HEALTHY KIDS CAMBODIA

Field guide

THE STRATEGY

To provide a sustainable integrated approach to primary health care for underserved children in schools and communities in Cambodia

One-2-One Charitable Trust

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1.0 – Purpose, rationale and strategy

1.1 Purpose

To provide a sustainable integrated approach to primary health care for underserved children in schools and communities in Cambodia.

1.2 Rationale

Children in Cambodia have a severe burden of dental caries especially affecting the primary teeth. The average 6 year old Cambodian child has 9 decayed teeth. If the conventional treatment approach to address these problems (eg "drilling and filling" and extractions) was implemented, the costs would be more than the national health budget for Cambodia, and the whole dental workforce of Cambodia could still not provide all the treatment needed. And even then, such an approach would still not reduce the on-going burden of disease.

But there is another way, and that involves empowering schools and communities to participate in the provision of primary health care, while integrating simple medical and dental interventions which focus on disease prevention, and targeting common risk factors. The *"Healthy Kids Cambodia"* approach to primary health care can be applied to meet some of the most important priorities of child oral health and general health, at a cost the school/community/NGO can afford. The strategy can be adapted to suit the wishes and resources of a school/community/NGO.

1.3 The Strategy

Healthy Kids is an initiative led by One-2-One Cambodia (121) which plays a role in stores management, training of staff, and the provision of services (depending on the needs and wishes of the community/school/NGO). *Healthy Kids* can be implemented by partnering with a community/school/NGO to provide basic services at three levels (Table 1).

Setting up the intervention involves three phases: (1) *mapping the social landscape* by establishing a working group and engaging resources in the community/school/NGO; (2) creating a *healthy environment* to make it easier for healthy behaviours to occur, and (3) *conducting health interventions* appropriate to the needs and resources of the community/school/NGO. The health interventions are designed to be implemented in a graduated way, with three levels of care, progressing from one level to the next. Level One must be in place before Level 2 or 3 are applied. Level 1 is designed to be affordable for most schools/communities, sometimes without any outside support. The funding and negotiation of services will be described in subsequent sections.

Table 1 – The healthy kids framework

Level One	Daily tooth brushing with a fluoride toothpaste Daily hand washing Bi-annual basic health screening, de-worming, Vitamin A and referral (where appropriate) Bi-annual application of Silver Diamine Fluoride to arrest decay in primary teeth Health education
Level Two	Level 1 activities – Plus… Fissure protection using glass ionomer cement (sealants) Atraumatic Restorative Treatment (ART) restorations (simple fluoride releasing white fillings without drilling)
Level Three	Conventional dentistry in a more controlled clinical setting: Dental school, NGO Clinic, Mobile dental service

For **Level 1**, the initial introduction of the program involves equipping the school or community with the necessary materials and skills to conduct the activities. The local partner school/organization can be trained to provide all the services themselves. Protocols, guidelines and materials can be provided by 121. Alternatively, 121 can also provide the service, as well as intermittent monitoring. Children needing additional health or dental health services can be referred, as described in the protocols. For dental treatment, children participating in Phnom Penh can also be referred to the 121 Dental Clinic, University of Puthisastra Dental Clinic, or any other clinic that the community/school/NGO builds a relationship with, on a fee-for-service basis.

Following implementation of Level 1, 121 can then assist the community/school to implement **Level 2**. The additional treatments provided at Level 2 are fissure protection ("sealants") on newly erupted permanent molars (to prevent decay), and simple white fluoride-releasing glass ionomer cement fillings, which are placed using only hand instruments (not "drills") following the WHO-recommended ART technique. If 121 provides this service then payment will be broken into two parts: a *materials charge* and a *service charge* (which would include the cost of transport to the community/school, a per diem, and labour). However some schools/organizations may have access to local dentists or dental nurses who can provide Level 2 services themselves, following the project guidelines and protocols.

In the process of implementing Level 1 and Level 2, a number of children will be identified who have a need for more advanced or urgent dental treatment. Some may need to be referred. For those children who can wait, Level 3 is about providing them with access to more definitive dental care. Level 3 includes dental extractions and restorations using conventional dental equipment. This level of care can be provided either through a Mobile Dental Service (eg provided by 121 or another NGO or university group), or at a fixed public, private or NGO dental clinic. The collective or the child's caregivers would be charged a fee-for-service, depending on the arrangement within the school/community/NGO.

2.0 – Mapping the social landscape

Ultimately, the determinants of disease should be addressed by creating a supportive environment in which health activities can occur. Health promotion is not possible without community involvement and that includes participation from health professionals, members of the school/NGO staff, and leaders within the community.

The first part of implanting the *Healthy Kids* strategy is to establish the *Healthy Kids Working Group* (WG) which is made up of at least 3 representatives from the different sectors of the community. Once the WG is established then it should be possible to assess the human and financial resources within a community which may be available to support *Healthy Kids*, as well as to identify places where children can go to get medical or dental care; in other words, a referral network. Once the social landscape of the working group and the referral network is established, then plans can be made for the activities, stores, and budget.

Central to the philosophy of *Healthy Kids* is the *'Common Risk Factor Approach'*, which is promoted by WHO. This approach recognises that dental caries and other non-communicable diseases (NCDs) share common risk factors such as diet and lifestyle (to name just two). Therefore interventions which address these Common Risk Factors can have much broader benefits. Other principles underpinning *Healthy Kids* are the efficient distribution of resources and a tiered implementation approach, which allows for maximum benefit at each level before progressing to the next.

2.1 Engaging the community

In order to ensure that a wide breadth of the community is involved, the working group should have participation from three sectors of the community. This could include, someone from the education sector, someone from the health sector, and someone from the community. The person from the education sector could be the school principal from the participating school, although they could delegate this role to an administrator or teacher. For the health representative, it would most likely be someone employed already in that community in a primary health care role. This might be a school nurse (usually supported by an NGO) or a government community health nurse. Finally, to represent the community the person could be a parent, a representative of the Parent Teachers Association (PTA), or someone representing another community group such as a village leader. Together the representatives of the three sectors could form the WG. The key idea is that different sectors are represented and that the representation can be flexible depending on the dynamics of the community.

2.2 Establishing a referral network

At Level 1, the children could be screened for eyesight, hearing, skin problems, hair lice, and some other medical conditions. For that reason, it is important to establish a relationship with local government clinics which can manage these conditions, or to refer children to a private clinic on a user-pays basis. Once the community has decided what medical conditions they want to screen for and what treatments they can support, then the referral network can be established.

2.3 Task distribution

There are three main activities required for each level; (1) the health interventions, (2) the purchase and distribution of consumables, and (3) administration/monitoring. It is important to delegate these tasks before the project begins so that responsibilities are clear and the right person can be assigned to the task.

2.3.1 Management of stores

The WG will need to identify a secure and dry space to hold stores so that they are kept safe but are easily accessed by those who need them. Expendables can be delivered in sets for 100 children from the 121 dental storeroom. The school/community/NGO will need to arrange the frequency of resupply. This could mean that any group may want to hold up to 3-months (one semester) of supplies in their own facility, along with the necessary instruments and sterilising equipment (depending on the Level adopted). The storage space will need to be established before health activities are undertaken.

2.3.2 Management of Funds

Funding for *Healthy Kids* can be sourced from a mixture of community, school and external donor contributions. Level 1 is designed so that it is affordable for a low-to-middle income school/community. It is recommended that all schools start with Level 1 and activities at this level are the foundation of other levels.. Different parts of the project can be selected to be funded by the school/community/NGO and possibly other external donors. The cost of the intervention can be broken down into: (1) Materials/medicines, (2) Instruments, (3) Administration/monitoring, and (4) Labour. For some schools, full external donor sponsorship may be required. However, where possible, the WG should try to obtain some financial or other type of contribution from the community in order to create a sense of *ownership*.

2.3.3 Project monitoring

It is important that the project is accessible, affordable, acceptable, appropriate, effective and adapted to the needs of the community, and so ongoing monitoring is pivotal. For Level 1, there should be active monitoring of daily tooth brushing/handwashing activities, application of sliver diamine fluoride, and the number of referrals. For Level 2, there should be intermittent clinical auditing to make sure that the treatments are effective. For Level 3 the provider can be responsible for their own practice.

2.4 Summary

Healthy Kids is an integrated primary health care approach designed to address the common dental and health problems affecting most Cambodian children. It aims to bring about positive improvements in health and quality of life, using low-cost proven interventions, focusing on prevention and local participation.

Partnering with the school or community and achieving local ownership of the *Healthy Kids* program are keys to its success. For maximum benefit, the program should be applied in a step-wise fashion: first establishing the social context, followed by changes to the physical environment and finally implementing a range of health interventions. Such a cumulative approach has a high chance of improving the quality of life for those who participate. Table 2 is intended to help with preparation and can serve as a check-list before the strategy is implemented.

Table 2 - Partnering with the community - check list

Healthy Kids working group:	
Is the school engaged?	
Are the local health professionals engaged?	
Is there at least one local community leader engaged?	
Who will carry out the interventions? What is the cost? When?	
Where will the children wash their hands and brush their teeth?	
Training	
What training will need to be provided?	
Who will conduct the training? When?	
Will there be a cost associated with the training? How much?	
Referral base:	
Who will you refer to in the case of a medical problem or emergency?	
Who will you refer to for acute dental problems?	
Who will you refer to for advanced dental care?	
Stores:	
Do you have a clean, dry and secure location for stores? Where is it?	
How many children per month will participate in the program?	
How often to you intend to resupply?	
Money:	
Are the community able to contribute and if so how much?	
How will money be paid to the staff?	
How will money be paid for stores?	
Monitoring:	
How will the daily activities be monitored (tooth brushing and hand washing)?	
How will the health screening and Silver Diamine Fluoride treatments be monitored?	
How will the referrals be followed up?	
Do you want to introduce Level 2 services? When?	
If you decide to apply level 2 then how will you monitor the effectiveness of the treatment?	
Do you want to introduce Level 3 services? When?	

3.0– Setting up Level 1

Level 1 is considered the foundation level and should be in place before any subsequent levels are delivered. Within Level 1, the community can choose which components are to be implemented. Of all of the interventions, daily hand washing and tooth brushing with fluoride tooth paste are the most important; as such, other interventions should not be considered until both these activities are in place and working well. . Setting up Level 1 has three parts (1) establishing the social landscape (2) establishing a healthy environment (3) conducting health interventions.

3.1 Establishing the Social Landscape

Healthy Kids is a community-based intervention, designed to harness the social capital inherent to the group. Each community is different and the pathway to health might take a different route, depending on the local environment and people, and the resources that are available. A core group of leaders from a variety of sectors will have the best chance of harnessing the resources available within a community. This core group of leaders will make up a 'Working Group'.

3.1.1 The Working Group

As stated in Section 2, the Working Group should be made up of representatives from three sectors of the community: the health sector, the education sector and a least one other. The working group can be larger than three people but not smaller. The function of the working group is to identify the resources within the community, establish a referral network, and delegate tasks (this might include delegating to 121 for certain aspects of the program).

Support from 121

121 is the facilitator and coordinator of the *Healthy Kids Cambodia* strategy. As such it is their role to enable, mediate and advocate, as directed by the working group. Once the working group has decided how they want to implement the *Healthy Kids* strategy then they can enter into a Memorandum of Understanding with 121 (Appendix 1). The MOU can be regularly reviewed and it provides a clear set of expectations between 121 and the working group

Working within the government framework

The socio-political influences on a community are important, and part of the Healthy Kids Cambodia strategy is to build evidence for the effectiveness of health interventions that might inform local or national policy in the future. As such, 121 will inform MOH and MOEYS of any school-based activities that are occurring, on behalf of the working group. Furthermore, were possible all community groups should cooperate with government Community Health Centres in order to support government policies and empower community health workers to carry out their function of providing primary health care to the community.

3.1.2 Establishing community support and buy-in

Although the working group will probably be in a position to make most of the key decisions, it is imperative that the community are informed about HKC and are invited to actively participate in the HKC program. Verbal and in written information (eg newsletters, meetings and posters) should be provided so that parents have to option to withdraw their child if they

choose. Once information has been propagated, then the level of "buy-in" can be ascertained. The Working Group should promote the message that the program belongs to the community rather than to 121 or any other organisation. Ideally the community should financially support all of the Level 1 activities independent of outside sponsorship. At the beginning of the program, the working group should make an assessment of how much the community might be able to contribute and make a plan to increase that contribution over subsequent years. In this way a community could progress from Level 1 to Level 2 and perhaps even Level 3 activities. The contribution from the community could be in the form of time, personnel, money or materials, such as soap and tooth paste. The community could also be responsible for setting up the hand-washing and tooth brushing facilities. It is the job of the working group to establish the appropriate level of contribution and gather community support.

Local corporate sponsorship

There may also be opportunities for Cambodian businesses and benefactors to support HKC in some way. The Working Group should seek partners and sponsors who could contribute financially and in other ways.

3.1.3 Establishing the referral network

The referral network will depend on the resources that are available to the community. In an urban setting such as Phnom Penh health screening may cover a broader spectrum of health problems because it might be possible to access a wider range of treatment providers. For each provider within the HKC network, a referral contact book or data-base should be created with details such as phone numbers and emails for points of contact, pathways for referral, clinic schedules, prices, and criteria for referral. These criteria may be set by the working group or by the provider depending on the situation.

3.2 Establishing a healthy environment

Once the social landscape has been established then the physical environment can be optimised for healthy activities to occur. This includes creating an environment where ablutions can take place in a clean and convenient way, along with handwashing and tooth-brushing facilities. It also includes promoting health through messages and advertising, introducing rules about what can and cannot be sold inside the school grounds (following MOEYS guidelines) and establishing good practices for cross infection control for medical and dental procedures, including toothbrushing.

3.2.1 Toilets, clean water and cleanliness

Daily hand washing and tooth brushing are the most important activities to conduct in Level 1. However these activities may be hindered by an environment making it difficult for the children or the teachers to comply. The first priority is to ensure a clean place for children to go to the toilet, and then create a space in which many children can conduct handwashing and tooth brushing in groups. If 50 children, for example, need to line up at a single water point then handwashing and tooth brushing will take a disproportionate amount of time and become untenable in the long term. Washing and brushing facilities can be set up for multiple children to take part at the same time. The working group can choose to use an existing design (Appendix 2) or create a new design, depending on their needs, wishes and financial resources. Once the facilities have been set up then regular monitoring should occur. Table 3 is an example of a check list that could be used on a daily basis to ensure that hand washing and tooth brushing can happen regularly.

Table 3 – Check list for hand washing and tooth brushing facilities

Are the sinks clean and tidy?	
Is there enough water?	
Does every child have a brush?	
Is there enough fluoride tooth paste?	
Is there enough soap?	
Are any repairs needed?	

3.2.2 Health messages and advertising

It is well documented that children in vulnerable settings are bombarded with advertising throughout the day, whether it is the sugary drinks advertisement at the shop outside the school or the cigarette or tabacco containing sweet advertisement on the way home. These advertisements create an environment in which sugary drinks and unhealthy behaviours are more difficult to resist. The Ministry of Education Youth and Sport have a policy against selling unhealthy food on school ground, unfortunately anecdotal evidence says that is rarely inforcd. Although it is not possible to control advertising and what is sold to children outside the school environment, the school should be a place where unhealthy products are not advertised, encouraged or sold. Safety within the school environment should be a priority as recommended by the Health promoting Schools policy of WHO.

3.2.3 Infection control

If health interventions are to occur then it is of utmost importance that it happens in a safe way and that effective infection control procedures are observed. The Ministry of Health, Cambodia has created a guideline for cross-infection control in the dental setting, and this should be the standard by which infection control is practiced (Supplement 1). Even a tiny amount of blood may be infected with viruses such as Hepatitis B,C and HIV. This why toothbrushes must NEVER be shared. And after careful cleaning, this why instruments used in the mouth of one person MUST be sterilised in a pressure cooker or autoclave before being used in the mouth of another. Un-sterilised instruments can be a threat to the whole community and these virus infections can threaten the lives of people infected with them. Section 3.6.3 presents a list of equipment that should be purchased in order to facilitate effective infection control if dental procedures are being carried out. Expendables are listed separately as part of section 3.6.5 (the Level 1 consumable list). Of note, it is necessary to establish an effective laundering routine for the drapes used to cover tables during clinical work, towels and clinical gowns.

3.3 Conducting health interventions

The health interventions chosen for any HKC project depend upon the decisions of the working group. 121 can provide support for the following interventions: Vitamin A; deworming, scabies and lice management; ear examinations; basic eyesight testing; and oral health promotion.

3.3.1 Deworming and Vitamin A

All children in Cambodia should be provided with deworming treatment and Vitamin A supplementation through the existing government system. Deworming tablets can be acquired from the School Health Department at the MOEYS. If the school principal fills out the form (Appendix 3) then the school will receive their allocated medication. Vitamin A supplementation is administered through the Community Health Centres and is generally administered in the community setting (rather than the school setting). The primary role of the working group is to support the systems that are already in place and in the situation where children have missed out, then an alternative way for them to receive the medication can be found. The protocol for administration of deworming and Vitamin A medications is consistent with the WHO recommendations (Supplement 2)

3.3.2 Scabies and de-lousing treatment

In general, those children suffering from scabies and lice infestations will become re-infected very soon after any treatment, and so the working group will need to make a decision about whether to provide some treatment for the child and whether to provide some support for the family to clear their home environment of the infestation. 121 is able to facilitate the provision of scabies soap, de-licing spray, and lice combs if the working group want to go ahead with such an intervention.

3.3.3 Ear examinations and basic eye testing

It is believed that the prevalence of ear infections and hearing loss may be quite high in Cambodia and this be could impeding some children's ability to learn. In addition it is not known how many children struggle in classrooms because of poor eyesight. The working group can explore the possibility of basic eyesight screening and ear examinations. If a child is found

to have eyesight problems then the working group could consider supporting that child to be professionally assessed with the possibility of obtaining glasses. If a child is found to have evidence of a burst eardrum or ear infection then it is best managed through Cambodia's leading NGO for hearing and ear related issues, All Ears Cambodia (EAC). The working group can establish a relationship with AEC at the beginning if they decide to assess ear health.

3.3.3 Management of dental caries

The management of dental caries in Level 1 involves daily tooth brushing with fluoride tooth paste, biannual application of Silver Diamine Fluoride to arrest (stop) any lesions in primary teeth, and the identification of children who have higher needs which can be provided for in Level 2 or Level 3 interventions, or who can be referred to a clinic for this. Each brushing with a fluoride toothpaste positively changes 3 of the 4 major causes of dental caries: poor fluoride exposure, poor access to saliva, and thick bacterial film (plaque). Frequent use of sugar foods and drinks is the 4th cause and this what changes the oral biofilm so that caries lesions begin and progress under it.

Clinical examination

The key idea behind the oral examination is that a non-dental professional can conduct a simple examination with limited equipment. The child will be examined to establish: (1) plaque levels on the upper central incisors – scored (+) if plaque is covering >1/3 of the crown; (2) the presence of a caries cavity in the upper permanent anterior teeth – scored (+) for referral to a Level 3 provider; (3) the presence of a caries lesion on any other permanent tooth – scored (+) for referral to a Level 2 provider; and (4) the presence of severe mouth pain or infection – scored (+) for referral for management of dental pain / infection.

Clinical procedure

The clinical protocol for application of SDF involves first cleaning the teeth with a tooth brush and tooth paste, isolation of the teeth with cotton rolls, and application of the SDF with a microbrush for 30-60 seconds. The detailed protocol can be found in Appendix 4.

Referral Criteria

Overall priorities for treatment are: (1) Relief of severe pain / infection; (2) Restoration of permanent anterior teeth; (3) Restoration of permanent posterior teeth; (4) Restoration of second primary molar teeth; (5) Restoration or SDF treatment of other decayed teeth; (6) Sealing at-risk sound permanent molars. These priorities are the guiding principles behind the various levels of treatment, and referrals (Table x)

Table 4 – Criteria for referral for dental treatment

Oral Urgent Care	Facial swelling or severe pain (Usually requires extraction / medications) Traumatized permanent front tooth
Level 2	Open cavitation on posterior tooth or Open cavitation on any permanent tooth in the situation that Level 3 is not in place (Usually requires ART restoration)
Level 3	Open cavitation on anterior permanent teeth (Usually requires an extraction, endodontic treatment, &/or other complex care)

3.3.4 Management of hearing and sight problems

If the working group has been able to find a provider to accept referrals for hearing/sight problems, then those conducting Level 1 activities should follow the guidelines of the clinic they are referring to. An example is the 'ALL EARS' clinic which provides training for hearing screening as well as a colour book to act as a guide. Vision testing could be conducted using a simple eye chart as a start and a suggested protocol is provided in Appendix 5.

3.3.5 Health Education

Health education is a central component of all interventions and so it should be incorporated into every aspect including classroom based education during community engagement and one-on-one education during delivery of interventions. For example, handwashing is the single most important behaviour to protect communities from the spread of infection. Supplement 4 is the Ministry of Health flip charts for Oral health education.

3.4 Record keeping

Each time a child participates in a Level 1 intervention a standard set of data will be collected either on paper (Forms contained in Appendix 6) or by direct entry onto a cloud-based database through a hand held device. The cloud-based database will be a limited access database using unique identifiers in order to protect the identity of the children. Data will be entered at routine screening and every time they are referred outside. Table 5 presents the data to be collected at Level 1.

Table 5 – Summary of record keeping for level 1

General Health		
Self reported diarrhoea	Do you have diarrhoea at the moment?	YES/NO
Self reported respiratory infection	Do you have a cough or chest infection at the moment?	YES/NO
Anthropometrics	Height and weight	Centimetres and Kilograms
Quality of life	Using the Child Health Utilities Questionnaire	8 questions using a Likert Scale
Ears	Any ear infection observed? Any burst ear-drum?	YES/NO
Eyesight	Eyesight within normal limits	YES/NO
Oral health		
Permanent teeth	Cavities anterior Cavities posterior White spots on upper anteriors	YES/NO
Pain on eating	Do you have any pain on eating/drinking? Pain at night?	YES/NO
Oral Health Related Quality of Life	Child Perceptions questionnaire	8 questions using the Likert scale
Interventions		
Silver diamine fluoride	Administered?	YES/NO
De-worming medication		
Vitamin A		

3.5 Review and Monitoring

The working group will establish the monitoring schedule that they prefer and the *Healthy Kids* database will automatically produce monthly and semester reports for the number of children seen and their general condition. A more detailed and ongoing review will be conducted by the 121 team to monitor the efficiency of the program against targeted health outcomes including changes in Quality of Life. In addition, the working group will be in regular communication with 121 in order to trouble-shoot and provide support as the required. The MOU between 121 and the working group will be reviewed at least one time per year.

It is important that the community receive feedback about the success of the strategy. Each working group should come up with an intentional plan to provide feedback to the community. It could be a short (A5 sized) newsletter that gives brief health information as well as reporting on the number of children seen. It could be that parents are invited for a meeting one time per semester. It could be via a hand held device. The working group will need to establish the appropriate strategy for their given setting and this is essential for building community engagement and subsequent sustainability of the project.

3.6 Budget for Level 1

Within the MOU the partnering working group will establish the appropriate invoicing and stores flow arrangement to facilitate the intervention. In general, the working group will need to budget for: creating a healthy environment, payment to any external providers for services rendered, instruments and equipment for sterilizing, instruments for conducting the health interventions, expendables, and staff and salaries.

3.6.1 Budget for "creating a healthy environment"

The working group will need to establish the appropriate toilet / handwashing / tooth brushing plan for their setting and so the budget will be unique to their environment. The working group is advised to allow around US$200 per school for the tooth brushing / hand washing, if there is already running water

3.6.2 Budget for external providers

The working group will need to budget based on recommendations from those external providers in their network.

3.6.3 Budget for sterilizing equipment

No	Items	Quantity	Unit Price	Total
1.	1 x Container (large) for water and detergent	1	$3	$3
2.	1 x Container (large) for rinse with water	1	$3	$3
3.	1 x Detergent bottle	1	$2	$2
4.	1 x Scrubbing brush	1	$1.50	$1.50
5.	2 x drape for dirty area	2	$2	$4
6.	4 x clean hand towels (small)	4	$1	$4
7.	1 x pressure cooker pot (with a good seal on the cover)	1	$58	$58
8.	1 x gas bottle	1	$30	$30
9.	1 x big metal box/carry bag	1	$20	$20
10.	1 x rubbish bin	2	$2	$4
11.	Alcohol spray bottle	2	$0.70	$1.40
12.	1 x bucket → to use if water needs filtering	1	$5	$5
13.	Water filter	1	$30	30
	Total			**$165.90**

3.6.4 Budget for dental instruments

1.	1 x box or bag to carry all	1	$20	$20
2.	2 x clean drape	2	$2	$4
3.	2 x head rest (wooden pole with cushion)	2	$2	$2
4.	2 x dental chair (adjustable height with wheels)	2	$30	$60
5.	Mirror	50	$1.5	$75
6.	Tweezer	50	$1.20	$60
7.	Metal Spoon (instead of dappen dish)	5 (10)	$2	10.00
8.	Explorer	50	$0.90	$45
9.	Metal Boxes for Set 1 Prefer plastic box (after use put in sterile pouch cos of dusty)	3	$2	$6
10.	Container for cotton roll	1	$2	$2
11.	Container for paper	1	$1.5	$1.5
12.	Headlight	2	$3.70	$7.4
	Total			**292.90**

Budget for medical screening equipment[*]

1.	Vision Chart	1	$10	$10
2.	Tape Measure	1	$3	$3
3.	Auroscope	1	$20	$20
4.	Glucometer	1	$35	$35
	Total			**$68**

[*]Not all groups will need this medical equipment and so the working group can consider what is needed on an item-by-item basis

3.6.5 Budget for Expendables

Sterilizing and dental expendables (500 children)

No	Items	Quantity	Unit Price	Total
1.	Caries Stop (SDF)	5	$7	35.00
2.	Tooth brush	5(100)	$16	$80.00
3.	Fluoride Tooth paste	30	$1.5	$45.00
4.	Protex soap	500	$0.25	$125.00
5.	Panty Hose (to hold soap)	50	0.25	$12.50
6.	Glove	15	$2.8	$42.00
7.	Mask	1box	$1.80	$1.80
8.	Cotton roll	10	$7	$70.00
9.	Micro brush	5	$2.8	$14.00
10.	Alcohol	5	$0.7	$3.50
11.	Tissue	1	$1.6	$1.6
12.	Rubbish bags	1(10)	$0.5	$0.5
13.	Clinical form	1(100)	$1.5	$1.5
14.	Hand Sanitizer	1	$7.50	$7.50
15.	A4 surface protector	1	$3	$3
16.	Disinfection solution	5	$0.75	$3.75
17.	Autoclave indicator strips/tape	1 packet	$5.00	$5.00
				$451.65

*Medical expendables (500 children)** ..--

1.	Dip stick (urine) x 20	1 (100)	$7	$7
2.	Cups (urine)	1(100)	$1	$1.00
3.	Scabies bar	250	$0.25	$62.50
4.	Lice	250	$0.25	$62.50
5.	Vitamin A	5(100)	$5	$25.00
6.	De-worming	1(50)	$5	$5.00
7.	Amoxicillin 250mg	100 tab	$2	$2.00
8.	Erythromycin	100 tab	$3	$3.00
	Total			**$168.00**

*it is not intended that these items will be needed for every group, the purpose of this part is to provide an estimate for working groups to consider

3.6.6 Budget for salaries and staff members

All of the activities described will require staff to prepare stores and to deliver the interventions, for that reason the budget should include a 5% charge for administration of stores and a $1 charge to cover the salary of those administering the interventions. These costs will be adjusted dependant upon the organisational structure and the way that the intervention is administered.

Date updated: 9/09/2015

3.7 Check list for Level 1

Table 6 – Checklist for Level 1

Mapping the Social Landscape	
Has the working group been appointed?	
Have responsibilities been delegated within the working group?	
How is the working group communicating with the community? *Flyers, meetings, posters?*	
How is the community contributing to Healthy Kids? *What level can the community pay for?* *Can you get Cambodian corporate sponsorship?* *What services can the community offer? Can they fabricate tooth brushing stands?* *Can the community help to monitor any activities?*	
Who is in your referral network and what are their contact details? *Acute medical?* *Acute dental?* *Level 2 or Level 3 dental services?* *Eyes/ears/other?*	
How will referrals be tracked?	
How will children be tracked? How will your record children's health progress?	
Healthy environment	
What are you doing to create a healthy environment?	
Can the children wash their hands and brush their teeth easily?	
What sort of advertising would you like to allow in your environment?	
Are the toilets accessible, clean and easy to use?	
How will you sterilize instruments and launder drapes etc?	
Are sweet foods and drinks being sold inside the school grounds?	
Interventions and timelines	
When will the social landscape be mapped out?	
When will the healthy environment be prepared?	
When will daily activities begin (hand washing and tooth brushing)?	
When will the biannual health screening and SDF application begin?	
When will Level 1 be fully sustained by the community?	
Will Level 2 and 3 activities be introduced? When?	
Monitoring	
Who will monitor daily activities?	
Who will monitor the healthy environment?	
Who will follow-up on referrals?	
Who will monitor health interventions and screening activities?	
How will you give feed back to the community?	

4.0 Setting up Level 2

The aim of Level 2 is provide simple and accessible dental treatment in a school or community environment using minimal materials and resources, targeting newly erupted permanent teeth for fissure protection, and permanent teeth with cavities. Level 2 interventions can be conducted together with with Level 1 interventions; however, it is recommended that Level 2 interventions are conducted once a year rather than two times a yearas is the case for Level 1. Ideally Level 2 interventions would be provided prior to Level 3 services in order to reduce the burden on Level 3 facilities; however, all level 2 procedures can be provided in a Level 3 clinical setting if the working group establishes that this is the most efficient way of working.

4.1 Referral for Level 2 treatment

As described in Table 4 , children will be referred to Level 2 treatment if: (1) there are open cavities in posterior permanent teeth; (2) if there are open cavities in anterior permanent teeth and no level 3 facilities are available; (3) if the child is between 6-years and 8-years of age and would benefit from fissure protection for their permanent first molar teeth.

4.2 The interventions

Two techniques are to be used at Level 2; (1) Atraumatic Restorative Technique (ART), and (2) Fissure protection using GIC (SEAL). Both of these techniques have well-established protocols which can be followed (Appendix 7 and Supplement 3). Both ART and SEAL are best provided by a two-operator team (operator and assistant team) although it is possible to deliver Level 2 with a single operator.

4.2.1 Notes on ART

ART will only be conducted on priority teeth and on teeth that can render predictable success. As stated in section 4.1, those permanent anterior teeth and those posterior permanent teeth with lesions involving >1/2 of the interproximal space will be referred to Level 3 for management. Of those teeth remaining the priority goes to permanent teeth and to second primary molars. Primary teeth with large interproximal lesions are best managed with arrest of caries treatment.

4.3 Budget for Level 2

The additional materials required for Level 2 are based on the assumption that all of the level 1 instruments are available including the sterilizing equipment. Also, it is assumed that only 1 in 5 children will require Level 2 services; therefore the expendable budget is written to 100 children groupings. It is expected that one operator could see around 20 children per day.

4.2.1 Budget for Level 2 dental instruments

No	Items	Quantity	Unit Price	Total
1.	Box or Bag to carry all	1	$20	$20
2.	Flat plastic	30	$1.5	$45
3.	Excavator large	30	$1.7	$51
4.	Excavator small	30	$1.7	$51
5.	Chisel	30	$10	$300
6.	Scraper (adjust height)	30	$10	$300
7.	Mixing spatula	3	$0.3	$0.9
8.	Metal tray	30	$2.5	$75
9.	Plastic bag (tray cover)	1(100)	$1	$1
10.	Rubbish bin	2	$2.5	$5
11.	Adjustable dental chair	1	$185	$185.00
	Total			**$1041.90**

4.2.2 Budget for Level 2 Expendables

No	Items	Quantity	Unit Price	Total
1.	GIC IX	2	$56	$112
2.	GIC VII	1	$56	$56
3.	Vaseline	1	$2.8	$2.8
4.	Articulating paper	2	$0.3	$0.6
5.	Plastic strip	1	$2	$2
6.	cup	2(50)	$0.75	$1.50
7.	Cotton rolls (400)	1 (500)	$7.00	7.00
8.	Cotton wool	1 packet	$5.00	5.00
9.	Water (if no water filter)	20 litres	$1.00	$1.00
	Total			**$187.90**

5.0 Setting up Level 3

Level 3 is intended to be conventional dentistry for high needs patients and it can be provided in fixed or mobile dental clinics following evidence-based protocols.

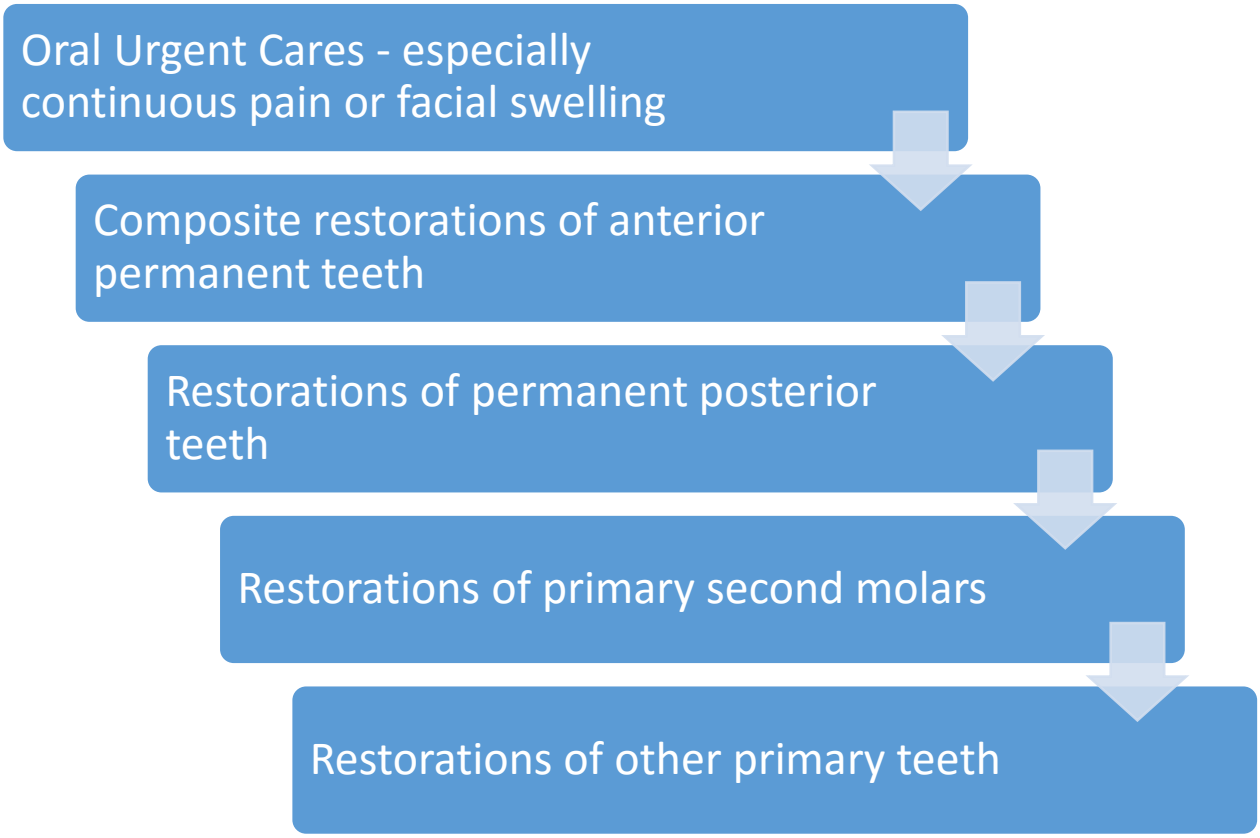
5.1 Referral criteria

Those children who require composite restorations on anterior teeth, or restorations on any permanent tooth in the absence of Level 2 services can be referred for Level 3 management. In addition, if a posterior permanent tooth has an interproximal caries lesion involving more than one half of the interproximal contact then that tooth should be treated at a level 3 facility.

5.2 Recommendations for Priority of treatment

The suggested priorities for treatment reflect the fact that resources are limited, many caries lesions will have already been arrested by the two times a year SDF applications, and any that any acute lesions would have been referred at the Level 1 screening stage (Figure X). Primary teeth which are severely decayed can be left if (a) the caries lesion is arrested (b) the soft tissues show no signs of active infection (c) there is no pain. Pulpally involved and /or broken down permanent molars should normally be extracted to allow forward drift of more posterior teeth. Placement of a root fillings and extensive restorations are often doomed to failure.

Figure 1 – Priorities of treatment at a Level 3 facility



6.0 Monitoring, research and development

Central to the HKC strategy is monitoring, research and development, so that the project can respond and improve as lessons are learnt. If the project is to be expanded into the future, the evidence of its effectiveness must be obtained. In order to dedicate time and effort to research and development, further resources may be required and all groups are invited to make a contribution to fund this research and development aspect. The team at One-2-One will be seeking full approval from the relevant government bodies to conduct the project and to carry our relevant research and evaluation. This includes obtaining ethical approval from the National Ethics Committee.

Data will be collected on the incidence of common medical and dental ailments affecting the children and this will be collated against Quality of Life data. It is hoped that the research will be able to demonstrate health improvements using both clinical measures (height, weight, incidence of diarrhoea or dental caries) and using Quality of Life measures. The combination of both types of data will form a compelling argument that these interventions are worth doing.