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USAID/Cambodia—All Children Learning HEARING AND VISION DISABILITY SCREENING REPORT

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Table of Contents

List of Tables	ii
Abbreviations	iii
1 Introduction.....	1
2 Goals and Objectives.....	1
3 Methodology	2
3.1 Participants	2
3.2 Study Sample.....	3
3.3 Tools.....	3
3.3 Results Discussion.....	5
4 Limitations	11
5 Recommendations.....	12
Annex A: Forms	13
References	15

List of Tables

Table 1.	Upper Pre-school and Grade 1 Data.....	3
Table 2.	Vision Referral	5
Table 3.	Hearing Referral	5
Table 4.	Prevalence Rate Comparison—Vision	6
Table 5.	Prevalence Rate Comparison—Hearing	6
Table 6.	Referrals and Monitoring.....	8

Abbreviations

CCWC	Commune Committee for Women and Children
DOE	District Office of Education
MoEYS	Ministry of Education, Youth and Sport
NGO	nongovernmental organization
POE	Provincial Office of Education
USAID	US Agency for International Development

1 Introduction

The US Agency for International Development (USAID) launched the All Children Reading–Cambodia project in 2017. The objective of All Children Reading–Cambodia is to improve instruction in the early grades with the goal of increasing the learning outcomes of primary students with and without disabilities.

All Children Reading–Cambodia is assisting the Ministry of Education, Youth and Sport (MoEYS), its development partners, and nongovernmental organizations (NGOs) to develop a more harmonized approach to early grade reading. It is supporting the development of a rigorous, scalable, and inclusive intervention for the Khmer language in upper-pre-school and grades 1 and 2.

USAID is funding the implementation of this intervention in two provinces through All Children Reading–Cambodia. USAID funding will also be used to provide materials and training for grade 1 mathematics in one province using a package developed by the United Nations Educational, Scientific and Cultural Organization and other partners. The Global Partnership for Education is funding the implementation of the early grade learning program in five additional provinces.

All Children Reading–Cambodia is also supporting the MoEYS in developing a plan for scaling the program nationally and building capacity to implement that plan. As part of this work, the project is supporting the Ministry in mobilizing resources within the public and private sectors for inclusive early grade learning.

All Children Reading–Cambodia aims to create a Khmer language instruction program that is inclusive, considering the needs of children with mild to moderate disabilities in mainstream schools from the outset. In addition, the project is working with the MoEYS and partners to adapt these materials for Cambodian Sign Language and braille users in special education settings. All Children Reading–Cambodia is also working to pilot additional activities in selected districts to support the access to education of students with disabilities. This includes piloting screening tools for hearing and vision difficulties, as well as working with community volunteers to support students with disabilities in accessing education. The goal of these activities is to contribute to the evidence of what Cambodian children with disabilities need to meaningfully participate in Khmer language and literacy lessons.

Findings from the All Children Reading–Cambodia situation analysis of the education of children with disabilities in Cambodia show that several NGOs have developed screening tools; however, these tools lack guidelines, they are not comprehensive, and they are not yet used with all school-aged children. Thus, the project has piloted guidelines and screening tests for vision and hearing in order to assess whether they might be a viable optional for national adoption. During the first year of implementation in Kampong Thom Province, the project selected two districts in which to pilot screening tools for detecting hearing and vision difficulties among students.

2 Goals and Objectives

The goal of this activity was to pilot screening tools on a reasonable scale to determine if teachers could be trained to appropriately deploy these tools to identify children who may have hearing or vision difficulties. Additionally, we wanted to test whether the necessary relationships and arrangements could be established to enable referrals for further evaluation and support for students who may have vision or hearing difficulties. This report mostly describes the support provided in terms of medical assessments and the provision of assistive devices such as hearing aids and glasses, however All Children Reading – Cambodia is also working to support students more holistically, e.g. offering sign language to deaf students, large print and “easy to read” versions of reading materials, working with

teachers to support them to change instructional practices, and to provide families with information. It is important to note that these are crucial for many students to meaningfully access education. Those activities are and will continue to be documented in other project reports, however this report focuses on the initial step of medical assessment, and then the provision of assistive devices.

To ensure alignment to best practice, and suitability for the Cambodian context, the All Children Reading–Cambodia team (National Director and International Advisor) reviewed existing tools, methods, and procedures for detecting possible disabilities among children. Staff from four departments in the MoEYS (School Health, Special Education, Early Childhood Education, and Primary Education) were consulted throughout the screening development and implementation process. Additionally, eight local and international organizations with experience and expertise on screening and assessments for vision and hearing difficulties (Krousar Thmey, Save the Children, Karona Battambang, Center for Child and Adolescent Mental Health, Fred Hallows Foundation, Association for Aid and Relief-Japan, All Ears Cambodia, and Hope Cambodia) as well as RTI’s experts based in the Home Office were consulted throughout the tool identification and development process. As a result of this consultation, the Lea Symbols Chart was selected to test visual acuity, and a noise test coupled with a questionnaire was selected to screen for hearing acuity.

The present report documents activities and findings from the All Children Reading–Cambodia screening pilot. The All Children Reading–Cambodia screening process consisted of the following components:

- Collaboration with local experts, NGOs, and MoEYS to identify tools and procedures (March to July 2018)
- Training of trainers (August 2018)
- Field test with 200 pre-school students in Kampong Thom Province (August 2018)
- Consultation with local experts and the MoEYS, revised and finalized tools and procedures (September 2018)
- One-day teacher training (3 one-day trainings, with 5 groups trained on each day, 30 teachers per group) (October 2018)
- Screening and first round of monitoring (November 2018 to December 2018)
- Second round of monitoring (December 2018)
- Referrals for hearing and vision (January to February 2019)

3 Methodology

3.1 Participants

Screening data were collected from all upper pre-school and grade 1 teachers who were teaching in public schools in the two pilot districts in Kampong Thom Province. With the pilot focusing on the referral mechanism as well as the screening, it was also important to consider the capabilities of the limited vision and hearing medical service providers. Screening children in two districts provided sufficient data for the MoEYS to make informed decisions about scalability, while producing referrals that were manageable for local services.

In each school, all grade 1 classrooms were selected. In schools with more than one grade 1 class, all grade 1 classrooms in the school participated. Additionally, if the school had an

attached pre-school with an upper pre-school classroom, this class also participated in the screening.

Selection of Districts. Within the Kampong Thom Province, two districts (Kampong Svay and Stueng Saen) were selected as the designated districts for All Children Reading–Cambodia screening activities in the 2018–2019 school year. All Children Reading–Cambodia staff selected the districts based on their proximity to the provincial town and the neighboring province, as these areas have established medical facilities for referral services following school-based screening. The location of these districts also allowed for the project field staff to provide other support to students identified through the screening, for example visits to teachers, meetings with parents, provision of additional reading materials, and for some students, the provision of sign language instruction. It was agreed with the MoEYS and USAID that if the pilot proved successful in these districts, the project could later attempt to replicate this with more remote districts.

3.2 Study Sample

The pilot sample included participants from a total of 103 schools in the two districts in Kampong Thom Province in Cambodia, specifically 28 schools in Stueng Saen and 75 schools in Kampong Svay. A total of 137 grade 1 teachers (109 women) and 61 pre-school teachers (59 women) conducted screenings. A total of 5,809 students were enrolled in grade 1 and upper pre-school within the two districts, as shown in Table 1.

Not all students for whom consent was provided were screened, as can be seen in Table 1. Ten students were perceived to have an intellectual disability that made it difficult to participate in the screening, and some students were absent during the period of screening.

Table 1. Upper Pre-school and Grade 1 Data

	Upper Pre-school			Grade 1			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Enrolled	806	719	1,525	2,288	1,996	4,284	3,094	2,715	5,809
Completed consent form	780	705	1,485	2,216	1,925	4,141	2,996	2,630	5,626
Screened	770	695	1,465	2,211	1,918	4,129	2,981	2,613	5,594

3.3 Tools

All Children Reading–Cambodia used three tools in the screening pilot: (1) the Lea Symbols Chart, a clinically validated vision screening tool; (2) a noise test; and (3) a hearing questionnaire for parents. Additionally, an informal teacher interview was conducted among teachers involved in the second round of monitoring to gather feedback on the training and screening process.

Field Test. In August 2018, project staff conducted a field test using the E Chart and Lea Symbols Chart for vision screening, along with the questionnaire and a voice test for hearing screening. During the screening of 212 students for vision and 202 for hearing, one child was referred for vision assessment and no children were referred for hearing assessment. To confirm the hearing results of all the students from screening prior to the assessment, a hearing audiometry test was conducted by trained professionals from Krousar Thmey. As no children with hearing difficulties were identified during the field test it is difficult to draw strong conclusions about accuracy. However, both the basic test and the audiometry test produced the same results, so there was no evidence to suggest that it was not accurate.

Teachers reported that the Lea Symbols Chart was simple and easier for the children to understand than the E Chart. Teachers also reported that the voice test was simple and easy for the children to understand. However, because there were no sound meters used during the field test, it was difficult to determine if the voice levels were consistent through voice test implementation.

The process of selecting hearing screening tools

Overall, 32 of the 5,594 students screened in the two districts were referred for additional assessment, as shown in Table 2 below. Of these, 23 students were referred for a vision assessment after the school-based vision screening; 9 students were referred for a hearing assessment after the school-based hearing screening. Of the 23 referred for vision assessment, 6 were identified during the monitoring visits from project staff; 5 of them were confirmed as having vision impairment. Three of the 9 students who were referred for hearing assessment were identified during the monitoring support; 2 of them were confirmed as having hearing impairment. Additionally, in the 20% of schools that received no monitoring and support, 7 students were referred for vision; 6 of them were confirmed as having vision impairment. One student was referred for hearing but confirmed to have no hearing impairment. The referrals data of monitored schools and non-monitored schools are indicated in Tables 6 below.

After an in-depth review of student results, the inclusive education team noticed that in some classes all students were receiving the same results. Many of these results were 6/7.5, 6/9.5 or 6/12. According to the Ophthalmic Nurse who provided the project staff with the initial training on the tool, these results indicate a need for rescreening after 6 months. When this second screening was due, project field staff rescreened 504 students from 21 classes in six schools participated in the re-screening activities. Most classes were chosen because of the large number of students who received results indicating the need for rescreening, this was in order for the field team to try to understand if the original results were accurate. The results of this additional testing suggest that the first screening results were not accurate, even in schools that had received a monitoring visit during the first day of screening. 355 students were found to not require a follow-up. However, eight of the 504 students who were rescreened were identified as needing a referral for a medical assessment.

The twenty teachers who were visited during this rescreening were also interviewed about their experience. When asked why many students were reported to need rescreening they gave various reasons as to why they felt the results might not be an accurate assessment of the children's vision. 8 teachers reported that students had difficulty participating, however when tested by the field team, the team found that most children were in fact able to participate. Others talked about environmental challenges like finding appropriate, well-lit areas. Differences in the results provided by the teachers and those found by the field team lead us to believe teachers were not performing the screening accurately.

Of the 23 students who were referred for vision during the first screening, 15 students received glasses to correct their vision. Three of the 15 pairs of glasses were paid for by the family of the child, 2 during the referral process and 1 prior to the referral process. Additionally, 2 students were wearing glasses prior to the screening, totaling 17 students wearing glasses in target schools. One of the referred students had an eye condition that required medical services beyond the capacity of the Kampong Thom Eye Hospital. A medical follow-up was expected during the last week of March.

In the school-based hearing screening, 9 students were referred and 2 were confirmed as having a hearing impairment. One of the 9 referred students required removal of impacted ear wax to improve hearing acuity. All Ears Cambodia has suggested a 3-month follow-up for students who have received hearing aids to examine the child's ear, check to see if the hearing aid is functioning, worn properly, still fits the child, and to provide families with

additional batteries when necessary. A summary of referral data can be found in Tables 2 and 3 below.

Table 2. Vision Referral

Vision					
Total screened	Referred	Medical assessment	Total receiving assistive devices	Further referral	False positives
5,594	23 (0.4% of all children screened)	23	15 (0.27%)	1 (eye condition not corrected by glasses)	7
			16 (0.29%) children identified with vision impairment		

Table 3. Hearing Referral

Hearing					
Screened	Referred	Medical assessment	Total receiving assistive devices	Other medical condition	False positives
5,594	11 (0.2% of all the children screened)	11	4 (0.07%)	1 (wax)	6

3.3 Results Discussion

The tables above show that 0.27% of students who were reported to have been screened by teachers were confirmed to have a vision impairment and 0.07% had a hearing impairment. Making comparisons between the numbers of students identified in this study and the numbers identified in other studies in an attempt to assess the accuracy of the tools and screening processes is challenging, as other studies worked with students of different ages or in very different contexts. However, they may provide useful background and could potentially indicate if the process used by All Children Reading–Cambodia might be failing to detect many students with impairments.

One concern from the beginning of the study was that teachers, although trained, might not apply the full methods. While the team undertook monitoring visits to support teachers, aiming to build their confidence and to encourage their use of the tools, it was not possible to monitor all teachers. In addition, the team only observed and supported teachers performing the screening with the first six students, and although teachers completed the forms for their classes, it is possible they did not actually complete the screening. A lower prevalence rate than found in other studies could possibly suggest challenges with the tool and how it was being used, or that it was not being used by teachers with as many children as they reported. Additionally, it is important to consider that disability prevalence rates increase with age. Thus, low prevalence rates for young children, such as pre-school and grade one students, are not completely surprising. Results from some other studies, with children of various ages, are shown below in Tables 4 and 5, with more detailed information in the following paragraphs.

Table 4. Prevalence Rate Comparison—Vision

Vision			
Country	Prevalence rate	Tool	Grade/Age
Cambodia All Children Reading– Cambodia	0.27%	Lea Symbols Chart and medical assessment	Pre-school and Grade 1
Cambodian Demographic and Health Survey	0.3 % some difficulty 0.1% a lot of difficulty	Washington Group Questionnaire	Aged 5–14
Cambodia Prevalence Study	3.02% (impairment) 1.53% (disability) 0.52% (Moderate/ Severe/Profound Disability)	Questionnaire and medical assessment	Aged 2–9
Cambodia School Health Integrated Programming	0.58%	E Chart and medical assessment	Grades 1–6
Ethiopia School Health Integrated Programming	2.83%	E Chart and medical assessment	Grades 1–6
Ghana School Health Integrated Programming	0.73%	E Chart and medical assessment	Grades 1–6
Senegal School Health Integrated Programming	1.77%	E Chart and medical assessment	Grades 1–6

Table 5. Prevalence Rate Comparison—Hearing

Hearing			
Country	Prevalence Rate	Tool	Grade/ Age
Cambodia All Children Reading– Cambodia	0.07%	Basic noise test, hearing questionnaire, and medical assessment	Pre-school and Grade 1
Cambodia Cambodian Demographic and Health Survey	0.5% some difficulty 0.1% a lot of difficulty	Washington Group Questionnaire	Aged 5–14
Cambodia Prevalence Study	6.53% (impairment) 2.51% (disability) 0.79%(Moderate/Severe/Profound Disability)	Questionnaire and medical assessment	Aged 2–9
Cambodia Save the Children	1%	Basic noise test and medical assessment	Grades 1–6
Cambodia Krousar Thmey	0.5%	New voice test technology and medical assessment	Pre-school–Grade 3
Kenya	1.7 %	Hearing questionnaire and medical assessment	Pre-school

Although there are no prevalence rates for hearing and vision difficulties specifically for pre-school and grade 1 students, there are some data for primary school-aged children. The Cambodia Demographic and Health Survey 2014 used the Washington Group Questionnaire to establish prevalence rates for various disabilities (National Institute of Statistics,

Directorate General for Health, and ICF International, 2015). The survey reported that 0.3% of children between the ages of 5 and 14 years had some difficulty seeing and 0.5% had some difficulty hearing. Additionally, 0.1% of children reported having a lot of difficulty hearing or being unable to hear, while 0.1% reported having a lot of difficulty seeing or being unable to see. It is likely that students in mainstream schools had mild disabilities, placing them in the category of individuals who reported having some difficulty. Students who had a lot of difficulty seeing or hearing were more likely to be in a special school for students who are blind or deaf or out of school. Therefore 0.3% is likely the most comparable number with this current pilot, which is close but slightly higher than 0.27%, which the All Children Reading–Cambodia study found. However, it is important to note that this is a household survey asking parents about their observations, not a medical assessment of children; therefore, it is likely to miss many children who have mild impairments and may potentially benefit from assistive devices.

In a study of prevalence of impairment and disability among Cambodian children, researchers reported that among children aged 2–9 in seven provinces, 3.02 % had a visual impairment and 6.53% had a hearing impairment (Evans et al., 2014). Impairment was defined as a limitation that was temporary or easily treatable or reversible (e.g., wax removal) or one that did not impact the child’s functioning. Researchers stated that the disability rates among these children was 1.53% for vision (0.52% moderate to profound) and 2.51% for hearing (0.79% moderate to profound). Disability was understood to be an impairment that permanently affected a child’s ability to function at the same level as peers. These rates were determined through a screening questionnaire and professional medical assessments. Researchers concluded that prevalence rates were much higher than reported in census data, suggesting that many parents and caretakers were unaware of their child’s disability. Given that these assessments were undertaken by medical professionals and included students in and out of school, the results are likely to be some of the most accurate data on prevalence. These rates were significantly higher than the current pilot; however, many studies in Cambodia have shown that many children who have impairments and disabilities are out of school, having never enrolled, or having dropped out. Therefore, although possibly among some of the most accurate statistics on disability in Cambodia, assessments of students in schools might give more comparable information for discussing the accuracy of our pilot data.

In 2016, the School Health Integrated Programming project led by the MoEYS conducted screenings among grade 1–6 students in 48 schools (World Bank and Global Partnership for Education, 2018). The project trained teachers on how to use the E Chart to measure visual acuity. Of the 12,440 students screened in Cambodian primary schools, 214 (1.72%) were referred, 72 (0.58%) received glasses, and 22 (0.18%) were referred to the hospital for additional treatment. This is over double the number of children identified by the All Children Reading–Cambodia project.

The same project was implemented in three other countries. In Ethiopia, 24,686 students were screened, 3,522 (14.27%) were referred, 699 (2.83%) received glasses, and 105 (0.43%) were referred for additional medical treatment. In Ghana, 10,099 students were screened, 2,138 (21.17%) were referred, 74 (0.73%) received glasses, and 235 (2.33%) were referred for additional medical treatment. In Senegal, 10,209 students were screened, 6,132 (10.68%) were referred, 1,017 (1.77 %) received glasses, and 3,178 (5.53%) were referred to hospitals for additional medical treatment. These numbers are much higher than the All Children Reading-Cambodia pilot, but given the differences in context, this variation is perhaps not surprising.

Of the hearing screenings conducted in Cambodia, Save the Children reported screening 3,500 students using a basic hearing screening; 60 of those students were referred and 35 (1%) were identified to have a hearing disability after a medical assessment. In 2018, Krousar Thmey also conducted a hearing screening for 2288 students; 0.5% or 13 students were identified as having a hearing disability. In Kenya, a questionnaire with 10 questions

was used to screen for hearing loss among pre-school children. In most cases, teachers or community nurses completed the questions with the parent and 33% of the questionnaires were completed by the parents or caregivers directly. Of the 757 students with a completed questionnaire, 195 were identified by the questionnaire and 13 (1.7%) were confirmed to have a hearing impairment (Newton, Macharia, Mugwe, Ototo, & Kan, 2001). Again, statistics from other countries are not necessarily comparable, but all of these rates are much higher than the 0.07% found in the All Children Reading–Cambodia pilot.

To summarize, with variations in age, location, and tools, it is difficult to fully compare the prevalence rates from the All Children Reading–Cambodia screenings to other prevalence rates. However, it can be concluded that false positives are common in some of the teacher-led school-based screenings. Based on the information presented above from different studies, a conclusion on false negatives is harder to determine. However, overall the prevalence rate of the All Children Reading–Cambodia vision screening compared to other Cambodian screenings is lower. As noted above, this could be partially due to the ages of the students screened in the project. Alternatively, it is possible the tool and process used by All Children Reading–Cambodia is resulting in larger numbers of false negatives than similar studies. The percentage of students with hearing impairments in each of the mentioned screenings was much higher than the percentage identified in our screenings. This leads us to believe that some students in our hearing screening also received false negatives.

In order to consider whether differences between this study and others were the result of the tools or the result of limited use of the tools among teachers (and falsely reporting that screening had been completed), below we have compared the numbers of children being referred and receiving assistive devices in schools with monitoring visits to those in schools without. We also separated the students screened on days when the team was present and those reported as screened on other days. Although these numbers should be interpreted with caution as the study was not designed specifically to compare these groups, some reflection on the differences here suggests some information about the impact of monitoring on teacher adoption of the methods and/or accuracy of use (Table 6).

Table 6. Referrals and Monitoring

Monitoring	Total screened	Referred	Medical assessment	Total receiving assistive devices	Further referral/ Other issue	False positives
Vision						
Monitored school on day the team was present	480	6 (1.25% of all students screened on monitoring day)	6	5 (1.04% of all students screened on monitoring day)	1 (needed further referral to hospital in Siem Reap)	0
Monitored school on following days	4071	10 (0.24% of all other students screened among the monitored schools)	10	4 (0.1% of all other students screened among the monitored schools)		6 (0.15% of all other students screened among the monitored schools)
No monitoring	1043	7 (0.67% of all students screened without monitoring and support)	7	6 (0.57% of all students screened without monitoring and support)		1 (0.09% of all students screened without monitoring and support)

Monitoring	Total screened	Referred	Medical assessment	Total receiving assistive devices	Further referral/ Other issue	False positives
Hearing						
Monitored school on day the team was present	480	4 (0.83% of all students screened on monitoring day)	4	3 (0.73% of all students screened on monitoring day)	1 ear wax removal	0
Monitored school on following days	4071	6 (0.12% of all other students screened among the monitored schools)	6	1 (0.02% of all students screened on the following days)		5 (0.12% of all other students screened among the monitored schools)
No monitoring	1043	1 (0.09% of all students screened without monitoring and support)	1	0		1 (0.09% of all students screened without monitoring and support)

The above results suggest that monitoring during screening activities led to more reliable results. The sample of students in monitored schools (480) was lower than the number of students in non-monitored school (1,043), yet the numbers of students referred for vision screening in both categories were similar. Among the 480 students who participated in the screening during monitoring, 1.25% were referred for vision and all 6 of those students were confirmed to have an impairment. If the same prevalence rate applied to the 1,043 students in the non-monitored school, it is expected that a total of 13 students would be identified instead of 6. Furthermore, the prevalence rate from the monitored screening implies that of the 4,071 students who did not receive monitoring in the schools that monitored some students, a total of 50 students would be expected to have a vision impairment instead of the identified 4. Thus, it is possible that at least 50 students received false negatives, or teachers did not screen all students in the non-monitored schools.

Only monitored schools produced accurate results for the hearing screening. Of the 3 referred for hearing from the 480 students in monitored schools, all had a hearing impairment at the time of the screening. Using the same prevalence rate of 0.62 % among the remaining learners who did not participate in a monitored screening, nearly 32 students would have had a hearing impairment. The non-monitoring screening did not identify a single student with a hearing impairment; rather, it led to 100% false positives, indicating that monitoring is essential for the hearing screening.

It can be concluded from data above that teachers who had monitoring support were more likely to successfully identify more students with vision or hearing impairments. It suggests that without the monitoring team there, teachers were either much more likely to have false negatives, or they were not performing the screening at all. It also suggests that even with the additional support of monitoring to help teachers understand and practice the process together, this was still an issue on days when the monitoring team was not present.

Teacher Feedback. Various responses were provided by the six teachers who provided feedback during the second round of monitoring. Some teachers expressed feeling confident doing the screening, explaining the screening and scoring the screening. However, most teachers believed that they could not conduct the screening without the team present. It

should be noted here that these six teachers were the ones who were last completing the screening forms and therefore received second visits; it is likely this group would not be representative.

Making a clapping sound as part of the hearing screening was viewed as one of the easiest components, along with having students look at the Lea Symbols Chart with both eyes (the first step of the activity). Challenges reported by the teachers included making the *psss* sound during the hearing screening, being confused on how to score the test with the Lea Symbols Chart, having difficulty with small children closing their eyes during the vision screening, and conducting the screening with children who had additional disabilities or difficulty speaking. Although they tried to follow up with parents, teachers also reported that some parents could not be reached for consent as they travelled to work away from home. Finally, teachers expressed that it was difficult to find a proper setting for screening that was quiet with good lighting.

To improve their confidence, teachers asked for a longer training and extra practice hours. A practice session with students during the training was also suggested. Teachers also asked to conduct the screening immediately after training. Finally, they suggested that the project provide materials with clear steps for the screening process.

Some teachers reported that they now knew how to do a screening and that they also understood which students to follow up with and which students to refer based on the results of the screening. They acknowledged that parent participation was necessary in this screening process. Lastly, teachers mentioned that the screening helped them better understand the feelings of the child and how to help students who had difficulty hearing or seeing.

Key Stakeholder Feedback. In February 2019, All Children Reading–Cambodia conducted a one-day consultation workshop with representatives from departments in the MoEYS, POE, DOE, and the Inclusive Education team that participated in the training and monitoring to share preliminary findings, reflect, and discuss lessons learned. The consultation focused on the tools and process of the screening, as well as teacher training and monitoring.

Overall, participants were pleased with their involvement in training and the supply of materials and screening tools. They reported being deeply involved with the selection of screening tools and understood how to use them practically. They were happy that All Children Reading–Cambodia conducted a field test and that the tools were revised based on the lessons learned. Also, participants were pleased with the inclusion of community members in the training, specifically the Commune Committee for Women and Children (CCWC). However, a stronger connection with the CCWC was advised due to the possibility of support for referral in the long run. Each CCWC is provided with a social work package that includes a small amount of money that can be used to financially support referrals.

For the teacher training and monitoring, participants were happy that teachers were trained on the topic. They also believed that the monitoring component was very beneficial for teachers. Conversely, the training was viewed to be too short and the time to practice completing forms was insufficient.

Key feedback from participants was that additional practical training was needed. A two-day training with an extension of practice time was suggested along with a refresher training. The representative from the Special Education Department stated that the Inclusive Education Working Group, which is composed of POE and DOE members, will be in charge of refresher training, mainly for the schools not able to start right after the training.

For the All Children Reading–Cambodia activities, completion of consent forms should occur during school enrollment; however, if the MoEYS was to adopt the screening, the Ministry reported that no consent form would be required for the school-based screening. Participants suggested that screening should occur during the second week of November for grade 1 and the final week of November for pre-school students due to the completion of the

standard testing during the first few weeks of school. It was also stated that the school director should assist teachers with consent forms and forms should be simplified.

For the hearing screening, participants suggested continuing with the current screening process (i.e., noise test and questionnaire) despite the fact that we have learned from the pilot that teachers had a difficult time completing the questionnaire as some parents were not around during the school enrollment period. If the hearing screening portion remains, consideration should be given to how to get valid information from parents.

Finally, participants suggested inviting implementers (e.g., teachers, CCWC, other people at the school level) to provide input when creating the tools. The participants were overwhelmingly supportive of the screening initiative. They understood that there were areas that needed to be reconsidered and further developed, but they encouraged the continuation of school-based screening.

4 Limitations

Hearing Screening Tools. As expected, the pilot confirmed that the basic hearing screening tool has its flaws. While the voice and noise tests were quick and easy to administer, these basic screening tools often overlooked students with mild to moderate hearing loss. It is unclear how many students were missed with the use of the basic noise test. Without providing each screener with a sound meter, it is impossible to determine if the sounds were standard in all screenings. Thus, sensitivity and specificity of these tests varied, especially in school settings where ambient noise could not be managed.

Furthermore, it is difficult to gauge the accuracy of parent responses to the parent questionnaire. During our first monitoring visits, it was suspected that many of the questionnaires were not completed by parents or that some were filled in by teachers without parental input because of the pressure from school administrators and the monitors.

Delay in Screening and Monitoring. Screening and monitoring did not begin until one to two months after training, primarily due to the delay in receiving parental consent. It was understood that seeking written consent might be difficult in this context, but All Children Reading–Cambodia found it important to provide parents with information about the screening and referral process before interacting with pre-school and grade 1 students. Teachers were trained at the beginning of October with the expectation that they would seek consent during the time of school enrollment (mid-October); this was also planned so teachers could use the hearing questionnaire with parents in this period. However, when contacted by the inclusive education officers, many teachers reported that they had not received consent. During this correspondence, the inclusive education officers again requested that teachers secure consent, and in the monitored schools, inclusive education officers scheduled a time with the teachers that the monitoring teams could visit to assist with the start of the screening. Inclusive education officers also contacted school directors to request their support with encouraging teachers to get parental consent.

The gap between training and screening can contribute to improper screening. In the future, if there is any other training happening at the same schools before enrollment (e.g., All Children Reading- Cambodia has school director training), perhaps those individuals being trained could be involved in collecting consent and the hearing questionnaire information. Alternatively, the screening could take place during enrollment. While this may create greater challenges for monitoring, it could allow for greater parent involvement. In addition, it would reduce the risk of detracting from instructional time. Teachers provided the feedback that they would rather screen six children per day than all in one session. While the team advised teachers to fit the screening into break time, there is a risk it could disrupt learning for multiple days.

Due to the size and capacity of our monitoring team, the first round of monitoring sessions only included observing the screening of six students in each classroom. Furthermore, 20% of participating schools were not monitored at all. It is difficult for us to conclude that the screening was properly conducted at schools when monitoring did not occur.

Likelihood of Screening. As noted in the results section above, there is reason to believe that teachers were less likely to complete the screening or that teachers provided less accurate results when the monitoring team was not there supporting and supervising the process and ensuring that it happened. All teachers who participated in the training submitted results. Upon analyzing the results, the Inclusive Education team noticed that in some classes a majority of the students received the same vision results. Thus, it is expected that some of the data provided were inaccurate. Before concluding with this assumption, a follow-up will be conducted for some classes to confirm results.

If it is confirmed that teachers did not screen or did not screen accurately without monitoring, consideration should be given to who can and will effectively screen without supervision, or to look at different ways to ensure the screening takes place. If trained staff need to oversee the screening of all students in order to ensure it takes place, it is not cost-effective to also train the teachers; it might be more effective to have dedicated teams do the screening rather than teachers. If there is reluctance among teachers to take on this responsibility, along with their existing duties, it would be helpful to consider the reasons why, and whether there are others within the government system (either health or education) who would be more appropriate to take on this role. This might also increase accuracy. While school-based screening might provide a short-term, project-based solution, a more effective, longer-term strategy might be to look at how to build (and advocate for) links between schools and medical services.

5 Recommendations

Based on the experience this year, the All Children Reading–Cambodia project does not recommend continuing with teacher-led screening. The pilot suggests that although some students can be identified through this approach, it is likely not the most cost-effective or reliable method. The resources needed to train teachers to screen children might be better directed to working with local health staff to conduct screening, and to support teachers to make instructional modifications. Instead of continuing with teacher-led screening, it is recommended that the project explore what support would be needed to enable schools to collaborate with nearby health facilities to have them conduct screening and facilitate referrals. Alongside that, the project can work with the MoEYS and teachers to consider the adjustments to instruction that are then needed to support students to learn effectively following referral.

Annex A: Forms

Parent Consent

Dear parent/caregiver,

Your child has been selected to participate in a hearing and vision screening at his/her school. This is a simple screening of which your child will be asked to perform tasks and provide responses based on what s/he sees and hears. This screening will be conducted by the teacher. No medications or eye drops will be provided to your child during this activity. Once your child finishes the screening, we may contact you about seeking additional services. If necessary, details will be provided during that time.

By allowing your child to participate in the screening, you agree to allow All Children Reading–Cambodia to use your child’s information, such as name, screening results from teacher and referral results from medical service providers for monitoring and evaluation purposes. We will track children that participate in the screenings through their referrals to ensure they receive support. This information will be kept for the duration of the pilot. Information will not be used for any other reason.

Please select one of the following:

- Yes, my child can participate in the screening
- No, I do not want my child to participate in the screening

Do you have any questions?

Parent signature: _____ Date: _____

Thank you for your cooperation.

Child Information

Child’s Surname: _____ Child’s First Name: _____

Village: _____ Commune: _____

District: _____ School Name: _____

Child’s Date of birth _____ / _____ / _____ Child’s Age: _____

dd mm yy

Child's Gender: Male Female

Parent's Name: _____

Parent's Mobile Phone Number (if known*): _____

1) Hearing Questionnaire

- | | |
|---|-----------|
| 1. Can the child hear a loud noise, e.g., a door banging? | Yes or No |
| 2. Can the child hear quiet sounds, e.g., bird chirping? | Yes or No |
| 3. Does the child respond when his/her name is called? | Yes or No |
| 4. Does the child have difficulty speaking? | Yes or No |
| 5. Does the child mention pain in the ear(s)? | Yes or No |
| 6. Does the child have an object in his/her ear? | Yes or No |
| 7. Does the child have drainage from the ear(s)? | Yes |
| 8. Does the child have a smell coming from the ear(s)? | Yes or No |

To be completed by teacher

Only check if the parent says:

- 1 **No.** The child cannot hear a loud noise, e.g., a door banging
- 2 **No.** The child cannot hear quiet sounds.
- 3 **No.** The child does not respond when his/her name is called.
- 4 **Yes.** The child has difficulty speaking.
- 5 **Yes.** The child mentions pain in the ear(s)
- 6 **Yes.** The child has an object in his/her ear
- 7 **Yes.** The child has drainage from the ear(s).
- 8 **Yes.** The child has a smell coming from the ear

Note: After asking the parent or guardian, please record results in T2

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