

Clinical and Cognitive Assessment of Children in Guyana, Jamaica, and Trinidad Education Programmes for the Visually Impaired

Supported by
Caribbean Council for the Blind
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ACRONYMS

CBM	Christoffel Blinden Mission
CT	Contact teacher
CCB	Caribbean Council for the Blind
CIT	Contact itinerant teacher
ECSA	East Central and Southern Africa
HRD	Human resource development
ICD	International classification of diseases
IE	Inclusive education
IEP	Individual education plan
IT	Itinerant teacher
LV	Low vision
LVDs	Low vision devices
LVRC	Low vision resource center
MLECP	Mid level eye care personnel
MoE	Ministry of Education
MoH	Ministry of Health
M&E	Monitoring and evaluation
NFP	National focal person
RC	Resource center
RE	Refractive errors
SNE	Special needs education
SSI	Sightsavers International
VI	Visual impairment
WHO	World Health Organization

Acknowledgement

Many people gave very generously and willingly of their time and knowledge during this regional exercise. We thank all those who have provided input into this report.

We would particularly like to thank all the teachers and children who participated in this exercise. We would also like to thank Ms. Sumrana Yasmin, Project Officer, Sightsavers International for her support in putting this report together and Dr. Aliya Qadir Khan for analyzing the data.

We feel very privileged to have been asked to visit Caribbean IEP. We've learned a great deal and hopefully provided useful material for the continuing progress of the programme.

BACKGROUND:

The Caribbean Council for the Blind (CCB) was established in 1967 as a regional not-for-profit organisation comprising of societies/associations of and for the blind throughout the mainly English-speaking Caribbean. However, CCB now includes associations from two Francophone countries, Haiti and Martinique. Initially, CCB operated out of Trinidad, but in 1980, the Secretariat or Administrative Office was relocated to Antigua. This new location, geographically, provided easier access to the territories of the Eastern Caribbean, Northern-Western Caribbean. CCB engages with Ministries of Education in: Antigua & Barbuda; Barbados, The Bahamas, Grenada, Guyana, Jamaica, St. Lucia, St. Vincent & the Grenadines & Trinidad & Tobago.

Sightsavers International works through partnerships with Ministries of Education and Association of and for the blind persons to deliver the services. Sightsavers has been working with Caribbean Council for the Blind to support the education services for children with blindness or visual impairments in Caribbean for nearly 39 years. The Caribbean Council for the Blind and Sightsavers International believe that all children with visual impairment must be provided with comprehensive clinical examination and those who are LV should be assessed for LV. Spectacles and LV devices (both optical and non-optical in combination with necessary environmental modifications) should be provided to all who can potentially benefit from these. These interventions could have a significant impact on the quality of life and access to education.

The main objective of this assessment was to ascertain the visual status of the children in the programme and collate it with their educational needs. It was realised to carry out a comprehensive and complete assessment of all the children enrolled in education programme for visually impaired in Guyana, Jamaica, and Trinidad. Another objective of this exercise was to sensitise the key stakeholders towards the needs of these children and also to identify the ways and means through which a sustainable mechanism can be evolved so as to ensure that the children with VI get the best available support. This exercise will also lead to identify the unmet need in terms of how many children with blindness and visual impairment still don't have access to education.

RATIONALE:

According to surveys carried out over the last ten years in various parts of the world there are a number of children who are either attending special schools or IE programmes who have adequate vision to cope in the mainstream setup. Also there are children who could benefit from surgical or refractive interventions and are needlessly blind. The main reasons for this are lack of coordination between eye care and education services and also the unavailability of personal trained to deal with children who have visual impairment.

The children with visual impairment can be divided into three sub-categories. Those with moderate visual impairment i.e. between 6/60 to >6/18 can manage well in the mainstream education with some support from teachers' parents and provision of optical and non-optical low vision (LV) devices. Almost all the children in this category can manage without additional support.

The second group i.e. children with severe visual impairment 3/60 to >6/60 need higher level of intervention and here the prescription and other support required is more complex. The degree of success with mainstream education depends more upon the parents and teachers and varies from case to case. Almost 50% children still can cope in mainstream schools.

Those with vision less than 3/60 (blind) often cannot cope in mainstream education with out support from itinerant teachers however a certain number about 10%-20% can still manage well, especially in higher grades. The remaining children in this category require more intensive support from the itinerant teacher, tactile materials including Braille, assistive technology, and teaching aids.

PURPOSE OF THE REVIEW

The purpose of the assessment is to review a random sample of children with visual impairment who are in education programs to ascertain their status and initiate steps to introduce more appropriate interventions where required.

The findings will be used to identify those factors or issues, which have influenced the realisation of the programme objectives and to what extent the programme is achieving or likely to achieve its overall aim. The key learning points and recommendations from the review will contribute to the future development of the inclusive education (IE) programme across the Caribbean.

OBJECTIVES

- To conduct a comprehensive clinical assessment of the children (randomly selected) in the programme to ascertain the educational support they require
- To undertake a preliminary cognitive assessment of the children to support development of the programme
- To review the current and planned future coverage of the programme and the implications for this on quality IE services in the country
- To review the achievement of project outcomes against normative expectations among children without visual impairments; and make recommendations as appropriate for the future development of the IE programme

METHODOLOGY:

The whole exercise was conducted by Low Vision and Refractive Errors Advisor; teaming up with Ms. Petra Venes, Optometrist, CCB. The assessment guidelines were developed and shared with team members before the assessment exercise.

Sample selection

A purposive sample of 171 children was drawn from 3 countries of Caribbean; Jamaica, Trinidad & Tobago, Guyana. These children were randomly selected by their Itinerant teachers.

Field operations and Clinical examination

All children in the programme were screened by teachers and allocated a day to come to the school where the clinics were established. A detailed ophthalmic examination and low vision assessment of these children was carried out by review team. A standardised pre tested protocol was followed for the clinical examination. Visual acuity for distance and near was assessed using Log MAR flip charts with tumbling Es and numbers. Contrast sensitivity was assessed with Lea contrast sensitivity charts. Dilated eye examination and cycloplegic refraction was performed where indicated. Anterior segment and eye adnexa were examined with a slit lamp. No clinical assessment of colour vision was performed

and only functional colour vision was assessed using colour pencils. Magnification was calculated using the equivalent viewing distances and trial of appropriate LVDs was performed where indicated and the improvement in vision was recorded. After the examination, children with refractive errors and low vision were advised and prescribed with spectacles and low vision devices. Those needing surgical intervention for cataract were referred for surgery to the nearest eye care facility.

Cognitive assessment

The cognitive assessment was done by administering a structured questionnaire to each child, participated in the assessment. The child was asked simple questions like what is your name, which class do you attend; how old are you and where do you live etc. Besides, a short reading text in large print and Braille given to the low vision and blind children respectively, duly prepared by the Itinerant teachers. Accordingly a circle in 1-5 point scale was given to mark out of five on the basis of the answer of the child and the reading test. It was also taken care that no adults/parents and concerned IE teacher interfered or answered on behalf of the child as instructed earlier.

The team also reviewed the project documents and additional relevant information in advance of the assessment. This information was summarised and forms part of this report.

Data management

All the information from exercise was entered on a pre-tested and pre-coded questionnaire. Data entered, recorded and check files created, cleaned and analyzed using EPINFO version 6.04.

Country wise breakdown of the result is as follows:

JAMAICA:

Jamaica is an island in the West Indies, 90 mi (145 km) south of Cuba and 100 mi (161 km) west of Haiti. The population of Jamaica in 2006 was estimated at 2,758,124 (growth rate 0.8%) with 31% of the population under 15 years of age. The life expectancy rate is 70.7 and according to the 2003 estimates the literacy rate in Jamaica is 87.9% (*male: 84.1% and female: 91.6%*).

Educational services:

The education services for the visually impaired have been delivered through Salvation Army School for the Blind. It is a residential facility primarily for children with visual impairment but also has a small number of children with multiple disabilities i.e. deaf-blind, multiple handicapped etc. The school has an enrolment of approximately 120 children. Of these, 20 children are studying in mainstream education supported by two itinerant teachers. All the children are referred by Ophthalmologists with a certificate of their visual status and diagnosis which is available in their case files. Some of the children have active pathologies and are receiving treatment. In many cases, the children have been prescribed with spectacles and a few children were using hand held magnifiers.

*** Estimated Need for educational services for VI in Jamaica**

Population	Childhood Pop.	Children with LV (6/60 to >6/18)	BI/SVI NPL to >6/60	Requiring Ed. Support Sighted	Support Non-sighted
2758124	855018	1026	513	360	86

* The need is calculated using an estimated prevalence of Childhood Blindness of 0.6/1000 and twice this number as having low vision. The numbers are calculated using CBL/LV calculation tool. This indicates that there are at least 86 children in the country who would potentially require education with non-sighted techniques while there are another 360 children who have severe visual impairment and require educational support through sighted methods. In addition to the above, there are about 1000 children with LV who although could be attending mainstream education will be having difficulties in accessing text and coping with the class work and the chances of their dropping out of school are significantly higher than that of their sighted peers.

Coverage

Ed. Support required Sighted	Ed. Support required Non-sighted	Number of Children in the programme	Number of Children assessed
360	86	120	89

The main service provider for the education of children with VI in Jamaica is the Salvation Army School for the Blind. This is the special education facility which has around 120 children enrolled. Of these, we were able to assess 89 while the remaining were either absent or unavailable. Our data indicates that this programme is been providing services to 33.3% of the children with BI/SVI in the country. Based on our discussions with key informants, there is no active case finding mechanism in place to identify children with VI. On the other hand, we couldn't find any evidence of any other formal education support programme for children with VI in Jamaica. Considering the coverage rate in other countries, this coverage is reasonable however, still majority of children don't have access to education.

Distribution by Age:

Age groups (years)	Frequency	%
1 - 5	0	0
6 -10	23	25.8
11 -15	46	51.7
16 - 20	20	22.5
21 - 25	0	0
Total	89	100

Table 1: Shows distribution of age in the sample. Majority of the children in programme are between the ages of 6-15 i.e. 77% which is the normal school going age of sighted children as well. Most of the children enrolled are studying in the grades appropriate to their age groups.

Distribution by Sex:

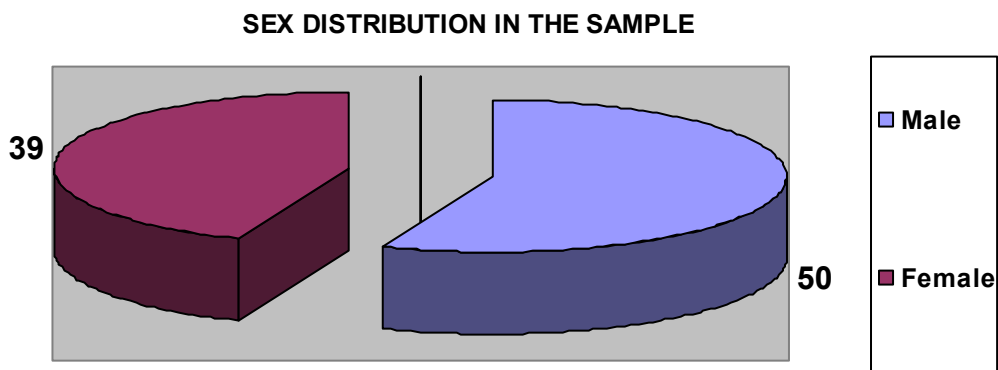


Fig. 1: Looking at the gender distribution of the sample, it is obvious that more male than female children are accessing educational services in the programme. There is no evidence to suggest that visual impairment in girls is less than boys and a concerted effort is needed to identify more female children.

Number of years spent in the programme:

No. of years in the programme	Frequency	%
Less than 1 year	4	4.5
1 – 3 years	33	37.1
More than 3 years	52	58.4
Total	89	100

Table 2: Shows that 58.4% of the children have spent more than 3 years in the current programme, while 37.1% have spent 1-3 years. New enrollment seems to be low as only 4 children were identified who have joined the school this year.

Any other disability:

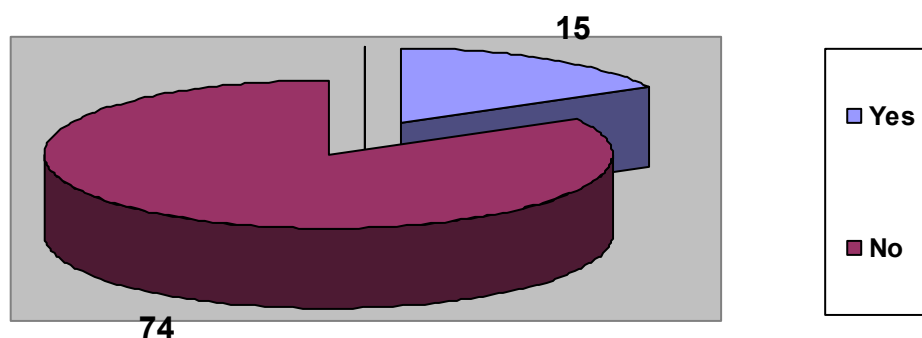


Fig. 2: A significant proportion of children had additional disabilities i.e. 17%. These included pre-dominantly children with hearing impairment, followed by intellectually challenged and a few with physical disabilities. There is a special facility in the school to cater to the needs of deaf-blind.

Reading ability:

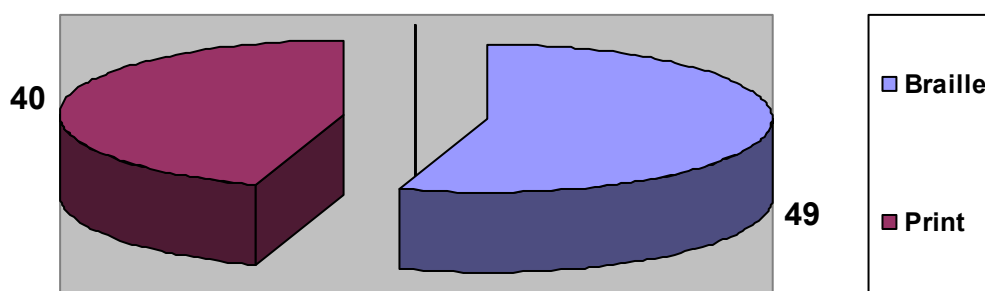


Fig. 3: 55% of sample was using Braille as their learning medium while 45% were large print-readers. This corroborates well with the visual status of the children and in most cases only those needing Braille were its users and those with useful remaining vision were using print.

Distribution by Diagnosis:

Diagnosis	Frequency	%
Normal	8	9
Refractive Error	2	2.25
Corneal disease	6	6.74
Lens related	20	22.47
Retinal disease	26	29.21
Albinism	0	0
Glaucoma	23	25.84
Others	4	4.5
Total	89	100

Table 3: the distribution by diagnosis raises some alarms about the clinical services for children with VI. A significant proportion of children nearly 50% had visual impairment due to causes which were either preventable or treatable. Glaucoma features quite high on the list of causes of blindness/SVI. Optic Atrophy secondary to Meningitis was also observed. A few children had un-operated cataracts but this was due to their parents not giving consent for surgery. Majority of the lens related were either Aphakic or Pseudophakic and their VI was due to Amblyopia.

Types of Refractive Errors:

Type of Refractive Error	Frequency	%
Blind	38	42.7
Myopia	17	19.1
Hypermetropia	16	18.0
Plain Astigmatism	2	2.2
None	16	18.0
Total	89	100

Table 4: 40% of the examined children had significant refractive errors where Myopia was the most common i.e. 19.1%, followed by hypermetropia 18% (some of this was actually Aphakia corrected with plus lenses).

Presenting Distance Vision:

Presenting distance vision	Frequency	%
≥HM (Blind)	38	42.7
≥ 1.4 (Blind)	10	11.2
≥ 1.1 - 1.3 (SVI)	12	13.5
≥ 0.6 - 1.0 (LV)	15	16.9
≤ 0.5 (Normally sighted)	0	0
≤ 0.3 – 0.5	2	2.2
0.3 or better	12	13.5
Total	89	100

Table 5: This table shows that 67.40% were either blind or severe visual impaired, while 16.9% had moderate low vision. Of those whose vision was either normal or near normal had either undergone surgery or had additional disabilities which was masking their actual visual status.

Corrected Distance Vision:

Corrected Distance Vision	Frequency	%
≥HM (Blind)	38	42.7
≥ 1.4 (Blind)	6	6.7
≥ 1.1 - 1.3 (SVI)	8	9.0
≥ 0.6 - 1.0 (LV)	23	25.8
≤ 0.5 (Normally sighted)	14	15.7
Total	89	100

Table 6: A slight shift was noted in the categories after appropriate prescription of spectacles. The percentage of blind/SVI reduced from 67.40% to 58.40%, where those who improved with correction shifted from the previous to the low vision category which increased to 25.8% from 16.9%. There was no shift in the percentage of normal/near normal vision which remained the same.

PRESENTING NEAR VISION

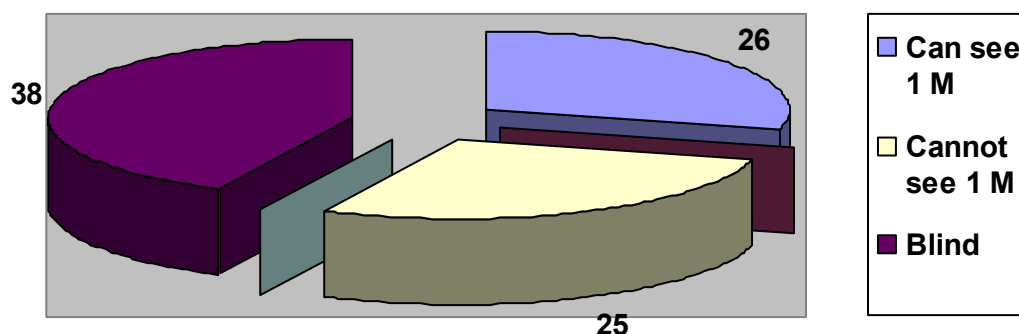


Fig. 4: On presentation, 25 children could not read N8 print (newspapers, books etc) while the remaining 26 could read N8 print either unaided or with their existing spectacles. The remaining children did not have enough residual vision to access print and needed materials or non-sighted.

CORRECTED NEAR VISION

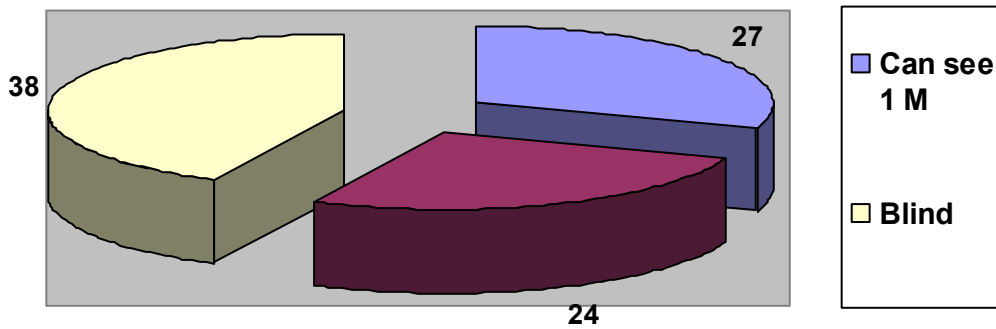


Fig. 5: No significant change in the reading ability was noted with the prescription of new spectacles.

Contrast sensitivity:

Contrast sensitivity	Frequency	%
Blind	38	42.7
Can read 20 or more at 1 meter	31	34.8
Can read 10 - 20 at 1 meter	10	11.2
Can read <10 at 1 meter	10	11.2
Total	89	100

Table 7: Contrast sensitivity function is the ability of the eye to distinguish between various shades of luminance. It is an important visual function which helps an individual in mobility, recognition of faces, copying from the blackboard and reading fine print. 22.4% children require additional lighting and high contrast materials.

Colour vision:

Colour vision	Frequency	%
Blind	38	42.7
Can see 2-3 out of 4 colours shown	42	47.2
Can see 1 out of 4 colours shown	8	9.0
Cannot see any out of 4 colours shown	1	1.1
Total	89	100

Table 8: Colour vision was not performed in detail and only functional colour vision assessment was carried out. Of those children with useful remaining vision majority had normal colour vision while 10.1% children had difficulty in recognizing basic colours. The teachers in the programme should be aware of the colour vision problems and need to develop teaching materials accordingly.

Visual fields:

Visual fields	Frequency	%
Blind	38	42.7
Normal fields	44	49.4
Constricted fields	7	7.9
Total	89	100

Table 9: Of the children with residual vision, 8% had significant constriction in their visual fields and could benefit from orientation and mobility training.

USE OF TELESCOPES IN THE SAMPLE

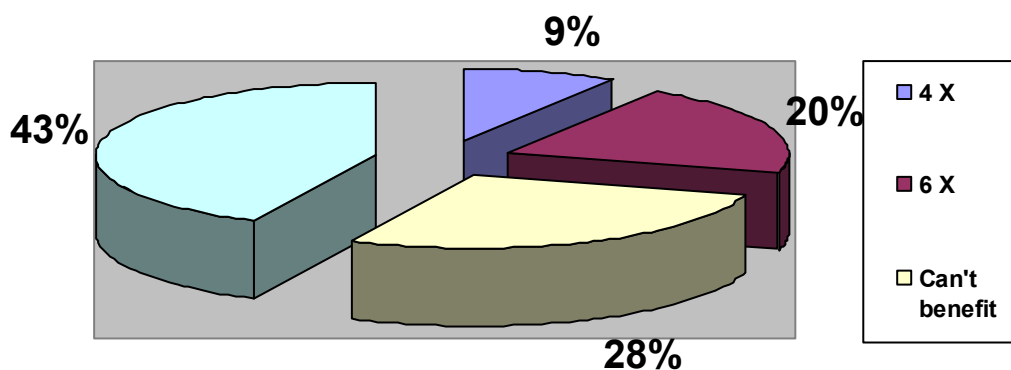


Fig. 6: Nearly 30% of the children could benefit from the prescription of a telescope and achieved a normal or near-normal vision. 6X handheld monocular telescope was found to be most effective, followed by the 4X telescope.

USE OF MAGNIFIERS IN THE SAMPLE

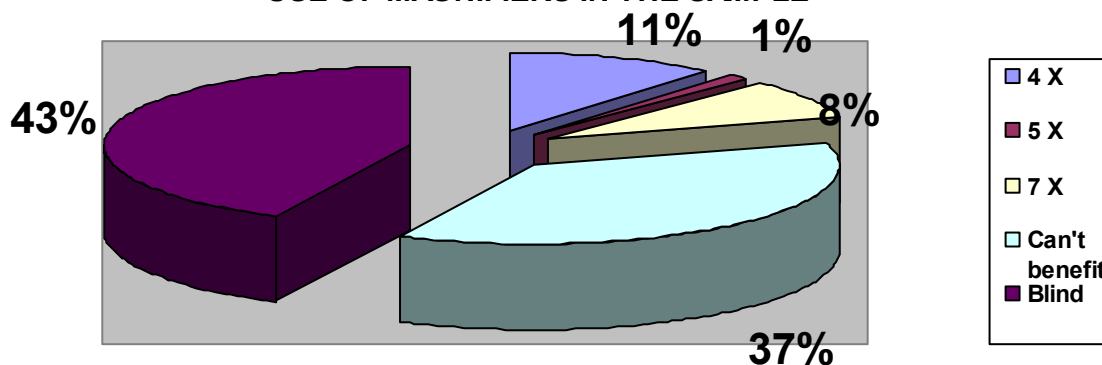


Fig. 7: Of the 24 children who couldn't read small print 18 could read N8 with the aid of magnifiers. While the vision of the remaining 6 children didn't improve substantially however, these children may still be able to read text with the help of close circuit televisions. Majority of the sighted children had never tried magnifiers before and were primarily relying on large print.

Cognitive Assessment

Methodology:

The cognitive assessment was done by administering a structured questionnaire to each child, participated in the assessment. The child was asked simple questions like what is your name, which class do you attend; how old are you and where do you live etc. Besides, a short reading text in large print and Braille given to the low vision and blind children respectively, duly prepared by the Itinerant teachers. Accordingly a circle in 1-5 point scale was given to mark out of five on the basis of the answer of the child and the reading test. It was also taken care that no adults/parents and concerned IE teacher interfered or answered on behalf of the child as instructed earlier.

Table 1: What is your name? How do you spell that?

Name & spelling	Frequency	Percentage
Does not comprehend	7	7.9
Makes an attempt	2	2.2
Needs time to answer	16	18.0
Answers confidently	39	43.8
Answers confidently & elaborate	25	28.1
Total	89	100

Table 1 shows 5 levels of response of children about their name and its spellings. 28.1% responded confidently and elaborated their reply while 43.8% answer confidently, followed by 18% who needed time to answer.

Table 2: How old are you? And which class do you attend?

Age & class	Frequency	Percentage
Does not comprehend	8	9
Makes an attempt	1	0.11
Needs time to answer	11	12.4
Answers confidently	44	49.4
Answers confidently & elaborate	25	28.1
Total	89	100

Table 2 shows response of children when asked about their age and class. 77.5% answers confidently, followed by 12.4% who needed time to answer.

Table 3: Where do you live and which school do you attend?

Town & school	Frequency	Percentage
Does not comprehend	9	10.1
Makes an attempt	3	3.4
Needs time to answer	15	16.9
Answers confidently	34	38.2
Answers confidently & elaborate	28	31.5
Total	89	100

Table 3 shows response of children about their village and school. 16.9% needs time to answer, 3.4% made an attempt while 10.1% doesn't comprehend the question.

Table 4: What is your favourite subject at school and why?

Favorite subject	Frequency	Percentage
Does not comprehend	20	22.5
Makes an attempt	11	12.4
Needs time to answer	20	22.5
Answers confidently	23	25.8

Answers confidently & elaborate	15	16.9
Total	89	100

Table 4: 25.8% responds confidently followed by 22.5% who needs time to answer about their favorite subject at school while 22.5% does not comprehend the question.

Table 5: Can you tell us about your journey to this clinic today?

Journey to clinic	Frequency	Percentage
Does not comprehend	60	67.4
Makes an attempt	10	11.2
Needs time to answer	11	12.4
Answers confidently	5	5.6
Answers confidently & elaborate	3	3.4
Total	89	100

Table 5 shows 5 levels of responses of children about journey to the clinic. 67.4% does not comprehend the question followed by 12.4% who needs time to answer while 11.2% makes an attempt. 3.4% answers confidently and elaborate their reply while 5.6% answers confidently.

Table 6: Which reading text has been given?

Reading text	Frequency	Percentage
Level 1: Words	15	16.9
Level 2: Sentences	74	83.1
Total	89	100

Table 6: The reading text was according to the intellectual and educational level of the children. 83.1% could read sentences while 16.9% couldn't perform up-to the mark.

Table 8: Comprehension?

Comprehension	Frequency	Percentage
Unable to make attempt	26	29.2
Can read few words	15	16.9
Can read text	10	11.2
Can read without help	18	20.2
Can read fluently with confidence	20	22.5
Total	89	100

Table 8: 29.2% of the sample was unable to read either through Braille or print while 16.9% could read a few words. However, 42.7% children could read fluently and without help.

Observations:

It is important to see the child with visual impairment first as a child (with all of the growing-up problems of other children), and secondarily as a child with a visual impairment. One aspect of social skills is often overlooked – that is of conversation. It was noticed that children sometimes have difficulty initiating, maintaining, and bringing closure to conversations. Some of these difficulties are due to the inability to observe facial expressions and body language, but the child's lack of experiences and egocentricity may also have contributed to the problem. Specific attention may need to be given to conversational skills (e.g., talking about events, people, objects, and encouraging the child to talk about them as well; reading a story and asking the child to fill in details or even retell the story). If these skills are practiced in early childhood, they may be less troublesome later, in school and in life.

Trinidad:

Trinidad lies in the Caribbean Sea off the northeast coast of Venezuela. Trinidad, the larger at 1,864 sq mi (4,828 sq km), is mainly flat and rolling, with mountains in the north that reach a height of 3,085 ft (940 m) at Mount Aripo. The population of Trinidad and Tobago in 2006 was estimated at 1,065,842 (annual population growth rate 2%) with 20% of the population under 15 years of age. According to UN, life expectancy is 68 years (men) and 74 years (women) and according to the 2003 estimates the literacy rate in Trinidad is 99%.

Education Services:

In Trinidad, primarily the education services for the blind have been delivered through an inclusive education system supported by a special unit in the Ministry of Education. There are trained itinerant teachers who provide support to children with VI in mainstream schools. Trinidad also has a school for the blind with an enrolment of 20-22 children. 10 years ago, a national survey was undertaken to identify the children with visual impairment. Since then, there has been no survey to identify children with disabilities.

Estimated need for educational services for VI in Trinidad

Population	Childhood Pop.	Children with LV (6/60 to >6/18)	BI/SVI NPL to >6/60	Requiring Ed. Support	
				Sighted	Non-sighted
1065842	213168	256	128	90	21

The need is calculated using an estimated prevalence of Childhood Blindness of 0.6/1000 and twice this number as having low vision. The numbers are calculated using CBL/LV calculation tool. This indicates that there are at least 21 children in the country who would potentially require education with non-sighted techniques while there are another 90 children who have severe visual impairment and require educational support through sighted methods. In addition to the above, there are about 250 children with LV who will be having difficulties in accessing text and coping with the class work and the chances of their dropping out of school are significantly higher due to unavailability of necessary support.

Coverage

Required Ed. Support Sighted	Required Ed. Support Non-sighted	Number of Children in the programme	Number of Children assessed
90	21	50	56

There are around 50 children enrolled in the programme and 6 children have been newly identified who weren't assessed earlier. Our data indicates that this programme has been providing services to 62% of the children in need. Considering the coverage rate in other countries, this coverage is reasonable however, an active case finding mechanism can be helpful to identify the children with VI who are not accessing educational services.

Distribution by Age:

Age groups (years)	Frequency	%
1 - 5	2	3.6
6 -10	15	26.8
11 -15	23	41.1
16 - 20	15	26.8
21 - 25	1	1.8
Total	56	100

Table 1 shows distribution of age in the sample. Majority of the children in programme are between the ages of 6-15 i.e. 68% which is the normal school going age of sighted children as well. Most of the children enrolled are studying in the grades appropriate to their age groups.

Distribution by Sex:

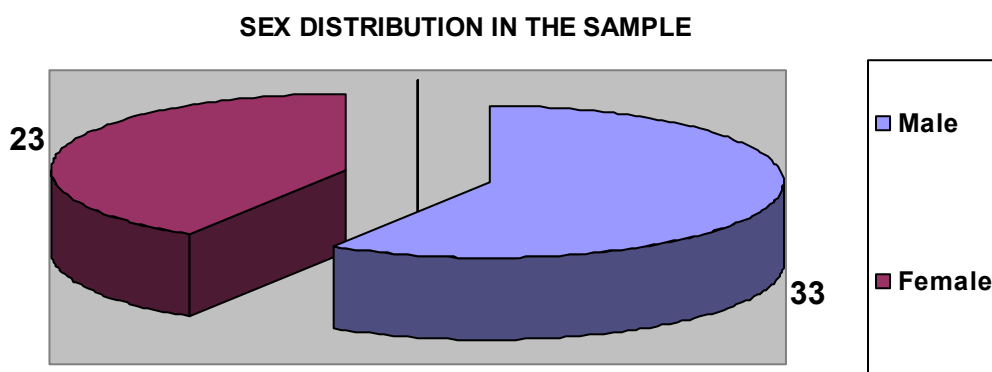


Fig. 1: Looking at the gender distribution of the sample, it is evident that more male than female children are accessing educational services in the programme. A concerted effort is needed to identify more female children.

Number of years spent in the programme:

No. of years in the programme	Frequency	%
Less than 1 year	8	14.3
1 – 3 years	26	46.4
More than 3 years	22	39.3
Total	56	100

Table 2: The data shows that 46.4% of the children have spent more than 1-3 years in the programme, which also indicate the recent escalation of the programme. New enrollment again seems to be reasonable as 8 children were identified who have joined the school this year.

Any other disability:

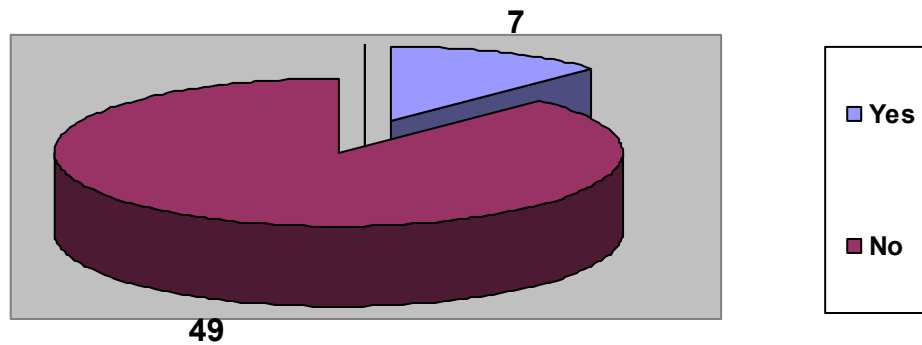


Fig. 2: 12.5% of children had additional disabilities which include pre-dominantly children with hearing impairment, followed by learning disabilities.

Reading ability:

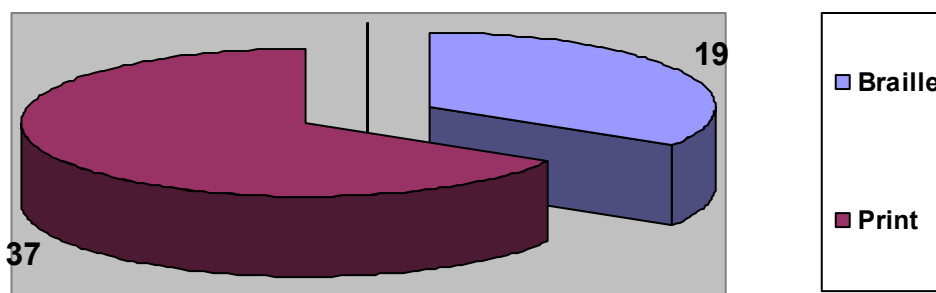


Fig. 3: 66% of sample was using large print as their learning medium while 34%% were Braille users. This corroborates well with the visual status of the children and in most cases only those needing Braille were its users and those with useful remaining vision were using print.

Distribution by Diagnosis:

Diagnosis	Frequency	%
Normal	9	16.1
Refractive Error	2	3.6
Corneal disease	7	12.5
Lens related	10	17.9
Retinal disease	19	33.9
Albinism	1	1.8
Others	5	8.9
Glaucoma	3	5.4
Total	56	100

Table 3: shows that nearly 24% children had visual impairment due to causes which were either preventable or treatable. Retinal diseases feature quite high on the list of causes of blindness/SVI. It is interesting to know that 16.1% of the sample falls within the normal category.

Types of Refractive Errors:

Type of Refractive Error	Frequency	%
Blind	17	30.4
Myopia	17	30.4
Hypermetropia	6	10.7
Plain Astigmatism	5	8.9
None	11	19.6
Total	56	100

Table 4: Shows significant refractive errors where Myopia was the most common i.e. 30.4%, followed by hypermetropia 10.7%.

Presenting Distance Vision:

Presenting distance vision	Frequency	%
≥HM (Blind)	17	30.4
≥ 1.4 (Blind)	5	8.9
≥ 1.1 - 1.3 (SVI)	11	19.6
≥ 0.6 - 1.0 (LV)	11	19.6
≤ 0.5 (Normally sighted)	0	0
≤ 0.3 – 0.5	2	3.6
0.3 or better	10	17.9
Total	56	100

Table 5: This table shows that 58.90% were either blind or severe visual impaired, while 19.6% had low vision.

Corrected Distance Vision:

Corrected Distance Vision	Frequency	%
≥HM (Blind)	17	30.4
≥ 1.4 (Blind)	3	5.4
≥ 1.1 - 1.3 (SVI)	7	12.5
≥ 0.6 - 1.0 (LV)	16	28.6
≤ 0.5 (Normally sighted)	13	23.2
Total	56	100

Table 6: A slight shift was noted in the categories after appropriate prescription of spectacles. The percentage of blind/SVI reduced from 58.90% to 48.30%, where those who improved with correction shifted from the previous to the low vision category which increased to 19.6% from 28.6%. The number of children with normal/near normal vision was increased from 12 to 13.

PRESENTING NEAR VISION

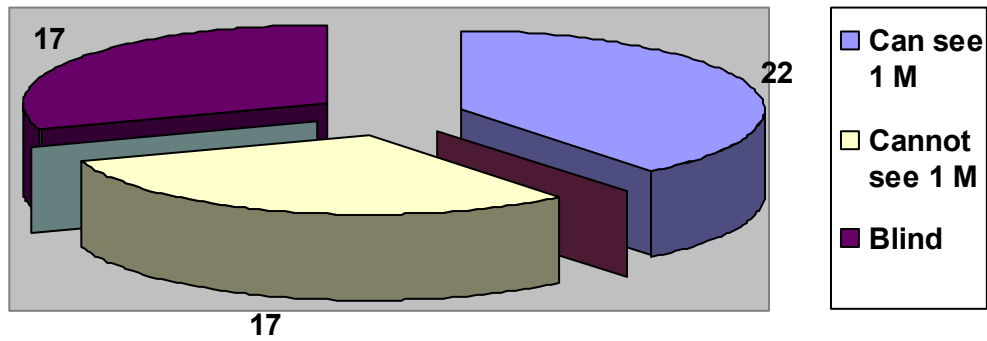


Fig. 4: On presentation, 17 children could not read N8 print (newspapers, books etc) while the remaining 22 could read N8 print either unaided or with their existing spectacles. The remaining children did not have enough residual vision to access print and needed materials or non-sighted methods.

CORRECTED NEAR VISION

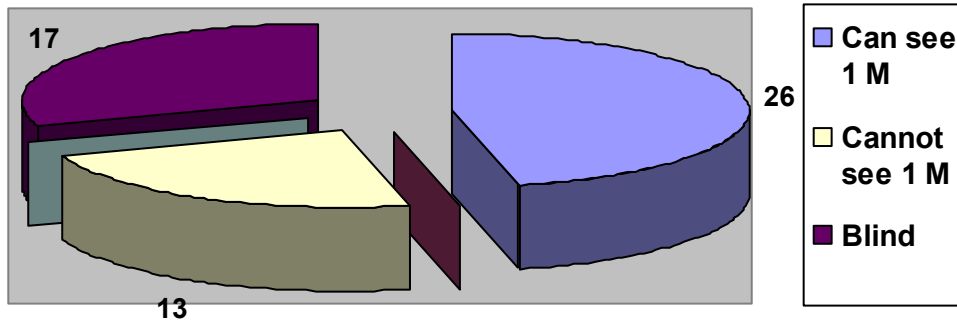


Fig. 5: A slight shift was noted in the categories after appropriate prescription of spectacles and the percentage of children who can't see 1M reduced from 30.36% to 23.21%.

Contrast sensitivity:

Contrast sensitivity	Frequency	%
Blind	17	30.4
Can read 20 or more at 1 meter	26	46.4
Can read 10 - 20 at 1 meter	3	5.4
Can read <10 at 1 meter	10	17.9
Total	56	100

Table 7: Contrast sensitivity is an important visual function which helps an individual in mobility, recognition of faces, copying from the blackboard and reading fine print. 23.30% children require additional lighting and high contrast materials.

Colour vision:

Colour vision	Frequency	%
Blind	17	30.4
Can see 2-3 out of 4 colours shown	39	69.6
Can see 1 out of 4 colours shown	0	0
Cannot see any out of 4 colours shown	0	0
Total	56	100

Table 8: Of those children with useful remaining vision majority had normal colour vision.

Visual fields:

Visual fields	Frequency	%
Blind	17	30.4
Normal fields	34	60.7
Constricted fields	5	8.9
Total	56	100

Table 9: Of the children with residual vision, 8.9% had significant constriction in their visual fields and could benefit from orientation and mobility training.

USE OF TELESCOPES IN THE SAMPLE

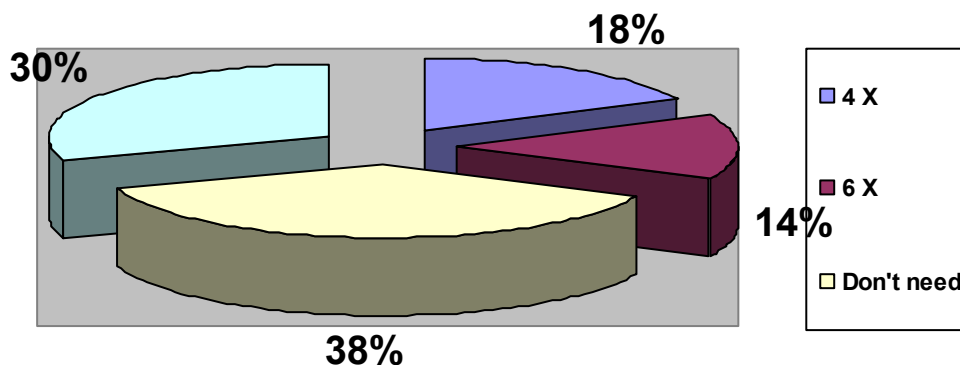


Fig. 6: 32% of the children could benefit from the prescription of a telescope and achieved a normal or near-normal vision. 4X handheld monocular telescope was found to be most effective, followed by the 6X telescope.

USE OF MAGNIFIERS IN THE SAMPLE

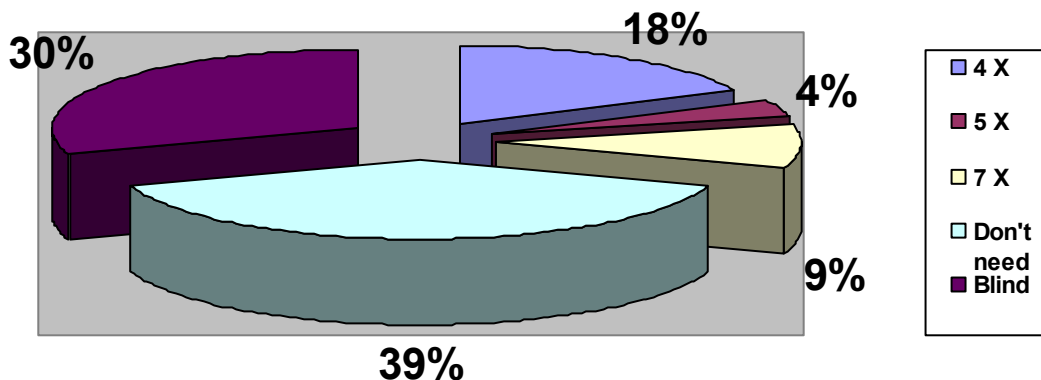


Fig. 7: 31% of the children could benefit from the use of magnifiers. 4X handheld magnifier were found to be most effective, followed by 7X magnifier.

Cognitive Assessment

Methodology:

The methodology of cognitive assessment was same as Jamaica.

Table 1: What is your name? How do you spell that?

Name & spelling	Frequency	Percentage
Does not comprehend	1	1.8
Makes an attempt	0	0
Needs time to answer	4	7.1
Answers confidently	13	23.2
Answers confidently & elaborate	18	67.9
Total	56	100

Table 1 shows 5 levels of response of children about their name and its spellings. 67.9% responded confidently and elaborated their reply while 23.2% answer confidently. Only one child could not comprehend.

Table 2: How old are you? And which class do you attend?

Age & class	Frequency	Percentage
Does not comprehend	0	0
Makes an attempt	1	1.8
Needs time to answer	6	10.7
Answers confidently	12	21.4
Answers confidently & elaborate	37	66.1
Total	56	100

Table 2 shows response of children when asked about their age and class. 87.5% answers confidently, followed by 10.7% who needed time to answer.

Table 3: Where do you live and which school do you attend?

Town & school	Frequency	Percentage
Does not comprehend	0	0
Makes an attempt	1	1.8
Needs time to answer	3	5.4
Answers confidently	12	21.4
Answers confidently & elaborate	40	71.4
Total	56	100

Table 3 shows response of children about their village and school. 71.4% answers confidently and elaborated while 21.4% answer confidently.

Table 4: What is your favourite subject at school and why?

Favorite subject	Frequency	Percentage
Does not comprehend	1	1.8
Makes an attempt	0	0
Needs time to answer	6	10.7
Answers confidently	19	33.9
Answers confidently & elaborate	13	53.6
Total	56	100

Table 4: 87.5% responds confidently followed by 10.7% who needs time to answer about their favorite subject at school while one child does not comprehend the question.

Table 5: Can you tell us about your journey to this clinic today?

Journey to clinic	Frequency	Percentage
Does not comprehend	1	1.8
Makes an attempt	1	1.8
Needs time to answer	3	5.4
Answers confidently	21	37.5
Answers confidently & elaborate	30	53.6
Total	56	100

Table 5 shows 5 levels of responses of children about journey to the clinic. 53.6% answers confidently and elaborate their reply while 37.5% answers confidently.

Table 6: Which reading text has been given?

Reading text	Frequency	Percentage
Level 1: Words	10	17.9
Level 2: Sentences	46	82.1
Total	56	100

Table 6: The reading text was according to the intellectual and educational level of the children. 82.1% could read sentences while 17.9% were not fluent with sentences.

Table 7: Comprehension?

Comprehension	Frequency	Percentage
Unable to make attempt	7	12.5
Can read few words	4	7.1
Can read text	7	12.5
Can read without help	12	21.4
Can read fluently with confidence	26	46.4
Total	56	100

Table 7: 12.5% of the sample was unable to read either through Braille or print while 7.1% could read a few words. However, 67.80% children could read fluently and without help.

Observations:

The above data shows that visual and cognitive developments are closely related. Most of the children actively participated in the assessment and patterns of difficulties noted in the assessment indicate that certain compensatory intervention strategies to facilitate learning and performance may be particularly helpful for children with VI.

GUYANA:

Guyana is situated on the northern coast of South America, east of Venezuela, west of Suriname, and north of Brazil. A tropical forest covers more than 80% of the country. The population of Guyana in 2006 was estimated 767,245 (growth rate: 0.3%) with 30% of the population under 15 years of age. The life expectancy is 65.9 and literacy rate is estimated 99% in 2003. Guyana's population is made up of five main ethnic groups--East Indian, African, Amerindian, Chinese, and Portuguese. Ninety percent of the inhabitants live on the narrow coastal plain, where population density is more than 115 persons per square kilometre (380 per sq. mi.). The population density for Guyana as a whole is low--less than four persons per square kilometer.

Educational services:

Although the government has provided free education from nursery school to the university level since 1975, it has not allocated sufficient funds to maintain the standards of what had been considered the best educational system in the region. Many school buildings are in poor condition, there is a shortage of text and exercise books, the number of teachers has declined, and fees are being charged at the university level for some courses of study for the first time. Education for the visually impaired children in Guyana is offered through an integrated education program based at two resource centres in Georgetown and Linden. A total of 26 children are enrolled in the two resource centres; eighteen in George Town and eight in Linden.

Estimated need for educational services for VI in Guyana

Population	Childhood Pop.	Children with LV (6/60 to >6/18)	BI/SVI NPL to >6/60	Requiring Ed. Support	
				Sighted	Non-sighted
767245	230174	276	138	97	23

Table 1: The need is calculated using an estimated prevalence of Childhood Blindness of 0.6/1000 and twice this number as having low vision. The numbers are calculated using CBL/LV calculation tool.

Coverage

Required Ed. Support Sighted	Required Ed. Support Non-sighted	Number of Children in the programme	Number of Children assessed
97	23	26	26

Table 2: Of the total number of 120 children with blindness and severe visual impairment who require additional educational support only 26 have been identified and enrolled in the program. This translates into coverage of 21.6%. This number does not include 276 children with low vision who may be enrolled in the schools but would be facing difficulties in accessing text and participation in the class work. This low enrollment could be partially understood in the context of low population density and scattered population. Also there is no active case finding mechanism for identification of VI children in place.

Distribution by Age:

Age groups (years)	Frequency	%
1 - 5	2	7.7
6 -10	9	34.6
11 -15	11	42.3
16 - 20	4	15.4
21 - 25	0	0
Total	26	100

Table 3: 77% of the children are in the age groups of 6-15, while 15.4% are older.

Distribution by Sex:

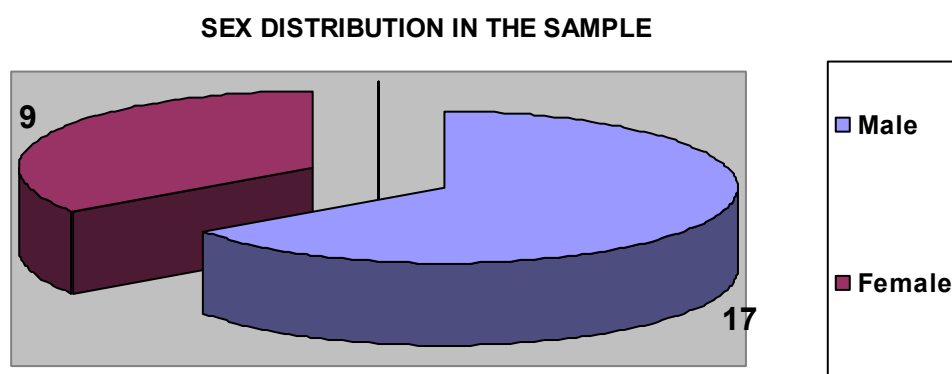


Fig. 1: There is a strong gender imbalance in the enrollment of girls with visual impairment and there are twice as many boys as girls in the programme.

Number of years spent in the programme:

No. of years in the programme	Frequency	%
Less than 1 year	8	30.8
1 – 3 years	5	19.2
More than 3 years	13	50
Total	26	100

Table 4: Most of the children have been in the education program for more than three years. New enrollment is also reasonable as 30% of the children have been enrolled in the program in last one year.

Additional disability:

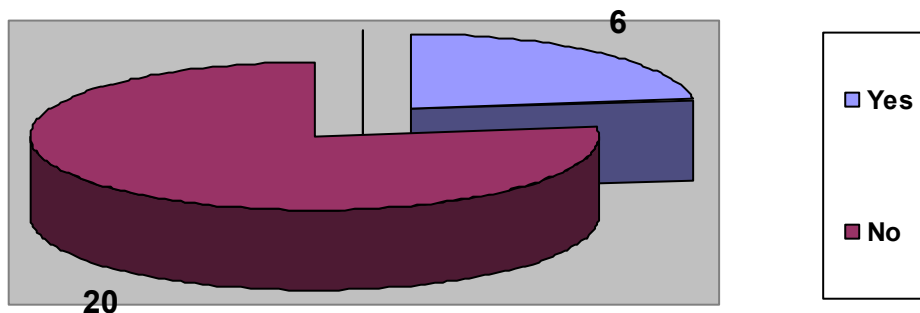


Fig. 2: A significant proportion of children (23%) had additional disabilities. Most frequently encountered other disability was learning disorder followed by hearing impairment.

Reading ability:

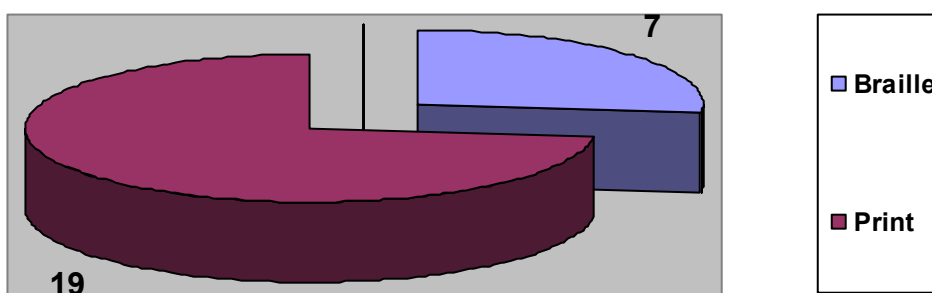


Fig. 3: Of the 26 children examined seven were Braille readers while the remaining were using large print.

Distribution by Diagnosis:

Diagnosis	Frequency	%
Normal	1	3.8
Refractive Error	4	15.4
Corneal disease	3	11.5
Lens related	9	34.6
Retinal disease	4	15.4
Albinism	2	7.7
Others	3	11.5
Glaucoma	0	0
Total	26	100

Table 5: The most common cause of visual impairment was lens related, mostly amblyopic followed by Aphakia but also posterior capsule opacification and other surgery related complication. A small number of children with refractive errors had also been wrongly enrolled in the programme when all they only require spectacles for the correction of their refractive errors.

Types of Refractive Errors:

Type of Refractive Error	Frequency	%
Normal	8	30.8
Myopia	9	34.6
Hypermetropia	4	15.4
Plain Astigmatism	2	7.7
None	3	11.5
Total	26	100

Table 6: Of those children with significant refractive errors, myopia was the most common at 34%, followed by hypermetropia and astigmatism.

Presenting Distance Vision:

Presenting distance vision	Frequency	%
Blind (HM or less)	8	30.8
≥ 1.4 (Blind)	2	7.7
≥ 1.1 - 1.3 (SVI)	3	11.5
≥ 0.6 - 1.0 (LV)	7	26.9
≤ 0.5 (Normally sighted)	1	3.8
≤ 0.3 – 0.5	1	3.8
0.3 or better	4	15.4
Total	26	100

Table 7: On examination 38.5% of the children were found to be blind. 1.5% had severe visual impairment while a significant number (27%) had low vision.

Corrected Distance Vision:

Corrected Distance Vision	Frequency	%
Normal	8	30.8
≥ 1.4 (Blind)	3	11.5
≥ 1.1 - 1.3 (SVI)	3	11.5
≥ 0.6 - 1.0 (LV)	7	26.9
≤ 0.5 (Normally sighted)	5	19.2
Total	26	100

Table 8: No classification shift was noted with prescription of best correction except a small increase in the number of normal sighted from low vision.

PRESENTING NEAR VISION

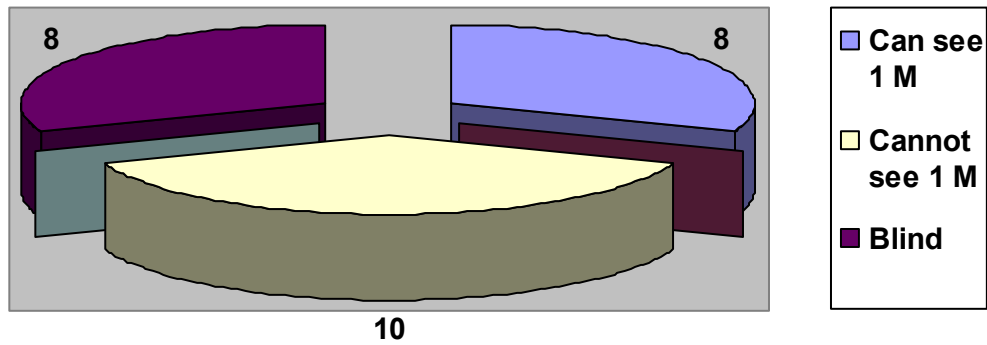


Fig. 4: On presentation, 10 children could not read N8 print (newspapers, books etc) while the remaining 8 could read N8 print either unaided or with their existing spectacles. The remaining children did not have enough residual vision to access print and needed materials or non-sighted.

CORRECTED NEAR VISION

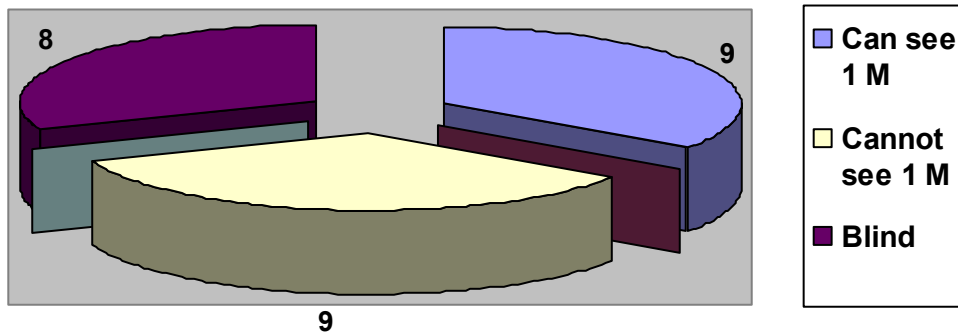


Fig. 5: No significant change in the reading ability was noted with the prescription of new spectacles.

Contrast sensitivity:

Contrast sensitivity	Frequency	%
Blind	8	30.8
Can read 20 or more at 1 meter	9	34.6
Can read 10 - 20 at 1 meter	3	11.5
Can read <10 at 1 meter	6	23.1
Total	26	100

Table 7: Contrast sensitivity helps an individual in mobility, recognition of faces, copying from the blackboard and reading fine print. 34.60% children require additional lighting and high contrast materials.

Colour vision:

Colour vision	Frequency	%
Blind	8	30.8
Can see 2-3 out of 4 colours shown	17	65.4
Can see 1 out of 4 colours shown	1	3.8
Cannot see any out of 4 colours shown	0	0
Total	26	100

Table 8: Of those children with useful remaining vision majority had normal colour vision while 3.8% children had difficulty in recognizing basic colours. The teachers in the programme should be aware of the colour vision problems and need to develop teaching materials accordingly.

Visual fields:

Visual fields	Frequency	%
Blind	8	30.8
Normal fields	17	65.4
Constricted fields	1	3.8
Total	26	100

Table 9: One child had significant constriction in the visual fields and could benefit from orientation and mobility training.

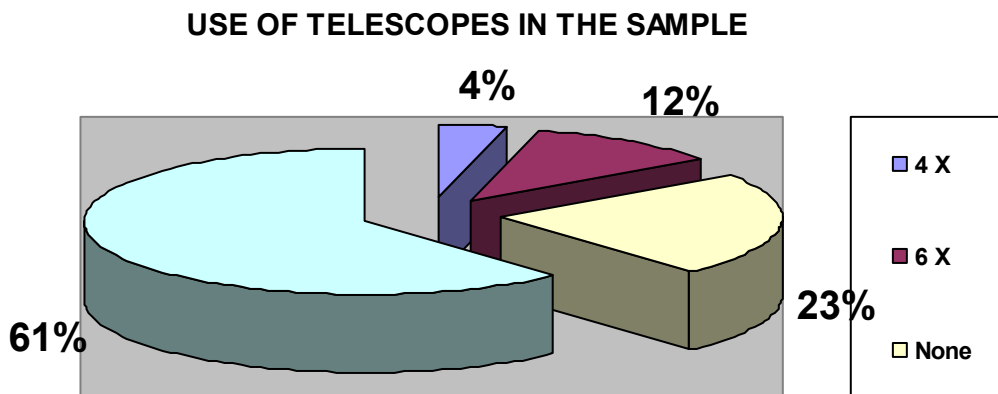


Fig. 6: Nearly 16% of the children could benefit from the prescription of a telescope and achieve a normal or near-normal vision. 6X handheld monocular telescope was found to be most effective, followed by the 4X telescope.

USE OF MAGNIFIERS IN THE SAMPLE

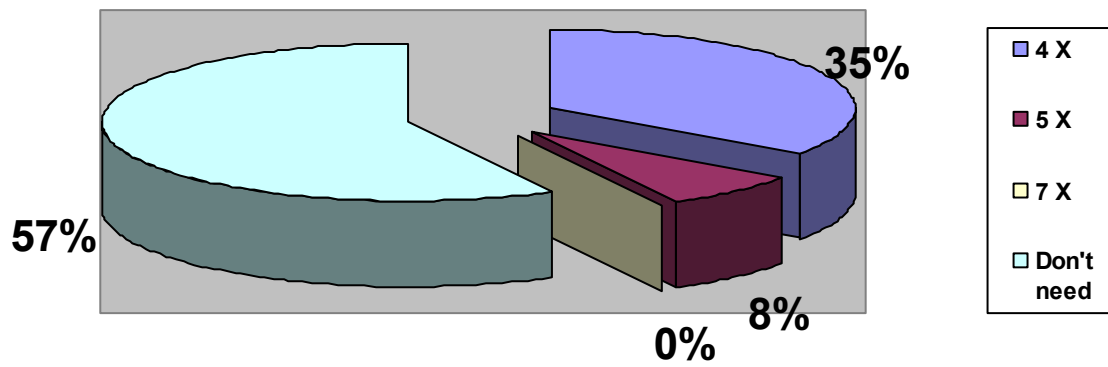


Fig. 7: Nine children who couldn't read small print all could read N8 with the aid of magnifiers. Two children who could read 1M without magnifiers were also prescribed 4X handheld magnifiers to facilitate their reading.

Cognitive Assessment

The methodology of cognitive assessment was same as done in Jamaica and Trinidad.

Table 1: What is your name? How do you spell that?

Name & spelling	Frequency	Percentage
Does not comprehend	2	7.7
Makes an attempt	0	0
Needs time to answer	2	7.7
Answers confidently	1	3.8
Answers confidently & elaborate	21	80.8
Total	26	100

Table 1 shows 5 levels of response of children about their name and its spellings. 80.8% responded confidently and elaborated their reply while 3.8% answer confidently, followed by 7.7% who needed time to answer.

Table 2: How old are you? And which class do you attend?

Age & class	Frequency	Percentage
Does not comprehend	2	7.7
Makes an attempt	0	0
Needs time to answer	1	3.8
Answers confidently	4	15.4
Answers confidently & elaborate	19	73.1
Total	26	100

Table 2 shows response of children when asked about their age and class. 88.5% answers confidently, while 7.7% could not comprehend the question.

Table 3: Where do you live and which school do you attend?

Town & school	Frequency	Percentage
Does not comprehend	2	7.7
Makes an attempt	1	3.8
Needs time to answer	4	15.4
Answers confidently	3	11.5
Answers confidently & elaborate	16	61.5
Total	26	100

Table 3 shows response of children about their village and school. 15.4% needs time to answer, 3.8% made an attempt while 7.7% doesn't comprehend the question.

Table 4: What is your favourite subject at school and why?

Favorite subject	Frequency	Percentage
Does not comprehend	5	19.2
Makes an attempt	0	0
Needs time to answer	2	7.7
Answers confidently	4	15.4
Answers confidently & elaborate	15	57.7
Total	26	100

Table 4: 73.1% responds confidently while 19.2% does not comprehend the question.

Table 5: Can you tell us about your journey to this clinic today?

Journey to clinic	Frequency	Percentage
Does not comprehend	2	7.7
Makes an attempt	1	3.8
Needs time to answer	5	19.2
Answers confidently	5	19.2
Answers confidently & elaborate	13	50
Total	26	100

Table 5: 50% answers confidently and elaborated, followed by 19.2% who answers confidently. 19.2% needs time to answer while 2 children could not comprehend the question.

Table 6: Which reading text has been given?

Reading text	Frequency	Percentage
Level 1: Words	9	34.6
Level 2: Sentences	17	65.4
Total	26	100

Table 6: The reading text was according to the intellectual and educational level of the children. 65.4% could read sentences while 34.6% couldn't perform up-to the mark.

Table 7: Comprehension?

Comprehension	Frequency	Percentage
Unable to make attempt	3	11.5
Can read few words	1	3.8
Can read text	7	26.9
Can read without help	6	23.1
Can read fluently with confidence	9	34.6
Total	26	100

Table 7: 11.5% of the sample was unable to read either through Braille or print while 3.8% could read a few words. However, 57.70% children could read fluently and without help.

Conclusion:

The above data shows the strengths and weaknesses of the cognitive profiles of the sample and factors which influence their performance. Most of the children actively participated in the assessment and it is clearly evident that *lack of vision, in itself, does not inhibit learning, but lack of opportunity to function does* and the less socially interaction there is, the less cognitive growth there will be. The sample is a good example of provision of many and varied concrete experiences i.e. "hands on" and "interactive" which help children with VI to achieve their cognitive potential.

Conclusion:

The programmes in Jamaica, Trinidad, and Guyana have been in progress for a number of years and have brought about a quantitative and qualitative change to access to education for children with visual impairment. However, the focus now should also shift to the issues of quality and how interventions could be designed to best suit the needs of individual children with visual impairment (child focused strategy).

The assessment shows the coverage variance from 21-60% in three countries. An identification mechanism needs to be put in place to further identify and enroll the children with VI. There is a bias towards male child and this need to be addressed so that more girls are identified and enrolled in the programme. Male to female ratio is imbalanced and there is a need to put a mechanism in place to identify and enroll more girls in the programme. Another important finding is the percentage of children with additional disabilities in the programme (Jamaica 17%, Trinidad 12.5%, and Guyana 23%) which is reasonably good but this could still pose an additional challenge and may require some capacity to support these children.

The findings from Jamaica assessment indicate that the predominant cause of visual impairment in this sample was children with retinal disorders. The percentage of children with VI due to Glaucoma was substantially high. On presentation, 67.40% were either blind or severe visual impaired, while 16.9% had moderate low vision. After correction, there was a slight shift noticed where the percentage of blind/SVI reduced from 67.40% to 58.40%, where those who improved with correction shifted from the previous to the low vision category which increased to 25.8% from 16.9%. On presentation, 25 children could not read normal print (newspaper print; N8), after correction 18 could read N8 with the help of spectacles and magnifiers. About 23% had moderate to severe contrast sensitivity loss, while 10.1% had difficulty in recognizing basic colours. This should be factored into their curriculum design especially where drawings, pictures and diagrams are concerned and ergonomics should be given due attention.

The findings from Trinidad assessment show that the predominant cause of visual impairment in this sample was children with retinal disorders (33.9%). On presentation, 58.90% were either blind or severe visual impaired, while 19.6% had low vision. After correction, there was a slight shift noticed where the percentage of blind/SVI reduced from 58.90% to 48.30%, where those who improved with correction shifted from the previous to the low vision category which increased to 19.6% from 28.6%. On presentation, 17 children could not read N8 print (newspapers, books etc) while the remaining 22 could

read N8 print either unaided or with their existing spectacle., after correction the percentage of children who can't see 1M reduced from 30.36% to 23.21%. About 23.3% had moderate to severe contrast sensitivity loss. This should be factored into their curriculum design especially where drawings, pictures and diagrams are concerned and ergonomics should be given due attention. 9% had significant constriction in their visual fields and could benefit from orientation and mobility training.

The findings from Guyana assessment indicate that the predominant cause (34.6%) of visual impairment in this sample was children with lens related disorders. On presentation, 38.5% of the children were found to be blind. 1.5% had severe visual impairment while a significant number (27%) had low vision. No classification shift was noted with prescription of best correction except a small increase in the number of normal sighted from low vision. On examination, 10 children could not read N8 print (newspapers, books etc) while the remaining 8 could read N8 print either unaided or with their existing spectacle. No significant change in the reading ability was noted with the prescription of new spectacles. About 34.60% had moderate to severe contrast sensitivity loss. This should be factored into their curriculum design especially where drawings, pictures and diagrams are concerned and ergonomics should be given due attention.

The assessment showed that low vision services are not available in the Jamaica and Trinidad and availability of LVDs is limited. Few donated second-hand hand held magnifiers was all that was available at the Salvation Army School for the Blind while a small inventory of devices is maintained at the headquarters of Jamaica Association of the Blind. In Trinidad, we found no evidence of any availability of devices except in one case where a child had got a telescope and magnifier from USA. A low vision clinic is functional in George Town, Guyana, however, the number of children who had undergone assessment and prescription of LVDs in this clinic is very low. No systematic programme is in place for referral of children from education to clinical services or vice-a versa.

One of the main constraints in delivering effective services to the children is unavailability of clinically trained personnel who could prescribe LVDs. This is due to unavailability of optometry cadre in the public sector and lack of interest in LV services by the private sector. Most of the teachers have undergone special needs training however; this training is weak where working with children with LV is concerned.

Cognitive Assessment

Cognitive assessments are used to measure student achievement and prerequisites for academic advancement. Successful completion of such assessments is absolutely key to

a student's education. Personnel responsible for the administration of such assessments should possess more knowledge of the educational needs of students with VI. As discussed earlier, there is a need for further refinement and fine-tuning of cognitive assessment tool. The text was developed according to children's intellectual and educational level and results provides an insight of the strengths and weaknesses of the cognitive profiles of the sample and factors which influence their performance. As a result, the teaching mechanism can be reviewed and revised according to the need of the children.

RECOMMENDATIONS:

- Considering the magnitude of the need in Caribbean, there is an urgent need to develop active case finding mechanisms. This could be in the form of national surveys, similar to the one previously carried out in Trinidad or through strengthening of primary and secondary eye care networks and promotion of cross-referral.
- These IE programmes are best demonstration models and could be used for the purpose of advocacy. As such in the medium term, there is a need to bring the standards and quality to the desirable level.
- All the children in the programme need to have their comprehensive ophthalmic assessment done before the school enrolment. An early assessment mechanism needs to be developed and implemented.
- Record keeping system needs to be set-up and strengthen. It is important to maintain the assessment record of the children for future interventions.
- A mechanism needs to be developed for early identification, detection, and treatment of children with curable eye conditions and refractive errors. Ideal vehicle for this could be through strengthening of primary eye care and secondary eye services in these countries.
- A focal person has been identified and trained as part of this exercise. This is an addition to a focal person previously trained through the national focal person training programme. There is a need to strengthen the capacity of these national focal persons so they can further identify and organize trainings for ophthalmologists, teachers, and primary health workers.
- There is a need to develop low vision services in Trinidad and Jamaica where children could be provided with appropriate interventions.
- All the itinerant teachers involved with the children with VI needs to be trained as focal point in low vision responsible for the functional assessment and provision of assistive devices. There will also be a requirement of a low vision kit which could be used for this purpose.
- A central inventory of LVDs needs to be developed at CCB HQ with distribution points in individual countries to ensure the access to low vision devices by the children in particular.
- The ophthalmic community, in general, needs to be oriented and sensitised to the needs of children with VI.

- Sensitisation of the teachers regarding cognitive, behavioural and social development of the student needs to be initiated. For this purpose, a dedicated module in LV needs to be initiated at MICO teachers training college and at least one in-services teacher and rehabilitation field officer needs to undergo this training. A resource room needs to be developed at MICO to facilitate this training.
- A comprehensive assessment service (educational performance) needs to be developed to establish the strengths and weaknesses of each student and offer him/her better support.
- The refractionists need to be better trained in refraction and low vision as resource persons. The regional refractionists training programme in Guyana needs to be strengthened to cater this need.
- Different studies suggest that the visual impairment is higher in girls than the boys so positive steps need to be taken to identify and enrol more girl children in the programme.
- Networking with other service providers and additional capacity will be needed to cater to the needs of children with VI and additional disabilities.

Annex A

Clinical and Cognitive Assessment of Children in the Inclusive Education Programme TO BE IMPLEMENTED IN 4 COUNTRIES ACROSS THE CARIBBEAN Terms of Reference

1.0 Rationale

According to surveys carried out over the last ten years in various parts of the world there are a number of children who are either attending special schools or IE programmes who have adequate vision to cope in the mainstream setup. Also there are children who could benefit from surgical or refractive interventions and are needlessly blind. The main reasons for this are lack of coordination between eye care and education services and also the unavailability of personal trained to deal with children who have visual impairment.

Across the Caribbean and around the World; the visually impaired (VI) children can be divided into three sub-categories. Those with moderate visual impairment i.e. between 6/60 to >6/18 can manage well in the mainstream education with some support from teachers' parents and provision of optical and non-optical low vision (LV) devices. Almost all the children in this category can manage without additional support.

The second group i.e. children with severe visual impairment 3/60 to >6/60 need higher level of intervention and here the prescription and other support required is more complex. The degree of success with mainstream education depends more upon the parents and teachers and varies from case to case. Almost 50% children still can cope in mainstream schools.

Those with vision less than 3/60 (blind) often cannot cope in mainstream education with out support from itinerant teachers however a certain number about 10%-20% can still manage well, especially in higher grades. The remaining children in this category require more intensive support from the itinerant teacher, tactile materials including Braille, assistive technology, and teaching aids.

The Caribbean Council for the Blind and Sightsavers International believe that: All children with visual impairment must be provided with comprehensive clinical examination and those who are LV should be assessed for LV. Spectacles and LV devices (both optical and non-optical in combination with necessary environmental modifications) should be provided to all who can potentially benefit from these. These interventions will have a significant impact on the quality of life and access to education. At least one teacher in each of these schools should be trained and the others sensitised to the special needs of these children.

2.0 Purpose of the review

The purpose of the assessment is to review a random sample of children who are in education programs for children with visual impairment to ascertain their status and initiate steps to introduce more appropriate interventions where required.

The findings will be used to identify those factors or issues, which have influenced the realisation of the programme objectives and to what extent the programme is achieving or likely to achieve its overall aim. The key learning points and recommendations from the review will contribute to the future development of the inclusive education (IE) programme across the Caribbean.

3.0 Objectives

- To conduct a comprehensive clinical assessment of the children (randomly selected) in the programme to ascertain the educational support they require
- To undertake a preliminary cognitive assessment of the children to support development of the programme
- To review the current and planned future coverage of the programme and the implications for this on quality IE services in the country
- To review the achievement of project outcomes against normative expectations among children without visual impairments; and make recommendations as appropriate for the future development of the IE programme.

4.0 Methodology

4.1 The review will involve key stakeholders in the programme. The evaluation team is expected to consist of Refractive Error and Low Vision Advisor to SSI, an ophthalmologist/optometrist with specialisation in LV and one person involved in the programme. The team members will provide the necessary technical knowledge in LV, as well as sound programme management.

4.2 A random sample of 100 children will be drawn from the students in schools providing education services to children who are visually impaired in selected countries across the Caribbean. Children will be randomly selected from schools in the following countries, and examined (by the team) at their schools, or at the national resource unit, whichever is more acceptable, given issues of logistics.

- Jamaica
- Trinidad & Tobago;
- Guyana
- St. Lucia;

A detailed ophthalmic examination and LV assessment will be carried out by the review team. All the children will also undergo a preliminary simple cognitive test that is expected to add value to this assessment exercise and help in future development of the programme. After the examination, children with refractive error (RE) and LV will be advised and provided with appropriate interventions. In addition, the team will also include the necessary skills in analysis and report writing.

4.3 The team will review the project documents, and additional relevant information in advance of the review as well as site information during the review.

5.0 Programme area to be covered

5.1 **States:** Caribbean Countries where CCB is supporting IE programs

5.2 No. of children to be assessed

- 100 in all – SAMPLED AS A RATIO OF THE NUMBER OF CHILDREN IN PARTICIPATING NATIONAL PROGRAMS. The 4 countries selected will provide suitable ethnic mix.
- Selection will be per IE unit(program), i.e. **all** children in a selected unit(program) will be assessed, irrespective of the category of visual impairment, including those totally blind

5.3 Assessment centres

The assessment will be done in the following countries:

Guyana
Jamaica
Trinidad and Tobago
St. Lucia

5.4 Sources of information

Secondary

- Project documents: This is not relevant, since these are not projects but national education program (mostly funded by national Governments. CCB-SSI facilitated establishment of

programs by: training teachers, providing some equipment and lobbied for space to establish program.

- Individual case files of children assessed
- Student questionnaire for simple preliminary cognitive assessment. The format along with guidelines for use is given in Annex 4 (this might have to be translated into the local language). (All participating countries speak English as their primary language).
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Primary

- Itinerant or class room teachers (in the case of residential programs).
- Project coordinators (Preferably) Principals or head of resource units
- Optometrists/ key paramedical staff associated with the project
- Project directors
- SSI staff

6.0 Team

The core members would be:

- Hasan Minto, SSI RE and LV Advisor
- Petra Vanes, Optometrists - orthorapist – CCB;

* Other personnel to be determined on a country by country basis;

The team will be supported by the partners and local SSI staff, viz:

7.0 Outputs

The evaluation is expected to result in the following key outputs:

- A debriefing with key stakeholders and interested parties
- A programme evaluation report which outlines:
 - the key findings of the review
 - provides recommendations against the key objectives of the review
 - identifies the key learning opportunities for the programme in general and key stakeholders in particular
 - Informs of areas for further research.

- 8.0 Timeframe

8.1 In view of the distances and logistic arrangements required to cover the programme, the assessment is expected to require a timeframe of 10 days, which would include 8 days in the field.

9.1 All logistical arrangements will be made by the CCB Regional Offices, with support from partners as appropriate.

9.2 Other logistical details:

9.2.1 The assessment will take place (as far as possible) at the school's or resource units involved.

9.2.2 Arrangements will be made to ensure that the team travels to the designated locations on a daily basis.

9.2.3 In the case of residential schools, It is anticipated that the children will be examined on a class-by class basis, causing limited disruption in the normal school day.

9.2.4 Children who attend mainstreamed schools, will be deferred from school to participate in the activity, if sampled.

9.2.5 The itinerant or classroom teachers in charge of the selected IE units must accompany the children and be present at the point of assessment.

