Policy Brief on access to essential diabetes and hypertensive medicines within community-based Peer Educator Networks in Cambodia as part of operational district health services

Background

In the early 90s, Cambodia's health system had to be completely rebuilt after decades of war and destruction. The international donor community set its own priorities and these did not include chronic NCD. Twenty years later, Cambodia's public health system does not offer a Continuum-of-Care for Diabetes and Hypertension to its citizens, although excess morbidity and mortality to these chronic diseases is nowadays relatively high when compared to most infectious diseases. Some of the negative consequences of this service vacuum are:

1. The average Cambodian diabetic or hypertensive citizen is unaware of his or her condition.
2. Chronic patients - once diagnosed - cannot afford the prices they are charged by private health service providers.
3. Chronic patients face multiple other barriers when they seek appropriate care for their condition: , high transportation costs, high costs of medicines, high costs of laboratory tests,
4. Lack of access to information from health service providers, a top-down attitude towards patients,an unwillingness to answer questions or provide information, about the skills and medication that they need in order to be able to self-manage successfully their chronic disease.

Evidence

Comprehensive continuum-of-care

Worldbank: Based on a review of available evidence and data from international experiences (that does not include the relevant evidence related to Cambodia's Peer Educator Networksdiscussed below and which has not been published in peer reviewed publications) World Bank's 2008 report called "Public Policy Challenges from noncommunicable diseases" cautions in general against investing public resources into *clinic-based care for chronic NCD in low income countries*. Below is areview of 4 types of experiences (options) with a Continuum of Care for Diabetes and High Blood Pressure:

1) International experience
2) Donor initiatives
3) Cambodian clinical care model
4) Peer educator networks

1) International experiments (Low Income countries in general):

There exists piece meal evidence about activities in low income countries with regards to specific elements of a continuum of care. The known low income country models that are accessible for the poor and middle classes are financed by charity. The limited availability of resources for charity makes that these clinic-based models unsuitable for scale-up. For that reason alone, they will not meet the needs of the population. Apart from the 5-year old (the comprehensive peer educator network) innovative model inside Cambodia itself, there is no evidence originating in any low income country about a comprehensive and effective continuum of care, one that includes routine medication, and which is available for common citizens who have diabetes and hypertension at a cost level that is affordable, sustainable and which is based on a strategy that appears suitable for scale-up and nationwide roll-out. The great majority of low income country models are "health service provider owned". Every model's costs are determined to a large extent by its reliance on the involvement of clinic-based professionals for secondary prevention.

Historically, professional human resources form a large share of the costs in high - and middle income countries, where this was considered better, affordable and therefore more easily justified. For Low Income Countries where this is not affordable, except for local elites, it makes sense to take a fresh look at this and re-assess all of the inputs, including the need for involving of professionals before deciding on the optimal design of a model.

2) Donor Initiatives:

In Cambodia some charity attempts to create functional chronic care clinics have produced evidence on their feasibility and positive impact in the Cambodian context (Center of Hope, MSF CDC clinics) but as costs were not included as part of the studies, serious doubts exist about feasibility of scale up and sustainability. Evidence from donor agency run (MiCaDO in Kossamak, Center of Hope in Phnom Penh, MSF Belgium in Siem Reap & Takeo Provincial Hospitals) Chronic care clinics in Cambodia (WHO Bulletin Isaakiidis) shows that they are feasible and effective but clinical models have serious limitations some of which seem rather intrinsic:

a. Costs were not studied as these were humanitarian or charity initiatives with expatriate medical doctors and nurses. For this reason alone they cannot be replicated;
b. Multiple barriers remained despite free medication from this provincial hospital based model as chronic patients from the other districts cannot afford to travel regularly to the clinic (no subsidized transport, opportunity cost) and information barriers, lifestyle messages but NOT effective,a third of all new patients visited the clinic just once and did not come back). Takeo's peer educators can compare the 2 models from experience;
c. Ineffective (hardly effective) in controlling blood pressure in diabetes patients with high blood pressure;
d. Despite providing several years of free care, the presence of a provincial clinic with free care has hardly increased the proportion of patients who are aware of their diabetes or hypertension and living in the other operational districts in the same province (Evidence from Peer Educator Network research report 5 years);

3) Provincial Chronic Care Clinics

So far no study is available of the experience in Cambodia. It is no secret that the Diabetes clinics in the provincial hospitals are struggling with professional medical staff precisely in the type of situation that the Worldbank 2008 report (Soji's on Public Policy Challenges) cautions against.The struggling is not because anyone is to blame but because there are inherent limitations of clinical models in Low Income Countries (including in Cambodian Provincial Hospitals (without donors) at the present socio-economic level of the society): the care is only suitable for perhaps 10% to 20% of wealthier Diabetes Patients who can afford to pay incentives at levels that are sufficient to pay for the catastrophic input mix that is customary in order to: a) keep doctors, nurses and laboratory staff motivatedand for b) the costs of the branded medicines and branded medical materials. Chronic diabetes and high blood pressure patients become cash cows of the health system just as in China, Laos, Vietnam etc. It is an open but painful question if the current situation "without clinical care"is less harmful to Cambodian society than this model which is already doing so much harm to people's livelihoods in median segments of the population in other Asian countries. Option 3 is probably the worst policy option at this stage of Cambodia's development.

4) Cambodian Peer Educator Networks:

A description of the data and sources of the evidence from an alternative model applied in 8 operational districts is available in "Peer Educator Networks for Diabetes & High Blood Pressure in Cambodia 2005 – 2010", written for WHO in 2011(own study). The trained peer educator network is able to train newly registered patients in self-management, including in basic knowledge and understanding of the disease

(diabetes, hypertension) and how to improve lifestyle in such a way that it improves health outcomes. In addition, the peer educators facilitate member access to health services: 1. diagnostic tests (biochemistry), 2. medical consultation for the patients who need to see a medical doctor with the capacity to treat, 3. routine prescription medication dispensed by a contracted pharmacy using a revolving drug fund.

The Cambodian community-based Peer Educator Network challenges the widespread notion that a patient population can only be reached effectively through professional health services and that for this reason alone any strategy aiming to deliver secondary prevention would require first of all an investment into clinic-based care and strengthening of health service provider capacity. It is simply not true.

The Peer Educator Networks start to implement their activities in rural districts where there is no professional diabetes or hypertension service available yet. These professional services become necessary as the new membership grows and develops and structures its own demand for specific services. With the backing of the NGO and the local health authorities, the Peer Educator Network negotiates with selected local service suppliers to meet its demands. Where local doctors want training, the NGO has provided some on-the-job training. This particular feature requires more attention as health service delivery systems for chronic patients in many other low income countries are weak and may also benefit from demand-side dynamics.

The high blood pressure (those without diabetes) component has not been evaluated. Results are compromised as the first level of health care officially promotes symptomatic treatment of 3 days oral medication for hypertensive patients, whereas the peer educators recommend lifelong daily medication. In Diabetes, where there is no conflicting instruction, this issue does not exist. It is not easy for the MoH to simply recommend lifelong treatment as the medicines to dispense are not available. Two practical questions must be raised: should Lifelong treatment only be recommended in those areas where the Peer Educator Networks are functional ? How fast can the Peer Educator Networks be scaled up ? Whatever answer is given to the first question, scale up can only be organized if the Ministry of Health throws its weight behind the innovative strategy and appropriates the Peer Educator Networks as part of its primary care system.

With a one-off totalinvestment of USD 2 to USd 2.50 per capita in rural areas, financed in regular instalmentsfor milestones over a period of 2 to 3 years, the following deliverables can beexpected:

a. Earlier awareness & registration:
    i. increase of diabetes awareness from less than one third to more than half (almost 60%) among entire rural population
    ii. increase of high blood pressure awareness
b. self financing sustainable care model that includes patient-centered services (self-screening, biochemistry laboratory services, effective and appropriate lifestyle changes tailored to the individual, access to medical consultation and prescription and routine medication and active follow-up with Khmer language data-base and 90% annual retention,
c. twice yearly independent assessments,
d. inter-sectoral primary prevention on risk factor control for selected groups);
e. opportunities for targeted financial support for disadvantaged individuals (with high prescription costs)
f. 2 to 3 times reduced health related expenditure (&lower transport costs) to on average USD 4 per month (less than 10% of rural per capita expenditure) (Study by Chean Men);
g. 80% reports to feel better than before registration;
h. More than half of diabetics has Fasting Blood Sugar <126mg/dl
i. More than half of diabetics has Blood Pressure < 130/80 mm Hg
j. About 10% annual loss to follow-up of DM patients;

k. On average about 2 consultations per year per DM patient but monthly contact with peer educator;
l. one peer educator for each health center coverage area, functioning under supervision of one Diabetic Program Manager in the Operational district supervising all and reporting to OD Director;
m. local acceptability and ownership of the intervention, no physical NGO infrastructure or presence other than through local people with diabetes and high blood pressure, organized and with a voice;
n. effective primary prevention among special groups and in schools;

MoPoTsyo: In order to put point 4a to 4n into proper perspective the following:The mentioned study of the PEN("Peer Educator Networks for Diabetes & High Blood Pressure in Cambodia 2005 – 2010", written for WHO in 2011) confirms that also Cambodia has not generated any evidence supporting a contrary advice with regards to general caution towards "clinic based care". Instead, it proposes *an alternative strategy* to address the needs for secondary prevention. The study concludes that experiences with Peer Educator Networks provide by now sufficient reason to balance this overall negative advice with evidence from an affordable and cost-effective strategy in Cambodia itself. The general caution remains valid. But a slightly more open minded look towards investing in NCD service provision can be justified as long as service provision remains part of and accountable to a mostly demand-side owned and organized initiative. By this is meant that the service organization, their generated revenue, the payments, the timing, the exact locations and other aspects that traditionally fall under exclusive service provider control, are instead driven by a structure that is dominated by its intended users. Probably this domination should not be exclusive and some co-ownership of public health authorities should be the norm. The result is a locally optimized remix of the service inputs that involveswhere possible the beneficiaries into the service delivery system itself. Where the beneficiaries cannot or should not deliver services, they can hire professionals.

According to the study, five years onwards, the feasibility, cost effectiveness and acceptability have now been sufficiently demonstrated in both poor urban and average rural settings (total 8 operational districts) where the following main categories of benefits can be observed and were studied in research report:

Early diagnosis and awareness

There is some reported evidence from India (annexes in Worldbank Soji's report of 2008), where medicines are relatively cheap, that awareness of diagnosis by itself improves health outcomes. If even that alone is enough to generate benefit, then the experience from Ang Roka OD in Takeo which shows that more than 70% of screened in people with Diabetes had been unaware of their condition until they were detected by the Peer Educator (for HBP this is this about 50%) must have been much more beneficial, because there the early diagnosis and early awareness are the result of services that are provided as part of a comprehensive continuum of care, and which offer the rural villagers affected by DM and HBP the opportunity to preserve their health, protect their livelihood against catastrophic health care expenditure and poverty. This protection results into hidden gains for society as a whole but alsointo lost income to private health service providers and some hospitals. With only one third of rural Cambodians aware of their diabetes, the case for community-based self screening for diabetes is easily made. In Ang Roka OD, after 3 years, the percentage of registered diabetics as proportion of their estimated prevalence (2.3% of rural adults >25years old has diabetes according to WHO STEP Survey 2010) had risen to 58% (see"Peer Educator Networks for Diabetes & High Blood Pressure in Cambodia 2005 – 2010").

Health

International Evidence shows that the effects of positive lifestyle changes on health can hardly be overestimated. Training patients in self-management skills produces better health outcomes than when they are not actively involved in their own care. The evidence also shows that training of patients in self-management and lifestyle changes does not quickly evaporate (see International Literature review).

The experience in Cambodia itself shows that urban and rural poor are also able to improve their health as a result of better understanding of their condition (DM) despite low levels of literacy. In Cambodia, the evidence shows that women benefit proportionally in significant greater numbers in joining and in uptake of all services from the Peer Educator Networks and adhere better to treatment and have better health outcomes than men, who are - oddly - overrepresented as (underpaid) peer educators. Registered network members consistently report that they feel better (see "Peer Educator Networks for Diabetes & High Blood Pressure in Cambodia 2005 – 2010", written for WHO in 2011). Studies show that since registration there are less episodes of hospitalization (Chean Men).

Health Expenditure

The cost of illness due to diabetes is very often catastrophic. This is the norm in Low Income Countries and there is a substantial amount of scientific literature that documents this (see international literature review). Also diabetes is very costly to patients and their households in Cambodia (Study "I wish i had AIDS" by Chean Men etc.);

For the members of the PEN in Cambodia: The average health expenditure of the members is USD 4 per month for their routine medication, on average a three-fold reduction from more than USD 12 per patient before registration. The biochemistry laboratory examinations, which patients are recommended to take at least once per year and not long before their medical consultation takes place, also cost about USD 4. An opportunity for medical consultation is seized on average about two times per year and typically costs around 1 USD. These expenses are all paid out of pocket by the registered patients. The evidence shows that the great majority of the membership pays 3 times less than before their registration. For poor patients with relative high monthly medication costs these price levels are not affordable. The data on monthly costs of prescription drugs of every patient with a prescription is available from the NGO database.

Conclusions

There is sufficient available reliable reports and data to draw the following lessons:

Secondary prevention of complications

It is possible to organize a PEN delivering a Continuum of Care for people with Diabetes, High Blood Pressure and associated disorders in the Cambodian context that seems sustainable. With sustainability is meant here that it is affordable and acceptable both to the Cambodian authorities and to the registered patients.

When registered DM patients are independently assessed, their average FBG and Blood Pressure levels have improved significantly compared to the time that they register as members of the NGO. The great majority reports to be more physically active and to eat less white rice than they did before their registration. Also, their knowledge, skills and practices with regards to self-management of their chronic disease have improved. The majority has improved lifestyle. These independent assessments have been

organized regularly among different random samples of registered patients who are being followed up by the Peer Educator Network and they show a relatively consistent pattern in improvements. Besides, the large majority of registered members report to feel healthier than before, and more in control of their disease.

The effects have not been proven yet for high blood pressure patients.

two important health system characteristics

Task shifting to lay health workers

Task shifting to the Peer Educator Networks helps to make a Continuum of Care affordable and acceptable among a population that faces multiple barriers to appropriate health care.

Task shifting must be accompanied by adequate supervision and regular assessments and re-fresher courses. Refresher courses are part of Total Quality Management and their costs must be taken into account when calculating the running costs of the model.

Cost containment

The use of the public referral hospital as the facility where the monthly consultation takes place does not present a significant item in the overall cost of the model. The largest cost items are prescription medicines, laboratory exams, incentives for the Peer Educators, local supervision, costs related to the visiting Medical Consultant who trains the local public service medical doctor and finally the 3% share in the NGO's Headquarter costs.

For sustainability reasons, almost the entire cost of the model is charged to the users, the chronic patients who have become member of the NGO.

It spite of this, the great majority of patients report that they spend less on their health than before registration. Health Financing of Secondary Prevention becomes affordable as a direct result of task shifting to the Peer Educator Networks.

Governance

The strategy requires not just to find but also to maintain the right balance between paying incentives, quality, access and sustainability.

There is a challenge in how to involve local Health Authorities into the governance so they strengthen the system further.

Risks

Lack of integration:
If the system is allowed to develop too much on its own without sufficient links with other parts of the health system, patients may miss opportunities for care that they would have received if they had remained within the existing public care system;

Low quality of care:
Many community based Peer Educators have enjoyed only little formal education. This limits their ability to grasp the complexity of the chronic cases under their follow-up and deal with these cases in the best way.

Narrow view of health problems:
Peer Educators are only trained in very specific health problems. They have no general basis in dealing with general health problems before they are trained as peer educator.

Weakness of peer educator is multiplied:
If a peer educator lacks a particular skill or knowledge, the patients under his follow-up will not be able to learn this from him either.

Position of the Peer Educator
At primary care level there can rise confusion about precise definition in terms of :

- hierarchy, responsibilities and accountability
- lines of communication
- complementary fit
- financing (level and mode of payment)

The ways to deal with each of these risks is by organizing supervision, trainings and by clarifying policy.

It is important to keep in mind that they have to remain motivated. A special challenge will be how to deal with serious complications over time as members will live longer and develop complications in greater numbers than they would have if there had been no program.

There will be a growing demand for core professional health services with the capacity todeal with complex chronic cases, real in the sense that they cannot be shifted to lay health workers.

Opportunities

Health & Productivity Restored:
Although Cambodia is a low income country with one million of its adult citizens affected by DM and HBP, Peer Educator Networks make it possible to provide these people with the opportunity to improve their health and restore their productivity.

Early diagnosis + access to care:
With Peer Educator Networks in place, and sufficient resources to let them organize the screenings for DM & HPB, the large proportions of patients who are unaware of their condition can be quickly brought down to levels that are close to those in most developed nations; this will help delay and reduce the numbers of complications among the patients;

Restored dignity:
The degree to which uncontrolled chronic disease over time undermines people's status and dignity should not be underestimated. When the disease is brought under control, this has also a positive effect on well being person within the household;

Less (catastrophic) health expenditure:
Reducing the level of Out of Pocket Expenditures among the chronic patients will help to reduce the numbers of households with catastrophic health expenditure; There are subsidized social health protection schemes with which the Peer Educator Network can be linked, using Health Equity Fund, Voucher Schemes and possibly Community Based Health Insurance to reduce the Out of Pocket Expenditure among the members.

Empowered link to professional Health Service Providers:
The Peer Educator Network helps to forge trust among the population and the public services through their close collaboration and because the medical consultations take place within the public facilities;

Inter-sectoral taskforce:
Patients are by nature inter-sectoral because they come from different professional backgrounds. Teams of chronic patients can be set up to undertake primary prevention activities to increase risk factor awareness among those not yet affected by chronic disease; priority groups are school teachers and school children, community leaders;

Recommendations and implications for policy

To take into account the existing practices and experiences with regards to PEN in Cambodia for further health policies, in particular with regards to:
- treatment guidelines including essential drugs
- planning of health work force and training
- health information system
- social health protection guidelines

Peer Educator Networks

- Acknowledge PEN as de facto part of Cambodia's Primary Care system
- Allow PEN to function under and report to the Operational District Director,
- Define PEN tasks as follows:
    - specific tasks related to the delivery of primary prevention of chronic NCD in the OD
    - secondary prevention of Diabetes, Hypertension and associated disorders
- Replicate the existing PEN to other operational districts in Cambodia ,prioritizing areas where medical health services are either scarce or relatively expensive for people with Diabetes and Hypertension.
- Use the monthly PEN report to the OD and adapt for standard reporting for the HIS.

Revolving Drug Fund

- Allow the Revolving Drug Fund to deliver routine prescription medication for the chronic patient membership organization
- Expand its dispensing points to approximately 4 per OD where a PEN has been established;
- Establish essential drugs list and guidelines on prescription based on cost considerations and published peer reviewed evidence on proven long term efficacy,;

- diversify dispensing through selected Health Centers instead of only through private pharmacies and compare the results;

Subsidies

- Use Health Equity Fund to help registered poor patients with chronic disease,
- Adapt HEF implementation guidelines to allow coverage of generic routine medication for registered members.
- Adapt the level of subsidies for HEFs accordingly
- For practical reasons, the level of affordability of prescription costs can be related to data from the Socio Economic Surveys in rural areas organized by Ministry of Planning, such as a percentage of the average Rural Household Expenditure, above which, for poor households, prescription costs can be partly or entirely subsidized. These levels and the additional subsidies need to be piloted to determine an optimal combination in terms of efficiency and effectiveness.

Governance

- Establish a functional technical link between the Dpt of Planning and Health Information (DPHI) and the Dpt of Preventive Medicine to work out health financing issues with a view on the growing epidemic of chronic NCD.

- Integrate Peer Educator Networks for chronic NCD into the planning of Human Resources for Health, based on a system of accreditation and made subject to continuous supervision;

- Peer Educator Networks must be integrated into operational district primary care policy,with clear accountability to Operational District authorities. T

- Establish a system of rewards for PEN based on the positive experiences gained in the Cambodian rural context.

maurits van pelt
MoPoTsyo Patient Information Centre
http://www.mopotsyo
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