CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

THE EMERGENCE OF A DIABETES PATIENT EDUCATION PROGRAM IN A COUNTY HOSPITAL

A project submitted in partial satisfaction of the requirements for the degree of Master of Public Health in

Health Science

by

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The project of Ted M. Zukin is approved:

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DEDICATION

This work is dedicated with love and appreciation to Dordie Zukin, Sylvia and Ernest Zukin, Jeannette Yablow, and Mike Diem.
The author would like to express his gratitude to Dr. Len Glass, and Lorie and Joel Garris, as well as to all of those family members and other friends who gave their continued support and encouragement throughout this endeavor.
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ABSTRACT

THE EMERGENCE OF A DIABETES PATIENT EDUCATION PROGRAM IN A COUNTY HOSPITAL

by

Ted M. Zukin

Master of Public Health in Health Science

This project describes the author's involvement in a planned field assignment from February 1973 to November 1973. During the field assignment, the initial development of a program of education for diabetic patients at the General Hospital of Ventura County took place. The program was initiated in the outpatient diabetes clinic and shortly after, expansion to include inpatient services was begun. Before the inpatient component was fully implemented, a change in program orientation was necessitated due to certain factors, mostly concerning program support. The result was the creation of a class/discussion orientation for both inpatients and outpatients. Plans called for the limited inclusion of nursing staff as in the inpatient component. The development and first phases of this component appeared to indicate that it was a viable method of
conducting a program, especially considering the limited support provided. The support problem became more significant and the class/discussion orientation was pursued for only a short time after the author's departure at the completion of the field assignment. Subsequent efforts at diabetic education have returned to the type in effect prior to the program. Inpatients receive instruction on an "as available" basis from the nurse-educator of the Educational Services Unit when she can take the time from her other duties.

The description of the program that was developed is followed by a detailed examination of the factors influencing its operation. These factors included low priority for patient education at the government, county and hospital level; extraneous factors operating in the community, the Ventura County Health Services Agency, and the Hospital, such as administrative reorganization and unrest in the nursing staff; and non-participation of the county Diabetes Association. The problems and the strengths of the program are treated in this report. Finally, comparisons are made to other programs and program components with a discussion of underlying principles of health education operative or lacking within them, and implications for future programs.
CHAPTER I

INTRODUCTION AND SETTING

This paper is intended to describe the initial development of a program of health education for diabetic patients and their families at Ventura County General Hospital. The author has endeavored to chronicle, from an administrative as well as educational point of view, the developmental processes of the program components. In addition, there has been an attempt to incorporate an analysis of influential factors on this development with reference to pertinent examples in the health education literature.

This author's involvement at Ventura County General Hospital was the result of a contact with the director of Health Education for the Ventura County Health Department made during the Fall semester of 1972. Through this meeting, the author became aware of possible involvement in a patient education program based at Ventura County General Hospital. In January 1973, the author contacted the director of the Educational Services Unit (ESU) of the Hospital. After a phone conversation and a visit to the Hospital, the author and his graduate advisor set up the mechanism for a field training assignment with the ESU director who became the author's field training supervisor.
The author became interested in a program of health education being planned for diabetic patients. The director felt that this involvement would be beneficial to both the author and the program since there was a shortage of available personnel. At the end of February 1973, the author underwent orientation at the Hospital and the Ventura County Health Services Agency and began assisting in the development of the patient education program. In addition, the author had the opportunity for several other types of exposure to health services while working in Ventura, including assisting at a well-baby clinic held at one of the county's outlying satellite outpatient clinics, going on a Public Health Nursing visit to a patient's home, participating in a staff development workshop for mid-level Hospital management, and previewing new health education dietary films for the County nutritionist. The author maintained his involvement in Ventura through November 1973, at which time he left to pursue full time employment.
CHAPTER II

DESCRIPTION OF COMMUNITY AND HEALTH SERVICES
AGENCY COMPONENTS

Ventura is a coastal county immediately northwest of Los Angeles County and southeast of Santa Barbara County. About 79% of the approximately one-half million people in the county are urban dwellers. Over 50% of the population lives in the coastal cities of Ventura, Oxnard, and Port Hueneme. The next largest population concentration is in the Simi-Conejo Valley area. The remaining population is scattered in outlying rural towns like Ojai, Santa Paula, Fillmore, and Piru (Ventura Health Alliance 1973). The county is a mixture of about 50% middle income, white collar suburbanites, 30% blue collar workers, and 20% agricultural workers (General Hospital Ventura County 1972a).

The Ventura County Health Services Agency was formed in September 1971* as part of a movement to reorganize and consolidate the public health service delivery systems in the community, to provide continuity and to close the gap between public health professionals and medical care providers. The Agency included the County Health Department,

*Joan Vance, personal communication, 1975.
the Mental Health Department, and the General Hospital, all responsible to the County Board of Supervisors. The Mental Health Department also maintains a Drug Abuse Center and a Center for Problems in Family Living. All of these facilities are located within a few blocks of each other, as are the Department of Social Welfare, the County Courts, and the Juvenile Hall.

The Ventura County General Hospital was originally built in 1887. It now has approximately 400 acute care beds with additional beds for long-term, psychiatric, and tuberculosis patients (General Hospital Ventura County 1971). A twelve month study (1970-71) showed 7,933 hospital admissions with 39,126 outpatient visits (General Hospital Ventura County 1972a). Most patients were Anglo- or Mexican-American and were in the lower socio-economic half of the population. A large portion were Spanish speaking only. The Hospital is medically divided into the following divisions: medicine, surgery, pediatrics, obstetrics and gynecology, geriatrics, psychiatry, and outpatient. The Outpatient Department includes the General Medical Clinic; the Emergency Room; and the specialty clinics in obstetrics and gynecology, pediatrics, chest medicine, internal medicine, cardiology, EENT (eye, ear, nose, and throat), diabetes, dermatology, orthopedics, Family Practice, ophthalmology, and arthritis. There are three satellite clinics in outlying areas of the county. These are located in Oxnard, Simi Valley, and Santa Paula.
The satellite clinics were formed in 1969 with the cooperation of the Health Department. All functions within them are intended to parallel with the outpatient clinics at the Hospital. Medical charts are maintained; social service screening is done; and appointments are made for lab work and X-ray, Hospital specialty clinics, and ancillary services such as Physical Therapy, Occupational Therapy, etc.

At the Family Practice Clinic, residents receive experience in following patients on a continuing basis. Community physicians volunteer their time as resident instructors.

The Educational Service Unit, formerly the Inservice Department and later the Department of Hospital Training, consists of the director, nurse educators, and a secretarial staff. Its general functions are to provide staff development and training, staff orientation, and patient education. The role of ESU will be discussed in greater detail in later chapters.
CHAPTER III

HISTORY OF PATIENT EDUCATION ACTIVITIES OF HOSPITAL

The purpose of this chapter is to provide a background on the previous activities and attempts having to do with patient education up to the time period just prior to the author's introduction to the program.

Previous Patient Education Activities

In June 1971, instruction of diabetic patients in self-care skills was begun by the General Hospital Department of Hospital Training (formerly the Hospital Inservice Department). This instruction was given on an individual basis by a registered nurse from the Department. In March 1971, an Obstetrical Tea and Tour was started to familiarize expecting patients and their husbands with hospital and obstetrical procedures. A film on labor and delivery was presented with an ensuing discussion. By June 1972, attendance dropped sharply. The program was later consolidated into classes presented by county public health nurses for adolescent obstetrical patients.

These were the only two formal educational presentations to have been offered through the Hospital. Informal presentations were offered by request. These included instructions to patients' families in tracheostomy care and
suctioning, bladder irrigation, and insulin injection technique. In addition, by June 1972, diabetes teaching had broadened to include some inpatient and outpatient teaching via referrals from staff physicians and residents in the Emergency Room and the General Medical Clinic. Much of the inpatient teaching, however, was done less than four hours before discharge. There was little participation by staff other than from the Department of Hospital Training. Some classes in diabetes were given with formal lectures and audiovisual equipment. These, however, were not on any regular basis. Most patients left the Hospital with little, if any, type of training in their particular condition (General Hospital Ventura County 1972a).

**Patient Education Conference**

In accordance with the increasingly broadening interest in the subject, a conference on patient education organized by the Area IV Regional Medical Program of the California Region was held in Ventura in August 1971. Two consultants from the United States Public Health Service discussed patient education theory and methods with representatives from local medical care organizations. Participants included the medical director of the General Hospital Family Practice Residency Program, private and staff physicians, Hospital nurses, General Hospital Department of Hospital Training personnel, the General Hospital administrator, and County health educators. Some key
points brought out were:

1. There is a great need for planning patient education programs in hospitals involving many different staff persons, including those having a lot of communication with the patient, regardless of the fact that they may be non-medical personnel. This sort of program needs the enthusiastic support of the hospital administrator.

2. Some hospitals have had success with an educational prescription form with which the physician, or others, can delineate what the educational needs and desires of the patient and his family are.

3. Some studies have suggested that monies invested in patient education yield savings in medical care costs, for example, by reducing frequency and duration of readmissions.

4. In some states the Blue Cross and Blue Shield insurance companies reimburse for costs of patient education (General Hospital Ventura County 1972a).

Committee on Diabetes Education and Aftercare

One result of this conference was the formation, by the director of the Health Services Agency, of the Committee on Diabetes Education and Aftercare in January 1972. The committee's membership consisted of the associate director of Health Education for the County Health Department (the chairman); the medical director of General Hospital; the County nutritionist; a consultant physician; a General Hospital clinic nurse; representatives from the General
Hospital Department of Hospital Training; and other repre­sentatives from General Hospital, the County Health Depart­ment, and the County Mental Health Department. The Commit­tee decided to review several folders of General Hospital patients with diabetes to identify such situations as re­admissions for diabetic care, diet mismanagement, emotional crisis, and levels of knowledge about diabetes of patients and their families. By assessing levels of management and control in relation to the variety of treatment, educa­tion, counseling and other follow-up care available, it was hoped to identify services and activities which should be expanded, modified, or added. Forty charts of diabetic patients were reviewed (20 inpatients and 20 outpatients). The reviews were completed in February 1972. Some of the impressions gained by the Committee were as follows:

1. There was inadequate information on charts to determine the type and extent of instruc­tion and follow-up care provided.

2. No instruction or guidance on weight control or personal hygiene was noted.

3. There were some indications of alcoholic comp­lications where no referrals were made on alcoholism.

4. There was no information about family involve­ment in counseling, diet, or insulin technique.

5. No indication of language difficulties or cultural differences in Mexican-American patients was noted.
6. No evidence of individualized diet instruction was noted other than standard 1000 and 1500 calorie American Dietetic Association diets (General Hospital Ventura County 1972a).

The Committee subsequently decided that a public health nurse evaluation of some of these patients would be beneficial in documenting needs. Consequently, seven charts were selected at random for home visits. Out of the seven, five interviews were actually conducted. A brief synopsis of each of these interviews follows:

1. Female; Mexican-American; sixty-five years old; diabetes for forty-six years. Diabetes not under good control (urinates frequently and gets sore easily). Uses Oxnard clinic frequently. Received some instruction, but not in Spanish. She has little apparent formal education. Husband helps with diabetic care.

2. Female; Mexican-American; eighty years old; diabetes for twenty to thirty years. Patient gets little or no help from family and is probably getting senile. Received help from a social worker some years ago.

3. Male; Caucasian; fifty years old; diabetes for one and one-half years. Diabetes under control. Patient understands diabetes and reasons for insulin. Has lost weight, the family being involved in diet instruction. Not sick for the last year. Says nurses were most helpful in regards to understanding diabetes. Hates shots of insulin.
4. Male; Mexican-American; diabetes for six years. Patient has body aches, gets angry, and loses sleep. Patient can not work and gave up driving because of fainting spells. Possible alcoholic. Has been in the hospital twice in the last six months for control. No family involvement and little understanding of condition. Hungry all the time.

5. Male; Caucasian; forty-five to fifty years old; diabetes for four to five months. Patient knows little, and his control is poor. Patient lost weight (160 lbs. to 116 lbs.); has kidney infections; is tired; takes diuretics, tranquilizers, and muscle relaxants; uses diet management for control. Patient not told when to test urine. Does not understand the value of testing.

From these visits, the following tentative conclusions and recommendations were reached by the Committee regarding the medical care-education-follow-up system these patients came under:

1. There appeared to be a need for a record of dietetics, Public Health Nursing contacts, patient and family education and follow-up, Diabetic Association contacts and other psycho-social contacts, regarding patient/family communication difficulties.

2. There appeared to be a need to assess the patients' and their families' level of information about diabetes, including attitudes and abilities. This was projected to be in the form of an information pre-test.
3. Spanish language literature about diabetes was not available, or not being used, and was needed.

4. The local Diabetes Association was found to have little involvement with General Hospital patients. There is a need for this relationship, for educational and emotional support.

5. Lastly, it was noted that a diabetes outpatient clinic at General Hospital would be valuable in helping to provide a totally coordinated diabetes care program (County of Ventura 1972).

Patient Education Proposals

Another result of the patient education conference of 1971 was the submission, by the General Hospital during early 1972, of a grant proposal to the Regional Medical Program for funding of hospital-based patient education programs. In the early part of the year, requests were made for an operational grant, a long-term funding mechanism which was to cover the development, implementation, and initial operation of the projects. The funding period of these requests was three years. The proposed program was to be carried out by General Hospital and directed by the Hospital administrator. For continuous guidance, the RMP district committee was to establish a patient education task force with representatives from other hospitals and from consumers. This task force was to be under the direction of the associate director of Health Education of the County Health Department. The RMP district coordinator was
to monitor the project. The proposal provided for systematic patient education within the General Hospital system, including the Family Practice Clinic, the General Medical Clinic, the three satellite clinics, the outpatient specialty clinics, and the inpatient services. Targets for learning were the health system staff, the patient, family and friends, the hidden patient, and the community. A full-time patient education coordinator was to be hired who would help develop a patient education system with the cooperation of the Hospital administrator, medical staff, resident staff, nursing and other health care staff, as well as county agencies and community groups. It was intended that patients and their families would be served, using the model of the educational prescription written by the patient's physician. The prescription would consider the patient's needs, interests, knowledge, cultural background, family situation, behavioral patterns, and the input of any other health or support groups having pertinent contact with him. The patient education coordinator was to obtain and develop tools for measuring knowledge, attitudes, and behavioral follow-through as well as those for teaching. A system was to be established providing clinical time for one-to-one teaching and group discussion. The proposal also stated that adequate education must include:

1. The physical aspect of the illness/condition; how it is caused, how it is diagnosed, and how it is treated.
2. The psychological aspects; guilt, dependency, frustration.

3. The social aspects; what do others think? The role of the family and friends.

The emphasis eventually was to be on training the nursing staff to do much of the actual teaching, one reason being that the nursing staff is in constant close contact with the patient and has the potential of building a strong rapport. They are also frequently pressed into service as teachers and should be properly prepared. A physician was to be hired on a half-time basis to develop audio-visual aids in support of the program.

In addition, to evaluate knowledge, attitudinal, and behavioral data, randomized, matched comparisons were to be made of readmission rates and durations, before and after instruction, and with patients who received no education. Measures of chemical control were to be compared in a similar manner. Evaluation of staff progress was to take place with before-after measurements of knowledge, attitude, and practices concerning patient education. Patient evaluation of staff was also to be used.

The overall program objectives included the following:

1. Improve the health status of diabetic outpatients including their understanding, attitudes, and practices concerning their condition.

2. Reduce readmissions of congestive heart failure patients.
3. Reduce length of hospitalization for all coronary patients.

4. Add other hospitals in the county to the program.

A justification for funding patient education was also presented in the proposal including relations to RMP goals, a literature search, and a review of the studies done within the county (General Hospital Ventura County 1972a).

This proposal was submitted rather hurriedly when extra operational grant funds suddenly became available. The Hospital submitted a very rough draft for Area IV RMP staff review. Area IV urged submission of an application to the Grant Review Panel. The Hospital protested that it did not have enough time to do all the necessary groundwork for the deadline. Area IV indicated that a rough draft could be sent to the Grant Review Panel, and the Hospital could keep working on the proposal until the deadline for submitting it to the State RMP Committee. However, the Grant Review Panel halted the proposal before it got to the state level. Although RMP was interested, there was not, in its opinion, enough Hospital commitment. There were no letters from staff or Hospital affiliates to support the request. Many of the objectives were stated so that it was impossible to achieve them or measure their achievement. It was suggested that future proposals be less global, perhaps limiting the involvement to General Hospital rather than having the goal of stimulating others
to organize patient education systems. It was also suggested that the objectives be stated in broader terms to allow flexibility (General Hospital Ventura County 1972b).

In May 1972, the Hospital decided to resubmit a grant application for the next funding cycle, following the suggestion of the Grant Review Panel. This time, the application was for a developmental grant which provides shorter term funding. This was intended to provide for the development of the tools, methodology, and skills to implement a program of patient education at the Hospital. The idea was to request additional funding at the end of the developmental period if the program warranted it. This proposal, and a further resubmission, were promptly denied by RMP in August 1972. The Grant Review Panel reversed itself in its denial of the second proposal sent. It criticized the application because it was limited to one hospital. It also stated that the objectives were too unrealistic and all encompassing (General Hospital Ventura County 1972b).

The Hospital next considered alternate funding sources. One of these was the California Medical Education Research Foundation, which normally funds education of resident physicians. Also considered was the establishment of a program through the use of existing Hospital resources. Neither of these ideas yielded action at the time.
Diabetes Clinic Education Proposal

During the submission of the previously described grant proposals to RMP, plans proceeded for the development of a diabetes outpatient clinic at General Hospital. The proposal for this clinic was developed in June 1972 by the Committee on Diabetes Education and Aftercare, as a result of its previous work, and was presented to the General Medical Clinic physician staff on August 31, 1972. The purpose of the clinic was to establish a formalized diabetes detection, treatment, education, and follow-up program for the systematic approach to the management of diabetes. Patients were to be referred to the clinic from the inpatient service, the General Medical Clinic, the three satellite clinics, the Family Practice Clinic, the outpatient specialty clinics, and the Emergency Room. The clinic was to operate one-half day per week on a referral basis only. It was hoped that the clinic structure would help in minimizing medical difficulties, maintaining a continuity of care for the patient, and motivating the patient and his family to begin to take the responsibility for understanding and managing his condition. The clinic was to have the support of the medical, nursing, and other specialty staffs of the Hospital and the rest of the Health Services Agency. These specialty services included Dietetics; the Department of Hospital Training; psychiatric and psychological, and social services in the Mental Health Department; and Public Health Nursing and Nutrition in the
Health Department. In addition, it was hoped that community services, such as the Ventura County chapter of the Diabetes Association, would become involved, as well as programs such as Alcoholic Intervention, Drug Abuse, and Child Growth and Development Assistance. The intent was to establish the patient as the focus of a team approach, with the team being composed of individuals representing the foregoing services and organizations (Ventura County Health Services Agency 1972).

Education was a large component of this proposal, and much of it was intended to have been funded by the grant from the RMP proposal. Each patient in the clinic was to complete a knowledge and attitude inventory with the assistance of the clinic nurse. As part of the clinic work-up, an educational prescription would be prepared, indicating what educational-informational processes would be desirable to establish adequate knowledge and understanding in addition to attitudinal changes to be arrived at through counseling. The Department of Hospital Training would see patients referred by the clinic physician, with an educational prescription, in a classroom situation, on a one-to-one basis, or both. The clinic nurse was to assume the responsibility of administering the knowledge and attitude inventory, as well as the writing of the educational prescription and implementing it through interpretation to the patient and his family. The clinic nurse was
also to handle referrals to other specialty services and maintain a constant liaison with the specialty services via activities such as case conferences after the clinic. Each patient and his family was to routinely receive dietary instruction and a public health nurse follow-up visit when he stopped attending the clinic. The Mental Health Department was to provide direct service to patients and their families referred from the clinic for emotional problems and consult with clinic staff on matters relating to mental health problems presented by patients (Ventura County Health Services Agency 1972).
In October 1972, an outpatient diabetes clinic, primarily for the chemical management of problem diabetics, was started by the medical director of the Outpatient Department. Since funds had not been received from RMP, most of the proposed educational features of the clinic were not able to be realized at its onset. Approximately concurrent with the clinic's inception, a new director was hired for the Department of Hospital Training. It was hoped that her training and experience in health education would lead to increased activity in the area of patient education. At this time, the name of the Department of Hospital Training was changed to the Educational Services Unit (ESU). Another grant proposal was prepared by the Hospital with major input from the new director of the ESU. This proposal included plans for a coordinated multidisciplinary diabetes inpatient and outpatient education system, and for planning a cardiac patient education system to be started in the fall of the following year.

Most of the suggestions in the previous education proposals and pertinent parts of the diabetes outpatient clinic proposals were incorporated in the diabetes component
of the new one. The proposal went on to suggest the following:

1. All diabetic patients coming through the General Hospital system would pass through the program, regardless of treatment regime or length of diabetic involvement.

2. Inpatient and outpatient education coordinators would be hired to coordinate the inpatient and outpatient education programs with each other and the rest of the Hospital staff.

3. An educator would be hired for the training of patients and staff and would be preferably bilingual. This person would be responsible for procurement and development of educational materials and methods.

4. The Hospital staff would receive the same basic information as the patient to enable its members to follow-up and reinforce information the patient has received.

5. An advisory committee would be established for diabetes education consisting of the education coordinators, the educator, members of the Social Services Department, members of the Occupational Therapy and Physical Therapy Departments, and residents and staff physicians having a high level of involvement with diabetes, such as the attending staff of the diabetes outpatient clinic. Case conferences would be held once per week to cover all diabetic admissions and clinic referrals.

6. All diabetic patients would be referred to the diabetes clinic for follow-up.
7. A progress report would be kept on the chart at all times to inform any staff of the patient's progress. A summary of the patient's educational experiences would be made a permanent part of his chart (General Hospital Ventura County 1972c).

This proposal was never submitted to RMP, mostly because of the combination of the proposal's funding requirements and the unsure status of RMP at that time. It was next decided that the ESU director would pursue the proposed programs as much as possible, utilizing the existing funds and personnel of the Hospital. It was realized that the scope of the program would be considerably altered due to the funding situation. The first component of the program was to start in the diabetic outpatient clinic, since it was already in operation and many of the necessary mechanisms were in effect. In January 1973, a staff physician was assigned to the clinic as the clinic physician. He placed high value on patient education and use of other specialty services in diabetic management. Through his efforts and those of the director of ESU, a multi-service team approach to patient care was implemented for the clinic. The team members included the clinic medical director, a different medical resident each month rotating through the clinic, a public health nurse who spoke Spanish, a nursing technician, a social worker, and occupational therapist, two dieticians, the ESU director, and a nurse-educator from ESU. The author joined this team
when he first became involved with the program. A con­sultant-physician specialist in diabetes attended the clinic a few times during the first months of its opera­tion. In February 1973, the clinic was moved from a sec­tion in the General Medical Clinic (GMC) to the Family Practice Unit. In this way, all the services were able to come to the patient. The clinic was held one-half day per week. Patients were referred from the inpatient service, GMC, satellite clinics, Family Practice Clinic, outpatient specialty clinics, and the Emergency Room. The flow of events for a patient attending the clinic was as follows: As patients arrived, they were registered by the nursing technician who subsequently obtained temperature, blood pressure, pulse, weight, and a urine sample. A quick-test for sugar and acetone in the urine was performed, and the measurements of all these variables recorded on the chart. A lab technician then came to the clinic and drew blood specimens from the patients for a fasting blood sugar test or a two hour post-prandial blood sugar test, depending on the particular patient or physician. The urine specimens, along with the blood, were taken to the lab. A social worker was available for patients with financial problems and generally saw the patients after their blood was drawn. The patients were next shown to an exam room to wait for their lab results to arrive. They were then seen by the physician. When the doctor had finished, the patients checked out with the nursing technician who gave them
instructions for return visits, referrals, and filling and refilling prescriptions. The entire clinic visit averaged about three to four hours per patient. This routine provided some unoccupied time for educational use in waiting modes; individually, in an exam room or in a group, in the waiting room. Since most patients seen at the clinic were somewhat problematical, they were seen several times and thus, more time for education was created. It was intended that patients could be scheduled for educational visits if their training was not complete by the time they had reached a level of chemical control sufficient for them to stop coming to the diabetes clinic. In addition, patients could return any time they wished for refresher sessions.

A clinic conference was held after the clinic, with members of the clinic team present, to discuss individual patient care strategies. These conferences provided the input of the different team members and served to open channels of information about patients. For example, since the patient at the hospital is out of his normal environment, he might behave differently there than at home. For this reason, the public health nurse is a valuable input in providing an accurate picture of the patient's home/family situation. In addition, because of differences in personalities, a patient may have been more open to one member of the clinic team than another and provided information about his situation that was of value in planning his care. This information was passed on during the conference, and
referrals were made to the appropriate services. The conference also provided a means of shaping the policies of the clinic by a group consensus. Lastly, the conferences were a source of inservice education because during the course of discussion, the clinic physician and other team members offered information about diabetes and its care that was new or refreshing to other team members.

As another inservice component, the clinic physician gave weekly lectures on various topics in diabetes for residents and other interested Hospital staff. The diabetic clinic staff was encouraged to attend these lectures. The topics included lipid disorders, skin and foot care, cutaneous ulcers, use of oral agents, glucagon administration, and renal diseases (Swimmer 1973).

It was intended that all patients coming through the clinic would be assessed for knowledge and attitudes about diabetes and given the education needed in the time frames available at the clinic. The assessment consisted of an evaluatory interview and administration of a diabetes knowledge questionnaire, oral or written. This assessment and data from the clinic team conferences was to provide a measure of the patient's existing knowledge of diabetes, as well as attitudes from documentation of his cultural, psycho-social, and educational background. The results of the assessment were to provide the basis of an instructional plan consisting of discussions, demonstrations, audio-visual materials, hand-outs, and patient participation in self-care
regimens. If possible, the patient's family was to be involved.

Though a good deal of the structure and intent of the clinic was like that of the proposed clinic, the limitations placed upon its operation by the budget and other factors altered the educational component considerably.

In early June 1973, the medical director of the Outpatient Department left the Hospital for another position and was replaced. In July, the diabetes clinic physician also left the Hospital for another position. The vacancy was filled by the new Outpatient medical director because of his interest and expertise in diabetes. This doctor was also highly receptive to patient education efforts.

Educational activities which were actually conducted in the clinic included the administration of a diabetes knowledge questionnaire to patients; individualized teaching of urine testing, insulin injection technique, and foot care; distribution of printed materials to patients; and occasional showing of filmstrips in the waiting room. A discussion of the written material used in the program will be found in Chapters VI and VII. The filmstrip used for the program was "Just One In A Crowd" (United States Department of Health, Education and Welfare 1965). It contains strips on (1) general diabetes, (2) diet, (3) good health, and (4) medications. Each strip is 10 to 12 minutes long. The set emphasizes that the patient is not alone and diabetes can be treated to help insure a normal
life. The strip on medications, being outdated, was not used.

Approximately 40 patients were assessed and received some education in the clinic between February and August 1973. These activities were carried on by a single nurse-educator with the assistance of the author. In addition, the author was involved in the clinic in performing sugar and acetone tests on patients' urine specimens and running errands, such as taking blood and urine specimens and results to and from the lab. The two dieticians on the team provided dietary instruction, coming to the clinic for consultation at the request of the clinic physician or resident. A further discussion of the outpatient diabetes clinic educational component will be found in Chapter VII. As of the end of November 1973, the clinic was still in operation but, due to a change in the format of the diabetes education program, to be further described, it had returned to serving primarily as a chemical control clinic by October 1973.
CHAPTER V

DESCRIPTION OF INPATIENT COMPONENT OF EDUCATION

In late March 1973, after discussion with the ESU diabetic clinic nurse-educator and the author, the ESU director decided to proceed with the planned development of the inpatient component of the diabetes education program. Most of the planning was done by the nurse-educator and the author with the assistance of the ESU director and other ESU staff, as well as other staff and departments of the Health Services Agency. As in the outpatient component, it was intended that the inpatient component would follow the plans of the proposal as much as possible. It was realized that there would be strong limitations because of budgetary factors. To initiate development, the ESU director, the nurse-educator, and the author met with the Hospital administrator to explain this component of the program to him. At this meeting, the administrator was presented with the proposition of proceeding with the inpatient component. He was informed, once again, of the program and developmental objectives, and a tentative schedule of planning, development, and implementation was suggested.

Through April and May, the advisory committee called for in the proposal was to be set up and convened with
other agency staff to be informed and called on when needed for consultation and service. Educational materials were to be further developed from the point reached in the outpatient component at the time, and staff instruction was to begin in early June. The Hospital administrator was agreeable to these suggestions, and gave his approval to proceed while emphasizing that the program development should not interfere with the other on-going Hospital activities and the duties of the ESU. Funding outside the ESU budget could not be used.

In early April, communication links were established between the ESU and those Health Service Agency departments and staff that were to be involved in some way with the program. The nurse-educator met with the medical director of the Internal Medicine Service, who suggested presenting the program plans to the Internal Medicine Conference for medical staff and residents at the end of April or May. This meeting prompted a revision of the scope originally planned for the program so as to include only internal medicine floors, with a further expansion to pediatrics, surgery, obstetrical-gynecological, and geriatric floors at a later time. The nurse-educator met twice with the director of Medical Resident Education, who suggested the program obtain a resident physician sponsor who could help in interpreting the program to other resident physicians. The Resident Education director was against a presentation to the Internal Medicine conference and said that to initiate
the program, he would issue a memorandum to the Hospital medical staff and resident physicians explaining it and instructing them to cooperate. The nurse-educator also spoke to several of the resident physicians, telling them about the program plans and trying to enlist their support. In general, they were quite receptive to the program plans and one of the residents agreed to be the sponsor. It was planned to make contact with a new group of residents scheduled to arrive in June as soon as possible.

The advisory committee was convened at the end of April. Originally the committee was to consist of the Hospital administrator; the medical director of the Hospital; the director of Medical Resident Education; the chief resident; the resident sponsor; the diabetes clinic physician; the consultant physician for the diabetes clinic; representatives from the nursing administration, Public Health Nursing, Occupational Therapy, Dietary Service, and Social Service; the Home Health Care Coordinator (functioning mainly in discharge planning, to see that the patient receives all needed services upon his return home); the county nutritionist; and the ESU staff, including the author. Other agency staff to be involved on an "as needed" basis included a physician who would assist in material development, a County health educator, head floor nurses of the Hospital, nursing technicians, the GMC head nurse, and the director of Internal Medicine Service. The committee was to conduct its work either through
The concept of the structure of the committee was subsequently revised so that when it met, it consisted of representatives from Dietary Service, Social Service, Occupational Therapy, Public Health Nursing, and the nursing administration; the county nutritionist; the Home Health Care Coordinator, the resident sponsor, the ESU director, the diabetes nurse-educator, and the author. Those members of the originally conceptualized committee not included on the new one would likewise be dealt with separately on an "as needed" basis, and would be kept informed of all program progress. At this meeting, the author and the nurse-educator presented the proposed program to the committee. The reaction was both favorable and enthusiastic. There was much discussion and input from committee members. The committee decided to reconvene at the end of May and then to meet thereafter semi-monthly or monthly.

During May, more individual contacts were made with members of the advisory committee and other involved staff. Early in the month, the author met individually with the director of the Occupational Therapy Department, the Home Health Care Coordinator, the dieticians, the County nutritionist, and the resident sponsor to discuss their roles in the program. One of the head floor nurses, with whom the program was discussed, suggested presenting it to a meeting of head nurses to be held in the middle of May. It was also learned that the day shift head nurses were in charge.
of all three shifts and would, therefore, constitute a vital
link in the communications with the nursing staff. The
meeting with the head nurses failed to materialize because
of scheduling difficulties among the nursing staff, so the
nurse-educator decided to take the program to the nurses on
the floors in an individual manner. The nurse-educator and
the author set up a tentative schedule for starting instruc-
tion of the nursing staff in the latter part of May.

A memorandum was developed by the nurse-educator and
the author describing the inpatient and outpatient com-
ponents of the program. This was to be given to the direc-
tor of Medical Resident Education and distributed to the
medical and resident staff, and posted on each floor in the
program. A meeting with the director was scheduled for the
end of May and then rescheduled for the first week in June.
However, the director did not attend because he was out of
town. The memorandum, therefore, had not gone out by this
time.

Up to this point in time, the inpatient component had
been primarily developmental. A limited pre-testing of an
Education Progress form had been done on a few charts since
mid-May. Education of inpatients was being carried out by
the nurse-educator on a one-to-one basis in much the same
manner that it had been previous to planning stages of the
inpatient component begun in late March. Educational
material development was a dynamic process, with materials
being constantly revised and used on inpatients in the
The following is a detailed summary of the inpatient component plans as they stood at this point. The memo, discussed above, is a synopsis of this summary.

Upon the patient's admission to the Hospital with a primary diagnosis of diabetes mellitus, the ESU will be notified by the head floor nurse or the ward clerk. As soon as possible, the ESU will do a complete educational assessment of the patient. Nursing staff and the doctor's notes, as well as other information on the chart, will document the patient's cultural, psycho-social, and educational background, and provide a measure of his existing knowledge of diabetes. Determination of the patient's stability for assessment will be made by a consensus opinion of the physician, the floor nursing staff, the ESU, other involved ancillary services, and the patient himself. The Dietary Service will next be contacted by the ESU and will also do an assessment on the patient for knowledge of good dietary practices. Alternatives will be for the ward clerk to notify the Dietary Service or for the ESU and the Dietary Service to check the daily patient listing for diabetics. Eventually, the floor nursing staff should be able to assume some of the responsibility for the educational assessment.

The results of the educational assessment will be recorded on a special educational progress sheet attached to the diabetic part of the chart or the front for easy access. (See Appendix A.) It is intended that this record will become a permanent part of the chart. This information could be recorded instead on the nurses' notes or on the
kardex. The choice of where to put the information is important when considering non-county patients with personal physicians. Though education is available for all patients, it will be the decision of these physicians to order it for their patients or not. If the progress sheet is used, the physician will be likely to see it and may order education based upon its recommendations by communicating on the doctors' progress notes. If the nurses' notes or the kardex is used, it will be up to the floor nursing staff to let the physician know where it is. The kardex, if it is used, would not become a permanent part of the patient's chart. The ESU will maintain its own record system containing a notation of every procedure performed and measurement instrument administered concerning a particular patient. Personal physicians will also be able to order dietary instruction based on the evaluation appearing on the dietary sheet in the chart. Any subsequent dietary teaching will be noted on this sheet.

The ESU diabetes nurse-educator will begin the education of the patient on the medical floor. The instruction plan will be guided by the educational assessment and, if the patient is under the care of a personal physician, what he orders. The instruction will consist of a combination of didactic presentation, discussion, demonstration, hand-outs, and patient participation in self-care regimens. As much as possible, the patient's family and friends will be included in the instruction. Gradually, members of the floor nursing staffs will be taught to be patient instructors. All
levels of nursing personnel will be included. All members of the nursing staff being educated will be given a knowledge assessment questionnaire to determine how much they know about diabetes and what they need to emphasize in learning more about the condition. In addition, all will be given an instruction manual containing all of the diabetes information that they and the patients need to know, suggestions for when and where to teach various subjects, and suggestions for obtaining the patient's confidence and attention. Materials for patients will be kept on the floor for nursing staff. Some instruction will be given in the ESU classroom. A large amount will be done on the floor in small groups, bearing in mind that the available on-duty staff be depleted as little as possible. This training will be done in a real situation based around the ESU nurse-educator as she works with patients. Eventually, the nursing staff will be able to take over a significant portion of the instruction of patients. Much of the teaching will be done during different phases of patient care. These can be the first areas to be taught by the nursing staff. For example, the nurse may discuss insulin injection technique with the patient as she administers his daily dose. The patient, with his physician's permission, may begin giving himself the injection under his instructor's supervision. This example illustrates the importance of training staff on all three shifts, since the night shift is the one which often gives the patients their insulin injections early in the morning before the day shift comes on. Other examples of teaching in patient care situations
include instruction in urine testing technique by a nursing technician as she is testing the patient's urine, and foot and skin care instruction during the patient's bath. Again, in both of these cases, the patient can, in time, assume the responsibility for doing the tasks himself with supervision. Since the nursing technician may not write on the nurse's notes, a stronger case is made for using the educational progress sheet, so that they may chart their contacts in instruction of patients. Whenever possible, writing will be kept to a minimum. The other alternative is for the nursing technician to rely upon the nurse to copy her report of instruction into the nurse's notes. This could involve losses in accuracy and efficiency. As the nursing staff becomes more familiar with instructional methods, it can become involved in training its own new members, with the ESU providing continuous material updates and improvements as well as consultation and support whenever needed.

It is intended that all diabetic patients be followed at the diabetes outpatient clinic following discharge. It is anticipated that many patients will not start or complete their program of instruction before discharge. Due to scheduling conflicts, instruction will then begin or be continued at the clinic. It is also intended that all patients will receive a public health nursing evaluation at home after their discharge. Patients who can not come to the diabetes clinic at the Hospital will be seen at one of the outlying satellite clinics and, periodically, by a public health nurse who will provide instruction as needed. Patients will be encouraged to come
into or call the ESU whenever they feel the need for refresher information or when questions come up. The Home Health Care Coordinator will be a vital link between the inpatient and outpatient components of the educational program.

After completing their program of instruction, patients will take a post-test for assessing the change in their knowledge of diabetes as a result of the program. A summary report of patient attitude change will be developed from the impressions of the staff who interacted with the patient as instruction proceeded. The patient's own impressions of his attitude change will be considered to be very important. The public health nurse will provide an evaluation of the patient's behavior patterns at home in contrast to those in the Hospital. Long term evaluation will include the monitoring of readmission rates and durations. These will be compared to like periods before instruction. In a similar manner, measures of chemical control, such as blood sugar levels, will be compared. These evaluatory reports will become part of the patient's educational progress record.

During the second week in June, the nurse-educator and the author met with the new director of the Outpatient Department who, as previously mentioned, was also the new diabetes clinic physician. He agreed to help with the diabetes education program, but soon suggested switching from the plan of training the nursing staff for patient instruction to one which would leave the teaching, for the time being, to the nurse-educator, the author, available
nursing staff, and others such as volunteers. The plan was centered around the concept of class or group discussion, including the inpatient and outpatient diabetic population in need of education. In late June, after discussing the new plan and reasons for adopting it, the ESU director, the nurse-educator, and the author decided to accept the suggestion of the director of the Outpatient Department. This component is described in Chapter VI. Further discussion of the inpatient component will be found in Chapter VII.
CHAPTER VI

DESCRIPTION OF CLASS/DISCUSSION COMPONENT OF EDUCATION

The decision to shift the orientation of the diabetes education program was made primarily for two reasons. First, there were problems occurring in the nursing staff which would have precluded much participation in the program. Second, there was general dissatisfaction with the way the outpatient education component was working out in the diabetic clinic. These reasons will be discussed further in Chapter VII.

It was intended that the proposed class/discussion centered approach could serve major portions of the inpatient and outpatient populations in need of diabetic education. This plan evolved from several conferences in June and July between the ESU staff and the new medical director of the Outpatient Department. The first two of these meetings, held between the Outpatient director, the ESU diabetes nurse-educator and the author delineated the need for change in the basic structure of the plan.

The class/discussion (to be called group discussion to patients) would be open to inpatients, outpatients, family, friends, Health Services Agency staff, and the community in general. It was felt that the class/discussion
technique could also place an emphasis on informing the family, friends and important contacts of the patients, such as fellow employees and students, employers and teachers. Class size was arbitrarily limited to ten to make sure that the plan was workable. It was planned to tailor the length of the sessions so that they were long enough to impart needed information, but not so long as to lose the patient's attention span. Tentatively, sessions were to be two hours in length, two days a week. One day was to be the same as that for the diabetic clinic, so that patients with transportation problems could attend the clinic and the classes with only one trip to the Hospital. On this day, both sessions would be held in the clinic in one afternoon. On the other day, both sessions would be held in the mid-afternoon. Other considerations were a three week cycle which would include diet classes and late morning classes as a better time for mothers considering children and, of course, inpatients who could not attend classes would be dealt with on an individual basis until they could attend.

A volunteer force was envisioned to bolster the ESU staff, and for teaching Spanish speaking patients. These volunteers were to come from a hopefully more active local chapter of the Diabetic Association, the Hospital volunteer organization, churches and community groups, and from patients. Volunteers were to be carefully chosen and trained. In addition, it was planned to have outside
speakers come and talk at the sessions. The talks could be given by physicians, dentists, nurses, patients, or any person with something of interest to offer.

The Outpatient director suggested setting up another meeting with the director of Medical Resident Education and one with the director of Nursing of the Health Services Agency. From these contacts, he felt that permission could be secured from the ESU staff to write on the doctor's progress notes, in a problem oriented fashion, for a clear charting of the patient's education experience and good communication with the doctor. This procedure would replace the educational progress sheet on the chart and eliminate the need for an extra form. Clearance was also desired for the nursing staff to supervise inpatients in giving their own insulin and in urine testing. In this manner, after ESU had given the patient a basic understanding of insulin administration and urine testing technique, the patient could begin performing these tasks under nursing staff supervision. Thus, the nursing staff could maintain some involvement in teaching while the patient practiced self-care techniques. As it became feasible, more emphasis could be placed on training the nursing staff for patient teaching. It was also decided to provide a specific educational prescription form with which private physicians could order education for their patients. The education would be based on their own perception of the
patient's need and/or the ESU assessment. The material to be covered in this class/discussion was to include that which had been planned for the clinic component and envisioned for the inpatient component. Findings, procedures and recommendations were to be charted in the ESU records and the physician progress notes. From this point, the diabetic clinic was to serve the education program as a routing mechanism and for helping to assess some patient information to be disseminated to the satellite clinics and Public Health Nursing so referrals could be made. Evaluation was envisioned in the same manner as with the first inpatient component. At the end of June, the ESU director returned from a leave of absence and when presented with the change in program concept, agreed with it.

During the first week in July, the author, the ESU diabetes nurse-educator, the ESU director and the Outpatient director met with the director of Medical Resident Education. He was presented with an outline of the program and a draft of a memo to be issued which would inform all Hospital staff of the progress and procedures to be followed. Included was the tentative schedule and a brief explanation of the objectives and structure of the planned program. In addition to general distribution, this was to be posted throughout the Hospital. As a result of this meeting, permission was secured for ESU staff to write on the doctor's progress notes, to do automatic evaluation of and give evaluation to county patients, and to do automatic
evaluation on private patients with provision of an educational prescription to the physician. It was decided that the memo would be issued by the new director of Hospital Administration, who subsequently promised that it would be out by the third week in July, worded as submitted. This would officially clear the progress for operation.

A meeting was held in the second week of July between the author, the ESU diabetes nurse-educator, the ESU director, the Outpatient Department director, and the Health Services Agency director of Nursing. The director of Nursing was positively inclined to retaining some of the nursing staff teaching involvement. She also made it clear that a possibility existed of sparing a Spanish speaking nursing technician to work with ESU on the progress. However, this person probably would not be available for another month or two.

The next several weeks were spent on further development and revision of materials. This included developing the Education Prescription (Appendix B), a sheet for recording services offered in the ESU files (Appendix C), and a patient information sheet containing socio-economic and other demographic information as a supplement to the assessment questionnaire (Appendix D). A check list was also developed to be given to the physician, especially the private physicians, which would spell out what the patient was taught, how well the patient responded, and what remained to be done. In addition, during this period, a
first class was held by the nurse-educator. This session was attended by one patient who was subsequently to be followed in Ojai by a personal physician. Being a new diabetic, she was given the introductory session and instructed in insulin technique as well. Two other inpatients were supposed to attend this session; however, one was too weak and the other was too disturbed emotionally at the time. The wife of the weak patient was also scheduled to attend but did not.

The memorandum due to be released from the Hospital Administration was delayed but did come out during the fourth week in July, signed by the medical director of the Hospital (see Appendix E). At the end of July, the author met with the ESU director, who identified the need for further development of the program before continuing with the classes. Foremost was the need for a set of educational objectives for patients in the program, a detailed class/discussion plan or outline, and several more meetings with various agency staff. In addition, it was decided to give appointment slips to outpatients when scheduling them for discussion sessions. County business cards were to be used to save time and printing costs.

Development of the educational objectives and class/discussion plan began immediately. Most of the objectives had been stated informally or conceived of somewhere in the program and were assumed to be included in the teaching. The formal development of these, however, resulted in
groups of objectives which were indexable by topics. They provided the basis for further systematic development of other materials. For the most part, objectives were designed so that when met, the learner would have a body of knowledge about diabetes and its control. The knowledge would be complete enough to reasonably insure the achievement and maintenance of control. This is not to suggest that meeting these objectives will guarantee control. The objectives were stated so that they could be met in various ways, depending upon the mode of education being used. The structure of the objectives was inspired by Robert Mager (1962).

With the development of the educational objectives, revision of the assessment questionnaire began once again. Originally, this questionnaire was constructed utilizing many items from a test used in the diabetes teaching program of Northridge Hospital in Northridge, California (Northridge Hospital 1972). Now questions and answers were moduled so that a certain topic or subject area in diabetes was covered by a particular numbered set of questions which could be matched to the corresponding objectives. The test was a multiple choice type. Whenever possible, the letters a, b, or c, representing the correct answer, were selected from a table of random numbers. The letter d, meaning a response of "I don't know", was included so that the respondent would not guess wildly. Patients were encouraged to use this response when they had
no idea of what the answer was. The vocabulary and syntax were intended to be as simple as possible without sacrificing meaning. The test was designed to be administered after being fully explained to the respondent. The respondent was to have as much time as necessary and was to be encouraged to ask questions if he needed to. Around the patient, the words "questionnaire" and "assessment", rather than "test" were used. A scoring system was also devised where, for multiple answer items, a determined proportion of correct responses would be counted as a correct answer to the question. Similarly, for each subject category, a fixed number of correct answers is accepted as sufficient knowledge in that area. With less than this proportion in a subject category, the respondent was to automatically receive that subject component of education. This does not mean that other modules were to be ignored. There was to be discussion on all areas with emphasis on those of greater need. For evaluatory purposes, the test was to be re-administered as a post-test after the patient had completed his education program.

The development of the objectives also spurred further development of a set of printed literature on diabetes, providing a discussion of the subject matter covered by the objectives. This was needed so patients and their families could have material to refer to at home and while traveling. There was a recognized need for this because most of the available information for laymen was printed by drug
companies and was too difficult to understand, in an unmanageable form and sometimes contained incorrect information. The ESU staff, therefore, endeavored to take information from the best available sources, compile it, and make it concise and understandable for the patients it was to serve. As with the assessment questionnaire, vocabulary and syntax were made as simple as possible without sacrificing the message. The hand-outs were modularized, following the objective, so that specific topics could be stressed. It was intended that these be distributed as soon as possible to patients and families so that no matter what else happened, at least some educational material was given them. The overall educational program was intended more to give the patient understanding and the ability to recognize the important signs and information concerning his diabetes, than for rote memorization of facts. Since many patients of the type commonly seen at a county hospital have rather sporadic medical and health services contacts, it was perceived as important for them to have real understanding rather than just memorized facts. The literature handed out could serve as their memory depository for facts, but the patient had to understand their use.

Lastly, the class/discussion plan was modeled after the educational objectives. These materials are all presented in Appendices F-I.

During the first week in August, the author learned that the ESU director would be leaving for another position
in the Health Services Agency. She emphasized that she would continue to provide support to the education program in a consultive manner as much as possible.

In the second week of August, a meeting of the ESU staff was held. Among other things, the level of involvement of the program was discussed. Since the intent was to have the program open to the community, it was suggested that publicity go out through the Diabetes Association and to physicians. Patients who did not ordinarily attend the Hospital or clinics could come in with a request from their physician for assessment and necessary instruction. It was decided that a form and letter for this purpose would be developed. In addition, coordination with the Visiting Nursing Association and the Public Health Nursing Department of the Health Services Agency was discussed. These groups could be given a package of methodologies and materials for use with patients who could not attend the Hospital education program. It was decided to wait for a period of time on these program extension suggestions until the program was running more smoothly within the Hospital.

Also during this week, a Spanish speaking patient volunteered to work with Spanish-speaking-only patients. Lastly, the nurse-educator and the author decided to review all previous diabetic clinic patients with the Outpatient Clinic's medical director and schedule the appropriate one for classes. It was felt that this would benefit both the old patients with a review and completion of unfinished
education and the new patients with a sense of comradeship. The support offered by the experiences of patients who had had diabetes for a longer time was also thought to be important.

In the third week of August, the author met with the new medical-surgical nursing coordinator. She had been an enthusiastic supporter of the program and was now in a position to help. She said that the ward clerks under her supervision would continue to be the ones reporting new diabetic inpatient admissions to the ESU. She felt that the nursing staff would eventually be able to do much of the diabetic patient teaching and was pleased that they could participate in insulin injection and urine testing technique monitoring. She suggested that those on the nursing staff with the available time could attend the diabetes class/discussions and observe the nurse-educator on the floor with patients. She was also willing to act as a resource for questions on subjects such as medications and equipment. Since she was effectively working two jobs while the nursing staff was reorganizing, she was not yet able to be fully active in the program. She was very enthusiastic about meeting again and keeping in touch. She also indicated that she would attend the class/discussions as time allowed.

During the first week in September, a second class was held by the nurse-educator. One outpatient, two of her friends, and the daughter of an inpatient attended. The
inpatient was a recent leg amputee due to uncontrolled diabetes. His daughter was taught insulin injection and urine testing after the class. One of the friends of the outpatient lady was found to be a possible pre-diabetic and was urged to be examined.

During the third week in September, the author met with the Outpatient medical director, who was pleased with the progress of the program development, especially the materials. The subject of adding diet classes to the curriculum was discussed. He felt that they would be all right as long as they remained relevant to the population served by the Hospital, which included a high percentage of Mexican-Americans whose diet is quite different than traditional American ones. The Outpatient director felt that emphasis ought to be placed on trying to establish control on existing conditions, changing as little of the patient's lifestyle as possible.

At the end of September, the author met with the ESU director, who had by now changed positions. Her vacated position had not yet been filled. She was in favor of the diet classes and encouraged a meeting with the county nutritionist and the Hospital dieticians. The dieticians had been seeing inpatient diabetics referred by the ward clerks on an individual basis. Diet classes incorporated into the ESU program could reach a wide range of patients other than inpatients. Also during this time period, a daily team conference on the medical-surgical floors was
initiated by the new medical-surgical nursing coordinator. The team included nurses, dieticians, Occupational Therapy, Social Service, and the Home Health Care Coordinator. The nurse-educator was to be called to attend these conferences when diabetics were on the floor.

During the first week in October, a new memorandum was prepared by the nurse-educator which again announced the class/discussion sessions. It was distributed to over 200 attending staff physicians. The classes were started again during this week. A class conducted by the author was attended by an outpatient, two dieticians, and a head floor nurse. Another scheduled patient did not attend. The patient who was there was a 70-year-old woman who had recently been discovered to be diabetic. She had the complications of congestive heart failure, chronic bronchitis, and had only one kidney. Her diabetes was being controlled through diet without medications. She was given the introductory session and was very enthusiastic, vowing to attend all the other sessions. The dieticians were approached after this session about the possibility of running diet classes. They were in favor of doing it and agreed to meet with the county nutritionist to prepare a program.

During the next two weeks, two classes were scheduled, but only one was held because the nurse-educator was too tied up with other priorities to give the class. The cancelled class was to have been for an RN and an LVN.
Another class was held in the first week in November. The student, a non-county outpatient, received the first two sessions. During this week the Hospital director of Personnel made it clear to the ESU staff that other priorities had made it necessary to reduce even further the ESU priorities for patient education.

The third and fourth sessions were given during the following week to the outpatient who had just had sessions one and two, and to another patient and her husband who had had sessions one and two at bedside. Another patient was scheduled but had developed heart trouble.

During the following week, the dieticians held their first class. The lady who had attended for the previous two weeks was the only student this week. She was the first patient to receive the full set of classes. At this session, she was taught more about food exchanges with the film strips and models, and her personal diet was discussed.

It was at this time, near the end of November 1973, that the author's involvement in Ventura was drawing to a close. With this consideration and the pressure from the Administration to pursue other activities than patient education, the nurse-educator started making plans to try and pursue again the idea of having the floor nursing staff more highly involved in the teaching program. See Chapter VII for a synopsis of the program status since the author's departure.
CHAPTER VII

ANALYSIS OF THE PROGRAM AND DISCUSSION

The program described in this paper was, in many ways, nebulous and, as such, is not easily separable into discrete units that lend themselves to analysis. Nevertheless, an attempt is made in this chapter to look at the factors affecting the planning, development, operation, and evaluation of its components. Pertinent references to other programs in the health and patient education literature will be pointed out.

In general, the program has been very valuable as a learning and developmental experience for all those who were heavily involved. Dramatic results with patients were not part of its successes, though this should not be construed to mean that the program did not significantly help some patients. Many patients were given needed guidance, support, and instruction. The fact that every one did not become a perfect model does not mean that there was no value to the program. Certainly, helping an individual a little is better than not helping at all.

The program, while changing through different orientations, found parts of each valuable as well as showing some progress in each. The clinic component identified a group
of patients definitely in need of an educational program, and a body of health professionals that was very interested and enthusiastic about providing such a program. The in-patient component, though short in duration, produced plans which were highly detailed and led to the accomplishment of a great deal of developmental groundwork in the class/discussion component. This included the development of a coordinated system of educational objectives and materials along with the clearing of several major administrative hurdles. Also, permission for the ESU to do automatic assessment and education on county subsidized patients, as well as permission to write documentation on the doctors' progress notes was granted.

It is probably best, however, to examine the program as a test or demonstration project. Those staff members responsible for initiating and running the program as far as it has gone have, in the author's opinion, demonstrated genuine enthusiasm and have invested a high degree of effort. When the severe limitations placed upon the program are considered, it can be said that the program was successful in that it was operational; it did help some patients; and much was learned.

**INFLUENTIAL FACTORS ON THE PROGRAM**

The author feels that the major limiting factor of the program was the balance of priorities for and against patient education. In any system, priorities govern the
distribution and usage of resources. The importance of patience education compared to other programs in the Ventura County health system, in the eyes of those with power and/or influence, was not great enough to establish it as a high priority. As a result, the biggest blow was the failure to secure federal funding. One member of the original RMP Grant Review Panel actually expressed the belief that the hospital setting is not an appropriate one in which to do patient education (General Hospital Ventura County 1972b). Next, the Health Services Agency and Hospital Administration was unwilling to commit Health Services Agency funds to the project. The program was approved with the stipulation that it would not use funds outside of the ESU budget nor disrupt other programs. The administrative position was further reflected in the staffing and duties of the ESU. When one of the staff reduced her employment to a half-time basis and subsequently left permanently, her position was not filled. Supposedly, there was yet another position funded in the ESU budget, but this too was not filled.

In addition, the duties and responsibilities of the unit were discussed and worked out between the staff and administration on different occasions. Among these were orientation for new Hospital employees; tours for Agency personnel; inservice classes and presentations for employees in areas such as cardiopulmonary resuscitation, body mechanics, charting, pharmacology, and isolation;
coordination of the disaster procedures training program; coordination of testing for promotion and hiring; coordination of outside educational programs such as LVN, nursing assistant, and psychiatric technician programs at Ventura Community College; and development and production of department manuals. The requirements of these duties included literature and audio-visual material review and ordering, agency-wide availability for demonstration and problem solving with respect to equipment operation, availability for clarification of procedural techniques, and all clerical responsibilities. Most of these functions were of higher priority in the Administration's opinion than patient education; some, of course, with good cause.

The staff available to the unit, after the loss of the previously mentioned instructor, was the unit director, two instructors, the secretary, and part-time services of this author on a voluntary basis. This amounted, at best, to a very fragmented full-time person working on diabetic patient education.

Other influential elements also presented problems in terms of support. Residents were the physicians who treated most of the county subsidized patients and were, therefore, key elements in the whole patient care process. The residents reported to the Director of Resident Education of the Hospital. Consequently, his endorsement was sought for the program. He proved to be an extremely busy man. For example, one meeting scheduled between him and the ESU
staff did not occur because he suddenly had to leave town. No notice was given to the ESU about the cancellation until the time of the meeting. Of course, this may have been a secretarial mistake. He was not particularly interested in the program but agreed to issue a memorandum to the resident physicians requesting them to cooperate. This memo was never circulated. The chief resident was contacted and agreed to be a sponsor for the program, as well as to act as a liaison between the ESU staff and other residents. However, he was also very busy, and was able to make little time available.

It is gratifying to note the progress mentioned at the beginning of this chapter, but it produced little in the way of tangible results with patients because of the general lack of support by the most important groups and individuals. The brief instances of support by the Administration seemed placative. This is exemplified by the memo just mentioned which was promised but never released and further, by the situation in which permission was granted to the ESU to assess and educate county subsidized patients but where funds were withheld for support of such activities. The significance of the latter instance was compounded by the constant administrative pressure put upon the unit to do activities other than patient education. For the same kinds of reasons, it was not possible to take advantage of the enthusiasm of interested parties. A vivid illustration of this was the diabetes class which was to be
given to an RN and an LVN, both interested in the program. It had to be cancelled because the diabetes nurse-educator became too busy with other assigned, higher priority duties. Also, a large drug company, undertaking a study of hospital-based patient education programs, indicated its interest in the Ventura program. This was not followed up and fell by the wayside. A study such as this could have provided the impetus for securing funding from the Health Services Agency administration and other county sources. Lastly, the assessment questionnaire was not taken full advantage of because it required more involvement than could be spared to properly administer it.

Other events occurring in the community, the rest of the Health Services Agency, and the ESU itself became factors which had significant effects on the program:

1. In the community, the local chapter of the Diabetes Association, traditionally a source of volunteers, literature, and support in general, was not very strong. In fact, it was inoperative during the summer of 1973.

2. In the agency, there was a shift in administrators. This caused delay in the program because of the necessity of reinterpreting the program to the new administrator and in the release of a memorandum, to be circulated through the agency, describing the program.

3. The Public Health Nursing staff, for internal reasons, became very much depleted during the course of the program, thus affecting the
follow-up component of the multi-disciplinary team.

4. The Social Service Department, which was highly involved in the diabetes outpatient clinic and the planning for the inpatient component, underwent an upheaval in late Spring 1973 which resulted in the departure of the department head. The worker assigned to the diabetic clinic also left for personal reasons, and the department effectively ceased to function at about the end of May 1973. It started functioning again without a department head near the end of September.

5. Shortly after the diabetic clinic started functioning as part of the education program, the director of Outpatient clinics left for another position. His replacement had to be informed of the program. However, this physician was more interested in patient education than his predecessor.

6. The doctor who headed the diabetes clinic and was very enthusiastic about patient education left for another position in July 1973. This blow was softened though because his position was filled by the new Outpatient clinics director who was also in favor of education.

7. The nursing staff underwent a large reorganization in early summer of 1973. There was a threatened strike, and the nursing staff was generally unable to be receptive to new ideas. In addition, one very capable nurse, who was willing to devote a lot of time to the program, found herself with two high administrative positions for a time after the
reorganization. This monopolized all of her available time. Prior to this, she had been on a leave of absence due to personal matters and, therefore, a great resource to the program was lost for an extended period of time.

8. Within the ESU, an event occurred which practically monopolized the time of the entire staff for over two weeks in May 1973. Briefly, this stemmed from a complaint by an employee over promotion exams and ballooned into a racial issue. The unit was kept busy coping with this problem, having to review cases and revise promotion requirements and exams.

9. The ESU director had to leave for the entire month of June 1973, due to personal matters. This left the program without guidance which was very badly needed. In August 1973, the ESU director left to take another position within the Health Services Agency. She continued to provide consultation but, of course, was not able to be as available as previously.

EXAMINATION OF PROGRAM COMPONENTS AND ELEMENTS WITHIN AND AMONG THEM

The result of the foregoing influences was, for the most part, a staggering lack of resources. With emphasis on these deficiencies, the following discussion will attempt to examine the program components as well as elements, intra- and interjacent. Areas where the lack of resources was felt most will be pointed out as will strong points of the program. This discussion was constructed to present strengths and weaknesses at the same time, a more valid
way of discussing the program.

**General**

The nurse-educator and the author were relatively inexperienced in the process of developing a program such as this. The closer guidance and participation of the ESU director and one of the other instructors with more experience was needed. These deficiencies occurred because: (1) the director and the other instructor were both very busy with the other duties of the unit, (2) the nurse-educator was also busy with other duties and had little time to learn new techniques concerning patient education, and (3) the author was able to be in Ventura only two to three days per week, and these were not full days. The situation was later compounded by the director's forced month-long leave of absence and her later departure from the ESU for another position in the Health Services Agency. The idea of the orientation of the ESU as the coordinating body of inservice and patient education was viable and well proven and will be further discussed later in this chapter. However, without the needed balance of staff and experience, the program failed to reach its potential. The lack of experience and guidance resulted in major problems of communication and planning for the program.

**Communication**

The communications problem was quite evident. Within the ESU, decisions sometimes did not make their way through
the staff, as small as it was, and actions were taken or policies put into effect before all were informed.

After the diabetes clinic had been in operation long enough for its routine to have been established, the lack of communication through the Outpatient Department was demonstrated. Patients scheduled for the diabetes clinic were to report there when they got to the Hospital. All work on the patients, including lab work, was to be done at the clinic. Several times though, patients scheduled for the clinic were not told where to report. Consequently, they showed up at the Outpatient General Medical Clinic. Some of these patients were sent to the lab where they spent as much as an hour of unnecessary time waiting because neither the Medical Clinic nor the lab staff knew that they should have gone directly to the diabetes clinic.

Another example of the communication gap was in the referral system for routing patients to the diabetes clinic. The clinic was seeing seven to ten patients weekly for the first ten months of its operation from October 1972 through July 1973.* Most of these patients were referred from the floor, the general medical clinic, and the satellite clinics. Toward the fall of 1973, the number of patients seen weekly in the diabetes clinic began to fall and eventually got down to three or four.* The rate of diabetic admissions to the Hospital though was at its

normal level of about eight to ten monthly.* This was seen as a breakdown in the referral system.

Lastly, a nurse who was very eager to help with the program was left out from the distribution list of a memorandum describing the program which was being circulated among interested parties and potential resources.

Planning

Much of the program planning was dictated by the program operation instead of vice versa. Policies were conceived and instituted on the spur of the moment. While it is true that some of these were probably good ideas, the program might have run smoother and more successfully if they could have been thought out in advance.

Other plans were unrealistic or wanting in completeness and were potentially harmful to the program. For example, the memorandum announcing the commencement of the class/discussion component came out at the end of July, which was later than intended. Yet the classes did not start on a fairly regular basis until almost two months later. Another memo, which went out in October to supplant the one in July, announced again the class/discussions. It was a very incomplete follow-up. Where the first memo clearly defined the program, the second one implied that the program had become much less comprehensive and structured. This was very poor publicity. The program plans

should have been clearly restated after such a long delay.

Delineation of program, developmental, and educational objectives was another planning problem. Program objectives, spelling out what the program hoped to accomplish, were set before the program development started, as were developmental objectives which gave proposed time frames for the major program objectives. These types of objectives can provide valuable guidance, but in the present case, they proved unrealistic with the resources available. The decision to proceed with the development of the inpatient education component, as stated in the developmental objectives, placed a great resource drain upon the diabetes clinic which the author feels contributed to its problems. The groundwork required for developing the inpatient component used a large amount of the nurse-educator's and the author's time for patient education. Thus, less time was spent on the outpatient component. Lastly, the development of part of the educational objectives, the knowledge objectives, illustrate the problems in planning. Knowledge objectives are learning objectives and state what information the patient must know. They are obviously very important with respect to planning a program. No doubt, at the beginning of the project there was some idea of what information patients needed to know. However, it was not until the beginning of August 1973 that the development of a systematic, ordered set of knowledge objectives was started. Once developed, they provided structure and organization
for the development of the assessment questionnaire, patient hand-out materials and the program curriculum. What is significant here is the delay of almost one-half year in the development of these objectives.

Attitudinal and Behavioral Objectives

Besides knowledge objectives, educational objectives can be said to consist of attitudinal and behavioral objectives. Attitudinal objectives state which attitudes the patient should assume in order to deal properly with his condition. Behavioral objectives identify which behaviors the patient must practice for favorable maintenance of his condition. Neither of these were formally developed. They were assumed, as were the knowledge objectives, for much of the program. Some examples of attitudinal objectives which might be desirable to include are:

1. The patient should accept his condition as "part of life" without continuing to feel "singled out".
2. The patient should want to live a normal life and have the confidence that he can do so.
3. The patient should be willing to adjust his lifestyle to do this.

Examples of behavioral objectives are:

1. The patient will keep appointments and in touch with his doctor, clinic, or hospital.
2. The patient will stick to his prescribed diet, medication, and exercise regimens.
3. The patient will keep records and notes concerning his condition.
These kinds of objectives are more intangible than knowledge objectives. However, the socio-economic status and all the concomitant problems of the type of patient frequently seen in this program make their achievement very important as a prerequisite to achieving knowledge objectives. In order for this to occur, the patient's unique situation must be gleaned, including attitudes and beliefs. Then support must be given to help the patient change old attitudes and accept new ones. This support is to be found in the ancillary departments of social service, occupational therapy, and public health nursing, as well as mental health. To this same end, Spanish speaking, bi­ilingual health personnel and translations of materials to Spanish are badly needed.

The ESU staff was aware of the importance of these objectives, and though they were not formally composed, meeting them was a high priority. However, the depletion and internal unrest of some of the support services, coupled with the limited staff and time availability of the ESU, created a situation that was, at best, a poor compro­mise for achieving them. Very little time was spent with patients who needed counseling and get-started services before they could begin to be responsible for helping to care for their own condition. There were no permanent or readily accessible translators. No one on the ESU staff was fluent in Spanish. In the diabetes clinic, one bi­ilingual public health nurse was available weekly for the
first few months of its operation. This was a side benefit though, for she was not there as a translator. When she left for another assignment, she was not replaced. The program did not progress far enough to develop a system of volunteer translators for the clinic or for the translation of written materials into Spanish.

Knowledge Assessment Questionnaire

The assessment questionnaire developed from the structure of the knowledge objectives was felt to be clear, comprehensive, and useful in a variety of orientations, an important asset to a program so subject to change. Although the instrument may have its advantages, it too merits some comment in regards to its structure and form as it relates to the socio-economic stratum of many of those it was designed to be administered to, along with the resources available to the program. A moderately educated person can take the test easily by reading the printed directions. An illiterate person must have the test administered verbally. A person with little education, but who can read, can take the test, but the availability of assistance is very valuable in making it a more valid instrument. Some of the reasons for this follow.

1. Though the variety of question types may make the test more appealing to the respondent, they could also cause possible confusion.

2. It is important to have a complete knowledge assessment. This made the test somewhat lengthy which may affect adversely the
concentration and enthusiasm of the respondent.

3. Even though they were intended to be as simple as possible, vocabulary and syntax may be somewhat confusing for some respondents. Those having some familiarity may find it easier. It was felt that there were approximately 75 words which might be difficult for some to understand. Most are common words, but the education level of some may have caused them not to have been exposed.

4. The construction of some questions and their answer alternatives could be confusing. These include questions with the alternative "Both A and B" (for example, No. 7 in the test) questions with repeated alternatives (Nos. 6 & 7) or sets of alternatives (Nos. 26 & 33), questions with similar appearing alternatives (No. 9), and questions which, under certain circumstances could have more than one correct alternative.

Pelletier (1968) cited similar problems of test length, phrasing, and vocabulary in describing several hospital-based experimental programs in patient education in the Paris, France area. Young (1968) reported that Thrush and Lanese analyzed the readability levels of printed materials designed for use by diabetics. They sampled 21 hospitals across the country and found the level to be greater than ninth grade. They believed that if the reading level of the required material is above that of the patient, comprehension will be reduced, recall may become
sketchy, and motivation for further information is decreased.

Thus, the educational level of many patients made it desirable to thoroughly explain the test to the respondent prior to its administration and to encourage questions at any point necessary. This is where things broke down, due to the time availability of the staff. It is a time-consuming procedure to properly explain the test, be available for questions and clarification, correct and analyze the results, discuss them with the patient, and write an educational prescription or recommendation. In the clinic, which provided three to four hours of time for an average of eight patients, it was impossible for the nurse-educator and the author to properly assess more than one or two new patients and still provide any kind of educational input for the rest. This situation improved in the inpatient setting and in the class/discussion setting, but the program did not advance far enough to bring the assessment questionnaire into full and correct usage.

Diet Component

Another problem of the program was that there was not a strong dietary component. In the clinic setting, the two Hospital dieticians made visits as part of the clinic team, as needed, and if they were able. A filmstrip on diet was shown also. The dieticians were very pressed for time with their other duties of preparing menus for the general inpatient population. In this capacity, they saw
diabetic inpatients. This early pattern made the diet the responsibility of the dieticians, as did the fact that the ESU was not able to do much work on developing materials related to diet. Hence, written objectives or rigorous evaluation techniques were not developed with regard to diet. One significant accomplishment of the dieticians though was the development of a diabetic menu which was very comprehensive, was translated into Spanish, and amended to include much of the typical Mexican-American diet. The switch to the class/discussion setting provided some impetus for the development of a diet class to go along with the rest of the program. In this way, more people could be reached at once. At the end of this author's involvement in Ventura, the dieticians were in the process of developing the diet component and had given one class, which was well received by the patient attending.

Switch in Program Orientation

The decision to make a change in the basic program orientation, switching from the separate in- and outpatient components, was based on several considerations. In late March 1973, development of the inpatient component of education was begun. The stage was reached where development of a detailed training manual for the nursing staff and training the staff could be undertaken while initiating trial stages of nursing participation in diabetic teaching. Contacts and arrangements had been made to set the stage
for operation. However, it became increasingly evident that the situation of the nursing staff was such that it would not be able to assume the additional responsibilities of learning, adapting to, and participating in a new program on a large scale. The nursing administration was involved in a reorganization of the staff, and there was general dissatisfaction among the staff. In fact, a strike was threatened by the end of June.

In addition, by mid-June, the outpatient clinic component of education had serious problems:

1. The clinic operated with a regular physician and a resident who spent four weeks at the clinic. This meant only four visits since the clinic was held once a week. These residents did not have time to familiarize themselves with the procedures of the clinic. This resulted in less efficient use of the services of the team because extra time was required to show the residents what was occurring in the clinic as well as explaining the educational program and convincing them of its value. Because the time of the team was at a premium already, this simply added more strain. An information sheet from the director of Resident Education, explaining the clinic to them and reminding them of the value of patient education, would have been valuable. Such a hand-out was prepared by the ESU, but it was not distributed by the Resident Education director.

2. The team was faltering and having difficulty remaining as a unit. The contributing factors
to this were the upcoming departure and
accompanying decreased participation of the
clinic physician, under whose guidance the
weekly team meetings had continued to be held,
the problems in the social service department,
and the depletion of the public health nursing
staff. Also, the ESU time availability problem
was significant with regard to time for coordi­
inating the team. The extremely busy schedule
of the new clinic physician prevented him
from providing the guidance of the first
physician.

3. The nurse-educator was unable to provide the
time necessary for thorough execution of
assessments, instruction, and other related
duties such as preparing residents and co­
ordinating the team as mentioned above. Much
of the problem of time availability could be
accounted for, as mentioned previously, by
the decision in March 1973 to start on the in­
patient component. The developmental stages
of this took up much of the time that the
nurse-educator and the author had allocated
for patient education. This time could have
been used in the clinic or in preparing for it.

4. The three to four weekly clinic hours, with
only spot periods for education, provided too
little time for the patient to be dealt with
thoroughly. In addition, the education was
done, for the most part, while the patient was
in a waiting mode and probably thinking about
what was coming next, such as the blood test
or the doctor, rather than about what he was
being taught.
The considerations of the problems with the separate outpatient and inpatient components yielded a plan which was hoped would provide relief for the nurse-educator from trying to run both programs at once. More pure education time for patients would be created with a group situation for in- and outpatients run as class/discussion sessions. Nursing staff would have some involvement as previously with teaching insulin injection and urine testing technique. The group teach-orientation has some advantages over one-to-one teaching. One problem found with one-to-one teaching is that there is not enough time to reach a significant number of patients (Nickerson, D. 1972). Different communities have found group classes to be useful in providing reinforced patient education. In addition, patients are offered the opportunity to share common problems with other diabetics while the bringing together of patients and their families provides for more efficient use of scarce professional time (Krysan 1965). D. Nickerson (1972) found, in a comparison of group versus individual instruction, that group-instructed patients had a higher increase in correct answers to a post education exam. This comparison was run with randomized controls.

On the other hand, a new orientation involved a time consuming developmental process. During this period of about six weeks, there was little time for education because of the nurse-educator's involvement in meetings and development of the procedures for the new component.
During this developmental phase, and as the first classes were held, the non-patient education burdens on the nurse-educator became increasingly greater, and even less of her time could be devoted to the program. The author's involvement was nearing its end, which meant still less time for the program. With this in mind, the nurse-educator again began looking to the nursing staff to start playing a greater role in the program. To this end she developed the first materials specifically for the nursing staff. There were a teaching guide and checklist, both of which are coordinated with the objectives and enables the nurse to identify herself and check off what the patient demonstrates he knows.

Evaluation

Systematic, ongoing evaluation is one of the most important components of patient education programs. The Task Force on Patient Education for the President's Committee on Health Education (Metropolitan Life Insurance Co. 1972) has listed several reasons for this:

- to establish the scientific validity of the educational component, to determine a cost-benefit relationship, and to attain acceptance of patient education concepts in hospitals and other health care facilities.

Unfortunately, evaluation has also been one of the most overlooked components of patient education programs. A review of over 450 articles, written from 1950 through 1967 describing patient education programs, found this to be
generally true. Evaluation that was conducted consisted mainly of subjective staff evaluation and patient questionnaires. None linked educational services with illness recurrence and readmission rates (McNulty 1969). Two major reasons for this were: (1) most programs were preoccupied with implementation, letting the relation between planning and evaluation deteriorate (Green and Figa-Talamanca 1974); and (2) funding was not available for such evaluation.

Those studies that have conducted fairly thorough evaluation have usually been well supported. Examples of such studies are the evaluatory study of a patient education program for congestive heart failure patients by the New Jersey State Department of Health, 1964 to 1966 (Rosenberg 1971); and the evaluation component of an experimental diabetes education program in four clinics testing the value of automated teaching machines (McDonald and Kaufman 1963).

Evaluation of the program under discussion was particularly difficult because the above reasons were in operation to their fullest degree. The evaluation phase was, however, well conceptualized on an ongoing basis. The first ideas were that evaluation of patient programs would be based on the level of control achieved by patients before and after the program, as well as their response on a test given after completion of the program. This was expanded later when the educational knowledge objectives were developed and the assessment questionnaire was revised.
to match the objectives. With this match, a patient's achievement could be evaluated on any objective or set of them using the questionnaire as a post test. The concept of diabetic control was elaborated upon to include the criteria under which the level of control could be measured and assessed, such as Fasting Blood Sugar; Post Prandial Blood Sugar; Glucose Tolerance; Urinalysis; self urine testing; hospital readmission rates and lengths of stay; and condition of diabetes damage prone areas such as kidneys, nervous system, eyes, feet, and skin. Other means of evaluation envisioned were: measurements and assessments of patient knowledge and attitudes via their responses in discussions with instructors and other patients; assessments of skill and behavior adaptation in self-care skills; and observation of habits as practiced in and at the hospital and at home. In addition, evaluation of the staff by other staff, patients, and knowledge and attitude questionnaires, as well as evaluation of the program by staff and patient opinion questionnaires were still other types foreseen.

In practice, very little evaluation was carried out. What was done was, at best, fragmented. This consisted of a count in August 1973 of the number of patients seen and educated at the clinic and as inpatients, and a count of the Spanish-speaking-only patients who had been through the clinic since January 1973. This study had to rely on data from the Hospital records for the first part of its
information. This was necessitated because logs or records were not kept by ESU on many of the first patients seen in the clinic. Though forms were developed, complete documentation by the ESU on patients was not kept. The files for most patients had simply their assessment exams, one or two sentences of what had been done, and maybe one or two more sentences of general impressions of the patient's status. In most cases, detailed summaries were impossible because not enough time was spent on the patient to write them, and little time was available to do so. In addition, the program was so fragmented by changing policies and staff with different skills and methods, as well as patient mobility, that very little in the way of results could be obtained.

Many times, meaningful evaluation is possible only after a program is fairly well established and after enough time has passed for observations to be taken. Care must be taken in the design of evaluation to provide adequate controls that take into account the influence of extraneous history, patient maturation, and the effects of pretesting.

A typical design for before and after evaluation can be depicted by \( O_1 X O_2 \), where \( O_1 \) and \( O_2 \) are observations collected at times 1 and 2, and \( X \) represents the experimental educational input. This design does not exclude rival hypotheses to explain changes in the observations. An example might be in a program where some of the patients may have seen a television special on diabetes between \( X \).
and $O_2$. This could be controlled for with the design

$$O_1 \times O_2.$$ Here, one group receives no educational input,

$$O_3 \quad O_4$$

and differences due to extraneous history can be measured. An added group, given $X$ and then $O_5$ at the time of $O_2$ and $O_4$, could control for pretest effects, and a group given only $O_6$ at the time of $O_2$, $O_4$, and $O_5$ could control for maturation. This design can be made stronger yet by randomizing the selection of subjects for the experimental and control groups. Another consideration is that in using measures of chemical control to evaluate the effects of educational input, the statistics would need to be monitored for a time before and after the input. Seasonal variations are extraneous factors to watch for in a study of this type. Finally, those groups not receiving the educational input can be given it after the last experimental observations have been completed. The foregoing is summarized from a contribution by Lawrence W. Green and Irene Figá-Talamanca (1974).

Other, more subtle, subjective evaluations which can help to determine what factors operate in changing patient attitudes and behaviors can be done only with comprehensive summaries of contacts with patients.

CONTINUING AND FUTURE STATUS OF THE PROGRAM

Since the conclusion of the author's involvement in Ventura in November 1973, the entire ESU staff has turned
over. The priorities of the Hospital have apparently moved further yet from patient education. During an interview with the nurse-educator now in charge of patient education, she indicated that she had run into resistance in the administration and general apathy elsewhere in the Hospital concerning patient education. The result of this, for the time being, is that patient education has returned to what it was about four years ago. Much of the development for a comprehensive program has been done, and plans and materials await provisions to be made for their use.

The question can be asked at this point: How can the program have some success in the near future with the limited resources available to it? First, the active recruitment of support must be practiced, if only to reach some level of enthusiasm. As much as possible, recruitment of support should continue to be pursued at all levels; government, community, agency, and staff. Any hint of interest, enthusiasm, or assistance should be cultivated. The relations with relevant parties should be consistent and open. Program components should be planned realistically without being over-zealous and considering as many influential factors as possible. There is nothing wrong in this situation with moving slowly as long as progress of some sort is being made. As any opportunity for improvement or growth presents itself, it should be immediately taken if it will benefit the program. Documentation and record keeping should be regarded as very important.
activities for future guidance and evaluatory purposes. Patients should be treated thoroughly, including follow-up. This may mean taking fewer patients to work with than the number that could actually benefit; however, with the available resources and the idea of reaching the goal of providing quality service, taking more may not be possible.

The philosophy advanced here is that something done in a thorough manner is more likely to be impressive than if done haphazardly on a larger scale. Results may not be impressive, quantitatively, in this situation. However, the potential for high quality results is present. Significant increases in the patients' desire and ability to accept greater responsibilities in caring for their condition can be achieved, thus resulting in better health and savings on medical care. With the type of low-income patients frequently seen in this sort of situation, good results are even more dramatic than with higher income patients. It is probable that none of this will be able to occur very rapidly and for this reason, patience is very important. Also, it is important to achieve some progress, even though small, with which to justify the program's continuity and, hopefully, its future expansion to cover all needy patients.

SUMMARY

A variety of problems as well as strengths of the program have been discussed. A major influential factor was
the lack of priorities and support for patient education by powerful and influential groups and individuals. Causes for this main deficiency need to be discovered. The declining economic situation may have been a key factor. In a more stable economy, a patient education program may have received adequate fiscal support.

Another major problem, occurring from the beginning, appeared to be the staffing deficiency and priority conflicts for patient education of the ESU. These problems seemed to be the basis for most of the others discussed, either directly or indirectly. A chart is presented in Appendix J which suggests what these cause and effect relationships were. It can be seen that these were highly interactive and combined to greatly hinder the program.

A series of vicious circles can be envisioned involving the program. At a time when the prevailing economic situation makes it unusually difficult to secure support, a county general hospital suffers a double blow because its patient load and demand for services increases as more people are affected economically and are forced to rely on government provided services. This pressure, in turn, adversely affects any program, such as patient education, which is not considered a necessity by the administration. Staff attitude may also be affected. The product can easily be a patient education program yielding poor results. How can these be used to satisfy the requirement of some
positive indications for justification when requesting support for a program? This situation is similar to Joseph Heller's "Catch-22" (1955, p. 47).

Another way to indicate the significance of these major deficiency factors to the success of a program is to examine some other programs and program components, both successful and not, along with certain ideas about health education and management, operative within them or foreseen for future programs.

A LOOK AT SOME OTHER PATIENT EDUCATION PROGRAMS

Value of Patient Education

Patient education is the means by which the consumer may be brought into full participation in his own health care. It tempts to close the gap between what is known about optimum health practice and what is actually practiced. Its targets are those individuals who lack adequate knowledge and those who possess it but do not practice recommended health behavior (Griffiths 1972). This last group has fallen into what Kogan (1970, p. 48) refers to as the "behavioral gap". The concern of patient education lies with individuals, families, institutions, and social conditions that facilitate or impede other individuals toward or from achieving optimum health (Griffiths 1972). Just by being present in a medical or health setting, the patient learns something about his condition. However, a systematic approach to the patient and
his family can help assure that the patient gains correct acceptance and understanding and can follow through on prescribed care for himself. Otherwise, much valuable health knowledge is wasted. This acceptance and understanding must include the following:

1. The patient must know where, when, how, and from whom to seek care.
2. He must recognize early signs and symptoms.
3. He must have an idea of what good care consists of.
4. He must understand what is told to him, including why some things are prescribed, forbidden, or allowed.
5. Most important, he must be willing to seek attention and follow medical advice. (Haynes 1962).

Chronic conditions, especially, require the patient to understand and accept medical advice. This is largely a problem of education. Patients who are provided an explanation of etiologies, prognoses, and the purpose of tests and treatments can participate more effectively in discussions with physicians and are more likely to accept the physician's formulation of the condition and plans for treatment than those who have not (Simmonds 1963, p. 36).

Value of the Hospital

The hospital, as a base for health education, has many advantages for patients, health professionals, and the community. Health education can bring about an awareness of people's interactions and administrative skills to
organize the hospital's educational potential (Mico 1962). It is a good place for the inpatient to be educated. In the early stages of an illness, a patient is likely to be in a stage of tension associated with the illness (Simmonds 1963, p. 37). He has had to recognize the illness and may, therefore, be more ready psychologically for education than in the community where he has not had to do so (Mebs 1963). In addition, the hospital can interpret health education needs to the community and can be the source of reference to many agencies for assistance in health education. In this way, the hospital serves as a focal point for health education (Mebs 1963). In 1970, the American Hospital Association registered 7,123 hospitals, serving 31,759,124 inpatients and reporting 133,545,000 outpatients. Obviously, the hospital has great potential as a vital educational force in the community (Metropolitan Life Insurance Co. 1972).

The Team Approach

The role of teaching the patient has traditionally been delegated to the physician. Now, with progress in scientific medicine, the relationship between the patient and physician is not as close (Mebs 1963). The training of physicians also emphasizes treatment of acute cases where there is more exciting action (Etzwiler 1972). Moreover, many doctors are not interested in chronic conditions (Painton 1969). The hospital, on the other hand,
has become a total treatment center. Almost all who provide some medical care can be called upon, at times, to provide some of what the patient needs to know (Mebs 1963). To increase manpower and lower costs of health care, numerous efforts are being directed toward the development of new allied health personnel. Lastly, the hospital presents one other outstanding attribute as an educational center. It can bring to bear, upon the patient, the services of a variety of allied health personnel to provide a positive environment and relationship needed to motivate the patient to begin to be responsible for understanding and managing his condition because of the multi-disciplinary approach it offers. First, many different types of health workers are in contact with the patient and thus, the chances of establishing open communication links are increased. Variations in the personalities of instructors is valuable. One instructor may be successful, while another cannot reach the patient at all (Ulrich and Keliey 1972). Finding out individual needs of patients is a very important part of the educational process which is also amenable to the team concept. Since the newly hospitalized patient is frequently under some tension, perception may be somewhat narrowed, and the same piece of information should be given in several different ways (Simmonds 1963, p. 37). The nursing staff, being in constant contact with the patient, has the opportunity to contribute heavily. Chances of building rapport are high
and phases of patient care are natural times for instruction because the patient is likely to be interested. Problems of staff continuity are markedly reduced. One staff member can often take over for another in case of absence or departure. The opportunity also exists to repeat information for reinforcement (Ulrich and Kelley 1972). In addition, the team concept tends to encourage comprehensive care, including follow-up, so that the patient is followed as an outpatient and continues his education as necessary. This can include expansion of the program and team to surrounding clinics and other interested organizations by providing them with packages describing the program, its function, and how to go about setting it up. The staff types making up the team might include the physician, nursing staff, dieticians, social workers, physical therapists, occupational therapists, and public health nurses, as well as the health educator.

The concepts of social class, culture, and individuality become very important at this point. Samora et al. isolated some of the factors associated with observed differences of levels of understanding among inpatients in a public general hospital (Young 1968, p. 36). They concluded that the probability of misunderstanding is increased in patients with little formal education and of low socio-economic class. While poverty increases health risks to a marked degree, it also slaps its victims on the
other cheek by creating barriers to teaching good health habits. Poverty-ridden people are generally apathetic about health because they face overwhelming problems of food, shelter, and clothing (Griffiths 1972). This is in accordance with the opinions of Maslow (1954), who suggested that man follows a hierarchy of needs in his patterns of striving. The first are physiological in nature, such as food, water, sex, shelter and clothing. The needs eventually lead to the desires for belongingness, love, esteem and, what Maslow called, man's highest and most difficult-to-reach stage of self-actualization or creative development. Somewhere in between are health needs and wants which are above food and shelter but below love, esteem, and self-actualization. Thinking of an individual's life in this way dramatically illustrates the terrible burdens of poverty. Ethnic minorities have, many times, found difficulties in health settings because of the lack of understanding of cultural differences by health workers. These differences are often greatest between the physician and patient. Knutson (1965, p. 49) presented an interesting example of socio-cultural influence on health:

The Indian mother who insists that the newly severed umbilical cord of the infant be wrapped in cow dung, or dares not boil the sacred water of the Ganges [river] lest some ancestral life be threatened, is led through cultural pressures, unrecognized, to threaten the very life of her infant. Yet her behavior is no less consistent with the values of her culture than that of the midwestern farmer who takes pride in the health of his children and rejects the idea of their
going for regular physical examinations or X-rays, since to do so suggests weakness in the family. Such behavior is not in accord with his measure of good health as expressed by his boast, 'We come from good stock; I have never been to a doctor in my life.'

In addition, Knutson (1965, p. 55) pointed out that to appreciate the significance of the uniqueness of the individual, it must be recognized that a person's health is one of the most intimate aspects of his personality, so intimate that he may have difficulty communicating with anyone about it, including himself. It is important that these factors are not overlooked, but dealt with as a highly significant component of the patient's condition. The opportunities afforded by the team approach just discussed can be seized upon to do so.

Role of the Health Education Specialist

The role of the educational specialist in a hospital-based patient education program has the potential to be one of great responsibility when combined with the team approach. The importance of a competent health education specialist was emphasized by Knutson (1965, p. 375), who stated:

The characteristic stubbornness in man in reacting to unwanted pressures, together with the infinite variability of his response patterns poses problems that require the effective educator to be artful or professional in his approach, constantly adapting his technique to the unique requirements of the situation.

To be really effective, he must have a thorough understanding that values, attitudes, and beliefs have a
pervading motivational influence over man's behavior. Spicer (Knutson 1965, p. 389) observed that people will not vary their customary behavior unless they feel a need which existing ways do not satisfy. Response to this feeling is behavioral change, which is what the health educator seeks to accomplish. Therefore, he must be able to arouse the interest or curiosity which will lead to the perception of the need for behavioral change.

The Task Force on Patient Education for the President's Committee on Health Education (Metropolitan Life Insurance Co. 1972) suggested the duties of the complete health education specialist to be: (1) organize, develop, and implement programs of patient education; (2) mobilize health resources for this; and (3) coordinate teamwork. This complements the idea of the health education department as the health education coordination unit from which the educational specialist works. In this orientation, the educational specialist acts as the focal point of the multi-disciplinary team developing programs for patients and coordinating and educating the staff in areas such as human relations, program administration, the team approach, leadership, development, problem solving, decision making, consultive techniques, communications skills, educational theory, and behavior (American Public Health Association 1970). Team members need to understand various cultural differences, how they affect patient management, and how to go about reaching and teaching patients.
However, the role of the health educator in the past has been one of community organization and preparing materials. There has been little identification as an associate of the physician and nurse in teaching patients (Haynes 1962). Some hospitals have experimented with nurse-educators whose nursing background includes some teaching experience. They give instruction in some areas of special need, such as diabetes diet and insulin injection and colostomy care. Though the instruction is valuable, there are heavy limitations to delegating all patient instruction to one individual. This probably limits a patient's instruction to one or two interviews and, therefore, it cannot be incorporated into a daily routine. If the nurse-educator is not at work, education ceases. This orientation does not make use of the available resources of the hospital for education (Ulrich and Kelley 1972).

Evidence for Hospital-Based, Team Oriented Education

There is mounting evidence for these assertions as to the benefit of patient education in hospitals. When the physician does not have, or does not make time for teaching the patient and relies on last minute improvisations, omissions and contradictions can and do occur. This may result in inappropriate medications being used, needless phoning, broken appointments, and ineffective compliance. Patients who are readmitted, or who have longer recoveries...
due to lack of understanding or self-care, have been ineffectively treated (Metropolitan Life Insurance Co. 1972). In his studies of patient application of medical advice, Davis (1966) found greater than 30% non-compliance in 80% of the studies and greater than 50% non-compliance in 33% of them. In some, there was greater than 93% non-compliance. He stated that part of this was due to weak educational practices. The patient is often given no chance to indicate if he understands the medical advice. The doctor may not always direct the education at the right person. For example, a patient is put on a special diet and instructed about it. His wife, however, does the cooking but receives no instruction. In contrast, a New Jersey State Department of Health study (Rosenberg 1971) showed that for 50 patients with congestive heart failure, increased patient knowledge of the disease, medications, and diet, as well as adherence to prescribed regimens resulted in significant reductions in readmission rates and total readmission days compared against their previous experiences and those of a control group. The experimental group was cared for by an educationally oriented multi-disciplinary team, while the control group was given uncoordinated treatment with similar medical and nursing care. These patients were interviewed for social and demographic data, along with knowledge of congestive heart failure, diet and medications. Repeat interviews were
scheduled at six month intervals to determine knowledge and attitude changes. Home visits by public health nurses and social workers were made routinely at the convenience of the patient. These visits were more intensified than with the control group. Home situations were better understood and the social workers and public health nurses kept in close contact with inservice staff during the patients' stay. Assessment of the effect of the program was measured by change in patient knowledge, degree of adherence to diet and medical regimen, observations of social functioning, and comparisons of hospital readmissions at one year.

The team program at the Miller Hospital Division of United Hospitals in St. Paul, Minnesota worked out of a department of health education which coordinated all health education programs. It was headed by an RN with a degree in health education. Another RN, a dietician, a pharmacist, and an occupational therapist worked out of the department, acting as consultive resources to inpatient hospital staff, as well as teaching outpatients and their families. In this program, education was initiated by the physician as an educational authorization that is part of a new diabetic's chart. A station nurse assessed the patient for knowledge and attitudes. The ward clerk and the health educator scheduled a patient planning conference of the health educator, the station nurse, the occupational therapist, the pharmacist, a
dietician, a social worker, the patient or a family member, and the physician. Learning goals were set and teaching assignments made. The planning sheet went onto the chart permanently. Each team member wrote comments and observations on a program sheet. Before discharge, a final evaluation was written and given to the physician as well as put on the chart. The patient could return as an outpatient as needed or be scheduled for public health nursing or Visiting Nursing Association home visits. Patients expressed appreciation and enthusiasm and there was much physician participation. This program began under a grant from the RMP, administered by the Diabetes Education Center of Minneapolis (Ulrich and Keliey 1972).

In another setting, the patient education program at Joslin Diabetes Foundation in Boston has shown that patients going through it had fewer admissions for acidosis than before the program. In addition, the cost of educating the patient was half of that for an admission and related procedures for an acidosis episode (Nickerson, H. 1972).

The diabetes education program of St. Francis Hospital in Peoria, Illinois centered around a team approach coupled with a teaching machine (Meadows 1969). The team provided personal support and reinforcement, in addition to reaching those patients not able to use the machine. Patients were impressed by the number of different individual contributors to their education. Physician
acceptance and enthusiasm was demonstrated by frequent orders for education and the statement by some physicians that completion of the program was a criterion to consider when determining if the patient was ready for release.

Still another previously mentioned study showed a high degree of success by using teaching machines (McDonald and Kaufman 1963). Diabetes patients were given a program of diabetic education via automated machines. The program included sections on: (1) general information such as occurrence, definitions, symptoms, diagnosis, and treatment; (2) diet; (3) medications and usage; (4) exercise; (5) urine testing; (6) hygiene; and (7) complications. The program required the student to make frequent responses while it continually informed him whether his answers were correct. In this way, the student could participate in his education and progress at his own rate. At the end of each section, there was a quiz to test learning. The teaching machine was durable, portable, easy to schedule, and could be used in a variety of settings in and out of the hospital. No student delays others. One hundred eighty-four randomized diabetic patients from four clinics received the program, and 106 completed all evaluation procedures. All age groups, socio-economic classes and educational levels were represented. Before and after the program, each patient was given a diabetic information quiz, an I.Q. estimation test, and a test to determine reading grade level. The
average completion time for the program was one and one-half to two hours. Seventy-seven per cent acquired some new learning and one-half of those showing no learning were from a clinic known for its outstanding program. These people also had higher pre-test scores than the others. Most patients thought they got new information from the program. There was no relation between learning increment and age, intelligence, or reading skill. The machine was also tested by 20 health professionals and 38 other non-diabetics. All showed improvement in knowledge and most thought the machine was beneficial. The machine allows more free professional time of physicians, nurses, dieticians, and other involved staff for matters not amenable to machines, such as assessing mental blocks and clarifying misunderstandings (Krysan 1965). It is not meant to replace the human teacher but to augment and provide instruction where none exists. Barriers to its use are insufficient reading ability, poor vision and other physical handicaps. Volunteers may be able to help in these situations (Meadows 1969).

Lastly, two other multi-disciplinary team teaching programs for diabetics, one at the Millard Fillmore Hospital in Buffalo, New York (Painton 1969), and one at the Passaic General Hospital in New Jersey (Ehernfeld 1969) have had marked success. These were measured by strong patient appreciation and enthusiasm for personal
attention and by physician acceptance and participation in the program.

Besides the benefits to patients, health professionals and the community, health education programs can become a significant influence on the general economy (Metropolitan Life Insurance Co. 1972). Etzwiler (1972) has stated that he feels economic pressure will soon cause patient education to be acclaimed for its importance. The increased demand for pre-paid care stimulates health providers to keep patients well and out of the hospital. For preventative care to be effectively practiced, the patient must be well informed. In recognizing the benefits offered by patient education programs, the Task Force on Patient Education for the President's Committee on Health Education has made some recommendations for developing patient education programs to their full potential (Metropolitan Life Insurance Co. 1972). Among these are:

1. Hospitals and health professionals (a) accept that the patient has the right to know the status of his health, the nature of his problem, resources available to him and his family, and what to do, if anything to prevent future recurrence and (b) encourage patients to take a role in their own care and make it possible to do so by providing an education center within the hospital for the establishment of staff and patient programs.

2. All organizations doing patient education do systematic evaluation and research to
(a) establish scientific validity, (b) determine a cost-benefit relationship, and (c) attain acceptance of patient education concepts in hospitals and other health care facilities.

3. Private and government agencies including third party payers should fund demonstration projects.

4. Health organizations and professionals, volunteer and federal agencies, and third party payers should collaborate in the promotion of patient education.

5. Third party payers should reimburse health care facilities for patient education programs.

Lesparre (1970) reported that Reader pointed out the primary interest third party payers such as Blue Cross, other insurance companies and the government have in testing whether health education can move people through the system more rapidly and keep them well longer.

There is no doubt as to the advancement of patient education in the past two decades. Hospitals are surely, but slowly assuming formal responsibility for programs. Other evidence has been the increased number of meetings and publicity on the subject as well as the concern of the federal government, the American Hospital Association, the American Medical Association, the American Public Health Association, the Blue Cross Association, the Health Insurance Council, and volunteer health agencies (Lesparre 1970).
Resistance

Despite these advances, along with the evidence for and logicity of patient education, there is still much resistance. Educationally, the patient has traditionally been left at the hospital door. Most health education has been in health promotion and prevention of disease, ignoring the situation where illness has commenced or recovery is underway. Unfortunately, many agencies have maintained that health services should be divided into two parts, preventative and curative (Simmonds 1963, p. 32). Public health educators are usually employed by the county health department. These ideas and practices serve to separate preventative and medical care. Ulrich and Kelley (1972) stated that health systems are illness systems. The system waits until people are sick and then gives expensive, expert medical care only for the patients to be discharged to return again. Hopefully, the move by some communities to consolidate health services so that the public health program includes emergency medical services, the county hospital, outpatient care, and public assistance as well as the public health and mental health departments will catch on. According to one survey, less than 15% of hospitals have some planned patient education program (American Hospital Association 1972). Health insurance companies and the federal government have been very slow to fund patient education grant requests. There is a
resistance on the part of hospitals to allocate staff and a budget for these services. A study of 26 hospitals in the Minneapolis-St. Paul area, which profess to educate their patients, showed that only 12 had a specific health education staff member, and only three had budgetary allocations for such activity (Etzwiler 1972). Most programs that have been judged successful according to some evaluatory criteria have been funded either by the hospital or outside sources.

A program in Newark, New Jersey (Fiori, de la Vega and Vaccaro 1974) which was budgeted had to wait 18 months for the funds. The annual budget was 20,000 dollars, without counting non-health education staff time. Even with funding and staff allocations, the program ran into problems similar to those observed in this project. After three years, the Newark project requested refunding for an additional three years. The main reason for this was the inadequate medical staff involvement. Desirable attitude and behavior change by physicians has not yet occurred. Most health education efforts had been the work of the health educator rather than the combined work of a variety of disciplines. In a survey (American Hospital Association 1972), the attitude of medical staff was cited as a hindrance to the development of a patient education program by almost 50% of the responding hospitals with no such program. Pelletier (1968) reported, in his description of hospital-based health education experiments at
several hospitals in the Paris, France area, that a main problem was that the staff was not convinced of the usefulness of health education. Therefore, active cooperation of doctors was not obtained and education was not integrated into the hospital routine. Pelletier also made the important observation that patients became more interested in their condition when physicians were around, demonstrating how crucial their support is because of the way they are perceived by many patients.

The next three years of the project in New Jersey produced more problems, some of which were again similar to those incurred in Ventura. A five month lapse in patient education activities occurred because of changes in the health education staff. This, combined with a major turnover in managerial personnel, created a situation in which no one group was present that had familiarity with the project. This necessitated development of new working relationships. The hospital had also pledged to take over much of the financial responsibility for the project. However, pressing financial, organizational, and community problems directed the attentions and energies of key people away from it. In addition, the budget allocation did not allow for a large enough sampling and time involvement to do cost-benefit evaluation with reduced admission rates and such. The course of this project is an excellent illustration of the importance of time and patience in developing a program.
Another problem for the New Jersey project was in finding a qualified health educator with sufficient knowledge and experience. This problem seems to be a major barrier to patient education programs. In 1972, a special questionnaire concerning patient education programs was administered to the 890 member National Hospital Panel Survey (American Hospital Association 1972). Data from the survey was projected to estimate national totals. The data showed that the non-availability of trained educational personnel was the main reason that 60% of hospitals without programs did not have them. De la Vega (1966) stated that employment of trained and qualified health educators has been limited for the most part to demonstration projects. Some of the other recommendations of the Task Force on Patient Education for the President's Committee on Health Education (Metropolitan Life Insurance Co. 1972) were aimed at providing programs with qualified educational specialists prepared in physical and social-psychological services and having expertise in educational methodology and evaluation. These included the encouragement of schools training health educators to provide adequate preparation in principles of teaching, learning, and evaluation as well as adequate field experience. The present author offers some suggestions at this point from his recent scholastic experience.

First, future health educators should be encouraged, early in their training, to become fluent in one of the
foreign languages spoken commonly in various areas of the United States. In addition, preparatory institutions should endeavor to place students in as much practical field work as they can handle during their training. Field experience is invaluable in providing the student with real-world training. In return, students could serve as needed resources for the programs into which they are placed. Another suggestion offered by Fiori, de la Vega, and Vaccaro (1974) was that health educators can be shared in shortage areas or in areas with small hospitals.
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APPENDIX A

PATIENT PROGRESS SHEET
<table>
<thead>
<tr>
<th>DATE</th>
<th>DEPT. and NAME</th>
<th>NEEDS and PROBLEMS</th>
<th>PROGRESS OF PATIENT AND/OR FAMILY</th>
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GENERAL HOSPITAL VENTURA COUNTY

PROGRESS SHEET
EDUCATION
APPENDIX B

EDUCATIONAL PRESCRIPTION
EDUCATIONAL PRESCRIPTION

Doctor: We offer a program of education for diabetic inpatients, outpatients, and their families. Please use this form for referring patients and/or family members you feel may benefit from the program. If you have any questions or would like other information, call the Educational Services Unit, Ext. 3425.

PATIENT NAME RELATIVE(S)

(fill in) (fill in name and relationship)

Please check the desired types of instruction in the blanks below.

PAT. REL.

INDIVIDUAL INSTRUCTION

Instruction in diabetic diet. Number of calories (fill in)

Other diet modifications (fill in)

Instruction in insulin technique.

Instruction in urine testing technique. (please check)

Clinitest

Other (fill in)

GROUP INSTRUCTION

General diabetes information

Insulin information

Oral agents

Hypoglycemia

Hyperglycemia and acidosis

Urine testing

Good health habits (skin, feet, eyes, mouth)

Exercise

Special problems and occasions (trips, illnesses, etc.)

Diet

Other (fill in)

Signed ___________________________, M.D.

GENERAL HOSPITAL VENTURA COUNTY

EDUCATIONAL PRESCRIPTION
APPENDIX C

RECORD SHEET OF SERVICES OFFERED
APPENDIX D

PATIENT FACE SHEET
DIABETIC PATIENT INFORMATION
EDUCATIONAL SERVICES UNIT

Miss
Ms.
Mrs.

PAT. NAME Mr. ________________  LAST ________________  FIRST ________________  M.I. ________________

PAT. NUMBER_______________  PHONE ________________  BIRTHDATE Mo. Day Yr.

ADDRESS
No.  Street  Apt.  City  Zip

HT.____  WT.____  MAX. WT.____  MIN. ADULT WT.____

ONSET OF DIABETES ________________  HOW ESTABLISHED ________________
Mo. Yr.

URINE TESTING METHOD ________________  TESTS WHEN? ________________

RESULTS USUALLY OBTAINED ________________

PRESENT MEDICATIONS: DIABETIC ________________  OTHER ________________

PAST MEDICATIONS: DIABETIC ________________  OTHER ________________

REACTIONS TO MEDICATIONS ________________

List Type, Mo., and Yr.

ALLEGIES ________________

UNDERSTANDS MEDICATIONS? ________________

RECENT ILLNESSES ________________

List Illness, Mo. and Yr.

FAMILY INVOLVEMENT ________________

Relationship and What Done for Pat.

IN WHAT WAYS HAS DIABETES AFFECTED PATIENT'S LIFE? ________________

DIET ________________

BEING FOLLOWED? ________________

Type  No. of Cal.

PATIENT SATISFIED WITH DIET? ________________  WHO COOKS MEALS? ________________

PREVIOUS DIABETIC EDUCATION ________________

List Type, Where, Mo., and Yr.

PHYSICAL HANDICAPS ________________

ACCEPTANCE OF DISEASE ________________

EDUCATIONAL LEVEL ________________  RELIGION ________________

RESISTANCE TO CHANGE ________________  OCCUPATION ________________

ECONOMIC STATUS ________________

RACE/NATIONALITY ________________  LANGUAGE PROBLEMS ________________

TRANSPORTATION PROBLEMS ________________

HOUSING STATUS ________________  FAMILY PROBLEMS ________________

OTHER ________________
APPENDIX E

PROGRAM ANNOUNCEMENT MEMORANDUM
MEMORANDUM

TO: NURSING STAFF, ATTENDING STAFF, HOUSE STAFF, LABORATORY, RADIOLOGY, PHARMACY, AMBULATORY MEDICINE

FROM: ADMINISTRATION

SUBJECT: COMPREHENSIVE DIABETES EDUCATION PROGRAM

The attached program outline summarizes the objectives, policies, and procedures of the Comprehensive Diabetes Education Program which became effective as of July 16, 1973.

An instruction schedule has also been attached to specify the class session hours.

Any questions regarding the program should be referred to Educational Services.

J. AUSTIN DALY, M.D.
MEDICAL DIRECTOR
COMPREHENSIVE DIABETES EDUCATION PROGRAM

In an effort to provide physicians with a resource to assist them in the teaching of their diabetic patients, a comprehensive diabetes education program will be initiated at General Hospital Ventura County. The main objective will be to assist in the development of self care skills by providing a system to permit patients and their families to understand what their condition is, to learn regimens that are required for self care, and to demonstrate acceptable performance of necessary regimens.

Upon admission of all patients with a primary diagnosis of diabetes mellitus, the ward clerk will notify the Educational Services Unit. The educational needs of these patients will be assessed using a variety of methods including direct observations, interviews, and pretests. A dietary history will also be taken by the Dietary Service which will be notified of the patient's hospitalization by the Educational Services Unit. Findings, recommendations, and procedures of both services will be charted on the Doctor's Progress Notes. Physicians of non-county patients will be provided with an education prescription form on the front of the chart which they may use to order the specific components of diabetic education they desire according to the needs of their patients.

During hospitalization, individual instruction will be available by the Educational Specialist on urine testing technique, insulin mixture and withdrawal technique, and insulin injection technique. After the instruction has been done and the patient has satisfactorily demonstrated the techniques involved, the Educational Services Unit will contact the resident or private physician who may then authorize that the patient perform these procedures himself under supervision of the nursing staff for the duration of his hospitalization.

Other instruction will be given in a group/class discussion situation in the Third Floor Classroom by the Educational Services Unit. The classes will be open to outpatients, family members, staff, and the community as well as to inpatients. Please refer to the schedule available from the Educational Services Unit for times and types of instruction offered. Materials will include handouts for patients; displays of medicines, equipment, and supplies; demonstrations; and audiovisual aids. Further individual instruction will be given to patients by the Educational Services Unit, the Dietary Service, and by Public Health Nurses on an outpatient basis when necessary. Outpatients attending the GMC or Diabetic Clinic may continue their education if it was interrupted when they were released. Please check with the Educational Services Unit for changes in the schedule and instructional offerings.
APPENDIX F

EDUCATIONAL OBJECTIVES
EDUCATIONAL OBJECTIVES FOR DIABETIC PATIENT EDUCATION PROGRAM

These educational objectives are knowledge objectives. Their achievement should be taken to indicate understanding and recognition rather than rote memorization. One or more of the following behaviors will be taken as evidence of a patient's immediate achievement of a particular objective:
1) Correct answer(s) to pertinent item(s) on the Diabetes Questionnaire.
2) Correct practical demonstration of a procedure or technique to the floor nursing staff or patient educator.
3) Correct verbal response to the floor nursing staff, to the patient educator, or during a group/class discussion.

The first two behaviors because of their easier documentation will be most often cited rather than the third. Lastly, it is stressed that achievement of the objectives does not implicitly demonstrate acceptance and practice of the behaviors stated in them.

GENERAL KNOWLEDGE OF DIABETES
The patients should:
1) Know the general function of insulin in sugar (glucose) metabolism.
2) Know where in the body insulin is produced.
3) Know that in diabetes there is not enough insulin produced in the body or that it cannot be used.
4) Know that sugar eventually spills over into the urine when the concentration of it becomes too high in the blood and that this is responsible for frequent urination and thirst.
5) Know what good control is so important and the possible consequences of not maintaining good control including circulatory, kidney, and nerve problems.
6) Know that although diabetes cannot yet be cured, it can be controlled with a combination of proper diet, exercise, and medication.
7) Know that diabetes is not contagious but that it may be inherited.

INSULIN
The patients should:
1) Know that insulin must be injected.
2) Know different types of insulin and their relative rates of action.
3) Know insulin injection technique including:
   a) how insulin is measured;
   b) how to read the syringe;
   c) sterile practices;
   d) measuring and injecting air;
   e) withdrawal and mixing;
   f) injection;
   g) rotation of injection sites;
   h) disposal of syringes.
4) Know how to store insulin.
5) Know that insulin causes blood sugar to decrease.
6) Know that lumps or hollows of the flesh around the injection site aren't normal.
7) Know when to take insulin.

**ORAL AGENTS**
The patients should:
1) Know that oral agents are not insulin and that they act in a different way than insulin does.
2) Know that oral agents can be used only by a person whose pancreas can still make insulin.
3) Know that persons taking oral agents may eventually need to take insulin injections.
4) Know the names of the commonly used oral agents.
5) Know that one oral agent should not be substituted for another without the doctor's permission.
6) Know that the doctor or clinic should be notified in case of side effects from oral agents or in case of allergy to sulfa medication.

**HYPOGLYCEMIA**
The patients should:
1) Know the different terms for hypoglycemia.
2) Know what hypoglycemia means.
3) Know those factors which can cause a hypoglycemic reaction.
4) Know the definitive symptoms of a hypoglycemic reaction.
5) Know the consequences if a reaction is not treated quickly and correctly.
6) Know how to treat a reaction.
7) Know the differences between hypoglycemia and hyperglycemia and how to test for them.
8) Know that the doctor or clinic should be notified if hypoglycemic reactions start to occur often.
9) Know that a family member or friend should be available who knows what to do to help if a serious hypoglycemic reaction occurs and that an identification card should be carried at all times listing the patient's name, address, and phone; a family member's or friend's name, address, and phone; the name, address and phone of the doctor or clinic; and the fact that the patient is diabetic.

**HYPERGLYCEMIA**
The patients should:
1) Know what hyperglycemia means.
2) Know those factors which can cause hyperglycemia.
3) Know the definitive symptoms of hyperglycemia.
4) Know the meaning of acidosis and diabetic coma.
5) Know the consequences if hyperglycemia is not treated quickly and correctly.
6) Know how to administer primary treatment for hyperglycemia.
7) Know that a family member or friend should be available who knows what to do to help in case of serious hyperglycemia, acidosis, or diabetic coma.

URINE TESTING*
The patients should:
1) Know why urine is tested for sugar and acetone.
2) Know which tests to use and how to use them.
3) Know the importance of recording results of urine testing for monitoring of diabetic control.

FOOT CARE
The patients should:
1) Know that special care of the feet is needed because the circulatory and nerve problems associated with diabetes make the diabetic more prone to numbness, foot infections, and poor healing.
2) Know the methods of daily washing of the feet.
3) Know how to treat dry or sweaty feet.
4) Know how to treat corns and calluses.
5) Know how to trim toe nails.
6) Know that feet should be inspected daily, what the problems are which may occur, and that the doctor or clinic should be notified if any of these problems are noticed. The patients should also know that a family member or friend should be available to inspect the patient's feet if he has poor eyesight.
7) Know what proper clothing and protection for the feet and legs are.

SKIN CARE
The patients should:
1) Know that special care of the skin is needed because the circulatory and nerve problems associated with diabetes make the diabetic more prone to numbness, infections of the skin, and poor healing.
2) Know what proper clothing and protection for the skin are.
3) Know how to treat a cut.
4) Know how to keep skin clean.
5) Know how to treat dry or sweaty skin.
6) Know what skin problems may occur and that the doctor or clinic should be notified if any of these problems are noticed.

EYE CARE
The patient should:
1) Know that because of the circulatory and nerve problems associated with diabetes, eye problems occur more often in diabetics.

*The objectives for Urine Testing are purposely not detailed so as to remain flexible for whichever of the different tests and techniques in use are selected by the physician and staff, according to the individual situation.
2) Know the conditions which may occur.
3) Know that a diabetic should have his eyes checked regularly and should notify the doctor or clinic of any eye symptoms or vision changes.

MOUTH CARE
The patients should:
1) Know that special care of the mouth is needed because the circulatory and nerve problems associated with diabetes make the diabetic more prone to gum and tooth problems.
2) Know proper tooth brushing, gum massaging, and flossing procedures.
3) Know that a dentist should be seen regularly and that the dentist should be informed that the patient is a diabetic.
4) Know that the dentist should be contacted if any mouth problems occur.

EXERCISE
The patients should:
1) Know that exercise lowers blood sugar, helps to maintain good diabetic control, strengthens muscles, and improves circulation.
2) Know that the doctor's advice should be closely followed concerning exercise.
3) Know that the doctor or clinic should be notified if the diabetic plans to exercise more or less than normal so that diet and/or medication may be adjusted if necessary.
APPENDIX G

ASSESSMENT QUESTIONNAIRE
DIABETES QUESTIONNAIRE

For each question: Read the instructions if there are any. Mark an "x" next to the correct answer or answers. If you don't know the answer to a question, mark an "x" next to the statement reading "I don't know." Read each question and all the answers before you answer.

1) Choose the most correct statement:
   ___a) Insulin makes sugar show up in the urine.
   ___b) Insulin helps sugar go from the blood to the body cells.
   ___c) Insulin is used as energy.
   ___d) I don't know.

2) Choose the most correct statement:
   ___a) Natural insulin is produced by the pancreas.
   ___b) Natural insulin is produced in the liver.
   ___c) Natural insulin is produced in the heart.
   ___d) I don't know.

3) Diabetes is a sickness in which the body:
   ___a) Does not have enough sugar in the blood.
   ___b) Has too much natural insulin.
   ___c) Does not have enough natural insulin.
   ___d) I don't know.

4) Choose the most correct statement:
   ___a) Sugar spills over into the urine if too much of it builds up in the blood.
   ___b) A large amount of sugar in the urine may make a diabetic thirsty and urinate a lot.
   ___c) Both statements a) and b) are correct.
   ___d) I don't know.

5) The following problems may happen if diabetes is not controlled:
   ___a) Circulation changes, nerve problems, kidney disease.
   ___b) Emphysema, tuberculosis, arthritis.
   ___c) Stomach ulcers, rheumatic fever, cancer.
   ___d) I don't know.

6) Diabetes can be:
   ___a) Controlled with proper diet, exercise, and medication.
   ___b) Cured with proper diet, exercise, and medication.
   ___c) Catching like a cold.
   ___d) I don't know.
7) Choose the most correct statement:
   a) Diabetes is catching like a cold.
   b) Diabetes can be passed on in a family from one generation to the next.
   c) Both statements a) and b) are correct.
   d) I don't know.

8) Insulin may be:
   a) Taken as a pill.
   b) Taken by injection only.
   c) Taken by mixing powder in a drink.
   d) I don't know.

9) Choose the most correct statement:
   a) Insulin causes blood sugar to decrease.
   b) Insulin causes blood sugar to increase.
   c) Insulin does not affect blood sugar.
   d) I don't know.

10) Choose the most correct statement:
    a) Insulin should be taken at the same time or times each day.
    b) Insulin causes the blood sugar to increase.
    c) Insulin can be taken any time.
    d) I don't know.

11) Lente and NPH insulin act:
    a) Fast over a long period of time (8-12 hours).
    b) At the same speed.
    c) Both statements a) and b) are correct.
    d) I don't know.

12) Regular insulin acts:
    a) At the same speed as NPH insulin.
    b) Fast over a short period of time (2 hours).
    c) Both statements a) and b) are correct.
    d) I don't know.

13) One half c.c. (cubic centimeter) of U-100 insulin contains:
    a) 50 units of insulin.
    b) 20 units of insulin.
    c) 80 units of insulin.
    d) I don't know.

14) For insulin injections, it is a good idea to:
    a) Use the same place on the body for injections.
    b) Rotate the site of injection.
    c) Give the injection through the clothes.
    d) I don't know.
15) Lumps or hollow spots where insulin is injected are:
   _a) Normal and to be expected._
   _b) Not normal and should be discussed with the doctor._
   _c) Signs that more insulin is needed._
   _d) I don't know._

16) Choose the most correct statement:
   _a) Disposable syringes should not be used more than once to prevent possible infections._
   _b) Disposable syringes should be broken and thrown away after use to prevent possible misuse by others._
   _c) Both statements a) and b) are correct._
   _d) I don't know._

17) Choose the most correct statement:
   _a) Insulin should be kept in a cool place or in the refrigerator._
   _b) Insulin can be kept anywhere._
   _c) Insulin should be heated before using._
   _d) I don't know._

18) Choose the most correct statement:
   _a) Oral agents (pills) for diabetes are pills of insulin and act the same way._
   _b) Oral agents for diabetes are more healthy than insulin injections._
   _c) Oral agents for diabetes are not pills of insulin and don't act the same way insulin does._
   _d) I don't know._

19) Choose the most correct statement:
   _a) Oral agents can be used by anyone who has diabetes._
   _b) Oral agents can be used only by a diabetic whose pancreas makes some insulin._
   _c) Oral agents are used only by juvenile diabetics._
   _d) I don't know._

20) Persons taking oral agents for diabetes:
   _a) May need to take insulin later on in life._
   _b) Take them all their lives._
   _c) Use them to replace their natural insulin._
   _d) I don't know._

21) Dymelor, Meltrol, Tolnase, Orinase, DBI-TD, and Diabanese are:
   _a) Kinds of insulin._
   _b) Taken by injection._
   _c) Kinds of oral agents for diabetes._
   _d) I don't know._
22) When a person runs out of oral agents for diabetes, he should:
   ___ a) Refill his prescription immediately and take twice as much as normal.
   ___ b) Refill his prescription immediately and continue on his normal dosage.
   ___ c) Take any diabetic medicine he can get.
   ___ d) I don't know.

23) A diabetic who is allergic to sulfa medicines or who has side effects like skin rashes, nausea, vomiting, or diarrhea which he thinks may be from oral agents for diabetes should:
   ___ a) Eat some sugar.
   ___ b) Stop taking the medicine and notify his doctor.
   ___ c) Change his medicine.
   ___ d) I don't know.

24) Hypoglycemia is also called:
   ___ a) Acidosis.
   ___ b) Diabetic coma.
   ___ c) Insulin shock or insulin reaction.
   ___ d) I don't know.

25) Hypoglycemia means:
   ___ a) High blood sugar.
   ___ b) Low blood sugar.
   ___ c) High blood salts.
   ___ d) I don't know.

26) From the list below, choose those things that can cause hypoglycemia. There are several correct answers. Mark all those you think are correct.
   a) Eating too much.
   b) Taking too much medicine for diabetes.
   c) Exercising more than usual.
   d) Worrying about something a lot.
   e) Not eating enough.
   f) A sickness like a cold, the flu, measles, or other infection.
   g) Not taking enough medicine.
   h) I don't know.

27) From the list below, choose those things that are symptoms of hypoglycemia. There are several correct answers. Mark all those you think are correct.
   a) Negative urine test for sugar.
   b) Hunger.
   c) Sweating or chills.
   d) Thirst, urinating a lot.
   e) Dry skin.
f) Fruity breath odor.
g) Change in vision like seeing double.
h) Worry, nervousness, anger.
i) Not hungry.
j) Positive urine test for sugar.
k) I don't know.

28) From the list below, choose those things that can happen if hypoglycemia is left untreated. There are several correct answers. Mark all those you think are correct.

a) Confusion.
b) Coma.
c) Hard to talk.
d) Unconsciousness.
e) Hard to walk.
f) Death.
g) Acidosis.
h) I don't know.

29) When a diabetic begins to have a hypoglycemic reaction, he should:

a) Immediately take some insulin.
b) Immediately eat some sugar or some food with a lot of sugar in it.
c) Immediately drink some salty soup.
d) I don't know.

30) If a diabetic starts to have hypoglycemic reactions often, he should:

a) Take more medicine.
b) Take less medicine.
c) Tell his doctor or clinic about it.
d) I don't know.

31) Choose the most correct statement:

a) A diabetic should have a friend or relative available who knows what to do if needed in case of serious illness having to do with his diabetes.
b) A diabetic should carry a card at all times stating that he is diabetic; his name, address, and phone; his doctor's or clinic's name, address, and phone; and the name, address, and phone of a friend or relative who is to be contacted in case of emergency or serious illness.
c) Both statements a) and b) are correct.
d) I don't know.

32) Hyperglycemia means:

a) Low blood sugar.
b) High blood sugar.
c) Low blood salts.
d) I don't know.
33) From the list below, choose those things that can cause hyperglycemia. There are several correct answers. Mark all those you think are correct.
   a) Eating too much.
   b) Taking too much medicine for diabetes.
   c) Exercising more than usual.
   d) Worrying about something a lot.
   e) Not eating enough.
   f) A sickness like a cold, the flu, measles, or other infection.
   g) Not taking enough medicine.
   h) I don’t know.

34) From the list below, choose those things that are symptoms of hyperglycemia. There are several correct answers. Mark all those you think are correct.
   a) Negative urine test for sugar.
   b) Hunger.
   c) Sweating or chills.
   d) Thirst, urinating a lot.
   e) Dry skin.
   f) Fruity breath odor.
   g) Change in vision like seeing double.
   h) Worry, nervousness, anger.
   i) Not hungry.
   j) Positive urine test for sugar.
   k) I don’t know.

35) Choose the most correct statement:
   a) Acidosis is a condition which may happen with hyperglycemia where the body builds up a chemical called acetone from using fat for energy instead of sugar.
   b) Acidosis is a condition which may happen with hyperglycemia where the body builds up a chemical called acetone from using muscle cells for energy instead of sugar.
   c) Acidosis is a condition which may happen with hyperglycemia where the body builds up a chemical called acetone from using bone cells for energy instead of sugar.
   d) I don’t know.

36) Choose the most correct statement:
   a) A person who is in diabetic coma is unconscious.
   b) After hyperglycemia, acidosis, diabetic coma, and even death may happen if the person is not treated.
   c) Both statements a) and b) are correct.
   d) I don’t know.
37) When a diabetic is fairly sure that he has hyperglycemia or acidosis, he should:
   ___ a) Call his doctor or clinic, drink liquids that don't have sugar in them, go to bed, keep warm, and keep taking his diabetic medicine.
   ___ b) Call his doctor or clinic, drink some orange juice, and keep walking.
   ___ c) Call his doctor or clinic, drink some orange juice, and take some extra diabetic medicine.
   ___ d) I don't know.

38) From the list below, choose the correct statements about urine testing. There are several correct answers. Mark all those you think are correct.
   ___ a) Urine testing is painful.
   ___ b) Urine testing is done to keep track of a person's diabetic control.
   ___ c) Urine testing is easy to do.
   ___ d) Urine testing may cause kidney infections.
   ___ e) Urine testing should be done more often when a diabetic person is sick with a cold or the flu.
   ___ f) Urine testing is usually done before meals.
   ___ g) Urine testing gives an idea of the amount of sugar in the blood and acetone in the system.
   ___ h) I don't know.

39) A lot of sugar in the urine of a diabetic person is:
   ___ a) A good sign.
   ___ b) A usual sign if he is in control.
   ___ c) A bad sign.
   ___ d) I don't know.

40) A lot of acetone in the urine of a diabetic person is:
   ___ a) A good sign.
   ___ b) A usual sign if he is in control.
   ___ c) A bad sign.
   ___ d) I don't know.

41) It is important for a diabetic person to record the results of his urine tests:
   ___ a) To help keep track of his diabetic control.
   ___ b) To help his doctor or clinic plan the right amount of diet, exercise, and medicine for him.
   ___ c) Both statements a) and b) are correct.
   ___ d) I don't know.

42) From the list below, choose those things that nerve and blood circulation problems in uncontrolled diabetes can lead to. There are several correct answers. Mark all those you think are correct.
   ___ a) Foot, skin, eye, and mouth infections.
   ___ b) Poor healing.
43) From the list below, choose the correct statements about foot and skin care. There are several correct answers. Mark all those you think are correct.
   a) Bathe daily in lukewarm water using a mild soap.
   b) Cut off corns or calluses with a pair of scissors.
   c) Use baby powder or body powder on sweaty feet and skin and moisture lotion on dry skin.
   d) Use moisture lotion on sweaty feet and skin and baby powder or body powder on dry skin.
   e) Use a pumice stone on corns or calluses.
   f) Wash all cuts and scrapes with warm water and soap and keep clean.
   g) Take a hot bath every day.
   h) Use a hot water bag or a heating pad for cold feet.
   i) Crossing the legs slows blood circulation, and putting the feet up helps blood circulation.
   j) Soak hard toenails in warm water before cutting. Then cut straight across and file the corners smooth with a nail file.
   k) Use socks for warming cold feet, or soak them in warm water.
   l) Cut toenails back at the corners.
   m) Use corn pads, corn removal liquids, and things like strong iodine if needed.
   n) I don't know.

44) If a person with diabetes gets a bad cut, scrape, bruise, or burn; sores; redness; cracks; swelling; color changes; changes in feeling to touch or heat or cold; or any other abnormal signs on his feet or skin or in his eyes or mouth, he should:
   a) Tell his doctor or clinic as soon as possible.
   b) Eat less sugar.
   c) Take more diabetic medicine.
   d) I don't know.

45) From the list below choose the correct statements about clothes. There are several correct answers. Mark all those you think are correct.
   a) Wear loose fitting clothes.
   b) Break in all shoes as quickly as possible.
   c) Wear socks or stockings with shoes.
   d) Don't go barefooted.
Socks or stockings aren't really necessary when wearing shoes.
Don't wear socks with holes or darns in them.
Shoes should fit well, support the feet, and be broken in slowly.
Don't wear tight garters or socks with tight tops because they slow blood circulation.
Change socks or stockings every day.
I don't know.

Persons with diabetes may get some eye conditions more easily than persons who don't have diabetes. These conditions are:

- Glass in the eye, glaucoma (too much pressure in the eye), and retinopathy (broken blood vessels in the eye).
- Glass in the eye, glaucoma, and cataracts (cloudy lens of the eye).
- Retinopathy, glaucoma, and cataracts.
- I don't know.

From the list below, choose the correct statements about mouth care. There are several correct answers. Mark all those you think are correct.

- Teeth should be brushed twice a day brushing down on the upper teeth and up on the lower teeth.
- Gums should be massaged with a soft brush every day in the same direction as teeth are brushed.
- Flossing gently between the teeth every day will strengthen gums.
- If gums bleed, they should not be massaged.
- Teeth should be brushed twice a day brushing up on the upper teeth and down on the lower teeth.
- Flossing between the teeth will irritate the gums and shouldn't be done.
- I don't know.

A person with diabetes should:
- See a dentist regularly for exams and tell the dentist that he is a diabetic.
- Tell the dentist if any mouth problems happen.
- Both statements a) and b) are correct.
- I don't know.

Choose the most correct statement:
- Exercise lowers blood sugar, helps blood circulation, and strengthens muscles.
- Exercise raises blood sugar, helps blood circulation, and strengthens muscles.
c) Exercise raises blood sugar, harms blood circulation, and strengthens muscles.

d) I don't know.

50) A person with diabetes should:
  a) Exercise as much as he wants to.
  b) Exercise only if he is not taking medicine for diabetes.
  c) Follow his doctor's advice about how much exercise he should do.
  d) I don't know.

51) If a person who has diabetes plans to exercise more than usual he should:
  a) Tell his doctor or clinic about it so that his diet and diabetic medicine may be adjusted if necessary.
  b) Take a little extra diabetic medicine.
  c) Eat more food.
  d) I don't know.
ANSWERS TO DIABETES QUESTIONNAIRE

1) b 11) c  21) c  31) c  41) c  51) a
2) a 12) b 22) b 32) b 42) a,b,d,e,g
3) c 13) a 23) b 33) a,d,f,g 43) a,c,e,f,i,j,k
4) a 14) b 24) c 34) d,e,f,i,j 44) a
5) a 15) b 25) b 35) a 45) a,c,d,f,g,h,i
6) a 16) c 26) b,c,e 36) c 46) c
7) b 17) a 27) a,b,c,g,h 37) a 47) a,b,c
8) b 18) c 28) a,c,d,e 38) b,c,e,f,g 48) c
9) a 19) b 29) b 39) c 49) a
10) a 20) a 30) c 40) c 50) c

For questions which have more than one correct answer, the following proportions will be taken as correct answers: 2 of 3
                                             3 of 4
                                             3 of 5
                                             4 of 7.

The following is a list of topics and the questions which apply to them:

GENERAL DIABETES  INSULIN  ORAL AGENTS  HYPOGLYCEMIA  HYPERGLYCEMIA  URINE TESTING
1  1  1  15  18  24  31  36
2  2  16 19   25  32  39
3  3  17 20   26  33  40
4  8  21  27   34  41
5  9  22  28   35  
6 10 23   29   36
7 11 24   30   37
   12
   13
   14

FOOT CARE  SKIN CARE  EYE CARE  MOUTH CARE  EXERCISE
31  31  31  31  49
42  42  42  42  50
43  43  44  44  51
44  44  46  47
45  45  48
The following is a list of topics and the objectives and questions which apply to them.

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<tr>
<th>TOPIC</th>
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APPENDIX H

PATIENT HANDOUTS
HOW DO SUGAR AND INSULIN WORK IN OUR BODIES?

The sugar we eat and the sugar from the starchy foods (examples: potatoes, bread, cereals) we eat is used by the body for fuel. This sugar, which is also called glucose, is carried by the blood to the cells of the body. The cells use the sugar to make energy. We need something called insulin to get the sugar from the blood into the cells. Insulin is a chemical made by our pancreas. The pancreas is an organ in the body next to the liver. Insulin is released by the pancreas when our blood sugar goes up after eating. The insulin is like a key that unlocks a door and lets the sugar go from the blood into the cells.

DIFFERENT KINDS OF DIABETES

Diabetes is a condition in which the pancreas cannot make enough insulin or the body cannot use its insulin. This is called adult onset diabetes. Sometimes the pancreas may not make any insulin at all. This is juvenile onset diabetes. Children who have diabetes usually have juvenile onset diabetes. Because the sugar cannot get into the cells, it builds up in the blood. When there is a high amount of sugar in the blood, it starts to spill over into the urine. This makes a person urinate a lot and get very thirsty. Diabetes is serious because the cells of the body don't get the nourishment they need. That is why you may have felt weak and lost weight. Many times, though, a person may not know he has diabetes until he takes a physical examination. Some diabetics do not take care of themselves because they feel fine. This is dangerous. Diabetes needs to be cared for every day. Diabetics have more problems with blood circulation than other people. This can make it easier for them to get infections and other problems on their feet and skin and in their eyes and mouths. Sometimes these infections can get so bad that the person may lose a leg or foot. Diabetics can also have problems with their kidneys and nerves. These can cause diarrhea, trouble urinating and pain in the legs. If the diabetes gets too far out of control, the person gets very high blood sugar. He may soon go into a coma and could even die.

IS THERE A CURE FOR DIABETES?

Diabetes cannot be cured yet, but it can be controlled so that many of the problems can be stopped. A person with diabetes can live a very happy, normal life if he takes care of himself.
TOPIC FOR DIABETES!

To control diabetes you can exercise, follow a diet, and if necessary, take medicines. Some people whose bodies don't make enough insulin may have to take insulin injections. Others may take medicines that help their own body insulin to work well. The diabetic diet is balanced to keep your blood sugar from getting too high or low. Most diabetic diets, except for reducing diets, are good, healthy diets for almost anybody. Regular exercise helps insulin to work better and lowers blood sugar. This is true whether you have enough of your own body insulin or you take insulin injections. Another important thing for you to know is that diabetes is not catching. It can be passed on in a family, though, much the same as hair or eye color.
INSULIN

Insulin was discovered in 1921. Before this, the only treatment for diabetes was a very strict diet. Even the strict diet did not always control the disease and many people died. Now though, insulin is put in bottles and can be used to help control diabetes. Insulin must be injected. If you take it by mouth, the digestive juices in your stomach will destroy it. Pills taken for diabetes are not insulin. They act in a different way.

KINDS OF INSULIN

All insulin is measured in units. There are different forms of insulin which have different rates of action. Some lower the blood sugar right away, and their effect lasts only a few hours. Others begin to act more slowly and stay effective over a long period of time. Your doctor will order the kind that is right for you.

WHEN TO TAKE INSULIN

It is important that you take your insulin every day at about the same time. Even when you are sick as with a cold, continue to take your insulin. If you are sick, call your doctor or clinic because even a mild sickness may cause your diabetes to go out of control.

STORING INSULIN

Insulin should be kept in a cool place. The bottle you are using does not need to be refrigerated, but extra bottles (reserve supply) should be. When you are traveling, an insulated bag or chilled thermos bottle will protect your insulin from too much heat.

YOUR INSULIN AND ITS RATE OF ACTION

Diabetic needs for insulin are different from one person to another. Your
doctor can tell you which kinds you should take. It is important to follow his instructions. Below is a chart which will show you the different types of insulin that are in use, how long the effect of each lasts, when its maximum effect is reached (that is, when it lowers the blood sugar the most), and when it begins to act. Your doctor can point out the kind or kinds you are taking and how it works with your diet and activity schedule to keep your diabetes under control all the time.

<table>
<thead>
<tr>
<th>Type of Insulin</th>
<th>Begins to Work</th>
<th>Greatest Effect</th>
<th>Begins to Wear Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Insulin</td>
<td>Right away</td>
<td>2 hours</td>
<td>4 hours</td>
</tr>
<tr>
<td>Semi-Lente Insulin</td>
<td>2 hours</td>
<td>8 hours</td>
<td>14-18 hours</td>
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<tr>
<td>Lente Insulin</td>
<td>2 hours</td>
<td>8-12 hours</td>
<td>18-24 hours</td>
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<tr>
<td>NPH Insulin</td>
<td>2 hours</td>
<td>8-12 hours</td>
<td>18-24 hours</td>
</tr>
<tr>
<td>Ultra-Lente Insulin</td>
<td>4-6 hours</td>
<td>16-24 hours</td>
<td>24-36 hours</td>
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</tbody>
</table>

The above times are not exact and should be used just as a guide to go by.
HOW TO GIVE YOUR OWN INSULIN INJECTIONS

AD THESE INSTRUCTIONS FIRST BEFORE YOU GIVE YOUR INJECTION:

1. Wash your hands with soap and water. Put the cotton, alcohol, syringe, and insulin together on a table or counter.
2. Hold the insulin bottle in your hands, and roll it between them to mix the insulin. Do this for 30 seconds. Don't shake the bottle or it will get air bubbles. (Air bubbles will not harm you, but they will take the place of your needed insulin units).
3. Wipe off the top of the bottle, especially the rubber, with cotton and alcohol.
4. Take the syringe out of the package and remove the plastic cover from the needle.
5. Pull the plunger back to mark on the syringe which shows the number of units of insulin you are to take. You have now measured up air.
6. Put the needle into the rubber top of the bottle and inject the air into the bottle.
7. With the needle still in it, turn the bottle upside down. Pull back on the plunger past the mark that shows the number of units of insulin you are to take. Measure about 10 units past your dose. This is so you can push up to your correct dose and get rid of any air bubbles.
8. Push the plunger back up to your correct insulin dose now.
9. Pull the syringe with the needle out of the bottle. If you need to lay the syringe down at this time, be sure not to let the needle touch anything. This is because the needle is sterile.
10. Clean off your skin where you are going to give the injection with cotton and alcohol.
11. Pinch up the skin where you are going to inject.
12. Keep your finger off the plunger until you have put the needle into the skin.
13. Insert the syringe with the needle into the skin quickly at a 45 to 90 degree angle. (See the drawing on the next page).
14. Insert the needle the full length. Draw back the plunger 2 to 4 units, and see if any blood or pinkish color shows up. If it does, the needle is in a blood vessel. You should take the needle out and put it back in at another spot.
15. When the needle is in correctly, inject the insulin.
16. Take the needle out and wipe the skin with cotton and alcohol.
17. Break the syringe and throw it away.
HOW TO GIVE YOUR OWN MIXED DOSE INSULIN INJECTION

READ THESE INSTRUCTIONS FIRST BEFORE YOU GIVE YOUR INJECTION:

1). Wash your hands with soap and water. Put the cotton, alcohol, syringe and insulin together on a table or counter.
2). Mix the cloudy insulin (NPH or Lente) by rolling the bottle between your hands and turning it up and down slowly. Do this for 30 seconds. Don't shake the bottle or it will get air bubbles. (Air bubbles will not harm you, but they will take the place of your needed insulin units).
3). Wipe off the top of both bottles of insulin, especially the rubber with cotton and alcohol.
4). Take the syringe out of the package and remove the plastic cover from the needle.
5). Pull the plunger back to the mark on the syringe which shows the number of units of NPH or Lente insulin you are to take.
6). Put the needle into the rubber top of the NPH or Lente bottle and inject air into the bottle.
7). Withdraw the needle and syringe from the NPH or Lente bottle, making sure the syringe does not have any insulin in it.
8). Pull the plunger back to the mark on the syringe which shows the number of units of Regular or Semilente insulin you are to take.
9). Put the needle into the rubber top of the Regular or Semilente bottle and inject air into the bottle.
10). With the needle still in it, turn the bottle upside down. Pull back on the plunger past the mark that shows the number of units of Regular or Semilente insulin you are to take. Measure about 10 units past your dose. This is so you can push up to your correct dose and get rid of any air bubbles.
11). Push the plunger back up to your correct dose of Regular or Semilente insulin now.
12). Carefully withdraw the syringe and needle from the bottle.
13). Turn the NPH or Lente bottle upside down and insert the needle.
14). Pull back on the plunger to the mark that shows the number of units of NPH or Lente and Regular or Semilente insulin you are to take.
15). Pull the syringe and needle out of the bottle. If you need to lay the syringe down, be sure not to let the needle touch anything. This is because the needle is sterile.
16). Clean off your skin where you are going to give the injection with cotton and alcohol.
17). Pinch up the skin where you are going to inject, if you can.

18). Keep your finger off the plunger until you have put the needle into the skin.

19). Insert the needle with the syringe into the skin quickly at a 45 to 90 degree angle. (See the drawing on the next page).

20). Insert the needle the full length. Draw the plunger back 2 to 4 units and see if any blood or pinkish color shows up. If it does, the needle is in a blood vessel. You should take the needle out and put it back in at another spot.

21). When the needle is in correctly, inject the insulin.

22). Take the needle out and wipe the skin with cotton and alcohol.

23). Break the syringe and throw it away.
ROTATION OF INJECTION SITES

It is important to rotate your injection sites to prevent scarring. The diagram below shows you the areas you can use. Change sites frequently.

45 degrees if thin
90 degrees if fatty
Some patients with diabetes may not require insulin but may be able to take pills called oral agents. Oral agents are not insulin. They act in a different way than insulin does. They can only be used for patients whose bodies can still make their own insulin. Your doctor will decide whether or not you will be able to use oral agents. Persons taking oral agents may eventually require insulin shots.

There are several different oral agents. Some of these are: Orinase, Diabenese, Tolinate, Dymelor, Meltrol, and DBI-TD. Patients who are allergic to Sulfa should be sure and tell their doctor because some of the oral agents are related to the Sulfa drugs.

Oral agents, like insulin, may cause low blood sugar reactions, or coma due to low blood sugar. Some oral agents cause such things as skin rashes, water retention, nausea, vomiting or diarrhea. If you have any of these symptoms while you are taking oral agents, tell your doctor. He will decide whether it is the pills causing these things, or if there is some other reason.
URINE TESTING

Urine testing is easy to do and shows if sugar is present in the urine and how much is there. The amount of sugar in the urine can give an idea of the amount of sugar in the blood. Another kind of test shows if there is acetone in the urine. Acetone in the urine may be a sign that your diabetes is dangerously out of control. A diabetic coma may follow. If you find acetone in your urine, call your doctor or clinic as soon as possible. There are several different sugar and acetone urine tests available. Your doctor will decide which are best for you, and you will be taught the ways to do them if you haven't been already. You will also be taught how often and at what times each day to test. It is important to follow the instructions you are given and to write down the results as well as the date and time you tested. In this way you and your doctor can keep an eye on your progress while you go through your normal daily routines. When you are ill, you should test your urine even more often.
Hypoglycemia (insulin shock or reaction) means low blood sugar. The blood sugar can become too low for your body's needs if you:

1). Do not eat enough food or skip a meal;
2). Exercise more than usual;
3). Take too much insulin or oral (by mouth) medication.

When the blood sugar becomes too low, the body cells react very fast to losing the constant supply of sugar they need.

The following are common things that can happen with low blood sugar; they can happen in order, and different ones can happen in different people:

1). Hunger
2). Worry, nervousness, anger
3). Can't think straight
4). Sweating
5). Change of vision, seeing double
6). Headache
7). Nausea
8). Blushing or getting pale
9). Tingling around the lips or in fingers and toes, numbness
10). Fast pulse, pounding heart
11). Tired
12). Weak or shaky
13). Chills
14). Dizziness

Your urine will probably test negative for sugar too. Serious illness can happen if hypoglycemia is not treated very fast. The following things could happen:

1). Confusion
2). Hard to talk
3). Hard to walk
4). Unconsciousness

It is very important to try and prevent hypoglycemia by following your diet, doing exercises, and taking your diabetic medications as instructed. Sometimes, though, hypoglycemia does happen, and it should be treated right away. If you feel like you are getting weak or shaky, eating something equal to 40 calories should help...
you. Some sugar that will get into the blood in about 15 minutes is good. Below are some suggestions to choose from which equal 40 calories:

- ½ cup orange juice
- ½ cup regular soda pop
- 1/3 cup apple juice
- 2 tablespoons raisins
- 2 teaspoons sugar
- 2 sugar cubes
- ½ cup regular jello
- 2 teaspoons honey
- 6 or 7 life savers

If you have a very had reaction you may have to take 80 calories of sugar food or drink some milk or eat a half a sandwich. Some of the warning signs of hypoglycemia are like those in hyperglycemia. The sugar and acetone test is a good way to find out which you have. If you test positive for sugar and acetone, you probably have hyperglycemia. If you test negative for sugar, you probably have hypoglycemia. If you take insulin, your doctor may have you keep a bottle of glucagon. This medicine has to be diluted and then injected like insulin. Glucagon helps to raise the blood sugar. Tell your doctor if you start having hypoglycemia often. If you can, let a relative or a friend know when you start to have a reaction so he may help, if you need him.
Hyperglycemia means high blood sugar. It may be caused by:

1). Eating too much;
2). Not taking insulin;
3). Not taking your oral medication (by mouth);
4). Worry
5). Fever;
6). Infection.

Hyperglycemia is the opposite of hypoglycemia. In hyperglycemia too much sugar collects in the blood because the body cells are not using sugar correctly. When cells are unable to use sugar, they start using the body's fat and protein for energy. If the body burns up too much fat, a condition called acidosis starts. The following are things which may happen with high blood sugar:

1). Urinating a lot;
2). Thirsty;
3). Not hungry;
4). Headache;
5). Weakness;
6). Tired;
7). Nausea;
8). Vomiting;
9). Stomach cramps;
10). Can't think straight;
11). Fast breathing;
12). Dizziness;
13). Fruity breath odor;
14). Dry skin.

With hyperglycemia your urine will probably test positive for sugar. If left untreated, your body may get a condition called acidosis. Now your urine will probably test positive for acetone too. From there it is a small step to a diabetic coma. Diabetic coma is very dangerous because you become unconscious. Some of the warning signs of hyperglycemia are like some of those in hypoglycemia. The sugar and acetone urine test is a good way to find out which you have. If you test positive for sugar and acetone, you probably have hyperglycemia. If you test negative for sugar, you probably have hypoglycemia. Another way to tell what your symptoms are from is to eat some kind of strong sugar food. If your symptoms aren't relieved soon, you probably have hyperglycemia.
You should call your doctor or clinic right away if you feel that you are going into hyperglycemia or acidosis. Then go to bed and drink some warm liquids which don't contain sugar. Keep taking your insulin or other medications. Let a relative or friend know about your diabetes so that they may be called to help, if you need them.
GOOD HEALTH PRACTICES

It is important for diabetics to follow good health practices because they may be likely to have problems with blood circulation, healing and infections. Any problem, even a small one, should be reported to your doctor or dentist right away. This can help stop small problems from becoming big ones.

FOOT CARE

Special care of the feet is needed because diabetics may have poor circulation, especially in their legs and feet. This can cause a problem in healing. Heat or cold, blisters, splinters, or even a pebble may not be felt very easily by a diabetic on his feet. This could lead to an infection which might not be noticed. Wash your feet each day in warm (not hot) water. Use a mild soap. You may do this when you are taking your bath. Dry your feet well by patting them gently (don't rub) with a soft towel.

If your feet seem to dry out a lot, put on a lanolin lotion. If your feet sweat a lot, put on some powder that won't irritate them.

If you have corns or calluses, use a pumice stone to remove them. Soak the pumice stone while you are washing your feet. Rub the stone gently on your corn or callus. Don't rub so hard that it becomes sore. Never cut the corn or callus. Also, do not use corn pads, medicated foot pads, iodine, or other corn removal liquids because these can burn the skin.

Toe Nails: If your toe nails are hard, soak your feet in warm water before cutting them. Trim your nails so that they are straight across to the end of the toe. Gently file the corners so that they aren't sharp. Do not cut back the corners. If ingrown toe nails are bothering you, do not cut them. Let your doctor know about it.

Inspect Feet: Inspect your feet every day and tell your doctor about any of the following conditions as soon as possible even if there is no pain:

- Sores
- Cracks in skin
- Athlete's foot
- Redness
- Swelling
- Color changes
- Changes in feeling to heat or cold
If you have poor eyesight, have a relative or a friend examine your feet for you.

Wear shoes and stockings or socks: Shoes and stockings or socks should be worn to protect your feet from injury. Break in new shoes gradually, and make sure they fit well and support your feet. Stockings or socks should be changed daily for cleanliness and shouldn't be worn if they have holes, darns or tight tops.

Circulation: Never wear tight girdles or garters around the legs because they slow up the blood circulation in the legs and feet. Crossing your legs also slows circulation. It is a good idea to put your legs up every so often for a short time.

Cold feet: Warm your feet by using warm socks or stockings or soaking in warm water. Never use a hot water bottle or a heating pad because your feet may get burned without your feeling it. Electric blankets are safe to use. Lastly, protect your feet from sunburn.
GOOD HEALTH PRACTICES

EYE CARE

Care of your eyes is important because some conditions of the eye can happen easier in diabetics than in other people. These are:

- Cataracts -- cloudy eye lens
- Glaucoma -- too much pressure in eye
- Retinopathy -- bleeding inside the eye

Have your eyes checked often by a doctor and see him right away if any problem such as a vision change or pain in the eye happens. Poor diabetic control can harm the vision. Good control helps it.

MOUTH CARE

Diabetics may often get infections of the mouth. See a dentist often for check-ups. Contact him as soon as possible if any problem happens such as sores, bleeding gums, poor fitting dentures or tooth ache. Brushing your teeth twice each day and massaging the gums gently after brushing, using a soft brush, is good for your mouth. Make sure your dentist knows that you are a diabetic.

SKIN CARE

Slow blood circulation to your skin over your body as with your feet may cause poor healing, infections and burning, so you should be careful of all cuts and bruises. If you get a cut, wash it in warm water, using a mild soap. Never use iodine or mercurochrome because they can burn your skin. You can keep your skin clean by bathing often in water that is not too hot or cold.

If you bathe too much, your skin may dry out. Dry skin can crack and get infected more easily than normal skin. If you have dry skin, use a lanolin lotion on the dry areas. As in foot care, don't use electric pads or hot water bottles because they might burn you. Also, don't get too much sun. To protect yourself, you may wear gloves or other protective clothing when you are doing things which may scratch or irritate the skin. An example of this is wearing gloves when you are gardening. It is important to let your doctor know if you have any problems with your skin such as redness, itching, oozing, streaks, slow healing, or bad burns.

Exercise is important for you as a diabetic because it helps lower the amount of sugar in the blood. It also strengthens muscles and helps blood circulation.
The diet and medication your doctor orders are affected by how active a life you live. You will be advised about how much regular exercise you should have. Too much exercise may bring on a hypoglycemic attack. If you plan to exercise more than usual, it is a good idea to let your doctor know. He will be able to tell you if you need to make a change in your diet or medication.
APPENDIX I

CLASS/DISCussion PLAN
DIABETES PATIENT EDUCATION PROGRAM DISCUSSION PLAN

SESSION I - GENERAL DIABETES INFORMATION

I) Introduction.
   A) Welcome.
   B) Purpose.
      1) To learn more about diabetes.
      2) To learn more about self and family care of the diabetic.
   C) Tone.
      1) Styled as a discussion.
      2) Encourage questions about:
         a) Interests.
         b) Confusing topics.
      3) Encourage comments on:
         a) Suggestions.
         b) Experiences.
         c) Opinions.
   D) Plans and methods.
      1) Discussion.
      2) Tapes.
      3) Films and filmstrips.
      4) Displays.
      5) Demonstrations.
      6) Speakers.

II) What Is Diabetes?
   A) Function of insulin in glucose metabolism.
      1) Food ingested containing glucose (sugar).
      2) Digestion results in sugar in the bloodstream.
      3) Sugar moves from the blood into the cells of the body
         and provides them with energy. This process requires
         insulin.
      4) Insulin is produced in the pancreas.
      5) Too little insulin or the inability to use it results in
         the condition known as diabetes mellitus (sugar
         diabetes).
   B) Symptoms.
      1) Thirst and frequent urination. Urine contains a lot
         of sugar which has spilled in from the blood. This
         highly concentrated urine pulls water from the body
         to dilute it.
      2) Weight loss in some people due to use of fat stores
         for energy.
      3) Hunger and weakness due to poor carbohydrate usage.

III) Who Gets Diabetes?
   A) Types.
      1) Juvenile; affecting mostly young people who produce
         no insulin.
      2) Adult; first affecting mostly people over 40. Most
         susceptible is a female who is overweight, over-eats,
         and has many children who were large at birth. These
         people produce some insulin, but it is a severely
         taxed supply.
   B) Heredity; diabetes can be passed on in a family like
      hair and eye color.
      1) Testing for diabetes is a good idea for family members
         of diabetics.
2) Some prediction is possible.
3) It frequently affects a child before it shows up in his parent.
4) It is not catching like a cold.
C) Famous diabetics.
1) Dan Rowan.
2) Mary Tyler Moore.
3) Others.

IV) What Can Happen?
A) Poor circulation.
1) Feet and skin are especially prone to infection from cuts, burns, and other tissue trauma.
2) No sensation at times makes one prone to trauma, possibly leading to gangrene, which, in turn, may lead to loss of a limb.
B) Retinopathy; weakened blood vessels in the eye may break, and loss of vision may result.
C) Kidney damage; trouble urinating.
D) Nerve damage; diarrhea, loss of sensation, pain in the extremities.
E) Acidosis; acetone build-up from fat break-down. Can result in coma and later death.

V) What Can Be Done?
A) Control; a cure is not available, but control can prevent the problems above, and a normal life can be led. There are three means of control which may be used in combination or, in some cases, separately:
1) Diet; a high protein, low carbohydrate diet does not produce a great load on the body's natural insulin. This is a good diet for most people. The overweight diabetic will have a somewhat more restricted diet.
2) Exercise; this lowers blood sugar level and burns off excess fat safely.
3) Medication; it may become necessary for some people to take insulin if they produce none and for others to take oral medications to stimulate their own production of insulin and to help it work better.
B) Good health habits; this includes proper care of the feet, skin, and mouth as well as use of proper protection for vulnerable parts of the body.
C) Some sort of identification which identifies the bearer as a diabetic. What medications, if any, are to be used; who to contact in case of serious illness; and where to go, if feasible should be carried at all times on the person of the diabetic and with a close friend or relative.

VI) Filmstrip; general discussion of diabetes to restate points.

SESSION II - MEDICATIONS
I) Insulin.
A) Natural insulin; produced in the pancreas. Lowers blood sugar level.
B) Manufactured insulin; display of different types, brands, and packaging.
C) Syringes; display different types and brands of disposables.
1) Review measurement.
2) Review reading of the syringe.
D) Demonstration by group leader or patient volunteer.
1) Syringe removal from packaging.
2) Measurement on syringe.
3) Injection of air.
4) Mixing.
5) Injection.
6) Sterile technique.
7) Storage and disposal.

E) Site rotation; lumps and hollows.

II) Oral Medications.
A) Display with names of different types and brands.
B) Not insulin; not to be used if body produces no natural insulin.
C) Side effects and Sulfa allergy
   1) Rash.
   2) Water retention.
   3) Nausea.
   4) Vomiting.
   5) Diarrhea.
D) Call physician for allergy or side effects.

III) Filmstrip; insulin technique.

SESSION III- URINE TESTING, HYPOGLYCEMIA, AND HYPERGLYCEMIA

I) Urine Testing.
A) Used for:
   1) Testing for sugar.
   2) Testing for acetone.
B) Reasons for testing:
   1) Monitoring control.
   2) Distinguishing symptoms.
C) Clinitest demonstration; group leader or patient volunteer.
   1) Measurement of water and urine.
   2) Addition of tablet.
   3) Color changes; interpretation.
   4) Pass through.
   5) Handling of materials.
D) Acetest demonstration; group leader or patient volunteer.
   1) Addition of urine to tablet.
   2) Color change; interpretation.
   3) Handling of materials.
E) Other tests available.
   1) Dextrostix; prick finger to determine blood sugar with reagent strip.
   2) Ketodiastix.
   3) Other tests are available.
   4) Up to the physician.

II) Hypoglycemia.
A) Meaning.
B) Terms:
   1) Low blood sugar.
   2) Insulin shock.
   3) Insulin reaction.
C) Causes; use chart.
D) Symptoms; use chart.
E) Complications:
   1) Confusion.
   2) Hard to walk.
   3) Hard to talk.
   4) Unconsciousness.
F) Treatment.
   1) Food display.
a) Orange juice.
b) Soda Pop.
c) Raisins.
d) Sugar.

2) Glucagon.
a) Functions to raise blood sugar level.
b) Administered by injection.
c) Used mostly by medical personnel though highly competent patients may carry it.

G) Important to have a friend or relative who knows what to do in case of illness and who is usually easily reached.

III) Hyperglycemia.
A) Meaning.
B) Terms:
   1) High blood sugar.
   2) Acidosis; define it.
   3) Diabetic coma.
C) Causes; use chart.
D) Symptoms; use chart.
E) Complications;
   1) Acidosis.
   2) Coma.
F) Treatment.
   1) Medications continued.
   2) No sugar to be take after it is known that the condition is hyperglycemia.
   3) Call physician.
G) Friend or relative available.

IV) Differentiating Between Hypoglycemia And Hyperglycemia.
A) Chart; symptoms.
B) Urine tests.
C) Paragraphs on tape.
D) Eating sugar as a definitive test.

V) Filmstrip if available.

SESSION IV- GOOD HEALTH PRACTICES
I) Alert To Problems With Feet, Skin, Mouth, And Eyes.
II) Foot Care.
A) Cleaning demonstration; group leader or patient volunteer.
   1) Warm water.
   2) Mild soap.
   3) Towel dry.
B) Lotion for dry feet.
C) Powder for sweaty feet.
D) Toenail care demonstration; group leader or patient volunteer.
E) Corn and callus demonstration; group leader or patient volunteer.
   1) Use pumice stone, not corn removal liquids which may burn.
F) Display of proper shoes, socks, and stockings.

III) Skin Care.
A) Cuts and other skin trauma; demonstration.
B) Dry skin; powder.
C) Display of proper clothing affording enough protection.

IV) Eye Care.
A) Problems.
1) Cataracts.
2) Glaucoma.
3) Retinopathy.

B) Importance of checkups.
C) Tell physician of any problems.

V) Mouth Care.
A) Tooth brushing demonstration; group leader or patient volunteer.
   1) Brushing.
   2) Gum massaging.
   3) Flossing.
B) Lecture/discussion with clinic dentist (when he is available).
C) See dentist regularly.

VI) Exercise.
A) Lowers blood sugar level.
B) Helps achieve better control.
C) Increases muscular strength.
D) Improves circulation.
E) Tell physician about changes in exercise patterns.

VII) Filmstrip #5.
APPENDIX J

SUGGESTED CAUSAL RELATIONSHIPS IN
PATIENT EDUCATION PROGRAM
SUGGESTED CAUSAL RELATIONSHIPS
IN PATIENT EDUCATION PROGRAM

1) Lack of priorities and support by:
   a) Governments- federal, state, and local.
   b) Hospital administration.
   c) Hospital department heads.
   d) Community.

2) Changing Agency staff:
   a) Administration.
   b) Physicians.
   c) Nursing.
   d) Social Service.
   e) Public Health Nursing.

3) Understaffed Dietary Service.

4) ESU extraneous events:
   a) Minority hiring and promotion problems.
   b) Absence and departure of director.

1) → 5) ESU staffing deficiencies.
1) → 6) ESU priority problems.
4), 5), & 6) → 7) Lack of guidance within ESU.
4), 5), & 6) → 8) Too little ESU time for patient assessment, teaching, and program evaluation.

7) → 9) Poor program communication.
7) → 10) Poor program planning.
8) → 11) Low program operation level in diabetes clinic.
9) → 12) Loss of team and staff relationships.
10) → 13) Premature development of inpatient educational component of program.
3) & 10) → 14) Late development of dietary educational component.
2) & 12) → 15) Too little team-time for achievement of attitudinal and behavioral objectives.
11), 12), & 13) —> 16) Diabetes clinic decline.

2c) —> 17) Inpatient educational component decline.

16) & 17) —> 18) Switch to class/discussion educational component.

8) —> 19) Class/discussion educational component decline.