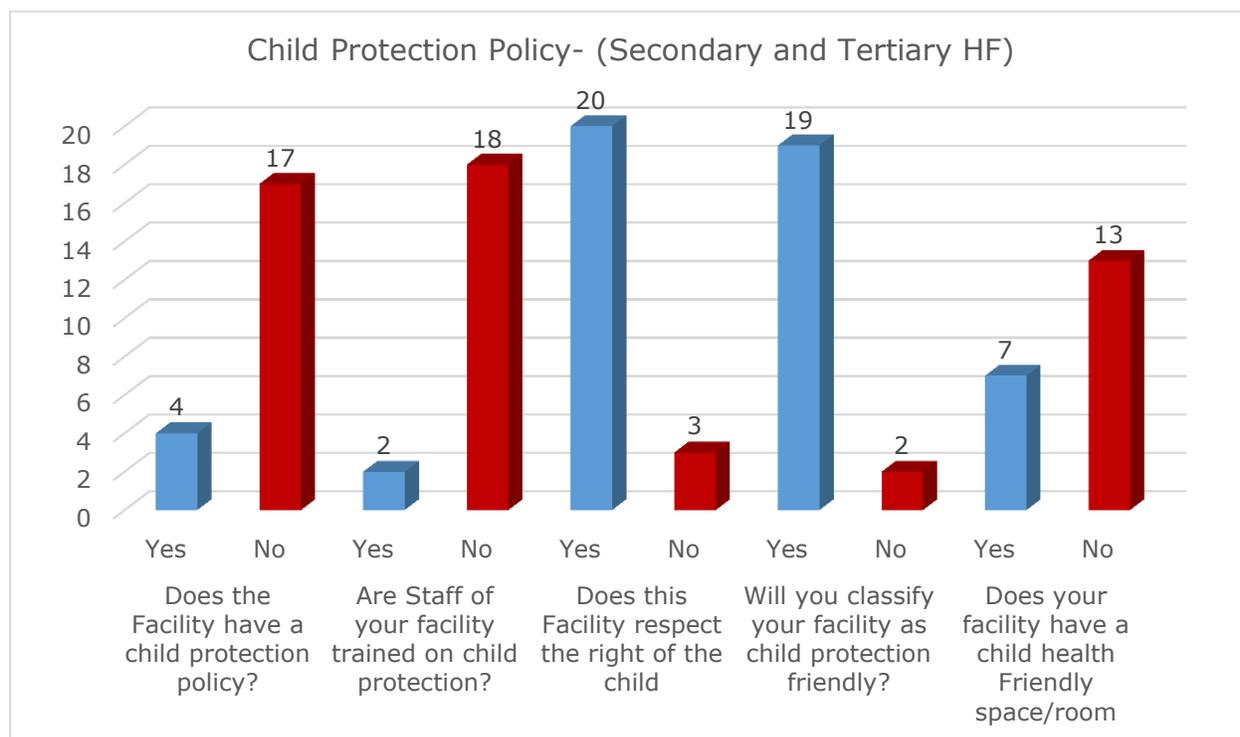
Figure 8



Child Protection Policy

The data in figure 9 displays the status of child protection policy in the Secondary and Tertiary HFs and is similar to that of disability inclusiveness. The majority of the Secondary and Tertiary HFs reported not to have child protection policy (17, 60.7%), to have had no previous training for staff on the subject (18, 64.3%) and a lack of child health friendly spaces (13 out of 20). Yet almost all health facilities also classified themselves as child protection friendly (19 out of 21) and also respecting of the rights of children (20 out of 23).

Figure 9



Recommendation

The study recommends that a follow up assessment should include the assessment of institutional frameworks such as health financing, governance, operations and policies as well as the capacity of the relevant MDAs responsible for providing an oversight role in the delivery of eye health services in support of the state. This would allow for strengthening the capacity of relevant stakeholders to sustain changes resulting from the project and consolidate gains made.

Establishment of coordination systems amongst the various levels of health facilities within each cluster, possibly at state level, would be necessary to improve the referral system, bridge human resource gaps and improve the quality of services.

There is a need to review the existing NHMIS tools to be able to capture and report eye conditions. This is necessary to correct the current paucity of data, particularly at the PHC facility level, which services a substantial proportion of the population. This effort will make data available to determine the prevalence of specific eye conditions across the geographical regions within Nigeria, and assist in more effective planning with respect to the resources needed to address the various challenges.

Adequate funds need to be allocated within the health budget for the provision of eye health supplies, as these are necessary to improve the quality of services across the various facilities.

The data collected on supervision was not aimed to assess collaboration during supervisory visits; however this assessment would be beneficial to ensure strong collaboration and feedback amongst the different parastatals and agencies conducting supervisory visits, and the utilization of data for system improvement.

Provision of the relevant materials and Standard Operating Procedures related to referrals and community engagement, as well as the training of relevant staff to use these, should improve both access, retention and the quality of services provided related to eye health.