CHAPTER II

PROGRAM DESCRIPTION

2.1   Background and Rationale

Diabetes Mellitus

Diabetes Mellitus is a group of disease characterized by high blood levels of glucose. It results from defects in insulin secretion, insulin action or both. Diabetes can be associated with serious complications and premature death, but people with diabetes can take measures to reduce the likelihood of these occurrences.

Diabetes is classified into two main types: Insulin-dependent Diabetes Mellitus (IDDM or type I diabetes) and Non-insulin dependent Diabetes Mellitus (NIDDM or type II diabetes). (Pongamorn Boonnak,1999:1). The classification of diabetes mellitus is listed in Table 1.

IDDM or type I diabetes is characterized by absolute insulin deficiency, abrupt onset of severe symptoms, proneness to ketosis and dependence on exogenous insulin to sustain life. The age at clinical onset or diagnosis is usually below 30 years, although the disorder may occur at any age. It is the commonest form of diabetes among children and young adults in population of European origin. (WHO Study Group,1994:13). NIDDM or type II diabetes or adult onset diabetes is a term used for individuals who have insulin resistance and usually have relative (rather than absolute) insulin deficiency.(Diabetes Care,1997:1187).

Table 1:   Classical description of type I and type II Diabetes Mellitus

	Type I	Type II
Age	<40 years	>40 years
Weight	Lean, recent weight loss	80 % are overweight
Pathophysiology	Absolute insulin lack	Variable insulin secretion, insulin resistance
Onset	Abrupt	Insidious
Treatment	Insulin injection	Diet control, oral or insulin injection

Source : Thep Himathongkam et al, 1997:30-31

Diabetes is a significant public health problem in Thailand. Report of the incidence of NIDDM among Thai people has increased from 100 per 100,000 in 1995 to 175 per 100,000 by 1998. (Bureau of Health Policy and Plan, Ministry of Public Health ,1997). World Health Organization predicted that 1.9 million of Thai would suffer from DM in 2015. Diabetes itself is the major leading cause of death in Thailand. The increasing rate of mortality from diabetes as reported has risen from 8.8 per 100,000 in 1996 to 12.2 per 100,000 in 2000. (Public Health Statistics, A.D.2000)

The government realized the importance of this issue and had designated the goal of diabetes death rate reduction to be below 5 per 100,000 and to provide DM screening covering 70 % of people aged 40 or above. (The 8th Health Development Plan, 1997:192)

Although the precise of etiology of NIDDM is unclear, researchers have identified two major risk factors which are (WHO Study Group ,1994:27-29).

1. **Genetic factors :**

Genetic susceptibility family history. Increased risk of diabetes with a positive family history of diabetes is probably due to genetic and environmental factors. Evidence for genetic factors comes from twin studies where the probability of finding diabetes in both twins is twice as high among identical twins as fraternal twins.

2. **Environmental factors**

Several environmental factors have been proposed as being associated with an increased risk of NIDDM. Major putative factors .

Physical activity

It has been demonstrated that regular physical activity increase insulin sensitivity and improve glucose tolerance.

Body weight and fat distribution

Obesity has been implicated as a risk factor for NIDDM in cross- sectional and longitudinal studies. Body mass index positively associated with increased risk of NIDDM in both sexes in many ethnic groups. Centralized distribution of body fat (variously measured and referred to as abdominal, upper body, truncal, or central obesity) has been implicated as a risk factor for NIDDM in those of European origin, Hispanics living in the United States, Indigenous Americans, Asian Indians,Chinese and Mauritian Creoles in both cross-sectional and longitudinal studies.

Nutritional factors

It would be an over-simplification to propose that any single nutrient is specifically diabetogenic. However, there is evidence from both laboratory and epidemiological studied in various populations to suggest that increased dietary intake of saturated fats and decreased intake of dietary fiber can result in decreased insulin sensitivity and abnormal glucose tolerance.

Other factors

Severe prolonged stress. Several states of physical stress or trauma are associated with glucose intolerance induced by hormonal effects on glucose metabolism and insulin secretion and action.

Drugs and hormones. Long lists of drugs that impair glucose metabolism have been compiled. Among commonly used drugs, phenytoin, diuretics(particularly of the thiazide type), corticosteroids, some contraceptive steroids and β-adrenoceptor-blocking agents may cause glucose intolerance and, in susceptible individuals, may induce diabetes.

Complications of Diabetes

Tertiary prevention of diabetes includes every action taken to prevent or delay the development of acute or chronic complications. Acute complications .including hypoglycaemia, ketoacidosis and infections ,can all be life- threatening. Chronic complications can be life-threatening, but they can also have deleterious effects on the lifestyle of the diabetic patient.(WHO Study Group,1994:40-63)

Acute complications:

Hypoglycaemia. The development of hypoglycaemia is an ever-present possibility in all patients with diabetes treated with insulin or oral hypoglycaemic medications. The serious consequences of hypoglycaemia relate to its effects on the brain, incliding loss of cognitive function, seizures and coma. Prolonged or repeated episodes cf hypoglycaemia may produce permanent brain damage, and the adrenergic response to the condition may be dangerous in people with cardiovascular disease.

Diabetic ketoacidosis. Diabetic ketoacidosis remains a potentially lethal condition with mortality as high as 10-15%, with 21 life-years lost per death in some countries. At least 50% of cases are avoidable

Infections. People with poorly controlled diabetes are more prone to develop bacterial (in particular mycobacterial and anaerobic) and fungal infections

Chronic complications:

Atherosclerosis. Atherosclerosis is the most common complication of diabetes mellitus among those of European origin. It accounts for 75% of their deaths. Coronary and cerebrovascular disease are also two to three times more common in those with diabetes, and post-infarction mortality is higher. In developing rural societies, changes in lifestyle to those of more developed and urban societies are often associated with a general increase in atherosclerosis, including that associated with diabetes. The largest numbers of ischaemic events occur in people with NIDDM.

Diabetic eye disease. Diabetes mellitus is associated with damage to the small blood vessels in the retina, resulting in loss of vision.

Diabetic kidney disease. Diabetic kidney disease is a major cause of premature death in diabetic patients, largely through uremia and cardiovascular disease

Diabetic neuropathy. Diabetic neuropathy is a demonstrable disorder, either subclinical or clinically evident, that occurs in diabetes mellitus without other evident cause. Mainifestations may occur in both the peripheral and the autonomic nervous system

Foot ulceration and amputation. Diabetes is associated with increased frequency of lower-limb amputations, many of which are potentially preventable

Treatment of Diabetes Mellitus

To date, there is no cure for diabetes. Consequently, the overall goal of care for clients with diabetes is control or regulation of blood sugar rather than cure. When diabetes is successfully regulated, the client avoids the complications of hyper- and hypoglycemia with minimal disruption to a normal lifestyle. Unfortunately, clients with diabetes may develop complications despite their own vigorous efforts to carefully control their disease

Diabetes control depends on the proper interaction of three factors : (1) food, (2) exercise and (3) insulin or oral medication to lower blood glucose. The intervention

planned for the treatment of diabetes must be individualized. It needs to be based on the clients's age, lifestyle, nutritional needs, maturation, activity level, occupation, and ability to independently perform the skills required by the treatment plan(i.e., monitoring of blood sugar levels, insulin injection).(Joyce M.Black and Esther Matassarin-Jacobs ,1993:1779-1780).

Dietary Management and weight control

Meal planning includes choosing healthy foods, eating the right amount of food, and eating meals at the right time. The American Diabetes Association and the American Dietetic Association develop 6 food exchange lists for the purpose of planning diabetic meals. The lists are: starch/bread, meat and substitutes, vegetables , fruits, milk or dairy, and fat. Every food on each list has approximately the same amount of carbohydrate, fat, protein, and calories for the amount given. Any food on the list can be exchanged for any other food on the same list. The food exchange lists also show the number of food choices that can be eaten at each meal and snack . Using the foods on the exchange lists along with a personally designed meal plan will control the distribution of calories and the balance of insulin throughout the day.

In NIDDM , weight management and a well balanced diet are important. Some NIDDM can discontinue medications after intentional weight loss, although the diabetes is still present. Consultation with a registered dietitian or nutrition counselor is an invaluable planning tool.

Regular Physical Activity

Regular exercise is important for everyone and in particular for diabetics. Regular exercise helps control the amount of sugar in the blood. It also helps burn excess calories and fat to achieve optimal weight. Exercise improves overall health by improving blood flow and blood pressure. Exercise also increase the body's energy level, lowers tension, and improves a person's ability to handle stress. Everybody should obtain medical approval before starting an exercise program, but this is especially important if you have diabetes.

Medication

When the person with NIDDM cannot achieve normal or near- normal blood glucose or near- normal blood glucose levels with diet and exercise, medication is added to the treatment plan. Medication is not a substitute for diet and exercise, however. The diabetic may require oral hypoglycemic agent, to lower blood glucose levels. These medications are not the same as insulin and are not effective for a person with Type I diabetes who dose not make insulin. The medications help people with Type II diabetes to lower blood sugar levels, trigger the body to release more insulin into the bloodstream and to help move glucose from the bloodstream into the cells. The medication is usually taken once or twice a day. Some people may find they no longer need medication if they lose weight. This happens because, in some people, their own insulin works better for them if their ideal weight is reached. The medication is usually not given in pregnancy.

Prevention of Diabetes Mellitus

To prevent and control of NIDDM, this prevention should be considered. (pongamorn Boonnak,1999:11-17)

Primary prevention: Preventing diabetes

The prevention of type II diabetes requires different strategies, as they have quite different causes. Primary prevention efforts are focused on the reduction of obesity and physical inactivity, which are known as modifiable risk factors for type II diabetes only.

Secondary prevention: Early detection of diabetes through screening

The primary purpose of secondary prevention activities such as screening is to identify individual without symptoms who either already have a disease or are clearly at high risk of developing it, and where intervention could have a beneficial effect.

Tertiary prevention: Preventing or delaying the complications of diabetes Tertiary prevention is aimed to delay or prevent the development of acute or chronic complications in people who already have diabetes. Acute complications including hypoglycemia, ketoacidosis and infections can be all life threatening. Chronic complications can be so but they can also have deleterious effects on the lifestyle of the patient.

Strategies for tertiary prevention involve prevention of the development of complications by strict metabolic control, education and effective treatment. They also

involve screening for early stages of complications when intervention and treatment are generally more effective. Such screening for complications aimed at early intervention and treatment has proved successful and may be even more effective than strategies aiming at preventing the development of complications.

Such complication prevention and control would be under the supervision of physicians and moreover continuous self-care. Public health officer in the health care team would play a good role in promoting, supporting and empowering capacity of correct self-care to the patient. Intervention to reduce incidence and death from diabetes in the 8th Public Health Development Plan has mentioned three strategies for cardiovascular and diabetes prevention and control plan as follows: (Supawan Manosounthorn ,1999:2)

1. Population approach and community-based approach strategy. This is for lifestyle and environment modification.

2. Screening for diabetes strategy. As in the 8th Public Health Development Plan, this strategy for cardiovascular and diabetes prevention and control plan is to screen the population group of age 40 and above; and

3. Referral and continuum care Symptoms

Symptoms of type II diabetes include:

- increased thirst

- increased urination

- increased appetite

- fatigue

- blurred vision

- frequent and/ or slow-healing infections (including bladder, vaginal, skin)

- weight loss despite increased appetite

- erectile dysfunction in men

Screening for type II

There is increasing evidence for the need to screen for type II diabetes (M.J.Davies et al.,1998).The primary purpose of secondary prevention activities such as screening is to identify individuals without symptoms who either already have a disease or are clearly at high risk of developing it, and where intervention could have a beneficial effect. (ADA.1989,p588-590).The desirable characteristics of such a program are shown in Annex 3. A summary of current screening methods is presented in Table 2

Table 2: **Summary of screening methods for NIDDM**

Diabetes type	Methods	Specificity	Sensitivity	Cost
NIDDM	Glycated Hb A10 or proteins	+ + +	+/-	+ + +
	Urine glucose	+/-	+/-	+
	Casual blood glucose	+ +	+	+
	Fasting blood glucose	+ + +	+	+
	Oral glucose tolerance test	+ + +	+ +	+ +

Key: - none

+/- none or minimal

+ low

+ + intermediate

+ + + high

Shows Table 2 a positive result in a screening test indicates only a high probability of the individual having the disease. Confirmatory tests are always necessary in the case of individual diagnosis.

Important considerations in the design of an appropriate screening program include:

- the sensitivity , specificity and predictive value of the screening test;

- the cost effectiveness and resource requirements of the screening methodology and any necessary follow-up in the context of the anticipated positive detection rate;

- the definition of the target population to be screened; and

- the provision of adequate and effective follow – up and care for individuals having positive test results.

Selective screening

This is undertaken in selected groups known to have risk factors indicative of a high risk of having or developing NIDDM. These include:

- ethnicity certain groups such as Pacific islanders, Australian Aborigines, Mauritians , migrant Asian Indian and Chinese , and Indigenous. Americans show high diabetes prevalence;

- a positive family history of NIDDM in first – degree relative (parents, siblings or children):

- Obesity, e.g. body mass index equal to or greater than 27 , especially in women with a history of gestational diabetes mellitus (GDM) or large babies;

- Age greater than 50 years in those of European origin, or greater than 30-40 years in high- prevalence communities;

- History of previous abnormality of glucose tolerance, particularly in pregnancy (e.g. IGI or GDM).

- Hypertension, macro vascular disease or dyslipoproteinaemia (raised triglycerides).

Diagnostic Diabetes

The diagnosis of diabetes mellitus is based on fasting blood glucose levels or the results of a glucose challenge test. Capillary blood glucose and self-monitoring of blood glucose can be performed by persons with diabetes to manage their disease.

The fasting blood (plasma) glucose (FPG) is the preferred test for diagnosis , but any one of the three listed is acceptable. In the absence of unequivocal

hyperglycemia with acute metabolic decomposition, one of these three tests should be useu on a different day to confirm diagnosis. Fasting is defined as avoiding the consumption of any food or beverage other than water for at least 10 to 16 hours before testing

Causal blood glucose: any time of day without regard tc time since last meal; symptoms are the classic ones of polyuria and unexplained weight loss.

Oral glucose tolerance test (OGTT): should be performed using a glucose load containing the equivalent of 75 g. anhydrous glucose dissolved in water. The OGTT is not recommended for routine clinical use in Table 3 (Sunthorn Tamthanan ,1999:20).

Table 3:   Criteria for the diagnosis of diabetes

Test/stage	Fasting Plasma Glucose (FPG) (Preferred)[*]	Causal Plasma Glucose	Oral Glucose Tolerance test (OGTT)
Diabetes	FPG 126mg/dl(7.0 mmol/l)**	Casual plasma glucose 200mg/dl (11.1mmol/l)plus symptoms.***	Two – hour plasma glucose(2hpg) 200 mg/dl.****
Impaired Glucose Homeostasis	Impaired Fasting Glucose (IFG) FPG 110 and< 126mg/dl		Impaired Glucose Tolerance (IGT)=2hPG 140 and <200mg/dl
Normal	FPG <110 mg/dl		2 hPG<140 mg/dl

*The FPG is the preferred test for diagnosis, but any one of the three listed is acceptable. In the absence of unequivocal hyperglycemia with acute metabolic decompensation , one of the these three tests should be used on a different day to confirm diagnosis

**Fasting is defined as no caloric intake for at least 8 hours

***Casual= any time of day without regard to time since last meal; symptoms are the classic ones of polyuria and unexplained weight loss

****OGTT should be performed using a glucose load containing the equivalent of 75 g anhydrous glucose dissolved in water. The OGTT is not recommended for routine clinical use.

Situation of DM in Phayao province

Results of intervention of DM case finding in people at risk aged 40 and above derived from 70,675 people in total of Region 10 Public Health Offices, including Phayao, Chiang Rai, Chiang Mai, Mae Hong Son, Lamphun, and Lampang in fiscal year 1997. The results were that DM prevalence was 7.02% and there were 1,177 new

DM patients (Wallop Thainue, 1997). In Phayao province, rate of incidence and death of DM from 1997 to 2000 had rising trend. Based on annual report (1999-2000) the incidence increased from 7.02 per 100,000 in 1997 to 7.92 per 100,000 in 2000 and the diabetes-related death rates increased from 8.7 per 100,000 in 1997 to 9.7 per 100,000 in 2000. (Table 4) It was higher than the aim of the 8th Economic and Social Development Plan indicating not over 5 per 100,000 population.

Table 4:   Incidence and mortality of DM per100,000 pop.(1997-2000)

Year	Incidence	Mortality
1997	7.0	8.7
1998	5.2	4.6
1999	6.6	4.6
2000	7.9	9.7

Source: Annual report, 1997 – 2000: Phayao Provincial Health Office

In response to the problem, Department of Social Medicine , Phayao general hospital in collaboration with village health volunteers conducted the CPDP in Phayao municipality starting in 1999 and continued in every year. The program was designed to be implemented for people at risk of diabetes from 13 communities by providing diabetes screening test for those who aged 40 years or above. According to the CPDP plan of Department of Social Medicine, the population who are 40 years and above of these communities was 5,791 in total (2,875 males and 2,916 females).

Why evaluate?

Program evaluation is carefully collecting information about the program or some aspect of a program in order to make necessary decisions about the program. (Carter McNamara, 1998).

Program evaluation is essential organizational practice in public health (Dyal WW, 1995). The need for program evaluation is dictated by a simple premise: unless a program is evaluated, we do not know whether it is producing positive, neutral, or negative result. The program evaluation can tell us whether we have been successfully in meeting two primary program objectives: have we been successful in implementing our program? and have we achieved the results/ outcomes we expected?. An evaluate should answer both types of these question.

Those who have studied the concept of evaluation define it in different ways. Below are some of their conclusions.

Evaluation is the systemic assessment of the operation and / or the outcomes of a program or policy, compared to a set of explicit or implicit standards, as a means of contributing to the improvement of the program or policy (Weiss, 1997:4).

Evaluation is the process of systematically aggregating and synthesizing various types and forms of data for the purpose of showing the value of a particular program (Anderson & Ball, 1978:212).

Just as there is no one definition for evaluation, there is no single correct way to evaluate that is the best suited for all situation. It is likely that a particular evaluation approach using certain methods and techniques will provide better answers to specific questions than some other approaches.

Program evaluation can include any or a variety of at least 35 different types of evaluation, such as for needs assessments, accreditation, cost/ benefit analysis, effectiveness, formative, summative, goals-based, process-based, outcomes-based etc. The following are some major types of program evaluations.

Goals-based evaluations, process-based evaluations and outcomes-based evaluation.

According to Carter McNamara,1998 goals-based evaluations are evaluating the extent to which program are meeting predetermined goals or objectives. Process-based evaluations are geared to fully understanding how a program is carried out. These evaluations are useful if programs are long-standing and have changed over the years, employees or customers report a large number of complaints about the program, there appear to be large inefficiencies in delivering program services and they are also useful for accurately portraying to outside parties how a program truly operates(e.g., for replication elsewhere) and outcomes-based evaluation facilitates your asking if your organization is really doing the right program activities to bring about the outcomes you believe (or better yet, you've verified) to be needed by your clients (rather than just engaging in busy activities which seem reasonable to do at the times). Outcomes are benefits to clients from participation in the program. Outcomes are usually in terms of

enhanced learning (knowledge, perceptions/ attitudes or skills) or conditions, e.g., increased literacy, self-reliance, etc. Outcomes are often confused with program outputs or units of services, e.g., the number of clients who went through a program.

Formative and Summative evaluations

Formative evaluations aim at improving the performance of the program or project which is evaluate, through learning from experiences gained. Summative evaluations are undertaken after the program or project has been completed. Their general purpose is to judge the worth of the program or project and, supplementarity, the appropriateness of its design and management (Dale,1998:11).

In the development of protocol for evaluating CPDP, the goals-based, process-based, and outcomes- based model of program evaluation has been adapted. Goal-based evaluation scrutinizer the program goals or objectives to determine. Process-based evaluation related to the implementation of the program. Finally, outcomes-based evaluation is the assessment of program outcomes. Its is essential to whether the CPDP has results in changes in behavior and knowledge in people at risk that are consistent with the program objectives.

2.2   Description of Program Activities

Table 5 and Figure 1 show the CPDP infrastructure, it consisted of 2 steps as follows :

1.   **Preparation**

     1.1   Preparation for community advisor

A one-day meeting for community advisor designed by head of community health service unit was established in each community. The objectives were to inform the purpose of CPDP and set up screening criteria for population aged 40 and above (10% or 579 people in total) to community advisors. There were presentations on problem statement, planning, measures, responsibilities, document and leaflet preparation. In addition, tips to prepare for a blood sugar test day, service location, material preparation: weight scale, height scale, blood pressure meter, glucostrip, health history form, notification on DM screening test for DM clinic of Phayao hospital for referral every Wednesday (5–10 patients per day). Then the community advisors would coordinated with VHV and local leaders for conveying the message to target groups.

1.2 Preparation for VHV

The Department of Social Medicine of Phayao hospital organized a one-day meetings for VHV/community leaders of 13 communities, and community advisors. The meetings intended to introduce objectives of the program and ask for collaboration to inform target group for the DM screening according to the community's screening plan and to prepare the place for screening.

1.3 Public relations

VHVs of each community publicized by announcement, notice board of target group name list on the board provided by Phayao provincial public health office for public information. Some communities, VHVs directly contacted to targets around the house group "Pok" of 10-14 households in responsibility.

1.4   Target selection and preparation

Each VHV had a name list of people in their responsibility, 10 –14 households in a house group, or "Pok". To select target, people aged 40 or over people with as least one risk factor, for example, polyuria, polydipsia, weight loss despite increased appetite, frequent and/or slow- healing infections including bladder, vaginal skin and those whose close relative suffered DM were focused. The target group were informed to have a check-up and how to prepare for physical check-up i.e., fasting after midnight prior to the check-up.

2.   Implementation

2.1   DM screening

When subjects arrived, VHV validated their name and made history record in the form (name, surname, age, sex, house number, community, body weight, height measurement) and referred to community advisor for record history of DM, hypertension. Then weight and height measurement were sent to head of community unit for Body Mass Index (BMI) calculation and blood tests were implemented for those who omitted breakfast (by asking whether he/she had breakfast). For those who had had breakfast would not received blood test but health education about diet habit and exercise and recommended annual check-up were given by health education official. For those who fasted, a blood tests were assessed from a fingertip, using glucostrip and glucometer, a 5-minute-wait result could classify them into 2 groups: 1) non-DM group (FBS <126 mg%) and 2) DM group (FBS$\geq$126 mg%).

After the results known, both groups were advised on health care practice, diet habit, exercise, and DM by public health officers and registered nurses. Most advice was given individually, especially for those with abnormal FBS results. For those communities with plenty of people, they were advised in 2 groups.

- Normal FBS (FBS<126mg%): The health educators advised subjects, on diet habit and exercise, how to prevent form DM, and annual physical check-up.

- Abnormal FBS (FBS $\geq$126mg%): The health educators advised individually on diet habit, exercise, and observed possible uncommon signs of DM, preparation for treatment, convince willingness, provided alternatives. If they had close relative suffering DM, monitoring would be given for some uncommon signs e.g. polyuria, polydipsia, weight loss, frequent and/or slow – healing infections , and providing home visit by community advisors for blood test. If FBS results exceeded 126 mg% twice of a week interval, diagnosed DM and sent for doctors.

2.2   Home visit

Community advisor separated name list for those whose FBS exceeded 126 mg% for home visit planning. Monthly visit for 3 months was provided to patients .

Table 5:   The program component of CPDP

Activities	Responsible Process	Target groups	Duration of activities
1.Preparation			
1.1 Concerning parties meeting for identifying the program objective	- Head of Department of Social Medicine and Head of community health service unit, Phayao general hospital.	- Public health officer (as community advisors , one per community)	- 1 day
1.2 Village health volunteer from 13 communities meeting for introduction	- Head of community health service unit / 13 community advisors - 13 village health volunteers	- Village health volunteer from 13 communities	- 1 day
1.3 Public relations	- Community advisors and village health volunteer , responsible of 10- 14 households	- population aged 40 or above	- 1 week before the program campaign

Table 5:   The program component of CPDP (Cont.)

| Activities	Responsible Process	Target groups	Duration of activities
2. Intervention			
2.1 Campaign for DM case finding - Enlist service clients - Health history record , measurement of body weight , height (for BMI),and blood pressure	- Community advisors and village health volunteer, responsible of 10 – 14 households	- At least 10% of population aged 40 and above attending to DM screening test	- 1 day each community
2.2 Health education/content - Depending on individual problem and blood sugar test results	- Health educator	- All attendants	- 5 minutes
2.3 Home visit	- Community advisors of 13 communities	- Target group DM screening and test for blood sugar by glucostrip method ,who results over 126 mg% blood sugar	- Every month for 3 visits
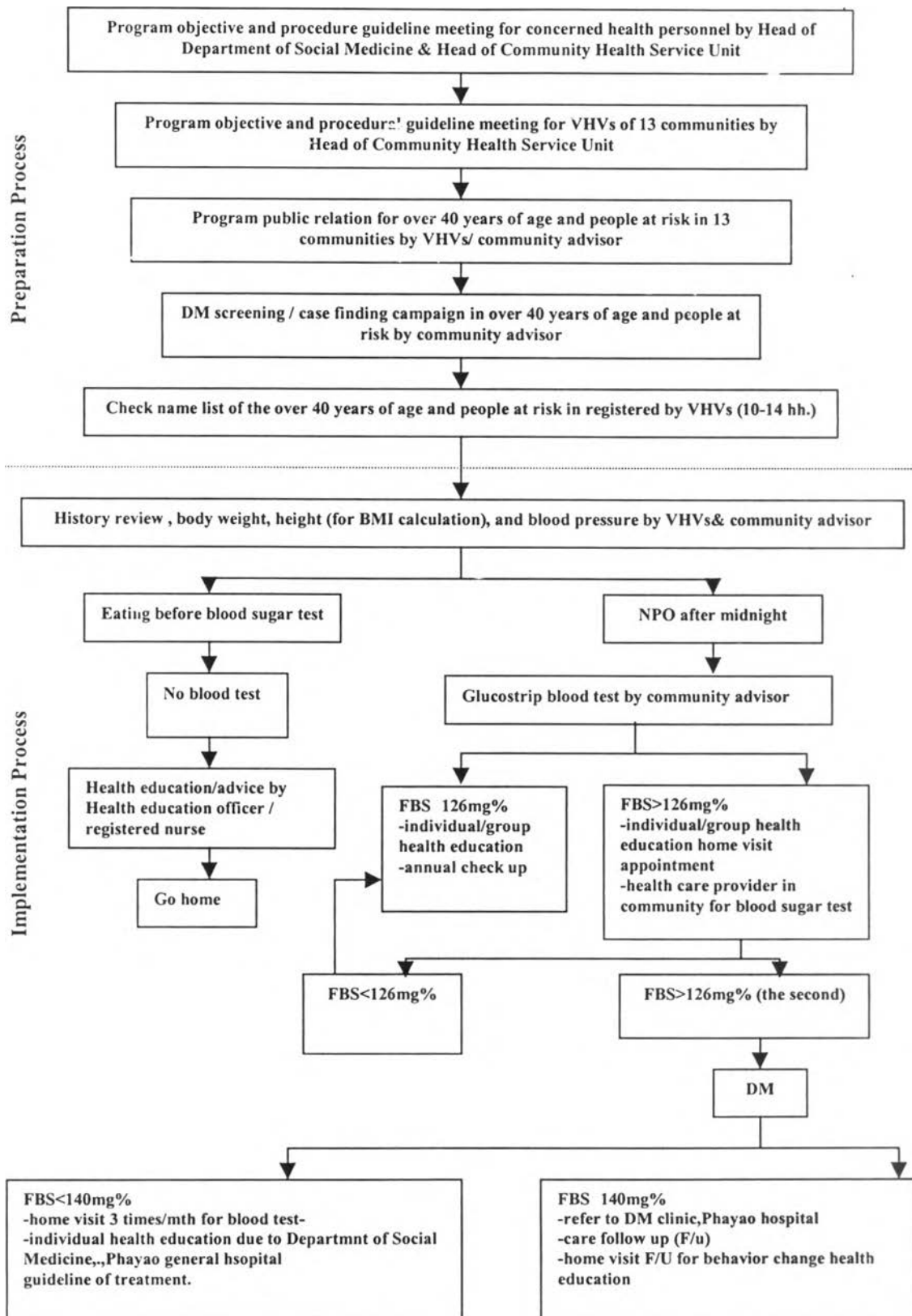
Figure1 : Steps of the intervention of type 2 Diabetes Mellitus prevention and control program in Muang municipalities,Phayao province 2000

2.3 Description of Collaboration Effort, Including the Agencies Participation in the Collaboration and their Various Roles and Responsibilities in the Initiative.

There are two collaborating teams: 1) The program officer and 2) Public health officer. The followings are their roles:

Roles of the program officer

The program officer was responsible for coordinating and maintaining the day to day implementation of the program. The program officer was consisted of head of Department of Social Medicine and head of community health service unit, Phayao general hospital.

Roles of Public Health Officer

Public health officer functioned as a community advisor. (one community advisor for each community). The main activities of the community advisors were to coordinate other public health issues with chief of village health volunteer and of community in one's responsibility and follow up person whose fasting blood sugar > 126 mg% and patients with diabetes detected by screening in order to provide them health education on diabetes .

2.4 Description of Strategies for Recruiting Participations

Participants for the program were recruited from people aged 40 years and above who lived in 13 communities. Methods of recruitment have been described in detail in section 3.4.1.

2.5   Activities Plan with Time Table

The program duration was 6 months. The detail of program schedule is shown in the Table 6.

Table 6:   Activities plan with time frame

Activity	Time
1. Preparation Process	
1.1 Community parties meeting for identifying the program objectives.	June,2000 (1 day)
1.2 VHV from 13 communities meeting for introduction	June,2000 (1 day)
1.3 Public relations	June,2000 (1 week before the program campaign)
2. Implementation Process	
2.1 Campaign for DM case finding	July,2000 (1 day each community)
2.2 Health education/contents	After the target group attending DM screening test.
2.3 Home visit (FBS>126mg%)	Every month for 3 visits.