MoPoTsyo Patient Information Centre

Annual Report
2007

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1 Introduction

This 2007 report is the 3rd annual report on our operations in the 4th year of our existence. This is the first time we can report on our community-based action for people with diabetes living in a rural area. MoPoTsyo is growing fast and steadily. We look back on a year of expansion, both in Phnom Penh and in the countryside, with the rural programme really taking off and very much according to plan.

We have become convinced that our intervention makes a real difference in diabetic people's lives. Our scope is small and does not yet cover hypertension. There are several good opportunities to reorganize the financial flows in Cambodian Society into more efficient streams. This is one of the challenges that MoPoTsyo plans to meet in the coming years for both diabetes and hypertension in the areas where its interventions are implemented, as it expands in geographic coverage and in scope of action.

2 Our History in brief

MoPoTsyo Patient Information Centre was founded on August 8th, 2004 in order to empower people with a chronic disease, with information and skills on how to manage and control their disease and to make them share information among each other.

Initially we tried to achieve this goal with professional health staff, but after some time we realized that we were more effective with peer educators, so with people who have "the" chronic disease themselves. Peer Education is a strategy that helps to achieve our main goal. Later peer education became "community-based peer education" as this element again improved the outcome.

In 2005 July, after completing our registration as NGO, we became operational in one down-town slum and one remote slum. Now, at the end of 2007, we are operational in 4 down-town slums and one remote slum, as well as in one rural operational district with 9 health center coverage areas, where 7 have a community based peer educator on diabetes.

Until now we remained focused on only one disease, diabetes, which is in fact not one disease but a manifestation of many different diseases. We have only 1 type 1 case as a registered member. All 617 registered members are one of several kinds of type 2. It is striking that almost half of our registered diabetic

membership is *not overweight*. If there is one lesson that is worth to be mentioned here it is that diabetes in Cambodia is not just a disease of the rich (many of whom are indeed overweight in this low-income country where many of the rich are "new-rich" who are not fully aware of the fitness-culture that is now normal in developed countries), but also very much a disease of poor people many of whom are not well nourished. One of major health challenges that Cambodian population faces at the moment is their overall preference for "overweight"-status as sign of wealth. We will only be able to make a dent into the coming epidemic if we succeed in changing this.

MoPoTsyo's peer educators do systematic detection ("screening[1]") of diabetes in their own community, using urine strips and of hypertension using blood pressure meters. It is the peer educators based at the grass roots who talk with the households, group leaders, village leaders and others. They assess any patient that they detect (screen in), counsel them and, if necessary, advise them to see a doctor. Regular evaluations have shown that the intervention delivers on its promises.

3 Our Diabetes intervention (projects)

Table 1 Objectives and results per 31 december 2007

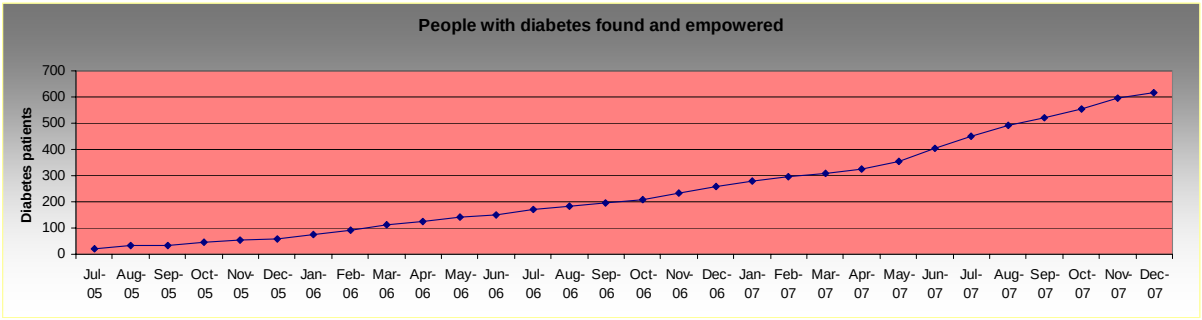
Nr	Original Objective	Changes to objective?	Remarks / reasons	Results in Dec 2007
1	Detection of diabetes	no change	our detection is very cost effective	618 patients detected among 29,335 adults
2	be diagnosed with diabetes	objective was dropped in 2006	there is no need to add this objective besides detection and access to appropriate care;	
3	get access appropriate medical treatment for diabetes disease	no change	**In 2 different ways**: 1) Through cooperation with Public Service at Kossamak National Hospital 2) Through own medical staff in rural program;	MoPoTsyo's equity fund facilitated 828 times access to health services for the most needy among registered patients.
4	Learn through MoPoTsyo about diabetes disease	no change	Instead of learning at headquarters, since 2006 learning takes place inside the communities from their peer educators	knowledge improved significantly;
5	Patients setting personal objectives and recording progress	no change	peer educators copy records of individual patient progress and report to MoPoTsyo; since early 2007 patients also record themselves (or family);	patients do keep their own records, sometimes helped by peer; many patients are aware of their treatment goals in terms of blood sugar and blood pressure and body weight;

[1] Urine strips fail to detect some diabetics, but the people missed in year 1, will be screened in later when they develop symptoms or when a second screening is organized. Using blood-glucose strips would increase the costs 15-fold and destroy the cost -effectiveness of the intervention. It is important to note here that almost half of Cambodian diabetics are NOT overweight (BMI <23), so focusing on so-called "risk groups" as done in the West would be a mistake in the Cambodian context.

Nr	Original Objective	Changes to objective?	Remarks / reasons	Results in Dec 2007
6	Creating contacts among diabetes patients living in the same area;	no change	weekly sessions in the community and General Assembly 450 people on World Diabetes Day (Nov)	2 large events have been organized as well as weekly sessions
7	Creation of active membership in the diabetes user group at selected locations	no change	12 peer educators manage 2 networks: urban + rural with large membership in 12 user groups	5 urban slums and 7 rural health center areas now have a community based Peer Educator managing a total membership of 618 diabetics;
8	Measure blood sugar control among participants	no change		FBG and PPBG results of a large number of patients are available, and show improvements;
new 9	introduced in 2007	Blood Pressure control	47% of diabetes patients have hypertension;	improvements in management of hypertension;
new 10	introduced in 2007	Establish a trained Peer Educator in each slum	the intervention has become “community based”;	Peer Educator is focus person in the community with credibility built up;
new 11	introduced in 2007	Review prescription and advise poor diabetics where (and what) to buy as cheaper drugs for diabetes/hypertension	Public service sometimes prescribes expensive brand drugs and too many molecules and too high dosages;	3 out of 5 interviewed persons say that self management is affordable although they have to buy the medicines;

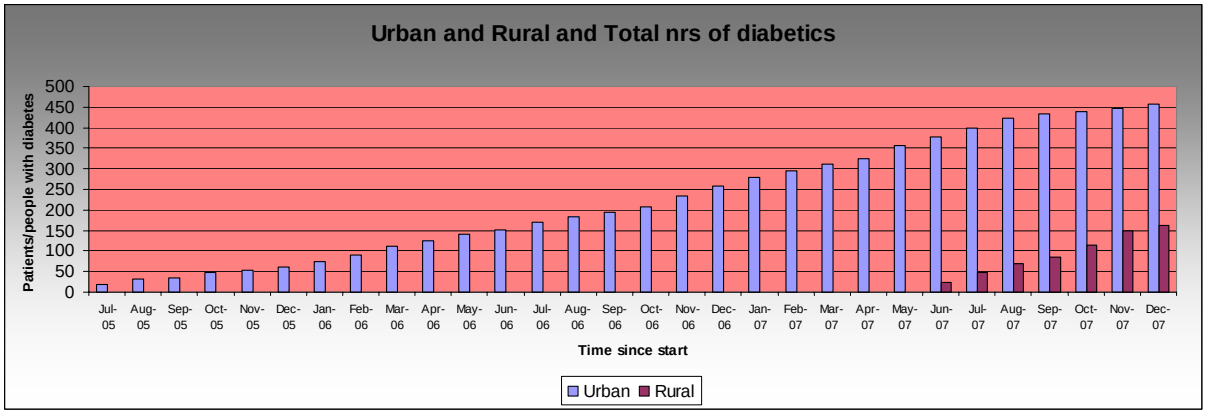
The graph below shows the steady growth of MoPoTsyo’s network since the start in June 2005.

Figure 1 Membership growth



In fact, in 2007 the urban slum network growth is kept steady as it concentrates on achieving managerial and financial sustainability, while the rural network is rapidly taking off with rural peer educator candidates trained in the urban slums and with the rural intervention as a whole building on the experiences gained in the urban slums during almost two years of operations.

Figure 2 Urban and Rural membership growth



We have been operational in 2005, 2006 and 2007, so this year it becomes possible for the first time to observe year-on-year trends in the cost per diabetes patient detected, stabilized and followed-up. The overall costs per diabetes patient in 2007 are up only because of the initial costs related to the start-up of our first rural project during the second half of 2007. In fact the 3rd year cost in the urban project are about half of what they were initially in 2005 with the first 60 patients. Of course the rural program cost should descend sharply in the coming years.

Table 2 Costs year on year

	2005	**2006**	**2007**
MoPoTsyo overall cost per DM-patient	$120	$93	$97
urban area	$120	$93	$62
rural area	-	-	$196

Although the figure drops over time, the benefit package of 2007 for the patients is more elaborate than the benefit package of 2005 and we have grown in office staff. We are trying to manage the rapid growth of our organisation in the best way we can. Decentralization of certain responsibilities to the peer educator networks is a key element of our growth strategy, but that needs to be prepared and implemented carefully.

The start-up cost per patient (2007) in the rural areas ($ 196) seems higher than they were in the urban areas in 2005 ($120) because in the rural area:

1. there are more transport costs as distances are larger and also because the price of gasoline price itself has risen sharply;
2. peer educators detect proportionately per screened adults only half of the diabetes patients when compared with screening in the urban slums, so the total costs are distributed over a smaller number of patients resulting in a higher overall cost average;
3. we also include all costs of medical diabetes service provided at the local hospital to “our patients”, which in the urban areas are

provided through the subsidized public service; so the rural model is a relatively "more complete care model", whereas the urban slum model is a "detection + education model";

We will continue to follow the development of costs over time as we grow although these figures have to be interpreted with caution.

3.1 The main lessons so far

We have come a long way since founding the organisation in August 2004 and the start of operations in July 2005. It has been fascinating to witness how the requirements of realities on the ground gradually moulded the intervention into what it has become now, sometimes quite different from the original design. Below are some learnt lessons:

3.2 Peer Education on diabetes

1. Peer Education by community based peer educators is moderately effective: In the 2 slum areas where the intervention is running for at least two years 52% of our diabetics has HbA1c below 7.5%. Just 7% of randomly selected diabetic urban slum showed up with random blood sugar >250 mg/dl. Around 65% of those who should is moving towards a healthier body weight. Only 12% maintains the wrong idea about losing or gaining weight, which is not obvious at all given the recent history of Cambodia. From independent assessments carried out over time we have learned that our intervention for diabetics contributes positively to people's health outcomes and reduces their health expenditure and increases their feeling of control over the disease. The intervention is much appreciated by the population.
2. So far it seems to work well to put community based peer educators into a network of about 10 peer educators, led by one salaried Manager who supervises and supports them. This was sofar only tried in urban areas, but we move into that system for the rural area as well with the Operational District mapping as the basis, so one peer educator per health center area and one manager per OD;
3. The urban yearly costs of peer education go down year by year. They will bottom out at USD 60, per patient. This amount must somehow be financed in order for the program to be financially sustainable. There are several possible sources: insurance, equity fund, sale of pharmaceuticals, twinning with overseas diabetes associations. The solution lies in a combination of financing sources.
4. Peer Education is mentioned in the draft National Diabetes Treatment Guidelines so it is gradually being recognized.
5. In Cambodia, it will take a long time before there will be enough professional trained care givers able to reclaim the "provision of professional services" from Peer Educators.

6. MoPoTsyo has established its urban peer educator networks in the vicinity of established Diabetes clinics, but it focuses on communities which are either somewhat marginalized or remote ; In Rural area it reaches a broader segment of society;
7. Peer Educators vary a lot in capacity. MoPoTsyo maintains a minimum standard that is already hard to achieve when they are tested during the exam. The exam success rate stands at 1/3 to ½. It is frustrating that so many candidates fail the exam. The curriculum has complex issues to master. Also, the amount of theory and practice that the student has to become familiar with in a relatively short time are challenging for most candidates. If we raise the standards, less students will pass. On the job coaching and re-trainings are the only way to further increase capacity and maintain knowledge and update what they have learned;
8. In the present system the peer educator remains responsible to alert the patient that he or she should see a physician or start to take medication.
9. If we want to replicate a program by affecting a peer educator from one area to "help" in another area, her own "maintenance" program can collapse behind her back.

3.3 Equity Fund

MoPoTsyo has not been very generous with equity fund support to pay for health services on behalf of poor patients. Because it is a new program, we wanted to avoid that people start to see MoPoTsyo as "the chronic financial solution" to their own chronic problems. We have tried to focus on poor diabetic people who are very hyperglycemic when they we first meet them, for who dieting is not enough and who are unable to cope. We have been very flexible with the type of costs that we support people with, but always on a temporary basis, to give people an opportunity to get out of their disease trap. Equity fund support is in most cases a temporary and matter, but not always. Without some financial support some people with diabetes cannot adhere to medicine treatment, although the medicines are not very expensive. We have now 165 people out of a total of 618 on permanent equity fund support (27%). For the reasons given below, this percentage is not very informative:

- because most of the 618 are people living in urban slum areas,
- some have been in the program for 3 years and others are newly registered,

which is when many have a financing problem which gets resolved later on as they recover and get healthy again.

A very useful figure would be the percentage of rural diabetics who, once stabilized, still need some equity fund support in order to cope well with their disease. MoPoTsyo is well positioned to manipulate this figure by increasing quality of follow up and access to medical services which will increase the cost,

or by reducing these. At the end of the day, the balance will be the result of negotiation and for this reason the patient assocation needs to matter in size and in advocacy skills.

The need for equity fund support decreases for most patients as they recover from a long period of hyperglycemia and become productive again. The equity fund should not substitute for support from relatives, even though they have already given up on their sick relative after spending on a lot of money on him or her. The community based peer educator is in a position to counsel the relatives on their role. The patient's physical recovery can help to restore and strengthen the family bond.

The sustainability of the equity fund support depends for a large part on the Cambodian government's willingness to support it.

3.4 Insurance

The theory is that health insurance has a financial interest in self-help groups like MoPoTsyo as they help reduce adverse selection on the side of the patients and reduce moral hazard on the side of the health service provider and reduce costs of disease.

For this reason, MoPoTsyo cooperates with SKY, the health insurance project of GRET, in Ang Roka. SKY had raised its premium at the same moment that MoPoTsyo started its intervention, so it experienced a dip. By now, the SKY membership is back at the point where it was when MoPoTsyo started. Still, with 1000 households, the SKY membership is not large, compared with the 200 diabetics that MoPoTsyo has find in the first six months of its intervention, and the expected 800 it is going to find. The disproportionality is going to get bigger when the hypertension intervention will start as there are probably twice as many hypertensives as diabetics. The peer educators have been slow to take up membership of SKY. This may be due to the quality of the public health service as perceived by the users.

3.5 Our short term priorities (2008)

1. experiment with Primary Prevention of Chronic Disease among Community leaders and School teachers;
2. Develop the MoPoTsyo's data base for decentralized use
3. implement hypertension module in rural area
4. strengthen the DPM's and GPM roles
5. find a more suitable office for HQ, training centre, drug stock, not far from Kossamak Hospital in the West of the city, and organize the move;
6. strengthen respect for GSP/GDP standards and expand our revolving drug fund system;
7. prepare expansion of our program to :

   a. the other 4 OD's of Takeo province
   b. Thmar Pouk OD in Banteay Meanchey province
   c. Chhouk OD in Kampot province (the neighbor OD of Ang Roka);
8. prepare 2008 World Diabetes Day with more formal and substantial consultation of the membership;
9. make film documentaries on aspects our work for different target groups including policy makers

3.6 Our long term priorities (2009 and beyond)

1. Obtain funding from an insurance provider
2. Manage a fully GDP and GSP compliant Revolving Drug Fund;
3. Obtain equity funding to help the poor diabetics and hypertensives pay for their health care costs;
4. Conduct a Cost Utility Analysis (based on DALY's) to demonstrate the cost effectiveness of our intervention;
5. Use our experience of replication in 2008 to design a national roll out with a realistic cost and time frame
6. Get strong national political support for a roll out of the intervention;
7. The Urban and Rural networks compared

The two interventions are not exactly the same. We can spot 4 main differences:

A *first* important difference is that the urban slum networks reach mostly the poor urban diabetics, while the rural networks reach not just the poor but middle and some higher class people as well. In the rural villages the peer educators reach practically all people because nobody declines, while in urban areas rich people and some middle class are not interested because they can afford "a real doctor".

A *second* important difference is that a special incentive reimbursement system was carefully designed to make sure that remoteness should not be a factor limiting access to MoPoTsyo's benefits. This is necessary because transportation costs are much higher in rural areas.

A *third* difference is that in the rural area MoPoTsyo itself is responsible for the specialist care for its membership, while in urban areas, MoPoTsyo does not have to do this as specialist care is available at Kossamak National Hospital.

A *fourth* important difference is that only 29% of the rural diabetics knew they have diabetes, while in urban slum areas this is 69%. These figures must be seen against the background that the urban denominator is a slum population while the rural population is the general population in a contracted OD with a relatively good public service. The first conclusion is that the urban slum population had better access to diagnosis than the rural population, while both did not have access to proper diabetes care. If access to diagnosis is so low in a contracted district, it is going to be even worse in non-contracted districts. There

the proportion of diabetics who have positive urine glucose while knowing that they have diabetes is probably lower than 29%. This confirms what was already found in the diabetes surveys carried out in different areas in Cambodia as published in The Lancet in 2005.[2]

3.7 Urban

March 2007 saw the start of 2 new slum projects (Boeung Salang and Borei Kelaa), funded partially by AUSAID. This brought us to a total of 5 slum projects as Anlong Kangan, Sras Chork, Boeungkak 2 existed already. It was difficult to find a good peer educator in Borei Kelaa. The peer educator from Boeungkak 2 was temporarily dispatched at Borei Kelaa, but as a result she was able to spend less time at Boeungkak 2.

3.7.1 Achievements

Key figures:

1. 13,340 urban adults learned from MoPoTsyo how to use a urine strip to test themselves for high urine glucose. This equals 3,735 households holding a population of well over 20,000 people, who have received the health promotion that MoPoTsyo offers about diabetes.

2. 457 diabetes patients were detected;

3. 316 (=69%) of them knew they had diabetes; This means that there are many people with diabetes that are *not* found which comes as no surprise because we use urinestrips for detection for reasons of cost effectiveness. The false exclusions are not a problem as the missed cases will be included later when they become more serious and detectable by urine glucose; Using blood glucose strips instead of urine strips would raise costs substantially.

4. 416 times did urban diabetics benefit from our equity fund. These 416 times were divided over 138 diabetics, with most benefiting once, and some as many as 15 times.

5. With time the diabetics improve under our intervention: In Anlong Kangan (2005) and Boeungkak (2005) 52% of diabetics are now ≤ 7.5% HbA1c; In Boengkak2 (2006) this is only 30 %, but this may be because

[2] The Lancet November 2005, 366;1633-1639 "Diabetes and associated disorders in Cambodia: two epidemiological surveys" King H *et al*.

the peer educator there had been affected to work in Borei Kelaa throughout the second half of 2007, resulting in poorer follow up in her own area. Both new areas Borei Kelaa and Boeung Salang showed that only 36% had ≤7.5% HbA1c, but this is normal as they started only in the second trimester of 2007.

6. 19 patients in the urban area are getting support from MoPoTsyo to pay for their insulin. In total 27 patients have been on insulin, but 8 can buy their own insulin.

7. The urban diabetes patients were accompanied by the peer educator on average 10 times in 30 months, so that is once per quarter (4,852 times for 457 patients during two and half years by 5 peer educators). The reason for accompanying the patient are:
    a. seeing to the Diabetes doctor 28% of 416 times in 457 patients;
    b. going to buy medicine 71% of 416 times in 457 patients
    c. another reason : 1% of 416 times in 457 patients

8. MoPoTsyo loses annually a little more than 8% of its patients, in other words 26% of registered patients over 3 years are no longer being followed up by the program.. More than half of those patients are lost because they move out of the area where we work to another area, the other half consists of deaths and people who are no longer interested. Since mid 2007, each Peer Educators fills and signs a monthly "stop-follow-up" forms so we keep track on who drops out and why.

3.7.2 Main challenges

1. The main challenge is to make people adhere rigorously to lifestyle changes. Many patients show an initial improvement and then relapse.
2. Quality of exercise is a point of concern. Many are not exercising "correctly" and stop too early, when they start to sweat. They feel tired and warm, just when they could start getting physical benefit.
3. Many patients and their environment want the patient to gain weight, although the patient should lose weight.
4. Finding candidate peer educators with good education who are ready to work despite the low incentives; quite some suitable candidates do not want to do peer education as it does not pay well. We must keep the program costs as low as possible as long as we have not assured financial sustainability.
5. Managing replication and growth of the networks;
6. There exists no open source software for database in khmer language, and this slows down our ambition to decentralize. We do not want to hire a company to develop a database because we will be dependent from the developer. We have worked with ACCESS until now and we will have to

continue to do so for the moment creating comparable decentralized databases per OD, whose outputs we can combine and analyse.

3.7.3 Plans for 2008 and future

The priority in the urban slums is now to expand the scope of its activity from diabetes to include also all people who have hypertension, likely a 1000 urban poor people in the areas where we are working already, and improve the quality of the peer education outcomes as well as the management and the efficiency of the organization, to learn lessons in urban situations before we apply them in adapted form to rural contexts.

In the long term, program may expand to include other types of chronic health problems, so rather seek to expand in "chronic scope" and "quality" rather than try to include more "urban people".

The urban network of 5 peer educators will come under the management of one Diabetes Program Manager, who reports to the General Peer Program Manager.

3.8 Rural

In mid 2007, we started our first rural program (Ang Roka OD in Takeo province). This is an operational district which has been contracted to the Swiss Red Cross and which has a relatively good public health service, but no diabetes or hypertension services as part of the regular public services provided at the health centers or referral hospital. MSF Belgium has been operating a Chronic Disease Care clinic (CDC) since 2003 at Takeo Provincial Hospital, where people with diabetes can get diabetes service as well as free medicine supplies. When we started our program, there were 150 diabetes patients from Tramkak (a slightly larger area of which Ang Roka OD is a part) administrative district registered at this CDC. It will take MoPoTsyo at least 2 years to screen the households in the whole OD and detect 800 to 900 diabetics. MSF B has announced that it will stop its diabetes activities in the future, so MoPoTsyo will be in a position to gradually take over the diabetes cohort, but offering a different benefit package than the patients were used to under MSF Belgium. Many of the CDC from Ang Roka patients already switched to MoPoTsyo, although they maintain their name at the CDC.

The appearance of MoPoTsyo (as an alternative to CDC) for the diabetes patients from Tramkak has resulted in defaulting among MSF B's patients as MoPoTsyo starts to meet their needs. This is a good sign especially as it means that people start to buy their own medicines.... It saves them time and transportation costs, while it makes MoPoTsyo's follow-up program more financially sustainable.

3.8.1 Preparations

Peer Education is not just something that you can start on day 1 when you start a project. A peer educator is somebody who has first brought her/him self under control. That takes many months. Only by going through various phases of coming to terms with the disease the peer educator matures. Because of this, we try to identify candidates before we start a project and coach them. This was done for 3 candidates from Ang Roka OD. They passed their exam in May 2008 so the WDF Board decision about the funding came through on June 18th, after which the project could start.

3.8.2 Achievements

1. By now, 7 Peer Educators are formally established in 7 out of the 9 health center areas in Ang Roka.

2. 15,995 rural adults in Ang Roka learned from MoPoTsyo how to use a urine strip to test themselves for high urine glucose.

3. 161 diabetes patients were detected in the first 6 months of the program;

4. Only 46 (=29%) of them knew they have diabetes; this is the norm for rural Cambodia. It also means that there are many rural people with diabetes that are *not* found by us which comes as no surprise because we use urinestrips for detection for reasons of cost effectiveness. As discussed above under the urban review, the false exclusions are not a problem as the missed cases will be detected in the years to come when they show urine glucose during a re-screening activity;

5. 71 times did rural diabetics benefit from our equity fund. These 71 times were divided over 27 diabetics, with most benefiting once, and some as many as 16 times.

6. After at least 3 months into the program, random samples of the diabetics in two areas were assessed at the end of December 2007/early January 2008, showing that 53% had HbA1c < 7.5% but it is early on in the program to say much about improvements in health status, knowledge and other expected outcomes as we know already from the urban experience that new patients have their ups and downs in coming to terms with their disease and the life style changes.

7. 3 patients in the rural area are on insulin at the moment of writing this report;

3.8.3 Main Challenges

The program is running according to plan and there were no big problems that manifested during the first 7 months, but there are some interesting points:

3.8.4 Early considerations in the rural program

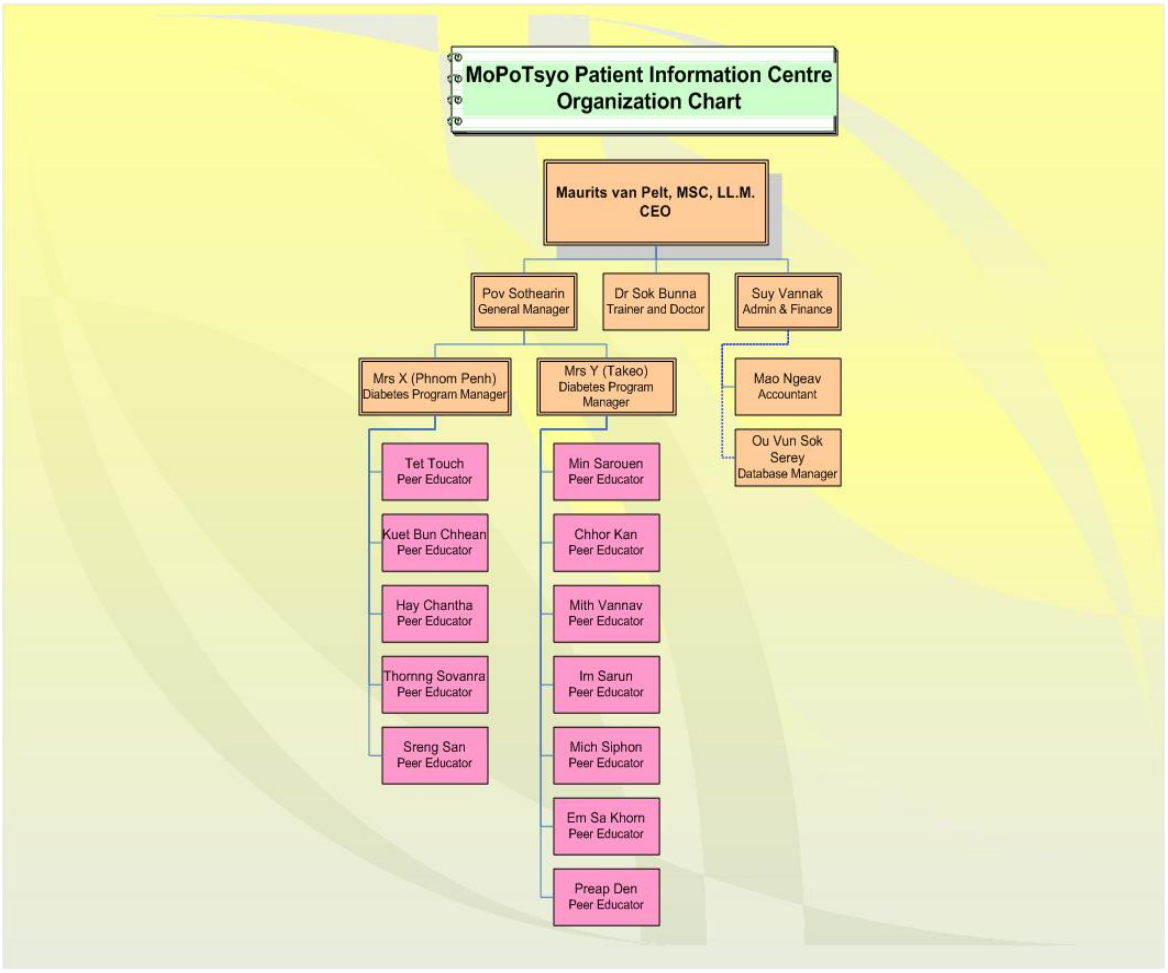
1. Urine Strip: there were some doubts about the efficacity of one of the urine strips. Because the Vietnamese strip became more expensive, we had switched to an American type of strip, but which did not perform as well as the Vietnamese type of strip that we had always been using in our programs. Then we switched back to the Vietnamese strip, although it has risen in price from USD 1.50 to USD 1.80 per pack of 50 strips.

2. Prevalence in rural area: Much less people can be found with positive urine glucose than in the urban slum areas. The reason is of course that the rural people are much more physically active than the poor people in the urban slums. It also shows that **prevention is not too late** and very much necessary here and that we can plan for 1 diabetic per 100 adults for rural Cambodia. ***The established peer educator network is a smart investment into a grassroots primary prevention machine that can never run out of fuel.***

3. ProCoCom in Takeo: MoPoTsyo is member of the provincial technical working group for health in Takeo. It was invited to expand its activities to the other 4 OD's by the OD Directors.

4 Organizational Chart and structure

Figure 3 Organizational chart



This chart shows that we are looking to put a Diabetes Program Manager at the head of each of the 2 networks, with a General Manager overseeing each salaried DPM, as they lead their network of peer educators in an area. A part of the administration and finance will be decentralized to each of the networks over time to ensure that MoPoTsyo Headquarters does not become a micro manager. This decentralization process starts in 2008 by training of local people in the networks to take on administrative tasks.

5 Various project Implementation issues

5.1 Introduction of stop follow-up form

In August 2007, MoPoTsyo introduced a “stop follow up form”, which has to be filled by every peer educator at the end of each month. It gives the ID numbers of patients that are no longer followed-up by the Peer Educator. The reason for drop out is “moving out” of the area, “death”, not interested. A total of 15% of all registered patients were found to have dropped out over a period of two and a half years.

The strict reporting allows us to have a more rigorous evaluation system based on random selection of patients that are “really” being follow-ed up by the peer

educator according to the peer educator. If the peer educator has not seen a patient for more than two months, it must be reported.

5.2 Cambodian Diabetic Food Pyramid

We revised the first version and published a second version of the Food Pyramid after making some small changes. As a simple and clear collection of typical Cambodian food items, it remains a very popular and effective tool to help people with diabetes in Cambodia eat healthy.

Figure 4 food pyramid version 1 and 2

In 2007, we decided to release it for use by others as well. From the evaluations we have learned that it is very much appreciated by our membership. It is meant to be kept on the wall of their home.

The pyramid has been distributed to all health centers in Phnom Penh Municipality upon request by the Municipal Health Department. It will be published in a Diabetes issue of Health Messenger in 2008, 20.000 issues of which are sent out to health center staff in the whole country.

5.3 Testing of Pharmaceuticals

We cooperate with the National Laboratory for Drug Quality Control to test the quality of the medicines that we recommend the registered patients to buy. We have contracts with pharmacies and health authorities to regulate our relationships and accountabilities.

6 Other topics

Glycemic Index of a Cambodian white rice: In 2006 we conducted a study, with approval from the national ethical committee, on the glycemic index of a commonly used type of white rice, to see if different ways of preparation would

produce different results. The differences were not significant. The official report was published in 2007 and made available to the Ministry of Health and WHO.

Memorandum of Agreement signed with Ministry of Health
In 2007 MoH and MoPoTsyo signed their first official agreement.

In November 2007, the MoH launched the National Non Communicable Diseases Strategy. This strategy also mentions peer education and MoPoTsyo.

MoPoTsyo made a first cost extrapolation of its intervention and presented this at the 4th Diabetology Congress in Phnom Penh.

MoPoTsyo made a presentation on peer education at the Cambodia Medical Congress at International University;

We signed an agreement with Sky/Gret to cooperate on health insurance in Ang Roka.

The WHO expressed interest in our intervention and welcomes a proposal from us to cooperate in developing financial sustainability.

We briefly tried to do screen for Hypertension in Anlong Kangan, in the way we do this for diabetes, but the method was immediately abandoned because it had to be rethought as it can be done much more cost effectively in another way. New pilots will be done in 2008.

7 World Diabetes Day

MoPoTsyo was active during 2 WDD's.

7.1 WDD in Kompong Cham 14 november

This year, World Diabetes Day was celebrated for the first time as a UN observed official day. The theme was "children with diabetes", but there are only very few of them alive nowadays. (MoPoTsyo has only type 1 patient, it is 14 year old girl, among 618 registered patients in the program). The event was organized by the Cambodian Diabetes Assocation in Kompong Cham, with presence of H.E. Tep Lun from the MoH.

7.2 WDD in Phnom Penh on 18 november

MoPoTsyo organized "a day" for its own membership and used as opportunity to hold a first informal meeting with its members, of whom some 450 showed up.

After MoPoTsyo's opening speech, very interesting informal but meaningful talks were delivered by dignitaries from Ministry of Health, Cambodian Diabetes Association and WHO. It was very encouraging.

It was well organized and there were fortunately no incidents: We had obtained official permission from the Mayor of Phnom Penh to hold a march from Chaktomuk Theater to Independence Monument, to Wat Phnom and then back to Chaktomuk, a walk of several kilometers. Two ambulances from Kossamak were on standby to help people who felt tired or became hypo. This was really necessary as it was a hot Sunday and the walk was a bit long. There were refreshments and a healthy lunch prepared by Nyemo Cambodia as reward. People were sitting down everywhere in and outside the building on the grass and talk with each other.

The membership sang the MoPoTsyo song for the first time. It was written by a famous Cambodian song writer and performer, Mr Bun Chanthorn who is himself diabetic. MoPoTsyo had organized a competition with a vote on the best performing peer education group. Boeung Salang slum area won the competition although their group was quite small.

It was the first time we were in the opportunity to consult our membership on important issues. It is not easy to organize meaningful discussions among 450 people, but the themes were well prepared and the organization allowed that people were remixed into different groups according to their specific type of diabetes as follows: a insulin using group, a type 2 diabetes group without overweight and a group of type 2 diabetes with overweight. The latter groups were split between with and without hypertension. This brought people together who did not know each other. The membership voted that peer education was and remains useful for them, although they are stable now. The membership also said that any budget should not only be used to reduce the price of their medicine but also to pay for peer education. And then they voted that they are interested in getting insurance coverage. They also mandate MoPoTsyo to represent their interests and they want to meet again in 2008. After this, the people from Takeo returned to Takeo and the people from the urban slums returned to their slum areas.

8 Communication Strategy

During the first six months of 2007, we had (our second) Dutch volunteer with type 1 diabetes to help develop a "communication strategy". The strategy was adopted by the MoPoTsyo board and forms the basis for conducting our external communications. It aims, among other things, to engage Diabetes Associations in developed countries in what we are doing. In the Netherlands there are 800.000 people with diabetes but they are not aware that in countries like

Cambodia their disease is lethal within ten years and that 99% of young people with type 1 who are living almost normal lives Europe, where they can get married and have children, cannot survive in Cambodia. This situation is likely to continue for decades unless civil society gets its act together, gets organized and puts more pressure on politicians and donors to think again on what the right public health priorities and - opportunities are instead of blindly following preprinted global formats and applying them locally.

MoPoTsyo produced a 10 minute documentary about a 13 year old girl from rural Takeo with type 1 diabetes. The majority of these children die. This child was about to die and it would certainly have died if MoPoTsyo had not intervened. The documentary lets the parents explain why they had given up on their eldest daughter. It is Khmer spoken, and versions with Dutch and English subtitles are available. The reality of this kind of documentary is simply too harsh for many Western audiences and it cannot be shown to people with diabetes in developed countries.

8.1 Diabetic associations

Support from overseas Diabetic Associations has not taken off. The reasons for this are not immediately clear. It can be that the Diabetes Associations in developed countries have been reluctant so far to confront their members with the details of situation on the ground in developing countries and the needs. This may be because the exposure of the reality is not in the direct interest of their members and creates unrest and uneasiness. Yet, there are encouraging signs of gradual opening up.

9 Financing and Funding

In chronological order we obtained in 2007 funding from the following new donors:

- AUSAID
- French Embassy Fonds Social Développement
- Swiss Red Cross
- World Diabetes Foundation
- The Department of The Hague of Diabetes Vereniging Nederland
- A “promise” of funding from WHO;

We failed to obtain funding, for which we had applied, on 2 occasions: from the Development Market Place organized by the World Bank and also a rather an interesting appeal from Ovations in Minneapolis (USA). It is always difficult to find out the real reasons why a proposal does not get accepted: is it technical, not well explained, mistakes...? There has not been much useful feedback coming from any of these institutions.

All these different sources of funding show that donors are interested and the ones who visit, evaluate our performance and read the reports **remain** interested. The Dutch ICCO funded us twice. Also, "Het Maagdenhuis" from The Netherlands has invited us explicitly to submit to them again a proposal after they externally evaluated our performance with regards to the first project that they had funded in Anlong Kangan slum area. Annex 2 has a complete overview of donors and funding since 2004 until 31 December 2007.

10 Audits

During 2004, 2005 and 2006 our organizational expenses were growing but were nevertheless small. It is well known that international auditors cost a fortune so we have always considered this a big waste of money compared to what we can do also with those budgets for people in need.

But as our administration becomes more complex, with different donors, and also because we want to grow, we decided in the second half of 2007 to have our whole administration audited back to 2004. As our annual budget is small it was not easy to find an auditor who wanted to do it for a reasonable price. We finally settled with Vanda Institute, the school for Accounting & Auditing (http://www.vanda.edu.kh/) .

During 2007, all previous years were approved after audit by our auditor. The audit of 2007 will be done by the same Cambodian audit firm Vanda Accounting & Auditing.

11 Annex 1 The MTR Dec 2006 revisited

Review of recommendations from the MTR (Dec 2006)

The MTR findings showed conclusively that MoPoTsyo is well underway towards reaching its (adapted) intervention objectives which aim to improve access to information for people living with diabetes in poor urban communities. MoPoTsyo 's challenge is to use technical opportunities for strengthening the quality and intensity of patient follow-up to produce better health outcomes, without that it drives up the costs jeopardizing sustainability.

MTR indicated 7 main areas for consideration and further strengthening of the intervention design:

1. Health Promotion and protection against health related poverty for the general population
2. Quality and affordability of medicines
3. Health Equity Funding
4. Quality of the Continuum of Care
5. Monitoring and Evaluation
6. Gender
7. Sustainability

GENERAL POPULATION: MoPoTsyo has not yet measured if the non-diabetic persons in the slum area know what to do if they develop symptoms of diabetes. This can be done through a survey towards the end of the project.	Will be done as part of primary prevention activities starting in 2008
MEDICINES: Purchasing of cost effective medicines: It is not enough just to guide people on which medicines are cheap, without having adequate drug quality control mechanisms in place related to those medicines; the best solution in the long term is to have anti-diabetic medicine and hypertension medicine supplied through the normal public drug supply system; MoPoTsyo can help to create a system of drug supply for chronic patients that piggybacks the existing system by creating a registered and organized membership whose drug consumption is recorded and known to the organisation; In the short term, MoPoTsyo can organize quality testing of the diabetic medicines and hypertension medicines, (including the so called "purity-tests") which it recommends to be bought by the members;	Done with National Laboratory for Drug Quality Control, but without purity test
MEDICINES: POLICY: MoPoTsyo can advocate for prescription of generic medicines in the public service, reducing direct promotion of brand medicines among the patients of the public service. The list of telephone numbers of patients of public services should not be given to pharmaceutical companies.	Done
HEALTH EQUITY FUNDS: MoPoTsyo has not yet measured if those for who the equity fund stops to pay are doing just as well as those for who the equity fund is still paying; Maybe those who are benefiting from the equity fund do better than those who are no longer benefiting from the equity fund. This is now unknown.	See next point
HEALTH EQUITY FUNDS: It may be preferable to continue partial funding of health related costs of equity fund beneficiaries to facilitate patient follow up in the longer term of vulnerable patients; If MoPoTsyo continues to fund, for example 25% of medicines, it can better keep contact with the patients and follow how they are doing;	Done

QUALITY: It is questionable whether MoPoTsyo should continue to recommend its members to use HbA1c, as it is expensive and difficult to finance. There are more cost effective methods to assess glucose control;	HbA1c no longer systematically done for everyone
QUALITY: MoPoTsyo may consider if it can record not just of what medicines people have been prescribed, but also whether they actually adhere to drug treatment or not, so it can compare treatment adherence with individual health outcomes;	Done
QUALITY: Peer Educators have become service providers to patients often instead of patients being applying certain self-management skills: the patients are not themselves using the blood glucose meter at the MoPoTsyo Patient Information center where they gather once a week nor the blood pressure meter nor do they record themselves their progress. All these activities are done by the peer educator for the patients. Maybe patients can be enabled to do some of these things themselves.	Partially done
QUALITY: SUSTAINABILITY: MoPoTsyo should write a draft Terms of Reference for the "community based diabetes Peer Educator" to discuss with partners and stakeholders;	Done
QUALITY: Choice of glucose test: HbA1c is too expensive to use on large scale. MoPoTsyo can use it in random samples per intervention area; There are not enough Fasting Blood Glucose tests taken. Patients are not using the cost effective urine strips themselves because there is not enough explanation about their utility and they are not provided and because there is no incentive related to the proper use of urine strips;	Action taken, situation has improved
QUALITY: Peer Educators can be trained more on signs of complications and co-morbidities; the assessment questions related to macrovascular and microvascular problems are not clear for the patients, so they need to be re-phrased.	Partially done
QUALITY: MoPoTsyo should apply one standard methodology for measuring blood pressure. Although the international standard recommends that the patient sits down on a chair with her arm resting on a table, this standard is unpractical for the local circumstances many of the instances when blood pressure is taken by the peer educator. It is time to standardize the method in each area, so the measurements can be compared with each other without doubts that variation is due to the way of measurment. This issue should be included in the training of peer educators;	Still not satisfactory
QUALITY: M & E: MoPoTsyo is not presenting data that show how many of its patients meet *all* the criteria of success. For example it is nice to know that the majority of patients feel more in control, but what if an individual patient feels in control, but he/she is not in control of their blood sugar, and the other way around. It would also be interesting to relate the health outcomes to knowledge, to drug adherence, and feeling in control, instead of measuring and presenting separately all indicators. However, the sample size may not always be large enough to produce significant findings.	Somewhat improved by evaluation

QUALITY: MoPoTsyo should check if everyone who is taking Metformin has had creatinine checked at least once a year with the result recorded and action taken if it is too high;	Not done
QUALITY: MoPoTsyo can consider to send patients with a diabetes history of more than 5 years for eye exam;	Done, all those patients received a letter from us
QUALITY: MoPoTsyo can teach the peer educators how to assess proteinuria among patients;	Not done
QUALITY: MoPoTsyo can organize assessments of cholesterol levels among all patients with diabetes, prioritizing hypertensive overweight patients;	Not done
GENDER : Most patients are women, but most peer educators are men. There should be more balanced representation; Inside the head quarter office, the genders are not equally represented either.	We keep trying, but they remain underrepresented
M & E: For 6 monthly evaluations, rather than checking all patients' health outcomes, it is more efficient to continue with random sampling, as is already done with knowledge assessments. The applied method of Lot Quality Assurance Sampling requires samples of just 19 individuals yielding results with an α-error of <0.1 and β-error of < 0.1, which is enough for MoPoTsyo's management purposes, to compare how intervention areas are doing relative to each other, with regards to a large number of indicators.	Done
M & E: MoPoTsyo has collected enough baseline information about the knowledge of patients when they register. Only assessments of randomly selected patients are necessary. MoPoTsyo can develop an instrument to assess whether patients who have poor health outcomes have well understood the information they received during the sessions.	not done, but it is part of evaluation
M & E: When making quantitative assessments in the intervention areas, MoPoTsyo should include a question or questions related to the amount and intensity of physical activity that patients are doing;	Done
M & E: When making quantitative assessments in the intervention areas, MoPoTsyo should include a question or questions related to whether the patient thinks he is now spending less on health care than before he registered with MoPoTsyo;	Done
RESEARCH: While the intervention was going on, one third of the registered overweight patients are still putting on weight. MoPoTsyo first needs to learn how these weight gaining people can be made to reverse this trend before it can effectively reach them. MoPoTsyo needs to study the group of concerned individual patients and see what the common causes are and what the common opportunities are for change. The discouraging environment needs to be addressed as one of the obstructing factors but there may be others.	Planned for March 2008
RESEARCH: Data collection for a Cost Benefit Analysis should be planned and organized before the arrival of the expert who will carry out the study, so MoPoTsyo should pro-actively contact potential candidates and make preparations; MoPotsyo will need to find funding to finance this study.	CBA was changed into cost utilitlity analysis based on DALY's

SUSTAINABILITY: In the poor communities people who work as peer educators must be compensated for the activities they undertake and the time they spend to follow up diabetic community members. The levels of reimbursement are so low, that sustainability should not be a big problem, provided the intervention remains cost effective and a third party payer is found who has an interest in savings that the intervention generates. As long as this third party payer does not exist, donors who are interested in reducing poverty can foot the bill via MoPoTsyo. These donors exist, can be found and engaged in particular among people with diabetes in developed countries.	Done, contract with health insurance made but no payments yet by them to MoPoTsyo; No donors found among diabetics in developed countries;
SUSTAINABILITY: There may be more opportunities for using existing public health infrastructure and allow the rural variation of this intervention to piggy back investments by other disease programs and the operational district in general;	Done to some extent
URBAN SLUMS: SUSTAINABILITY:The external funding of the 3 urban interventions ends at the end of 2007. The time that remains must be used to strengthen the chances of sustainability of what has been achieved. The proposal already indicates that it plans to explore possibilities to obtain financial support from equity funds, health insurance and from twinning with diabetes associations overseas.	Issue is not yet solved so donor dependency continues.

12 Annex 2 Donor overview

	31 December 2007 US$	31 December 2006 US$
AFF	1,991	3,836
MH	2,661	3,858
ICCO	9,454	15,807
MiCADO	3,980	3,985
Maurits van Pelt	6,550	1,000
Other Private	896	580
AusAID	19,900	-
FSD	26,250	-
WDF	54,945	-
	126,627	**29,066**