CHILDHOOD BLINDNESS 2009 REPORT FOR LIONS SIGHT FIRST EYE (LSFEH) HOSPITAL, BLANTYRE, MALAWI

Introduction

Lions Sight First eye hospital (LSFEH) , located at Queen Elizabeth Hospital premises in Blantyre, Malawi has been designated through the Vision2020 initiative and NPBC endorsement to become a centre for excellence for paediatric ophthalmology in Malawi. A paediatric Ophthalmologists team has already been operating at LSFEH since 2008; and various support and initiatives to fully develop the unit are being implemented.

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Cataract is the number one cause of reversible blindness in children so a larger amount of the work for the paediatric ophthalmology unit involves dealing with children with cataract.

Thorough Blantyre Institute for community ophthalmology (BICO) ,a research unit that focuses on finding out successes in training volunteers and Health Surveillance Assistants (HSA's) to identify blind and visual impaired children from the community to the tertiary hospital , and implementing tracking systems to follow up such children , data is now available for all children that reported to LSFEH is 2009 .

We would like to appreciate the role played by Kilimanjaro Centre for community Ophthalmology (KCCO) in Tanzania, and Future Vision Ministries (FVM) Canada, whose efforts to complement the research work that BICO has been carrying in southern Malawi have already started showing improvements in the paediatric eye department of LSFEH .

BICO's research work is part of the childhood blindness PHD work that Dr Khumbo Kalua has been conducted in various districts in Southern Region of Malawi; and this work has been major funded by the British Council for Prevention of Blindness (BCPB) through International Centre for Eye Health, London school of Hygiene and Tropical Health, UK. The research involves comparing the successes of using trained volunteers versus trained health surveillance assistants (HSA's) in identifying blind and visual impaired children in Southern Malawi.

The districts that are involved in the PHD work are Mulanje, Zomba, and Mangochi is south west zone of Malawi.

Report of findings from this important operational research should be available towards the end of 2010.

Children's hospital admission for 2009 at LSFEH

Even though the major focus is on childhood cataract, a detailed report of all cases seen and admitted at LSEH in 2009 is given table 1 below.

Table 1 : Children admissions at Lions Sight First eye hospital 2009

	DISTRICT	ADMISSIONS		
		Male	Female	Total
1	Blantyre	65	56	121
2	Zomba	20	20	40
3	Mulanje	23	15	38
4	Chikwawa	10	20	30
5	Mangochi	15	11	26
6	Thyolo	14	12	26
7	Chiradzulu	11	4	15
8	Balaka	8	5	13
9	Nsanje	4	7	11
10	Machinga	9	5	14
11	Phalombe	4	4	8
12	Neno	3	4	7
13	Mwanza	1	4	5
14	Mozambique	0	4	4
15	Ntcheu	2	2	4
16	Mzuzu		1	1
17	Rumphi	1	0	1
	Total	190	174	364

Districts 1-13 are in southern Region of Malawi ; district 15 in central region and district 16 -17 in northern Region of Malawi .

Mozambique (14) borders part of southern region of Malawi and it is not uncommon to have children from Mozambique referred to Malawi.

As can be seen from the table 2 below, more than half of all children admitted at LSFH end up having surgery.

Table 2: Number of children admitted at LSFEH versus no. who had surgery

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District	No. admitted	No. who had surgery	% who had surgery
Blantyre	121	78	64%
Mulanje	38	29	76%
Zomba	40	28	70%
Chikwawa	30	23	77%
Mangochi	26	23	88%
Balaka	13	12	92%
Thyolo	26	12	46%
Machinga	14	11	89%
Nsanje	11	8	73%
Neno	7	7	100%
Chiradzulu	15	4	27%
Mozambique	4	4	100%
Mwanza	5	4	80%
Ntcheu	4	3	75%
Phalombe	8	2	25%
*Mzuzu	1	1	100%
*Rumphi	1	1	100%
Total	364	250	69%

Rumphi and Mzuzu are the farthest places from Blantyre; they are in Northern region of Malawi.

The diagnoses that children were admitted with are shown in the table 3 below:

Table 3: Diagnosis of children at LSFEH in 2009

Diagnosis	Male	Female	Total	%
Cataract	46	37	83	22.8%
Cornea perforation	33	22	55	15.1%
Cornea ulcer	21	17	38	10.4%
Miscellaneous cases	24	11	35	9.6%
Retinoblastoma	6	14	20	5.5%
Lid abscess	13	4	17	4.7%
Other trauma	10	6	16	4.4%
Glaucoma	10	3	13	3.6%
Hyaphaema	10	3	13	3.6%
Orbital cellulites	8	4	12	3.3%
Other tumours	8	3	11	3.0%
Squint	5	5	10	2.7%
Cortical blindness	8	1	9	2.5%
Staphyloma	4	5	9	2.5%
Conjunctivitis	5	1	6	1.6%
Chalazion	2	4	6	1.6%
Pthisis	2	0	2	0.5%
Dermoid	2	0	2	0.6%
Panopthalmitis	2	0	2	0.6%
Discharging sinus	1	0	1	0.3%
Optic atrophy	1	0	1	0.3%
Refractive error	1	0	1	0.3%
Opthalmic neonatarum	0	1	1	0.3%
Uveitis	0	1	1	0.3%
TOTAL	222	142	364	100%

Cataract is the commonest cause of admissions in children at LSFEH; it is also the commonest reversible cause of blindness in children. It is surprising that a large number of children (N=55) have trauma resulting in corneal perforation. Perhaps in future more awareness messages on the dangers of trauma need to be disseminated widely throughout Malawi to prevent more cases of trauma.

Among the 83 children that reported with cataract at LSFEH , only 61 (73%) of them ended up having surgery in 2009 .11 children had coexisting condition that did not warrant surgery ; and 11 came between November and December when the paediatric surgeon was engaged with other activities These children were booked to come back in early 2010.

The 61 children (42 boys & 19girls) that had cataract surgery came from the following districts as outlined in table 4 below.

Table 4 : Districts where cataract children came from

District	Total Population	Children with cataract		Total	Percentage
		Male	Female		
Zomba	670533	7	4	11	18%
Blantyre	999491	6	4	10	16%
Mulanje	525,429	7	2	9	15%
Mangochi	803,602	6	2	8	13%
Thyolo	587,455	4	2	6	10%
Nsanje	238,089	3	1	4	7%
Chikwawa	438,895	2	1	3	5%
Chiradzulu	290,946	2	0	2	3%
Ntcheu	474.464	1	1	2	3%
Balaka	316748	1		1	2%
Machinga	488,996	1	0	1	2%
Mzuzu	724,823	1	0	1	2%
Neno	108,897	0	1	1	2%
Phalombe	313,227	0	1	1	2%
Rumphi	169,112	1	0	1	2%
Total	6,676,717	42	19	61	100%

Using the estimated prevalence of childhood cataract of 100 cases per 1 million population; the catchment area that reported has been reported from should have at least 667 cases of cataract; however in this cases only 83 cases actually reported and only 61 were done surgery .It is indeed possible that still a large number of children with cataract remain unidentified, but more population based information is still needed to calculate the true prevalence of childhood cataract , as there is a potential that that the expected number of cataract children other may be a gross overestimation .

About 2/3 (69%) of all cataract children were boys and 1/3 (31%) were girls. These figures are consistent with the previous data from this hospital and also in agreement with observation from our colleagues in Tanzania.

The BICO childhood blindness project spent the first half of the year 2009 in training HSA's s A larger part of 2008 was and volunteers from Zomba and screening children they had identified; and later on moved to Mangochi towards the end of the year .In 2008 the BICO project conducted trainings and screened children only in Mulanje district .It is therefore not surprising that among the top 4 districts where most children came from, the 3 districts where the BICO project was based contributed to almost half (46%) of all children identified with cataract . The LSFEH hospital is within Blantyre so one would normally expect Blantyre district to have the most number of children however this is not the case .Currently there is no data that supports that cataract in children is more prevalence in some districts in Malawi than others.

This data is well in agreement with 2008 data where after training community volunteers and HSA's in Mulanje in 2008, most children came from there.

The conclusion that can be drawn from this observation is that despite childhood cataract being rare, the numbers coming to hospital can be increased with "active case finding". Nevertheless it is imperative to know that such interventions can be expensive and cannot normally be funded within the normal ministry of Health budget.

So what has happened to these children after surgery?

The majority of these children have had their cataracts removed and the lens implanted .Foldable lenses were purchased and made available for children. Approximately all these children or their parents have been contacted by the childhood blindness coordinator more than once to come for a follow up and more than 80% have reported for follow up .

For the few who did not have intraocular lenses implanted, they were refracted and prescription lenses were ordered for them .Through the VISION links with Glasgow ,Scotland , a donation of 400 pair of frames was available for use by children .

However to stringent forex regulations in the country, only 5 children ended up having their lenses ordered and their frames fitted. The rest could not get the lenses as money could not be transferred from Malawi to any country outside Malawi .The lenses were not available locally.

The childhood blindness coordinator has kept a database of addresses and other contact details of all children with cataract operated on in 2009, and these will be called in 2010 to come for follow up and have their glasses given. LSFEH has now linked with KCCO in Tanzania on how children can still access the lenses despite issues in forex.

As management of cataract involves all of the following things listed below, several issues still pose as a major challenge for childhood cataract in 2010:

1. Identification and referral
2. Surgery
3. Refraction and optical correction
4. Low vision assessment
5. Long term follow up

1. Identifciation and referral

There is need for continued identification and referral of children to LSFEH. The BICO childhood blindness project (limited to 3 districts) was only funded for 3 years and funding has now been stopped Luckily enough, through BICO's contact with KCCO; another Child Health Tertiary Facility (CEHTF) project has started in Blantyre in 2010. More methods of identifying and following up children with cataract will be explored for the next two years and the project with move to new districts (Machinga and Balaka) in 2020 .The

childhood blindness coordinator will continue taking a leading role in this project ; which will be coordinated by the paediatric Ophthalmologist in Blantyre .BICO will continue giving technical support .

2. Surgery
For surgery, the current challenge is the increased workload on the paediatric Ophthalmologist and the resulting waiting list of children to be operated on .In 2010, through the CEHTF project, a second theatre day for the ophthalmologist will be created and an anaesthetic will be paid to assists with children operation for next two years.

3. Refraction and optical correction in all children operated on with cataract
This remains a challenge; however mechanisms to have readily available supplies of lenses are being explored. When glasses are available , they will be given to children free of charge. Children who had cataract surgery will also get transport refunds whenever they come for follow up.

4. Low vision assessment
It is obvious that despite cataract surgery a few children will not fully recover their sight and will need additional low vision services .Efforts to establish an effective low vision clinic are still being explored. The challenge remains on how to have a dedicated low vision therapist; and how children can access low vision devices.

5. Long term follow up of children
BICO will continue keeping a database of all children coming for cataract surgery; and the coordinator will constantly have to make a telephone call to remind parents to bring children for examination .However these intervention are expensive; and it would be necessary to think of what will happen to these children after the CEHTF project is over in two years time.

Conclusion
Discussion to engage interested partners like KCCO in Tanzania and Future Vision Ministry in Canada to continue not only supporting children transport refunds but also other activities related to childhood blindness will continue being pursued.

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