A HOSPICE FEASIBILITY STUDY
AT VALLEY BAPTIST MEDICAL CENTER, HARLINGEN, TEXAS

A THESIS

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CHAPTER I

INTRODUCTION

Medical care has been undergoing many changes during the past few years. Health care needs have increased, and services have been expanded to meet those needs. One development which reflects medical care's response to patient need is the economics of the health care system through the use of a hospice. The hospice may be defined as ". . . a medically directed, nurse-coordinated program providing a continuum of home and inpatient care for the terminally ill patient and family." (Flexner 1979, p. 248)

The hospice concept dates back to the first century in England, with references being made to "way-stations" for weary or sick travelers. This program now has special meaning for many dying patients and their families. The adoption of the hospice philosophy has added another dimension to the health care delivery system, which has traditionally been based on the concept of healing the sick rather than helping the dying to cope with death. The hospice philosophy states the following:

> Death is a universal fact of life, and whether or not it is accompanied by disease, dying is a normal process. We believe that every person is entitled to participate fully in this part of life in order to prepare for death in a way that is personally satisfactory.
>
> Hospice, as an option in the medical care system, exists not to postpone death but, with special skills and therapies, to help the patient and family live as fully as possible. Death is not denied, but life is affirmed and lived until death comes.
>
> We believe that we are all dependent on one another; therefore, it is crucial, in the last few months of life, to help develop a caring community that can provide comprehensive services to patients and their family. (Flexner 1979, p. 248)

Hospices have been used in an attempt to provide holistic care for dying patients within their service areas. The programs which are offered have aided their clients in coping with death on a psychological and a physiological basis. The scope and magnitude generally have differed from hospice to hospice.

The hospice team providing care treats both the patient and his family and friends as the unit of care. The staff generally utilized in a hospice includes physicians, professional nurses, psychologists, counselors, clergy, social workers, volunteers, home health aides and homemakers, nutritionists, clinical pharmacists, and family and friends.

Most hospice programs provide services to the unit

of care regardless of ability to pay. Many reports indicate that hospice care is less expensive than if the patient were in an acute care facility (Markel and Sinon 1978). A survey of 500 patients by Hospice, Inc. reports that the average cost of hospice care was approximately $750.00 for the final three months, approximately 27 percent less than similar services in cost of an acute care facility (Markel and Sinon 1978).

Two other aspects make the hospice concept unique. The first is the way in which pain and the collateral system are approached. There are no heroic efforts made to save the patients. Drugs are administered solely for the relief of the patient, and not for curative means. Secondly, bereavement follow-up is provided to the family.

Statement of the Problem

Initially hospices were established as facilities separate from acute care centers; however, rising costs in recent years have caused care givers to consider the possibility of combining hospice services with existing acute care facilities. The problem of this study was to determine the feasibility of inaugurating a hospice program at Valley Baptist Medical Center (V.B.M.C.) in Harlingen, Texas.

Purpose of the Study

The purpose of this study was to develop a feasibility study of initiating a hospice at Valley Baptist Medical Center. Within the acute care system, there has been no program for the dying patient who has no medical recourse. Systems of acute care address only the curative approach. The hospice concept, however, assists in their endeavor to have "death with dignity." The program assists the family and friends in coping with the loss of their loved-ones. Feelings of guilt, depression, or a dependence on alcohol may be circumvented through this program. This study provided an analysis of the service area, potential market, relationship with existing facilities, services to be offered, manpower requirements, and economic feasibility. An analysis was made to aid the V.B.M.C. officials in making a judgement regarding the initiation of a hospice program or unit.

Research Question

This study had one basic research question: Is it feasible to establish a hospice program or unit at Valley Baptist Medical Center, Harlingen, Texas?

Definition of Terms

The following definitions are employed in this study:

1. Chronic terminal diseases--those diseases which cause progressive deterioration and ultimately death within a few days or weeks
2. Financial feasibility--the predictable economic outcome of the results of management operations
3. Mortality statistics--frequency of deaths in proportion to population
4. Hospice--a program designed for dying patients with emphasis being placed upon palliative care as opposed to curative care

Assumptions

The hospice concept has proven to be a positive program in socio-economic-geographical areas, other than the particular one being analyzed. For the purposes of this study, it was assumed that the program (if implemented) would provide similar positive benefits for patients and their families who would use the hospice program at V.B.M.C. It was also assumed that the public is desirous of such a program.

Limitations

This study is applicable and limited exclusively to Valley Baptist Medical Center, Harlingen, Texas, and the time frame in which the study was conducted. The opinions expressed in this study reflected that of Valley Baptist Medical Center. Since it was assumed that the community was desirous of a hospice project or service, there was no community involvement.

Significance of the Study

The significance of this study is its demonstration to Valley Baptist Medical Center of the prospects of developing a hospice in the Lower Rio Grande Valley. This study also indicates what services should be offered, at what cost, and, what staffing will be required to provide said services. In addition, a means of determining the finances required for the selected combination of services, staff, and cost is given.

Chapter II reviews related literature. Chapters III and IV report on the methodology by which the study was done and the study itself; chapter V, provides summary, conclusions, and recommendations.

CHAPTER II

A REVIEW OF RELATED LITERATURE

Although hospice care for terminally ill patients is a relatively new concept in the United States, there has been a steadily increasing interest in this attractive alternative to lengthy and expensive hospital care. A certain amount of confusion has been associated with the hospice concept; therefore, a good working definition which addresses the potential, scope and limitations has been developed:

> Hospice is a medically directed, nurse-coordinated program providing a continuum of home and inpatient care for the terminally ill patient and family. It employs an interdisciplinary team acting under the direction of an autonomous hospice administration. The program provides palliative and supportive care to meet the special needs arising out of the physical, emotional, spiritual, social, and economic stresses which are experienced during the final stages of illness, and during dying and bereavement. This care is available 24 hours a day, seven days a week, and is provided on the basis of need regardless of ability to pay. Such care of necessity requires careful record-keeping for coordination of patient care as well as for use in education and research. (Flexner 1979, p. 247)

While particular hospices may differ from one another widely, there are elements which seem common to all such programs. Elements or philosophies which

most programs share include the following:

1. Services are provided to terminally ill patients and their family and friends
2. The unit of care is considered to be the patient and his family and friends; and this total unit is necessary for total patient care
3. There is a combination of inpatient and home care services being rendered
4. Care is available 24 hours per day, every day of the year
5. Care is provided by an interdisciplinary team with each member having special and distinct skills
6. Care is rendered as palliative and supportive, rather than curative
7. Bereavement services are provided for the family and friends after the patients' death
8. Educational programs are offered for both the unit of care and interdisciplinary team on death, and educating the unit of care on in-home care
9. The volunteers that work provide an intricate role in the care of the patient and his family and friends (National Hospice Organization 1979).

In addition to these nine common characteristics, hospices tend to deliver both inpatient and home services. At present, five basic types of hospice organizations are possible:

1. Hospital Based
   A. Acute care hospital with centralized palliative care or hospice unit: Separate unit within a general hospital with the staff and beds designated for the provision of care for the dying.
   B. Acute care hospital hospice "consultant" program: Specially designated interdisciplinary hospice team or existing staff of social workers, psychologists and others provide services to hospice patients dispersed throughout the general hospital.
   C. Hospital based home care programs: The hospice team may be separate from the home care staff or may be members of the home care staff with special training in hospice care techniques.
2. Hospital-Affiliated, Free Standing
   A separate facility with all beds and staff assigned to providing care to the dying patients. The facility is located adjacent to the hospital or in the community, but is owned by the hospital.
3. (Independent) Free Standing
   A separate facility with all beds and staff assigned to providing care to the dying patient. It is an independent economic entity governed by its own administrative staff and board.
4. Home Care (Hospice Without Walls)
   A program which provides and coordinates hospice services in the home, but does not own or operate an inpatient facilty. The program is administratively and economically autonomous. Hospice team members are available for services in the home 24 hours a day.

5. Extended Care Facility or Nursing Home
A nursing home or extended care facility program which has converted beds or established a separate unit for the provision of hospice care. Staff is trained in the provision of hospice care. The facility is governed by its own board and administrative staff. (National Hospice Organization 1979, p. 22-23)

Such a variety of combinations of services should permit any community or medical care facility a wide latitude in choosing the type of hospice which best suits its needs. Certainly this aspect of hospice organization may in part account for the growing interest in hospices.

Number and Organization of Hospices

A study conducted by the United States General Accounting Office in 1978 indicated that most hospices were located on the east and west coasts. California had the greatest number, with 37 percent of all existing hospices and 22 percent of all developing hospices (Vicker 1979). In the study, the 59 operating hospices were divided into five different types of hospices, and they were then divided into the categories of "for-profit," "non-profit corporation," and "non-profit not incorporated." All but four hospices were non-profit. Fifty-four percent of all the hospices were located in hospitals or other inpatient facilities. Twelve of the programs were

organized as distinct hospice units. The eleven remaining programs ranged in size from four to 15 beds and were organized under medical or support service departments. These departments included the following: community medicine, home health care, nursing service, human support, community service, and chaplaincy departments (Vicker 1979).

The 73 developing hospice programs fell into approximately the same patterns as the existing hospices. All but one of these developing hospices were non-profit programs. Thirty-three percent of the developing hospices were going to be located in either a hospital, skilled nursing home, or a free-standing facility. Forty-five percent were not going to have inpatient facilities, and the remaining 22 percent were undecided as to what type of hospice they were going to develop. The number of operating and developing hospices has increased considerably since this study was conducted. No one has been able to keep a totally accurate count of the number of such groups in the United States simply because of the rapid expansion of the movement. By late 1979 or early 1980, it was estimated that there would be between 200 and 225 hospices in the United States at various levels of operation or development (Vicker 1979).

Accreditation

Fundamental difficulties exist in providing appropriate accreditation for health care programs and institutions. These difficulties, however, are inherent in programs which have not had any prior standards regulating their structure. Standards and guidelines for performance are generally developed because there is a need to measure or enhance the quality of a particular aspect of care or service. "Accreditation, within itself, is the process by which programs are evaluated and subsequently recognized as meeting predescribed standards" (National Hospice Organization 1979, p. 90).

Since most accreditation programs are linked with reimbursement by third parties, most facilities have at least a quasi-accreditation program. Hospitals and skilled nursing facilities have maintained their accreditation programs in order to obtain reimbursement from medicare and medicaid. Because many of the existing hospice programs are within such facilities, they are reviewed; however, problems exist regarding the non-specific guidelines by which they are reviewed. Accreditation is primarily placed upon programs and areas other than the hospice within the facilities according to the traditional process defined for these systems.

Currently, reviews by the Joint Commission on Accreditation of Hospitals, Health Care Financing Administration, medicare and the National Hospice Organization are underway to develop standards by which quality assessment can be made. Differences in philosophy exist as to the specifics of these guidelines. The Joint Commission on Accreditation of Hospitals desires very detailed guidelines depicting optimal measures whereas the National Hospice Organization urges the guidelines to be of minimal standard composition with a broad philosophical approach.

As of 1979, only five states had developed licensure laws which cover hospice programs. These five states are Arizona, Connecticut, Florida, Nevada, and Oregon; these laws not only cover free-standing hospice programs but also hospitals and home health services. The National Hospice Organization has been the precipitous in the development of these laws.

Guidelines were developed so that these laws would have more specific meaning. These guidelines stated the following:

> First, to identify those standards which are intrinsic to all forms of Hospice care. Second, to establish criteria which outline acceptable limits for Hospice care programs. Third, to create and implement mechanisms by which Hospice care programs can be accredited.

> All of these activities will be carried out under the direction of the National Hospice Organization Board and in response from the membership at large. (National Hospice Organization 1979, p. 100)

The National Hospice Organization is currently trying to identify optimal ways to confer accreditation on hospice programs that represent the coordinated efforts of separately administered inpatient and home-care programs.

Service Area

One of the problems that hospice patients encounter has been accessibility for continuance of care. It has been desirable to treat patients within a limited geographical radius. In an analysis of two hospices, Breindel and O'Hare (1979) reported that patient residence locations were within 20 and 30 minutes, respectively. The distance is kept to a minimum to keep the travel time for the family to a minimum.

Types of Patients

Under the hospice concept, the aim has been to keep the family and friends involved in caring for terminally ill patients. The family and friends are necessary to provide support to the patient which will tend to decrease anxiety. In addition, involving family and friends will help them cope with life without the patient (United States General Accounting Office 1979). Studies have

shown that without this "rendering of assistance," after the expiration of the patient, some family members and friends have committed suicide, developed reactive depression, or had other serious medical or psychological problems (United States General Accounting Office 1979).

The types of patients who utilize a hospice do so as a result of a variety of diseases. A study at St. Mary's Hospital, Richmond, Virginia, reviewed the deaths of 307 patients. Of the 307 total deaths that year, 104 patients died of cancer; 63 died of other terminal diseases and 140 patients died of complications which were not readily associated with being potential hospice patients (Breindel and O'Hare 1979). The 167 deaths of patients who were potential hospice users were distributed as shown in table 1.

According to the United States General Accounting Office (1979), 60 percent of all those people who died of cancer (carcinoma or malignant neoplasms) were 65 years of age or older. Thus, since hospices primarily serve terminal cancer patients, about 400,000 persons per year are potential hospice patients. Also, according to the United States General Accounting Office (1979), these statistics suggest that if 60 percent of all people who die of cancer are older than 65 years of age,

TABLE 1

DISTRIBUTION OF POTENTIAL HOSPICE PATIENTS BY DISEASE: AT ST. MARY'S HOSPITAL IN RICHMOND, VIRGINIA

Disease	Frequency	Percent
Carcinoma or malignant neoplasms	104	62
Severe chronic lung disease	2	1
Arteriosclerotic heart disease	44	26
Hypertensive arteriosclerotic vascular disease	6	4
Chronic obstructive pulmonary disease	4	2
Chronic renal failure	4	2
Cirrhosis	1	1
Chronic obstructive lung disease	1	1
Cerebral arteriosclerosis	1	1
Total	167	100

Source: Breindel and O'Hare 1979, p. 54.

there are approximately 250,000 potential medicare-eligible patients.

The operating hospices, according to the United States General Accounting Office (1979), served patients ranging in age from 12 to 80 years. The mean age was 58 years for the 2,980 patients in the 56 operating hospices. Most of the hospice patients were between 60 and 70 years of age.

The racial composition varied from hospice to hospice. According to the United States General Accounting Office (1979), the racial mixture of the patients served generally reflected the racial composition of the area served. Most patients served were caucasian; however, the minorities were served, also. In this same study, 11 hospices indicated that out of their 575 patients, 66 percent were referred by physicians, 10 percent by friends, 9 percent by nurses, 8 percent by social workers, and 7 percent came from other sources (United States General Accounting Office 1979).

Thirteen hospices reporting to the United States General Accounting Office (1979) provided statistics regarding the average length of participation in the programs. These ranged from 13.9 to 105 days. This range indicated only the amount of time the patient spent

within inpatient facilities or the amount of time that the family and friends spent with the program after the expiration of the patient.

The average length of stay for inpatients' care averaged 20 days, ranging from 8.2 to 60 days. The upper end of the range was skewed by a singular facility which reported that once a patient was admitted to their facility, he usually stayed there until expiration.

The mix between male and female hospice patients is almost balanced. An anlaysis of the patients at St. Christopher's Hospice in London, showed that there was a mix of 60 percent males and 40 percent females. The staff at St. Christopher's also compared their patients to the patients of another facility and the results showed that there was almost an identical breakdown between males and females (Parkes 1979).

Delivery System

The delivery system of hospice programs includes five major areas. These areas include the following: admission techniques, funding interaction with other facilities, personnel and staffing, services offered, and reimbursement (National Hospice Organization 1979). Hospice programs are beginning to fall into patterns

that are recognizable as a mode of care administering to dying patients.

Admission Techniques

Methods of patient referral and admission criteria seem to be similar in many hospices. Fairly uniform admission criteria have been established in most hospices regardless of type. Overlook Hospital, a hospital-based program, used the following criteria:

1. patients for whom palliative, rather than curative treatment is most appropriate;
2. patients who have a primary care person available to provide continuity of care between professional visits;
3. patients who have a primary physician who is willing to participate in the program and make home visits, including a visit at the time of death; and
4. patients whose families are willing to accept and to support care of the patient in the home as part of the hospice program. (National Hospice Organization 1979, p. 55)

Almost all referrals came from physicians. After the referral was made, then the admission criteria were developed with the patient and his family and friends.

Another hospice program, Connecticut Hospice, New Haven, Connecticut, had admission criteria which included:

1. a terminal disease with a prognosis of the patient's living less than six months;
2. a person available around the clock who will assume responsibility for the patient's care in the home.
(Vicker 1979, p. 257)

These criteria for admission to a hospice program reflect the practices and policies of many hospices.

Funding

The initial amount of funding necessary to start a hospice varied in relationship to the type of hospice being developed. Hospices providing only home-based care required less funding in order to establish programming, and conversely inpatient facility-based hospices required the greatest amount of funding. Operating costs were similarly related to the type of facility and the services being offered (Vickers 1979).

According to a survey of 59 hospices conducted by Vickers (1979), all of the funding came from five sources: private donations; membership fees; hospital and hospice revenues; federal, state and local grants and contracts; and private grants. In some cases, grants were received from organizations such as the National Cancer Institute or the Kaiser Foundation or churches.

Most non-facility based hospices required initial funding from $5,000 to $10,000 to establish their programs. The exception to this, according to Vickers (1979), was a singular facility which required $38,000 to establish its program. The non-facility or home

based programs kept their budgets down because, when a patient needed to be facility-placed, a referral was made.

Hospices which were facility-based required the highest initial funding due to the cost of the facility, equipment and staffing necessary to maintain the facility. One private inpatient facility which Vicker (1979) surveyed needed initial funding of $998,000, and another needed $86,000 in order to convert six beds of a pre-existing facility into a hospice.

Interaction with Other Facilities

The hospice movement in the United States has had an interface rather than a competitive affect upon existing facilities. The linkage exists between inpatient and home care services to ensure continuity and coordination of care between the areas. Most hospices had linkages in several different modes:

1. Hospital inpatient to hospital home care;
2. Skilled nursing facilities to community-based home health agencies;
3. Skilled nursing facilities to skilled nursing facilities based home care;
4. Community-based home care to one or more hospitals;
5. Hospital-based home care to multiple hospitals;

6. Hospital-based inpatient care to community-based home care;
7. Free-standing hospice to home care provided by hospice staff or community agencies.
(National Hospice Organization 1979, p. 66)

The interfacing of these entities worked reasonably well with proper coordination. However, it was necessary to make sure that there was not a duplication of services between the different groups and organizations.

Most hospice programs often originate in home care programs, community-based or hospital-based facilites, of which the hospitals have provided the most available medium for inpatient care. The number of free-standing hospice programs is limited at this time. The majority of developed hospices did not consider the possibility of erecting a free-standing facility according to a report by the National Hospice Organization (1979).

One other factor involved with duplicating services and beds is that, if an area is over-bedded, it is unlikely that a free-standing hospice will be developed. If an area is under-bedded, then there is a legitimate reasons for considering construction of a free-standing facility (National Hospice Organization 1979).

Personnel and Staffing

Hospice officials contend that care of the terminally ill requires an interdisciplinary team to be available to both the patient and the family and friends. The team is made up of paid and volunteer nurses, social workers, psychologists, physicians, clergy and other persons of various backgrounds. These people ensure that there is complete care for the patient and his family and friends.

The United States General Accounting Office (1979) compiled a report of 53 operating hospices, reflecting that 39 had paid staff and 14 had an all-volunteer staff. Five of the reporting hospices were hospital-based programs and differentiation in staff could not be determined. Twelve of the hospices, in turn, contracted for services, which made their overall staffing much lower while providing the same services.

The paid staff totaled 340 full-time equivalents for 39 of the 53 hospices. This is an average of 8.7 full-time equivalents per hospice. The volunteer staffs totaled 2,251 full-time equivalents, or an average of 42 full-time equivalents per hospice. The paid staff ranged from 0.1 full-time equivalent to 51.5 full-time equivalents for a free-standing facility hospice. The active-volunteer staff ranged from a low of one to a

high of 160 persons. The ratio of paid staff to volunteers ranged from a low of one to 0.2 volunteers, to a high of one to 134 volunteers (United States General Accounting Office 1979).

The majority of the paid staff were mainly medical personnel such as nurses, physicians, therapists and technicians. The balance of the personnel were administrative and clerical staff. Personal care and emotional support was the primary function of the volunteers (United States General Accounting Office 1979). Table 2 reflects the number and percentage of paid staff and volunteers.

Services Offered

Most hospices provide a mixture between medical and supportive services including home health, bereavement follow-up, and referrals to other agencies for services. According to the United States General Accounting Office (1979), ten medical services and six supportive services were identified as commonly provided services. Table 3 indicates these services.

Most hospices provide, on the average, seven to 12 of all the medical and supportive services. Only a few hospices provided as few as two or three services or as many as 14 (United States General Accounting Office 1979).

TABLE 2

NUMBER AND PERCENT OF PAID STAFF AND VOLUNTEERS IN 1979 BY ORGANIZATIONAL GROUP FOR HOSPICES IN THE UNITED STATES

	Paid workers		Volunteers	
Occupational group	Number	Percent	Number	Percent
Physicians	13.0	4	138	6
Nursing and aide staff	181.5	53	305	14
Therapists and technicians . . .	6.2	2	27	1
Social and psychological staff . .	19.2	6	208	9
Personal care, administrative and clerical staff .	120.8	35	1,573	70
Total	340.7	100	2,251	100

Source: United States General Accounting Office 1979, p. 14.

TABLE 3

SERVICES PROVIDED BY THE FIFTY-NINE OPERATING HOSPICES IN THE UNITED STATES FOR 1979

Services	Percent of hospices that		
	Provide service	Coordinate or make referrals[a]	Do not provide, refer, or coordinate service
Medical services:			
home health, skilled nursing care, and aide	68	20	12
home visits by physicians	41	30	29
psychiatric consultation	46	24	30
pain control:			
medication	63	22	15
surgery[b]	7	59	34
radiation[b]	7	66	27
physical therapy	41	39	20
occupational therapy	29	32	39
inpatient care	30	36	34
ambulatory services in and outpatient facility	19	30	51
Supportive services:			
bereavement follow-up	93	2	5
day care for patient	10	7	83
homemaker services	30	48	22
meal preparation at home	17	59	24
respite care[c]	63	5	32
death education	61	3	36

Source: United States General Accounting Office 1979, p. 14.

[a]Seventeen percent of the hospices do not make referrals to other agencies

[b]These services are rarely performed since they are normally not medically necessary to relieve terminally ill patients' pain.

[c]The patient receives total care from hospice representatives in a facility or in the home so that family members or primary care givers in the home may have a couple of days or more of rest from the stress of caring for the patient.

Hospices that provide psychiatric consultation indicated that this service is primarily provided to the hospice staff rather than the patient and family. The psychiatrist helps the interdisciplinary team by providing emotional support and guidance in dealing with the patient and family and friends. A limited number of hospices indicated to the United States General Accounting Office (1979) that a psychiatric nurse or psychiatrist did have counseling sessions with patients and family and friends.

Only 50 percent of the hospices provided 24 hour-a-day, 7 days-a-week home nursing care. This is one aspect that is deemed vital to hospice programs as stated in the "definition" of a hospice. The agencies that provided such services generally were unlicensed facilities with large volunteer staffs. Five of the hospices indicated that they were going to expand their services to provide around-the-clock coverage, thus raising the overall average to about 60 percent. About half the operating hospices plan to provide additional services. Most want inpatient facilities if they can obtain the funds (United States General Accounting Office 1979).

Payment

One of the major elements in the health care

delivery system is the cost of services and reimbursement for said services. The four major reimbursement institutions are medicare, medicaid, Blue Cross, and self pay. Most medical programs offered by hospices are reimbursed, and most home care programs are beginning to be reimbursed.

Cost of Services

The cost of hospice care is much less expensive than conventional health care. It was estimated (Flexner 1979) that if a patient were kept hospitalized during the "dying hours," the cost would range between $15,000 and $20,000. If that same patient were treated as a hospice patient with home visits and outpatient care, the cost would be less than $1,000.

According to Amado, Cronk and Mileo (1979), most of the cost depended upon how the patient was classified; that is, stage I or stage II. A stage I patient receives less extensive and critical care than a stage II patient. The cost of providing home-hospice service for stage I patients averaged $39.48 per day. This was inclusive of all medical and supportive services. The distribution of these costs is shown in table 4.

TABLE 4

DISTRIBUTION OF PER DIEM COST BY PAYER

FOR STAGE I HOME-HOSPICE CARE

Payers	Patients N = 55	Medicare	B.C.[a] "65" Policy	B.C. "120" Policy	Total
Medicare Beneficiaries .	37	$28.83	$4.67	$ ---	$33.50
Blue Cross Subscribers . .	18	---	---	50.79	$50.79
Average Cost	55	$28.83	$4.67	$50.79	$39.48

Source: Amado, Cronk and Mileo 1979, p. 523.

[a]Blue Cross.

The difference between the medicare policy holders and Blue Cross is that the medicare patients received an average of 49.7 home health aide hours and the Blue Cross patients received 122.6 hours. Amado, Cronk and Mileo (1979) speculated on the reason for this discrepancy and suggested that the older patient's primary care provider was able and available to manage much of the care while the younger patient's family members may have had to continue to work; thus, the responsibility of care shifted to home-hospice personnel.

The stage II patient has a much greater intensive level of care. According to the information in table 5, the medicare cost was still less than that of Blue Cross.

It should be noted that during this stage, home-hospice services are not intended to substitute for family involvement where it is reasonably offered. The services are meant to support, or relieve, family members when the responsibility for care exceeds or threatens to exceed their physical or emotional resources.

According to Amado, Cronk and Mileo (1979), the average length of service was 27 days, inclusive of stage I and stage II phases of care, at an average per diem cost of $75.28. The cost of home-hospice service during the stage II period was $116.86, for an average length of stay of 13.3 days.

During stage II, Blue Cross subscribers used an average of 162 hours of nursing and home health aide services while medicare patients utilized 159 hours. This, in itself, is not significant until it is noted that Blue Cross patients were provided with nurses, while medicare patients used this service at a rate of 45 percent of all hours. The effect of this utilization pattern on cost is significant according to Amado, Cronk and Mileo (1979).

The cost of providing in-home nursing and home health aide services to Blue Cross patients averaged $107.54 per diem, while the medicare patient's cost was $84.94 per diem. This difference greatly influences the per diem cost of care reported in table 5.

TABLE 5

DISTRIBUTION OF PER DIEM COST BY PAYER

FOR STAGE II HOME-HOSPICE CARE

Payers	Patients N = 55	Medicare	B.C.[a] "65" Policy	B.C. "120" Policy	Total
Medicare Beneficiaries	37	$39.84	$67.67	$ ---	$107.51
Blue Cross Subscribers .	18	---	---	140.15	$140.15
Average . .	55	$39.84	$67.67	$140.15	$116.86

Source: Amado, Cronk and Mileo 1979, p. 525.

[a]Blue Cross.

The total cost of care, inclusive of stage I and II, equaled $118,626 for the 1,567 days of care provided (Amado, Cronk and Mileo 1979). According to the authors of this article,

> Had these patients not received home-hospice services, their physicians estimated that 943 hospital days of care would have been required at a cost of $212,175 (based upon an average inpatient per diem cost of $22,500). (Amado, Cronk and Mileo 1979, p. 525)

Reimbursement

Medicare and medicaid were established by Titles XVIII and XIX of the Social Security Act, respectively; they are administered by the Department of Health, Education and Welfare's (H.E.W.) Health Care Financing Administration. H.E.W. is now known as Health and Human Services. These programs help eligible persons meet the cost of health care services. Medicare, generally speaking, covers the over 65 years of age person; and, medicaid covers the categorically needy and those whose income is too high to qualify for cash assistance, but too low to pay for medical care (National Hospice Organization 1979).

A variety of social services, including home-based services, can be covered and funded from state programs established under Title XX of the Social Security Act, commonly known as the Social Services Program. The home-based services can include homemaker, home health aide, home management, and personal care (National Hospice Organization 1979).

Many of the services provided by hospices have the potential to be covered by the medicare, medicaid, social services, and Older Americans Act programs under the present law. Others probably cannot be covered. H.E.W. and/or the states are responsible for determining whether specific services are covered under these programs, and they will have to make the final determinations. Also, it should be recognized that a number of people who are potential hospice patients are not eligible for any of the four programs (National Hospice Organization 1979).

Inpatient Care

Both medicare and medicaid cover inpatient hospital and skilled nursing facility services. Medicaid also covers intermediate care facility services. If the inpatient care provided by a hospice meets the definition applicable to these levels of care, medicare and medicaid would pay for such services up to a beneficiary's maximum benefits. Medicare helps pay for 90 inpatient hospital days and 100 skilled nursing facility days per spell of illness. To be eligible for medicare skilled nursing facility services, the patient must have been hospitalized for at least 3 days prior to admission to the facility.

Medicaid limits on covered days vary by state (United States General Accounting Office 1979).

The question of what is an inpatient hospital is one of concern to medicare.

> For medicare, an inpatient hospital is defined as a facility primarily engaged in providing to inpatients--by or under the supervision of a physician--diagnostic, therapeutic, and/or rehabilitative services for medical diagnosis, treatment, care or rehabilitation of injured, disabled, or sick persons. To be covered as inpatient hospital services, it is required that the services be medically necessary and that it be necessary that the services be provided in a hospital and not at a lower level of care. (United States General Accounting Office 1979, p. 23)

Medicaid uses the same definition.

The main question that could arise concerning coverage of inpatient hospital services for hospice patients is whether it is necessary for the patient to receive the service in a hospital. Of course, if the service could be adequately provided at a lower level of care, it should be.

For third party reimbursers, the definition of a skilled nursing facility is important.

> For medicare and medicaid, the definition of skilled nursing facility is the same: a facility engaged primarily in providing skilled nursing care and related services or rehabilitation services to injured, disabled or sick persons on a daily basis. Again in order to be

> covered, it must be necessary to provide the services in the skilled nursing facility. (United States General Accounting Office 1979, p. 24)

Assuming that the necessity requirement (and for medicare the three-day prior hospitalization requirement) is met, hospices should be able to obtain medicare and medicaid reimbursement for skilled nursing facility services they provide. In fact, medicare presumes that a patient is eligible for 14 days of skilled nursing care after discharge from a hospital with a diagnosis of terminal cancer, the disease most hospice patients have. A potential problem with medicare coverage is the requirement that a person be hospitalized for three consecutive days before admission to the skilled nursing facility. Some potential hospice patients may not meet this requirement (United States General Accounting Office 1979).

Intermediate care facility services under medicaid are health-related inpatient care and services provided to individuals who do not require the degree of care and treatment that a hospital or skilled nursing facility is designed to provide. Because of these individuals' mental or physical condition, they require care and

service (above the level of room and board) that can be made available to them only through institutional facilities. Normally, hospice patients in intermediate care facilities would meet coverage requirements if eligible for medicaid (United States General Accounting Office 1979).

Physician Services

Both medicare and medicaid pay for physician services. No problems should arise in hospices receiving payment for these services except in a few state medicaid programs that severely restrict the number of physician visits allowed (United States General Accounting Office 1979).

Home Health Care Services

Medicare, medicaid, social services, and Older Americans Act programs all provide home health care services. Home health is covered under both parts A and B of medicare, the primary difference being that, to be covered under part A, the patient must have been hospitalized for at least three consecutive days. Skilled nursing visits and home health aide visits, including

personal care services if provided incidental to skilled nursing services, are covered (Vicker 1979).

Potential problems in obtaining medicare payments for hospice home health services arise because of several medicare requirements. One requirement is that the patient must be homebound, that is, unable to leave the home except for infrequent or brief absences to obtain the services in another setting. Many terminal cancer patients, who represent the vast majority of hospice patients, remain ambulatory and, thus, are not homebound until the very last days of life. However, hospice administrators believe such patients should be cared for in the familiar setting of the home, because this is the most psychologically comfortable setting for the patient. Unless the homebound requirement is eliminated, many hospice home health visits could not be covered by medicare. The Health Care Financing Administration estimated that eliminating the home-bound requirement for all medicare beneficiaries, not just hospice patients, would increase medicare home health costs by $140 million during fiscal year 1979 (United States General Accounting Office 1979).

Another requirement which could pose problems is that the services provided by a nurse during a home health visit must involve skilled nursing care before a medicare payment can be made. In other words, at least one service that meets the definition of skilled nursing care must be provided. Many home health visits are for observation. Such visits are not routinely covered by medicare but can be if certain conditions are met. Also, personal care services provided by home health aides are not covered unless they are provided in connection with skilled nursing care under an approved plan of care. Many of the hospice home health aide visits would not meet the skilled nursing care requirement. The Health Care Financing Administration estimated that including coverage of homemaker services for all beneficiaries, not just those served by hospices, would increase medicare home health costs of $300 million during fiscal 1979 (Vicker 1979).

Finally, medicare requires that home health patients require intermittent skilled nursing. Occasionally, more service may be provided for a limited period when the physician recommends it. Medicare requires that the patient must be confined to his or her home and

under the care of a physician who establishes the plan of treatment and certified the necessity for home health services (United States General Accounting Office 1979).

Under the medicaid and social services programs, states are permitted great latitude in designing their home health care programs. The same is substantially true for grantee agencies under the Older Americans Act. Thus, the requirements for and limitations on reimbursement under these programs vary from state to state and from area to area. Some hospices use medicare requirements and limitations while others are either more or less restrictive (United States General Accounting Office 1979).

Emotional Support Services

As part of its home health benefits, medicare covers medical social services under the direction of a physician. Medicare, however, requires that these services be provided by a qualified psychiatric or medical social worker. According to the United States General Accounting Office's survey (1979), four hospices indicated that their staff were involved in providing patient and family counseling and emotional support, which do not

meet the medicare requirements for reimbursement; however, they believed these requirements are too stringent (Vicker 1979).

Although federal law has no specific restrictions on mental health benefits under medicaid, except for those in institutions, most states provide only limited medicaid mental health benefits. Also, if mental health benefits are provided under a state's social services program or an agency's Older Americans Act program, they are usually quite limited (Vicker 1979).

Private Insurance

Private insurance has taken much the same role as medicare and medicaid. The major difference becomes predominant in the different plans individuals can purchase from private insurance agencies. Table 6, developed by the National Hospice Organization (1979), shows those home care services provided by Blue Cross. Blue Cross appeared to be representative of most private insurance companies.

As can be noted, those services which are provided in inpatient facilities are also those services which appear to be covered by private insurances, and more

TABLE 6

HOME HEALTH CARE SERVICES COVERED BY

BLUE CROSS AND BLUE SHIELD PLANS

FOR 1979 N = 49

HOME HEALTH CARE SERVICE COVERED	TYPE OF PLAN					
	All Plans		[a]BC Only		Joint BC & BS[b]	
	Per Cent	No.	Per Cent	No.	Per Cent	No.
Physician and nurse home visits	69	34	52	12	85	22
Physical therapy	94	46	96	22	92	24
Respiratory therapy	80	39	83	19	77	20
Speech pathologist	71	35	78	18	65	17
Occupational therapy	65	32	74	17	58	15
Medical social service	53	26	61	14	46	12
Nutritional guidance	37	18	48	11	27	7
Home health aide service	57	28	78	18	38	10
Homemaker service	8	4	13	3	4	1
Diagnositic & therapeutic services & materials	80	39	78	18	86	21
Pharmaceuticals	88	43	87	20	88	23
Medical and Surgical supplies	92	45	87	20	96	25
Durable medical equipment (short term rental)	92	45	91	21	92	24
Medical appliances & prosthetic devices	86	42	83	19	88	23
Outpatient services	88	43	87	20	88	23
Ambulance or special transportation	82	40	78	18	85	22
Dietary assistance	10	5	13	3	8	2
Supportive devices for maintenance in home	6	3	4	1	8	2
Visiting teachers, vocational counseling, friendly visitors, etc.	0	0	0	0	0	0
Total Number of Plans Covering Home Health Care Services		49		23		26
Total Number of Plans Responding to Innovative Health Care Benefits Survey		59		25		34

Source: National Hospice Organization 1979, p. 120.

NOTE: 49 represents the number of Plans (out of 59 respondents) that reported covering certain home health care services.

[a]Blue Cross. [b]Blue Cross & Blue Shield.

specifically, Blue Cross. Bereavement follow-up was not included on the list; however, almost exclusively there is no coverage in any of the plans.

Feasibility Study

Before the initiation of any hospice, a thorough feasibility study should be done. A feasibility study is a stepping stone in "know-how" to develop a hospice and the scope of its boundaries.

According to the Dictionary of Business Management (1978) a feasibility study is "an inquiry to determine that which can be achieved given certain specific resources and other constraints." This method utilizes a systematic approach in evaluating the area of interest.

The use of feasibility is used in the literal sense of describing situations or events. Feasibility studies have distinct purposes. The purposes, according to the Handbook in Research and Evaluation (1977), are:

1. To collect detailed factual information that describes existing phenomena.
2. To identify problems or justify current conditions and practices.
3. To make comparisons and evaluations.

4. To determine what others are doing with similar problems or situations and benefit from their experience in making future plans and decisions. (Handbook in Research and Evaluation 1977, p. 18)

The Handbook in Research and Evaluation (1977) is also very specific about the steps needed to be taken in order to develop feasibility studies. They include the following:

1. Define the objectives in clear, specific terms. What facts and characteristics are to be uncovered?
2. Design the approach. How will the data be collected? How will the subjects be selected to ensure they represent the population being described? What instruments or observation techniques are available or will need to be developed? Will the data collection methods need to be field-tested and will data gatherers need to be trained?
3. Collect the data.
4. Report the results.
(Handbook in Research and Evaluation 1977, p. 18)

A review of the literature related to hospice concepts, philosophies, programs, and systems reveals that, while the idea of caring for the terminally ill in a hospice setting or program is relatively new in the United States, already a number of facilities have been developed. Although few guidelines for the initiation and operation of hospices have been formalized, it is apparent that most hospices share characteristics such

as personnel staff needs, admission policies, and financial structure. It is also evident that the initiation of any new hospice program should be preceeded by a feasibility study. In the present study of feasibility at the Valley Baptist Medical Center, this was accomplished through methods described in chapter III.

CHAPTER III

METHODOLOGY

Setting

The study was conducted at Valley Baptist Medical Center (V.B.M.C.), a 278-bed facility located in Harlingen, Cameron County, Texas. Harlingen is located in the Lower Rio Grande Valley, semi-tropical area located within 30 miles of Mexico. The population is primarily Hispanic, with a large influx of elderly people entering the area during the winter months to vacation.

The study was limited to three counties: Willacy, Cameron, and Hidalgo. The major towns in these counties are all within a forty-five mile radius of V.B.M.C.

V.B.M.C. receives money from the government only for services rendered. Therefore, any hospice project initiated at V.B.M.C. would have to be self-supporting.

Procedure

Research and determination of need were explored through the use of library research to collect information and to identify problems. This research identified six problem areas which needed to be reviewed. These six areas of feasibility were as follows:

1. Service area
2. The types and needs of patients
3. The relationship of existing facilities
4. Types of services offered
5. Manpower requirements
6. Economic feasibility

Data were collected in each of these areas and compared to similar figures from V.B.M.C. The results of the analysis will be made; however, field testing will not be completed, but deferred to a later time.

The service areas were examined in relationship to two factors. The first factor was the frequency of deaths within the geographic location. The geographic area was limited to approximately 45 miles, and encompassed the counties of Cameron, Willacy and Hidalgo. The second factor was the relationship between the numbers of deaths to the number of patients admitted to Vally Baptist Medical Center within this geographic location.

Factor two was concerned with the types of patients who might utilize the service. For the purpose of this study, the statistics were limited to those patients who had carcinoma or malignant neoplasms. Consideration, but not concentration, was given to the following diseases:

1. Chronic obstructive pulmonary disease

2. Renal disease
3. Colitis--malnutrition
4. Congestive heart failure
5. Cirrhosis
6. Benign brain tumors

It was believed that patients with these diseases would add to the potential hospice market. Cancer records from Cameron, Hidalgo, and Willacy Counties were examined along with those records from Valley Baptist Medical Center. The age, sex, and length of last stay were examined to review what type of malignant neoplasm patients died at V.B.M.C.

The third area involved the relationship between the proposed hospice project and services and the existing facilities and services. These agencies included home health care agencies, acute care nursing home facilities, area hospitals, visiting nursing associations, physical therapists, medical social services, home help services, speech therapy services, counseling services, and nutritional services. These services were examined from the viewpoint of the hospice program. The other facilities were examined to determine their affect on one another, with special consideration being placed on the overlapping of services. It was desirable to have no duplication of

services; however, those areas that appear to have duplication should be minimized.

Fourthly, the types of services to be offered were reviewed. The services fall into two areas, medical and supportive. The medical areas were

1. Home health, skilled nursing care, and aide
2. Home visits by physicians
3. Psychiatric consultation
4. Pain control
5. Physical therapy
6. Occupation therapy
7. Inpatient care
8. Ambulatory services in an outpatient facility

The supportive services were basically to help with the welfare of the patient and his family. These services included

1. Bereavement follow-up
2. Day care for patient
3. Homemaker services
4. Meal preparation at home
5. Respite care
6. Death education
7. Clergy services

The medical and support services were evaluated

according to availability of manpower and needs of the program. Other hospice programs were examined to determine the most desired services.

The fifth area of concern dealt with manpower and its availability. To operate a full service hospice, professional staff positions would include the following:

1. Medical director
2. Administrator
3. Director of nursing services
4. Staff registered nurses
5. Director of volunteers
6. Social workers
7. Secretaries
8. Volunteers

The other area of manpower was concerned with the availability of nonprofessional staff. Based on area manpower statistics, it was decided that there was not enough data to make that determination.

The sixth area of concern dealt with economic feasibility. This complex area involved proforma income and expense statements. Emphasis was placed on revenues and expenditures where total revenues received exceeded total

expenditures. Income would be generated from visits and consultations. Reimbursement for these services would come from eight sources:

1. Medicare
2. Medicaid
3. Blue Cross
4. Self pay
5. Private insurance other than Blue Cross
6. Foreign insurance
7. Other means (for example, Aide to Dependent Children, Red Cross, Kidney Foundation)
8. Combination of any of the above

It was expected the expenditures would be incurred in eight distinct areas. These areas included

1. Office lease
2. Office supplies
3. Movable equipment
4. Staffing
5. Utilities
6. Travel
7. Postage
8. Telephone

A review of the proforma income and expense statement or budget would reveal whether the program will be

self-sufficient. If the program were not self-sufficient, then donations would need to be solicited or services and staff be reduced and/or eliminated. It was important to Valley Baptist Medical Center that the program generate enough capital to sustain itself.

Data Analysis

An evaluation of all areas of this feasibility study was made utilizing several techniques. This evaluation included the following components:

1. Library research--a computer-assisted bibliographical search of literature related to factors such as guidelines, components, personnel, legal backgrounds, and direct hospice operations was examined and summarization of hospice patients by disease, staffing, services offered and insurance costs were cited
2. Demographic--based on information derived from the Texas Department of Health, United States Census Bureau, South Texas Health Systems Agency's Health Systems Plan, and The Human Resource Indicators Manual. Calculations were done by tabulation and summarization on population statistics by number, age, density and welfare. All work was done by aid of a calculator and recorded by hand

3. Mortality--based on information from the Medical Records Department of Valley Baptist Medical Center and the South Texas Health Systems Agency's Health Systems Plan, an evaluation of the causes of death, categorized by diagnosis, age, sex, and an examination of the principal methods of payment for patients who expired. Hand tabulation and summarization of frequency of diseases by location, age, sex and length of stay
4. Comparison of existing faclities and services--an analysis was made of the service area concerning duplication of services, with a more detailed analysis of the seven most affected facilities. Comparison was based upon intensity of service, location and duplication. All calculations were based on summarization of services offered with an interpretation as to the effect. Calculations were based on information from the Lower Rio Grande Valley Development Council, and the South Texas Health Systems Agency
5. Evaluation of service--based on information derived from the review of the literature, an extrapolation was made of services related to

manpower requirements and cost. Analysis was done by hand tabulation of services offered in the Lower Rio Grande and selected agencies

6. Area manpower statistics--based on information from Human Resource Indicators and the South Texas Health Systems Agency's Health Systems Plan, statistics were examined as to the availability of staff necessary to provide any proposed service by a hospice program at Valley Baptist Medical Center. Analysis was made on the basis of the number of personnel per 100,000 and an interpretation was made regarding the hospice impact

7. Proforma income and expense statement--based on information from the application of Southeast Texas Hospice, Inc., Ann's Haven Hospice and the Accounting Department of Valley Baptist Medical Center, a projected expense budget was developed. Calculations were done by hand and were based on current cost figures and estimated expenses

The findings of these analyses are presented in chapter IV. Chapter IV is the feasibility study itself.

CHAPTER IV

FEASIBILITY STUDY

The present study of the feasibility of inaugurating a hospice program in Valley Baptist Medical Center in Harlingen, Texas, examined four areas. Those areas are as follows:

1. The service area
2. Death rates
3. Facilities and services
4. Economic needs

Service Area

The majority of the patients who were hospitalized in Cameron County, primarily in Valley Baptist Medical Center (V.B.M.C.) of Harlingen, came from three counties: Cameron, Hidalgo, and Willacy (Texas Department of Health 1979). These three counties comprise the service area.

Texas had a total provisional population in 1980 of 14,228,383, with Cameron, Hidalgo, and Willacy Counties having a combined provisional population of 510,404 (see table 7). This represents a growth rate of 27.07 percent for Texas over a ten year period (or an annual

TABLE 7

POPULATION OF TEXAS, LOWER RIO GRANDE, AND COUNTIES WITHIN THE LOWER RIO GRANDE UTILIZING THE 1970, 1975 ESTIMATES, PROVISIONAL 1980, PROJECTED 1981 TO 1985 CENSUS

Location	1970	1975 Estimated	Provisional 1980	Projected[a] 1981	Projected 1982	Projected 1983	Projected 1984	Projected 1985
Texas . .	11,197,400	12,487,000	14,228,383	14,531,833	14,835,283	15,138,733	15,442,183	15,745,531
Lower Rio Grande . .	337,465	427,200	510,404	527,682	544,960	562,238	579,516	596,794
Cameron .	140,368	179,500	209,680	216,614	223,548	230,482	237,416	244,350
Hidalgo .	181,535	230,300	283,229	293,395	303,561	313,727	323,893	334,059
Willacy .	15,570	17,400	17,495	17,688	17,881	18,074	18,267	18,460

Source: The University of Texas Institute of Human Resource Indicators 1974, p. B1.

United States Census Bureau 1976, p. 3, 4 and 6.

United States Census Bureau 1980, p. 4, 7, 17, and 31

[a]Projections based on the following formula: Formula for Projecting Census Based Upon Percentage Increases:

1. annual percentage growth rate = $\frac{\left(\sqrt{\text{census for base year - census of most current data}}\right)^2}{\text{current census year - base census year}}$

2. average amount of growth per year = annual percentage growth rate X census of base year

3. projected census = census for base year X (average amount of growth per year X number of years wanting to project into the future)

rate of 2.71 percent) and a growth rate of 51.25 percent for the three counties over a ten year period (or an annual rate of 5.13 percent). Cameron and Hidalgo Counties had annual growth rates for the same time period of 4.94 and 5.6 percent respectively. Willacy County only had an annual growth rate of 1.24 percent. Hidalgo County contained 55.5 percent of all the people residing in the area in 1980. The 1980 census that was used in this study was provisional and limited in scope. There were no statistics delineated by age, density, or welfare; therefore, the statistics discussing these areas are based on the 1970 census.

The median age (see table 8) is the same in all the three counties with an overall median age of five years lower than the 26.45 years of the state. The different population by age categories, according to table 9, shows that the service area ages are consistent with state figures except one; Hidalgo has approximately twice as many people over the age of 65 as the state does, and approximately 50 percent more than the state mean. These figures do not reflect the fact that during the winter months, there is a great influx of elderly winter tourists into the area; however, because they are not permanent residents, they are not reflected in the

TABLE 8

MEDIAN AGE OF TEXAS AND CAMERON, HIDALGO, AND WILLACY COUNTIES UTILIZING 1970 CENSUS

Location	Median Age (years)
Texas	26.45
Cameron	21.82
Hidalgo	20.71
Willacy	20.87
Median Value	30.92
Mean Value	32.09

Source: The University of Texas Institute of Human Resource Indicators 1974, p. B14.

TABLE 9

PERCENT OF POPULATION BY AGE FOR TEXAS AND CAMERON, HIDALGO, AND WILLACY COUNTIES UTILIZING 1970 CENSUS

Location	Under 5 yrs.of age	Under 18 yrs.of age	18-64 years	65 years of age and over
Texas	8.92%	35.89%	55.24%	8.87%
Cameron . . .	10.75%	43.59%	47.86%	8.55%
Hidalgo . . .	11.09%	44.43%	47.83%	19.93%
Willacy . . .	10.52%	44.35%	47.23%	8.42%
Median Value	7.88%	33.92%	52.11%	12.75%
Mean Value .	7.92%	34.12%	52.61%	13.32%

Source: University of Texas Institute of Human Resource Indicators 1974, p. B4, B5, B6, and B7.

population figures. The density of the service area (see table 10) is approximately three times greather than the state as a whole and approximately twice that of the mean of the state. The population appears to be poor (see table 11) when a comparison is made regarding the percent of population on welfare in Cameron, Hidalgo and Willacy with the figures for the state. In Texas, approximately 6 percent of its population is on welfare, whereas, the service area for V.B.M.C. has an average of between 11.5 and 12.5 percent of its population on welfare (Human Resource Indicators 1974). The cost per capita for welfare in Cameron, Hidalgo, and Willacy Counties is almost twice that of the state as a whole (Human Resource Indicators 1974).

Death Rates

The majority of the causes of deaths in Cameron, Hidalgo, and Willacy Counties is very similar to that of the state. A broad overview of selected deaths shows that the four leading causes of death in both Texas and the V.B.M.C. service area (see table 12) are heart diseases, malignant neoplasms, acute myocardial infarctions, and cerebrovascular diseases. A comparison between the death rates of Texas and those of the service area reveals a basic uniformity. One exception is that diabetes melitus

TABLE 10

DENSITY PER SQUARE MILE FOR TEXAS AND CAMERON, HIDALGO, AND WILLACY COUNTIES BASED ON 1970 CENSUS

Location	Density
Texas	42.72
Cameron	156.66
Hidalgo	117.65
Willacy	26.35
Median Value	15.37
Mean Value	46.69

Source: The University of Texas Institute of Human Resource Indicators 1974, p. B14.

TABLE 11

WELFARE STATISTICS BY PERCENT OF POPULATION AND COST PER CAPITA FOR TEXAS AND CAMERON, HIDALGO, AND WILLACY COUNTIES BASED ON 1970 CENSUS

Location	Percent of Population	Cost Per Capita
Texas	5.81	28.91
Cameron	11.26	52.30
Hidalgo	11.48	56.70
Willacy	12.50	59.25
Median Value	6.18	34.75
Mean Value	6.62	37.97

Source: The University of Texas Institute of Human Resource Indicators 1974, p. B149, B150.

TABLE 12

DEATHS FROM SELECTED CAUSES BY STATE, SOUTH TEXAS HEALTH SYSTEMS AGENCY REGION, LOWER RIO GRANDE SUBAREA, AND COUNTIES IN LOWER RIO GRANDE FOR 1977

Diseases	Texas	South Texas Health Systems Agency Region	Lower Rio Grande (Cameron, Hidalgo, and Willacy Counties)	Cameron	Hidalgo	Willacy
Deaths, all causes	100,077	8,330	2,770	1,227	1,413	130
Heart Diseases	33,536	2,830	892	351	490	51
Malignant Neoplasms	19,358	1,559	463	212	224	27
Acute Myocardial Infarction	14,084	1,261	385	128	240	22
Cerebrovascular Diseases	10,263	740	231	101	125	5
Motor Vehicle Accidents	3,674	335	98	41	54	3
Non-Motor Vehicle Accidents	3,318	245	86	43	41	2
Diabetes Melitis	1,645	212	77	29	45	3
Pneumonia, Influenza	2,714	217	73	26	40	7
Diseases of Early Infancy	1,676	170	52	26	26	0
Cirrhosis of Liver	1,419	114	42	19	23	0
Arterio-Sclerosis	1,611	118	40	19	19	2
Homicides	1,793	99	38	19	18	1
Suicides	1,797	125	35	18	15	2
Congenital Anomalies	928	68	33	17	15	1
Emphysema	954	85	20	8	11	1
Tuberculosis	176	24	13	7	6	0
Nephritis, Nephrosis	424	41	12	6	4	2
Enteritis & Diarrheal Diseases	153	19	9	6	3	0
Anemias	188	14	7	1	6	0
Hypertension	280	11	4	2	2	0

Source: South Texas Health Systems Agency 1980, p. 28, 29, 30.

is the cause of approximately eight more deaths per 100,000 people in the service area than in the state. In contrast to this, death rates for suicides and emphysema in this area are lower than the rates for Texas as a whole.

Cameron County and Hidalgo County appeared to be fairly consistent in the rate of deaths per 100,000 (see table 13) for the specific categories of causes of deaths. Hidalgo County, on the other hand, has elevated rates with respect to heart diseases and nephritis and nephrosis.

A review of the death statistics at V.B.M.C. did not reveal any extraordinary findings. During the year 1980, 325 people expired in that facility. According to the review of the literature, persons with the following types of diseases have a higher probability of becoming hospice patients: chronic obstructive pulmonary disease, renal disease, colitis--malnutrition, congestive heart failure, cirrhosis, benign brain tumors, and carcinoma or malignant neoplasms (cancer). A review of the percentage of total deaths for V.B.M.C. (Medical Records Department 1980) yielded the results shown in table 14.

TABLE 13

DEATH RATES[a] FOR SELECTED CAUSES BY STATE, SOUTH TEXAS HEALTH SYSTEMS AGENCY REGION, LOWER RIO GRANDE SUBAREA, AND COUNTIES IN LOWER RIO GRANDE FOR 1977

Diseases	Texas	South Texas Health Systems Agency Region	Lower Rio Grande (Cameron, Hidalgo and Willacy Counties)	Cameron	Hidalgo	Willacy
Deaths, all causes	8.0	7.7	7.3	7.9	7.1	8.1
Heart Diseases	268.2	261.9	242.1	227.8	246.9	318.8
Malignant Neoplasms	154.8	144.3	125.6	137.6	112.9	168.8
Acute Myocardial Infarction	112.7	116.7	104.5	79.8	120.9	137.5
Cerebrovascular Diseases	82.1	68.5	62.7	65.5	63.0	31.3
Motor Vehicle Accidents	29.4	31.0	26.6	26.6	27.2	18.8
Non-Motor Vehicle Accidents	26.5	22.7	23.3	27.9	20.7	12.5
Diabetes Melitis	13.2	19.6	20.9	18.8	22.7	18.8
Pneumonia, Influenza	21.7	20.1	19.8	16.9	20.2	43.8
Diseases of Early Infancy	13.4	15.7	14.1	16.9	13.1	0
Cirrhosis of Liver	11.3	10.6	11.4	12.3	11.6	0
Arterio-Sclerosis	12.9	10.9	10.9	12.3	9.6	12.5
Homicides	14.3	9.2	10.3	12.3	9.1	6.3
Suicides	14.4	11.6	9.5	11.7	7.6	12.5
Congenital Anomalies	7.4	6.3	8.9	11.0	7.6	6.3
Emphysema	7.6	7.9	5.4	5.2	5.5	6.3
Tuberculosis	1.4	2.2	3.5	4.5	3.0	0
Nephritis&Nephrosis	3.4	3.8	3.3	3.9	2.0	12.5
Enteritis & Diarrheal Diseases	1.2	1.8	2.4	3.9	1.5	0
Anemias	1.5	1.3	1.9	0.6	3.0	0
Hypertension	2.3	1.0	1.1	1.3	1.0	0

Source: South Texas Health Systems Agency 1980, p. 31, 32, 33.

[a]Rates per 100,000 estimated mid-year population except deaths, all causes which are per 1,000 estimated mid-year.

TABLE 14

DISTRIBUTION OF DEATHS AT VALLEY BAPTIST MEDICAL CENTER FOR 1980

Disease	Frequency	Percentage
Chronic obstructive pulmonary disease	3	2.0
Renal disease	4	2.0
Colitis--malnutrition	1	1.0
Congestive heart failure . . .	21	12.0
Cirrhosis	2	1.0
Benign brain tumors	2	1.0
Malignant neoplasms	55	31.5
Other	86	49.5
Total	174	100.0

Source: Valley Baptist Medical Center Medical Records Department 1980.

As can be seen in table 14, one third of those who died at V.B.M.C. who might have been eligible for a hospice program died of cancer. In most hospice programs, the cancer patients are statistically indicative of the

types of patients likely to utilize a hospice. A review of the death rate for the Lower Rio Grande shows that the death rates are not very different from those of Cameron, Hidalgo, and Willacy Counties of Texas. The figures (see table 15) show an increase in frequency of deaths at the age bracket of 45-64, and then another large increase for the over 64 age category.

The data contained in tables 14, 16, and 17 reflect the large numbers of elderly patients dying from cancer in the service area. Sixty-two percent of all the patients who died of cancer at V.B.M.C. were 65 years of age and over.

The number of male and female deaths due to malignant neoplasms at V.B.M.C. were approximately the same (see table 18). Fifty-nine percent of the deaths were of male patients and 41 percent were of female patients.

The length of stay of patients who expired of cancer at V.B.M.C. appeared to be skewed. According to the figures in table 18, 88 percent of all the patients who died at V.M.B.C. stayed between one and 14 days. This, of course, is not indicative of the tenure of their

TABLE 15

TOTAL DEATHS BY AGE FOR SOUTH TEXAS HEALTH SYSTEMS AREA, LOWER RIO GRANDE AND CAMERON, HIDALGO, AND WILLACY COUNTIES FOR 1976

Location	All Ages	Under 5 [a]y.o.a.	5-14 y.o.a.	15-24 y.o.a.	25-44 y.o.a.	45-64 y.o.a.	over 64 y.o.a.
South Texas Health Systems Area . .	8,403	476	82	247	472	1,891	5,235
Lower Rio Grande .	2,824	209	31	80	152	606	1,746
Cameron	1,292	97	14	30	71	292	788
Hidalgo	1,402	101	17	45	75	292	872
Willacy	130	11	0	5	6	22	86

Source: South Texas Health Systems Agency 1980, p. 34.

[a]Years of age.

TABLE 16

DEATHS BY MALIGNANT NEOPLASMS BY AGE FOR SOUTH TEXAS HEALTH SYSTEMS AREA, LOWER RIO GRANDE AND CAMERON, HIDALGO, AND WILLACY COUNTIES FOR 1976

Location	All Ages	Under 5 [a]y.o.a.	5-14 y.o.a.	15-24 y.o.a.	25-44 y.o.a.	45-64 y.o.a.	over 64 y.o.a.
South Texas Health Systems Area . .	1,565	5	9	17	80	522	932
Lower Rio Grande .	501	2	5	9	21	161	303
Cameron	235	1	2	1	8	73	150
Hidalgo	247	1	3	6	13	84	140
Willacy	19	0	0	2	0	4	13

Source: South Texas Health Systems Agency 1980, p. 38.

[a]Years of age.

TABLE 17

MALIGNANT NEOPLASMS DEATH RATES PER 100,000 BY AGE FOR SOUTH TEXAS HEALTH SYSTEMS AREA, LOWER RIO GRANDE AND CAMERON, HIDALGO, AND WILLACY COUNTIES FOR 1976

Location	All Ages	Under 5 [a] y.o.a.	5-14 y.o.a.	15-24 y.o.a.	25-44 y.o.a.	45.64 y.o.a.	over 64 y.o.a.
South Texas Health Systems Area . .	147.5	4.9	3.8	8.3	32.8	291.9	988.9
Lower Rio Grande .	136.2	5.2	5.9	11.9	25.6	287.4	971.5
Cameron	152.7	6.3	5.7	3.4	22.3	306.5	1088.5
Hidalgo	124.7	4.8	6.5	14.4	29.8	283.2	877.2
Willacy	118.8	0	0	49.9	0	157.5	896.6

Source: South Texas Health Systems Agency 1980, p. 39.

[a]Years of age.

TABLE 18

PERCENTAGE OF DEATHS DUE TO MALIGNANT NEOPLASMS BY SEX, AGE, AND LENGTH OF STAY FOR VALLEY BAPTIST MEDICAL CENTER FOR 1980

Demographics		Percentage
Sex:	Male	59
	Female	41
Age:	1-15 y.o.a.[a] . . .	1
	16-24 y.o.a. . . .	1
	25-45 y.o.a. . . .	5
	46-64 y.o.a. . . .	31
	64 y.o.a. and over	62
Length of Stay:	1-14 days	88
	15-35 days	9
	36-50 days	2
	51 days and over	1

Source: Medical Records Department Valley Baptist Medical Center 1980.

[a]Years of age.

diseases. It was impossible to determine how long they had been diagnoses as terminally ill, without reviewing every chart, and this was not done.

Projecting the number of potential patients can be accomplished by multiplying the population projections (see table 7) by the death rates of specific causes (see table 13) in the Lower Rio Grande. The death rate for malignant neoplasms in 1977 in the Lower Rio Grande (see table 13) was 125.6 per 100,000 people and the death rate for chronic obstructive pulmonary disease, renal disease, colitis--malnutrition, congestive heart failure, cirrhosis and benign brain tumors was 88.4 per 100,000 people. According to the information contained in table 19, it can be observed that there will be 1,166, 1,203, and 1,240 potential patients in 1982, 1983, and 1984 respectfully.

In 1977 there were 65 patients at V.B.M.C. who expired from malignant neoplasms (see table 19) and there were 463 deaths attributable to malignant neoplasms in the Lower Rio Grande (see table 12). Equating these two figures together by dividing the 65 patients at V.B.M.C. by the 463 total deaths due to malignant neoplasms, yields a 14 percent service rate. Applying the 14 percent to the projected number of malignant neoplasms death, it could be

expected that actual participation by V.B.M.C. will range from 96 to 102 patients from 1982 to 1984 (see table 19).

The projection of the actual number of patients that any proposed project will serve is at best a reasonable estimate since not every potential patient will utilize the proposed service. In 1980, V.B.M.C. served 55 patients who expired from malignant neoplasms. The number of patients utilizing a service is also dependent upon influences from the community, staff, and communication from people who would have been affected by the proposed project. It would be a reasonable assumption to believe that they will serve as many patients in 1982 as they did in 1980. Considering the fact that the frequency of projected deaths due to malignant neoplasms and other diseases should increase each year through 1985, then the market should increase. Starting with 55 projected patients and increasing this number by 50 percent each year through 1984 (see table 19) should provide a reasonable estimate of expected usage. This range is also within the limits that Southeast Texas Hospice experienced within their first three years of operation (McKenna 1981).

TABLE 19

PROJECTIONS OF POTENTIAL AND PROBABLE NUMBER

OF PATIENTS FOR 1982, 1983, AND 1984

Year	Projected Census for Lower Rio Grande (see table 7)	Projected Potential Patients			Projected Direct Patient Care of Deaths Due to Malignant Neoplasms Based on a 14 Percent Annual Participation Rate	Projected Number of Hospice Patients Based on Current Participation and Increased at a rate of 50 Percent Per Year
		Projected Deaths due to Malignant Neoplasms based on 125.6 Deaths per 100,000	Projected Deaths due to other Diseases at a combined Death Rate of 88.4 Deaths per 100,000 (see table 14)	Total Projected Deaths and Potential Hospice Patients		
1982	544,960	684	482	1,166	96	55
1983	562,238	706	497	1,203	99	83
1984	579,516	728	512	1,240	102	124

Source: United States Census Bureau 1976, p. 3, 4 and 6.

United States Census Bureau 1980, p. 4, 7, 17, and 31.

Valley Baptist Medical Center Medical Records Department 1977 and 1980.

Facilities and Services

Table 20 contains a listing of the service area facilities. Most facilities and services overlap with respect to medical care being given to the ill. The service area for V.B.M.C. has the following acute care hospital beds per 1,000 people: Cameron--3.006, Hidalgo--2.275, and Willacy has 1.379 beds (Institute of Urban Studies 1974). According to the South Texas Health Systems Agency (S.T.H.S.A.), the staff recommended that there should not be any additional acute care facility beds for one year.

Conversely, the S.T.H.S.A. (1980) planners believe that additional skilled nursing care facility beds are needed over the next two years. Supporting this are the figures from the Institute of Urban Studies showing that there are 0.042 skilled nursing care beds per 1,000 people in Cameron County, and 0.029 and 0.245 beds per 1,000 population in Hidalgo and Willacy Counties respectively (Institute of Urban Studies 1974).

Hospitals and skilled nursing homes indeed have an affect upon any hospice program, however, direct competition with regards to how patients are cared exists. Where hospitals and skilled nursing facilities

TABLE 20

HEALTH FACILITIES IN CAMERON, HIDALGO AND WILLACY COUNTIES, 1981

Facilities	Cameron	Hidalgo	Willacy
Hospitals:	Brownsville Medical Valley Community Harlingen State Chest Rio Grande State Center Valley Baptist Valley Eye Clinic Dolly Vinsant	Edinburg General James C. Looney McAllen General McAllen Maternity Mission Municipal Knapp Memorial	Willacy County Hospital
Nursing Homes:	Good Samaritan Center Perpetual Help Home Retama Manor Valley Grand Manor Good Samaritan Center Retama Manor T.L.C.Nursing Center Twinbrooke South	Colonial Manor Retama Manor Colonial Manor Good Samaritan Center Retama Manor The Village Twinbrooke South Pharr Nursing Home San Juan Nursing Home Retama Manor Valley Grand Manor	Retama Manor Nursing Center
Specialty Services and Hospitals:	Harlingen State Chest		
Emergency Services:	Brownsville Medical Valley Community Valley Baptist Dolly Vinsant	Edinburg General McAllen General Mission Municipal Knapp Memorial	Willacy County Hospital

TABLE 20--Continued

Facilities	Cameron	Hidalgo	Willacy
Renal Dialysis Clinics:	Valley Hemodialysis Center Watson W. Wise Memorial Center	Valley Hemodialysis Center	
Family Planning Clinics:	Brownsville Community Health Clinic Brownsville Nursing Office Planned Parenthood Family Health Service Clinic Harlingen Nursing Office Planned Parenthood Texas Department of Health Texas Department of Health Planned Parenthood San Benito Nursing Office	Donna Clinic Delta Rural Health Center Edinburg Clinic Pan American Health Center Planned Parenthood Elsa Clinic McAllen Clinic McAllen Migrant Clinic Planned Parenthood Mercedes Clinic Mercedes Migrant Clinic Mission Clinic Planned Parenthood Pharr Clinic Planned Parenthood Planned Parenthood Weslaco Clinic	Planned Parenthood Su Clinica Familiar
Freestanding Outpatient Clinics:	Brownsville Community MHMR Brownsville Drug Treatment & Prevention Brownsville Satellite Center Family Health Clinic # 1 Family Health Clinic # 2 Harlingen Drug Treatment & Prevention	Drug Treatment & Prevention Elsa MH[a] Satellite Center Tropical Texas Center MHMR[b] McAllen Drug Treatment & Prevention McAllen MH Satellite Center	Family Health Services Clinic

TABLE 20--Continued

HEALTH FACILITIES IN CAMERON, HIDALGO AND WILLACY COUNTIES, 1981

Facilities	Cameron	Hidalgo	Willacy
Freestanding Outpatient Clinics--continued:	Harlingen MHMR Harlingen Satellite Center Protective Services/ Children	Mid-Valley MH Clinic Rio Grande Radiation Center	
Rehabilitation Facilities:	Moody Clinic Valley Rehabilitation	Easter Seal Society	
Residential Care Facilities:	Brownsville Emergency Shelter Esperanza Home The Haven Reality House Villa Bethany Rio Grande State Center Rio Grande Valley Midway House Valley Boys Ranch Bilbie Hall Sunny Glenn	South Texas H.S. Halfway House Casa Mirasol La Lomita Farms Rio Grande Children's Home	
Home Health Agencies:	Rio Grande Home Health Agency Rio Grande Home Health Agency Cameron County Health Department Home Health Services	Hidalgo County Home Health Service Hidalgo County Home Health Service Rio Grande Home Health Agency	Valley Home Health Agency

TABLE 20--Continued

Facility	Cameron	Hidalgo	Willacy
Public Health Departments:	Cameron County Health Department Cameron County Health Department Cameron County Health Department	Hidalgo County Health Department Hidalgo County Health Department Hidalgo County Health Department Hidalgo County Health Department Hidalgo County Health Department Hidalgo County Health Department	P.H.Clinic--Region 8
Other Health Related Resources:	American Cancer Society Cameron County Expanded Nutrition American Heart Association Cameron County Expanded Nutrition Cameron County Expanded Nutrition	American Cancer Society Hidalgo County Migrant Health Hidalgo County Migrant Health Hidalgo County Migrant Health Hidalgo County Migrant Health Hidalgo County Migrant Health March of Dimes Foundation Rio Grande Valley Blood Service	

Source: Rio Grande Development Council 1979, p. 76-146.

[a]Mental Health.

[b]Mental Health & Mental Retardation.

will propagate curative care, any hospice program will be striving for palliative care. The seven home health care agencies located within the service area should have services more aligned with that of the proposed hospice, and, therefore, provide more of a direct competition.

Table 21 contains a review of these seven agencies. They are as follows: Rio Grande Home Health Agency, Harlingen and Brownsville; Cameron County Health Department, Harlingen and Brownsville; Home Health Services, San Benito; Upjohn Health Care Services, Harlingen and McAllen; Hidalgo County Home Health Services, Edinburg and Weslaco; Rio Grande Home Health Agency, Weslaco; and Valley Home Health Agency, Raymondville. Through these seven agencies, homebound patients basically receive medical services including: home health, skilled nursing care and aid, home visits by physicians, psychiatric consultation, pain control, physical therapy, occupational therapy, inpatient care, and ambulatory services. The major difference between these seven agencies, rather than approach, is their utilization of support services. These services include: bereavement follow-up, day care for the patient, homemaker services, meal preparation at home, respite care, death education, and clergy services.

Most of these services, both medical and support, are offered (see table 21) by some agency. Any organization desiring to maintain a program for terminal patients should strive to offer as many of these services as possible.

The staff necessary to start a hospice depends upon the type of hospice being developed. If the hospice is a free-standing facility-based operation, it would obviously require more manpower than a hospice which is coordinative in nature and has arranged for services to be provided by contracted agencies and facilities. The National Hospice Organization President's Newsletter (1981) developed a formula for the determination of bed need (see table 22). The formula is:

$$\frac{\text{total number of patient days per year}}{\text{number of days of care per year for one bed at a desired percent of occupancy}} = \frac{\left[\text{number of patients who die at home} \times \text{average number of days of inpatient care}\right] + \left[\text{number of patients who die in hospice units} \times \text{Average number of inpatient days}\right]}{\left[\text{desired percent of occupancy for one bed} \times \text{number of days per year}\right]}$$

The formula considers an occupancy percent times 365 (number of days per year), to obtain the number of days of care per year for one bed at a desired percent of occupancy. After the number of patients have been determined, then by

TABLE 21

SERVICES OFFERED BY HOME HEALTH CARE AGENCIES IN CAMERON, HIDALGO AND WILLACY COUNTIES IN 1978 AND 1979

COUNTY	AGENCY	CITY(S)	DESCRIPTION OF SERVICES OFFERED CONCERNING HOME HEALTH
Cameron:	Rio Grande Home Health Agency	Harlingen Brownsville	skilled nursing, home health aid services and in home health aid to tri-county area of Willacy, Cameron and Hidalgo Counties
	Cameron County Health Department	Harlingen Brownsville	skilled and unskilled nursing services for homebound patients, family care (basic homemaker services offered)
	Home Health Services	San Benito	skilled nursing care, family care service for homemakers, home health aid, 24 hour service, diabetic teaching, care of terminal cancer patients, rehabilitation of the stroke patients
	Upjohn Health Care Services	Harlingen McAllen	provides professional care, home health aid and visiting care in the home; also, provides staffing in hospitals and nursing homes, physical therapy, speech and occupational therapy and nutritional guidance
Hidalgo:	Hidalgo County Home Health Services	Edinburg Weslaco	skilled home health aid services offered, nutrition and social services offered

TABLE 21-Continued

COUNTY	AGENCY	CITY(S)	DESCRIPTION OF SERVICES OFFERED CONCERNING HOME HEALTH
Hidaldo continued:	Rio Grande Home Health Agency	Weslaco	same as Rio Grande Home Health Agency, Cameron County
Willacy:	Valley Home Health Agency	Raymondville	all services for in-home care, provides skilled nursing, social services, nutritional instruction and planning, and physical therapy in the home and at a fully equipped center

Source: Lower Rio Grande Valley Development Council 1978 and 1979, p. 76-146.

TABLE 22

COMPUTATION OF INPATIENT HOSPICE BED NEED AT VALLEY BAPTIST MEDICAL CENTER FOR 1982

	Hospice patients who die at home	Hospice patients who die in Hospice units	Total
Percentage of all Hospice patients . .	70	30	100
Number of patients . .	39	16	55
Average number of days of inpatient care	5	17	--
Total patient days per year	195	272	467

Number of days of care for one bed at 85 percent occupancy: $(.85)\ (365) = 310$ days

Number of inpatient Hospice beds needed at 85 percent occupancy: $\frac{467}{310} = 1.51$ beds

Source: National Hospice Organization President's Newsletter 1981, p. 4.

multiplying the average number of inpatient days by the number of patients, will yield the total patient days per year. The division of the total patient days per year by the days of care yields the number of hospice beds needed. According to the National Hospice Organization President's Newsletter (1981), 70 percent of all patients died at home with five days of inpatient care, and conversely 30 percent die in hospice units with an average of 17 days of inpatient care. A test of this formula at Ann's Haven: Hospice of Denton County, Texas, indicated that the results from the formula were similar. Utilizing the bed need formula developed by the National Hospice Organization (1981), their need would be between one and two beds (see table 22).

Manpower was projected on figures from Ann's Haven Hospice (1979) and the Southeast Texas Hospice of Orange, Texas (1978), pertaining to their bed needs and projected demand. Ann's Haven, according to table 23, required 3.81 full-time equivalents to start operations and the Southeast Texas Hospice needed 4.45 full-time equivalents to start at the beginning of the year. Furthermore, projected need for Southeast Texas Hospice was 7.5 by the end of the year.

TABLE 23

ESTIMATED STAFFING REQUIREMENTS FOR

TWO EXISTING HOSPICES BY TIME

Position	Ann's Haven			Southeast Texas		
	opening	six months	one year	opening	six months	one year
Medical Director . .	0.1	n/a	n/a	0.2	.5	1.0
Administrator	1.0	n/a	n/a	1.0	1.0	1.0
Director of Services/ RN[b]	1.0	n/a	n/a	1.0	1.0	1.0
Staff RN	0.5	n/a	n/a	0.5	1.5	2.0
Director of Volunteers	1.0	n/a	n/a	0.5	0.5	1.0
Social Worker	0.2	n/a	n/a	0.25	0.25	0.5
Secretary	1.0	n/a	n/a	1.0	1.0	1.0
Psychologist	0.06	n/a	n/a	n/a	n/a	n/a
Psychiatrist	0.05	n/a	n/a	n/a	n/a	n/a
Total	3.81 FTE[a]	n/a	n/a	4.45 FTE	5.75 FTE	7.5 FTE

Source: Ann's Haven: Hospice of Denton 1979, p. S3C.

[a]FTE--Full-Time Equivalent
[b]RN--Registered Nurse

NOTE: Ann's Haven did not supply data for 6 months and one year's time frame.

The number of registered nurses and physicians in the area is much lower than the state figures according to table 24. Texas has a ratio of one registered nurse per 274 people, whereas, Cameron and Willacy have a ratio of one nurse per 582 people. Hidalgo and Star have one registered nurse per 688. The number of physicians in the area appear to be low even though the state figures were not available for a comparative standpoint. The number of allied health professionals, or those people who have ancillary services, was not available. Determination of manpower requirements is a function of three elements: (1) number of patients being served, (2) services being provided, and (3) the amount of time necessary to fulfill those services. Reviewing table 19, there is a predicted patient load of 55, 83, and 124 patients in 1982, 1983, and 1984 respectively. Services that are expected to be offered include all medical and support services. They include: home health, skilled nursing care and aide, home visits by physicians, psychiatric consultation, pain control, physical therapy, occupational therapy, inpatient care, ambulatory services, bereavement follow-up, day care for patients, homemaker services, meal preparation at home, respite care, death education, and clergy services.

TABLE 24

SELECTED HEALTH MANPOWER RATIOS PER 1,000 POPULATION FOR TEXAS AND CAMERON/HIDALGO AND STAR/WILLACY COUNTIES FOR 1979

Location	Registered Nurses	Physician	Allied Health
Texas	1 per 274	not available	no figures available
Cameron/ Willacy	1 per 582	1 per 4475	no figures avilable
[a]Hidalgo/ Starr	1 per 688	1 per 3233	no figures available

Source: South Texas Health Systems Agency 1980, p. 7.

[a]Figures were compiled in study by combining areas.

The amount of time spent completing these services and the personnel required to do the task can be seen on table 25. According to the information contained in table 25, in 1982 there will be a combined full-time equivalent (F.T.E.) requirement of 2.828 professionals other than the 2.0 F.T.E. requirement for the administrator and the secretary. In 1983, there should be a combined F.T.E. total of 4.273, plus the two F.T.E.s for administration, and in 1984, there should be a combined F.T.E. need

TABLE 25

PROJECTION OF STAFFING REQUIREMENTS FOR PROPOSED HOSPICE FOR 1982, 1983, AND 1984

Projected Number of Patients (1)	Staff Position (2)	Number of Visits (3)	Total Number of Hours Spent for Each Visit (4)	Total Hours Needed for Each Visit (2)*(3) (5)	Total Hours Needed Per Year (1)*(4) (6)	Full-Time Equivalents Need to Satisfy Hourly Requirements (6)- 2080 Hours per Year (7)
55	Physician	2	2	4	220	0.106
	Medical Consultant	3	1	3	165	0.079
	Registered Nurse	15	2	30	1650	0.793
	Physical Therapy	2	0.5	1	55	0.026
	Occupational Therapy	2	0.5	1	55	0.026
	Medical Social Worker	4	2	8	440	0.212
	Clergy	12	1	12	660	0.317
	Volunteers	16	3	48	2640	1.269
	Total	56	12	107	5888	2.828
83	Physician	2	2	4	332	0.160
	Medical Consultant	3	1	3	249	0.120
	Registered Nurse	15	2	30	2490	1.200
	Physical Therapy	2	0.5	1	83	0.040
	Occupational Therapy	2	0.5	1	83	0.040
	Medical Social Worker	4	2	8	664	0.319
	Clergy	12	1	12	996	0.479
	Volunteers	16	3	48	3984	1.915
	Total	56	12	107	8881	4.273
124	Physican	2	2	4	496	0.238
	Medical Consultant	3	1	3	372	0.179
	Registered Nurse	15	2	30	3720	1.789
	Physical Therapy	2	0.5	1	124	0.060
	Occupational Therapy	2	0.5	1	124	0.060
	Medical Social Worker	4	2	8	992	0.477
	Clergy	12	1	12	1498	0.715
	Volunteers	16	3	48	5952	2.862
	Total	56	12	107	13,268	6.379

SOURCE: National Hospice Organization, 1979, p. 5.

Southeast Texas Hospice, 1981, p. 1.

of 6.379 plus the 2.0 F.T.E. required for the administrative staff.

Economic Feasibility

Almost any program is dependent upon generating a net profit, or at least breaking even in order to maintain its services. The Southeast Texas Hospice of Orange, Texas, generated its revenues from four sources: hospice--medical doctors, hospice--registered nurses, hospice--medical social workers, and medical consultants. They charged $28.68 for each visit, except for the medical consultant, for whom a charge of only $20.00 was made. They estimated that they would generate a total of 3,717 visits broken-down to 300, 3,252, 160, and five visits respectively for the four revenue sources. These 3,717 visits would generate $107,049.00 in revenue. It was also estimated that there would be 1,626 volunteer visits for which there would be no charge. A review of table 26 shows the charges that two hospices and a home health care agency generate per visit.

Reimbursement for all services at Valley Home Health, Southeast Texas Hospice, and Ann's Haven Hospice of Denton County came from several different sources. The information in table 26 shows, by percentage, how services were reimbursed from these different agencies

TABLE 26

PROPOSED CHARGES FOR SERVICES AT VALLEY HOME HEALTH, SOUTHEAST TEXAS HOSPICE AND ANN'S HAVEN HOSPICE OF DENTON COUNTY FOR 1978 TO 1979

Facility	Amount
Valley Home Health (Willacy County)	$30.00/visit
Southeast Texas Hospice (Orange County)	
Medical Doctor	$26.68/visit
Registered Nurse	$26.68/visit
Social Worker	$26.68/visit
Medical Consultant . . .	$20.00/visit
Ann's Haven: Hospice of Denton County (Denton County)	$50.00/visit

Source: Lower Rio Grande Development Council 1979, p. 100.

Source: Ann's Haven: Hospice of Denton County 1978, p. S3C.

Source: Southeast Texas Hospice 1978, p. 9.

and organizations. There appears to be a great difference between the amounts reimbursed by medicare and medicaid. One factor that may be involved is the large number of elderly people who enter the service area during the winter, probably raising the percentage of medicare and medicaid reimbursements (see table 27).

Projecting the amount of money necessary to maintain the proposed hospice at V.B.M.C. can be seen in tables 28, 29, and 30. These figures are based on the proposed services to be offered, the projected number of patients, and the manpower necessary to maintain the program. The hospice type is a hospital based--home care type hospice, since the bed need has been estimated to be only one to two beds. Salaries are based on wages normally paid in the Lower Rio Grande and supplied by V.B.M.C.

In 1982, there is a projected loss of $32,364.00, and in 1983 and 1984, there are projected losses of $9,219 and $2,128 respectively. As can be observed, break-even point should occur at some point shortly above 124 patients, and into the year of 1985. Differences between operating costs and income would have to be supported through private contributions or carried as an operating deficit.

The contributions that are listed in tables 28, 29,

TABLE 27

PERCENTAGE OF REIMBURSEMENT BY SOURCE FOR PATIENTS AT VALLEY BAPTIST MEDICAL CENTER COMPARED TO THE SOUTHEAST TEXAS HOSPICE FOR 1980

Source of Reimbursement	Valley Medical Center	Southeast Texas Hospice
	percentage	
1. Medicare	61	56
2. Medicaid	15	8
3. Blue Cross	9	18[a]
4. Self pay	18	18
5. Private Insurance other than Blue Cross	8	. . .
6. Foreign insurance . .	6	. . .
7. Other means	1	. . .
8. Combination of any of the above	2	. . .
	100	100

Source: Valley Baptist Medical Center 1980.

Source: Southeast Texas Hospice 1978, p. 1.

[a]Is a combination of Blue Cross and private insurance other than Blue Cross.

TABLE 28

PROFORMA INCOME-EXPENSE STATEMENT BASED ON FIFTY-FIVE PATIENTS FOR 1982

I.	Income		
	A. Visits		
	1. Physician (2 visits x 55 patients x $40.00)	$ 4,400	
	2. Registered Nurse (15 visits x 55 patients x $40.00)	33,000	
	3. Medical Social Worker (4 visits x 55 patients x $20.00)	4,400	
	4. Medical Consultant (3 visits x 55 patients x $40.00)	6,600	
	5. Physical Therapist (1 visit x 55 patients x $20.00)	1,100	
	6. Occupational Therapist (1 visit x 55 patients x $20.00)	1,100	
	7. Clergy (12 visits x 55 patients)	-0-	
	8. Volunteers (16 visits x 55 patients)	-0-	
	B. Contributions	5,000	$55,600
II.	Expenses--Fixed		
	A. Facility (12 months x 300/month)	$ 3,600	
	B. Salaries		
	1. Administrative Director (1.0 F.T.E.)[a]	20,000	
	2. Secretary (1.0 F.T.E.)	8,000	($31,600)
III.	Expenses--Variable		
	A. Salaries		
	1. Medical Director[b] (.25 F.T.E.)	$10,000	
	2. Staff Registered Nurse (0.8 F.T.E.)	14,400	
	3. Medical Social Worker (.3 F.T.E.)	6,000	
	4. Director of Volunteers (.25 F.T.E.)	2,500	
	5. Physical Therapist (.03 F.T.E.)	450	
	6. Occupational Therapist (.03 F.T.E.)	450	
	7. Clergy (12 hours x 55 patients) (.3 F.T.E.)	-0-	
	8. Volunteers (48 hours x 55 patients)	-0-	
	B. Uncollectables	4,144	
	C. Utilities	600	
	D. Telephone	1,200	
	E. Postage	600	
	F. Office Supplies	300	
	G. Travel (2,860 visits x $2 each)	5,720	($46,364)
	TOTAL		($32,364)

[a]F.T.E. = Full-time equivalent

[b]Medical Director's salary includes the physician and medical consultant

TABLE 29

PROFORMA INCOME-EXPENSE STATEMENT BASED ON EIGHTY-THREE PATIENTS FOR 1983

I.	Income		
	A. Visits		
	1. Physician (2 visits x 83 patients x $40.00)	$ 6,640	
	2. Registered Nurse (15 visits x 83 patients x $40.00)	49,800	
	3. Medical Social Worker (4 visits x 83 patients x $20.00)	6,640	
	4. Medical Consultant (3 visits x 83 patients x $40.00)	9,960	
	5. Physical Therapist (1 visit x 83 patients x $20.00)	1,600	
	6. Occupational Therapist (1 visit x 83 patients x $20.00)	1,600	
	7. Clergy (12 visits x 83 patients)	-0-	
	8. Volunteers (16 visits x 83 patients)	-0-	
	B. Contributions	10,000	$86,360
II.	Expenses--Fixed		
	A. Facility (12 months x 300/month)	$ 3,600	
	B. Salaries		
	1. Administrative Director (1.0 F.T.E.)[a]	21,000	
	2. Secretary (1.0 F.T.E.)	8,400	($33,000)
III.	Expenses--Variable		
	A. Salaries		
	1. Medical Director[b] (4 hours x 83 patients) + (3 hours x 83 patients) + staff (0.3 F.T.E.)	$12,000	
	2. Staff Registered Nurse (30 hours x 83 patients) (1.2 F.T.E.)	21,600	
	3. Medical Social Worker (8 hours x 83 patients) + staff (.35 F.T.E.)	7,000	
	4. Director of Volunteers (.25 F.T.E.)	2,500	
	5. Physical Therapist (0.4 F.T.E.)	600	
	6. Occupational Therapist (0.4 F.T.E.)	600	
	7. Clergy (12 hours x 83 patients) (.5 F.T.E.)	-0-	
	8. Volunteers (48 hours x 83 patients) (2.0 F.T.E.)	-0-	
	B. Uncollectables (10 percent x total income)	6,647	
	C. Utilities	600	
	D. Telephone	1,200	
	E. Postage	800	
	F. Office Supplies	400	
	G. Travel (4,316 visits x $2 each)	8,632	($62,579)
	TOTAL		($ 9,219)

[a]F.T.E. = Full-time equivalent

[b]Medical Director's salary includes the physician and medical consultant

TABLE 30

PROFORMA INCOME-EXPENSE STATEMENT BASED ON ONE HUNDRED TWENTY-FOUR PATIENTS FOR 1984

I.	Income		
	A. Visits		
	1. Physicians (2 visits x 124 patients x $40.00)	$ 9,920	
	2. Registered Nurse (15 visits x 124 patients x $40.00)	74,400	
	3. Medical Social Worker (4 visits x 124 patients x $20.00)	9,920	
	4. Medical Consultant (3 visits x 124 patients x $40.00)	14,880	
	5. Physical Therapist (1 visit x 124 patients x $20.00)	2,480	
	6. Occupational Therapist (2 visits x 124 patients x $20.00)	2,480	
	7. Clergy (12 visits x 124 patients)	-0-	
	8. Volunteers (16 visits x 124 patients)	-0-	
	B. Contributions	15,000	$129,080
II.	Expenses--Fixed		
	A. Facility (12 months x 300 per month)	$ 3,600	
	B. Salaries		
	1. Administrative Director (1.0 F.T.E.)[a]	21,000	
	2. Secretary (1.0 F.T.E.)	8,400	($ 33,000)
III.	Expenses--Variable		
	A. Salaries		
	1. Medical Director[b] (4 hours x 124 patients) + (3 hours x 124 patients) + staff (0.5 F.T.E.)	$20,000	
	2. Staff Registered Nurse (30 hours x 124 patients) (2.0 F.T.E.)	36,000	
	3. Medical Social Worker (8 hours x 124 patients) + staff (0.55 F.T.E.)	11,000	
	4. Director of Volunteers (0.25 F.T.E.)	2,500	
	5. Physical Therapist (0.60 F.T.E.)	900	
	6. Occupational Therapist (0.60 F.T.E.)	900	
	7. Clergy (12 hours x 124 patients) (0.7 F.T.E.)	-0-	
	8. Volunteers (48 hours x 124 patients) (3.0 F.T.E.)	-0-	
	B. Uncollectables (10 percent total income)	10,912	
	C. Utilities	600	
	D. Telephone	1,200	
	E. Postage	800	
	F. Office Supplies	500	
	G. Travel (6,448 visits x $2 each)	12,896	($ 98,208)
	TOTAL		($ 2,128)

[a]F.T.E. = Full-time equivalent

[b]Medical Director's salary includes the physician and medical consultant

and 30 are general estimates of what might be collected according to Mr. Ben McKibben, President of V.B.M.C. (1981). During the last three years (1978, 1979, and 1980) V.B.M.C. collected approximately $600,000 in donations for the hospital and their foundations. These contributions were collected for specific projects and would not be available for other programs as needed.

The income area reflects that charges are $40 for all visits except those for the medical social worker, physical therapist, and occupational therapist. This falls within the range of what the two other hospices charged and is in keeping with what the administration at V.B.M.C. would like to charge (McKibben 1981).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The hospice movement in the United States is a rapidly growing method of care for the terminally ill patient. There is no hospice program currently available in the Lower Rio Grande and Valley Baptist Medical Center (V.B.M.C.), Harlingen, Texas, is interested in the development of such a program. An analysis was made of the service area for V.B.M.C. in terms of population statistics, death rates, manpower availability, and economic feasibility to determine the feasibility of implementing such a hospice.

Conclusions

Several conclusions were reached during the study of V.B.M.C. service area and they include the following:

1. The three county area population age 65 and over is about the same as that for Texas, with the mean about four percent below the state
2. The population by age does not include the vacationers who migrate to the area during the

winter because they are not considered residents

3. There is a substantial difference regarding the number of people on welfare in the Lower Rio Grande (L.R.G.). Texas has 5.81 percent of the population on welfare whereas the L.R.G. has 11.50 percent of its population on welfare
4. The cost per capita for welfare is higher in the L.R.G. than that of Texas by almost twice as much. Texas had a cost per capita of $28.91 whereas the L.R.G. has approximately a $57.00 cost per capita
5. The population density in the L.R.G. is much greater than that of the state. Texas has a mean of 46.69 people per square mile versus the L.R.G. mean of about 130 people per square mile. The exception to this is Willacy County, which has a density of only 26.35 per square mile
6. The mortality rate for the L.R.G. is approximately the same as the State of Texas. The three county area had a range of 7.9 to 8.0 deaths per 100,000 versus a state rate of 8.0 in 1977. The two leading causes of death, cancer and heart diseases were similar to those figures from the state

7. The typical patient utilizing a hospice would be a cancer patient
8. Approximately one third of all former patients deemed eligible to enter a hospice program from V.B.M.C. died of cancer
9. The rate of cancer deaths in the L.R.G. is consistent with rates for the South Texas Health Systems Agency by age
10. There is very little difference between the number of males and females who die at V.B.M.C., and who would have been deemed eligible for possible hospice participation
11. The South Texas Health Systems Agency does not recommend the addition of any more acute care facility beds within the next year
12. The South Texas Health Systems Agency planners recommend that no additional skilled nursing care beds be built past the year 1983
13. Any opposition to a hospice at V.B.M.C. will probably come from the seven different home health care agencies in the area; with the most opposition coming from Home Health Services in San Benito

14. Other area facilities and services offer partial duplication of proposed services, but they are probably not specifically designed to provide the usual hospice services
15. Reviewing two hospices which were both "home care" hospices, their manpower requirements were estimated to be between 3.81 and 7.5 full-time equivalents their first year of operation
16. If a hospice at V.B.M.C. served approximately 50 patients in a year, it would generate a predicted bed need of 1.3 beds
17. Most programs are covered by medicare, and it is estimated that 56 percent of all reimbursements will come from medicare
18. Based on 55 patients the first year at V.B.M.C. there would be an operating loss of $32,364.00
19. Based on 83 patients the second year at V.B.M.C. there would be an operating loss of $9,219.00
20. Based on 124 patients the third year at V.B.N.C. there would be an operating loss of $2,128.00
21. It should take approximately three years to break even. Break even should occur shortly after 124 patients have been served
22. The population in the Lower Rio Grande had a

growth rate of greater than 50 percent for the ten year period between 1970 and 1980 (United States Census Bureau 1980)

23. The population in the Lower Rio Grande has a projected population growth rate over the next five years of 5.13 percent
24. The total projected hospice patients for Cameron, Hidalgo, and Willacy counties show a potential of 1,166, 1,203, and 1,240 patients in 1982, 1983, and 1984 respectively

Recommendations

In consideration of all factors--demographic indicators, vital statistics, manpower, area facilities, economic feasibility, and current status of Valley Baptist Medical Center, the following recommendations are made:

1. Based on the projected bed need of one to two beds it is not recommended that a free-standing facility be built
2. Utilization should be made of the facilities at V.B.M.C. to help reduce the cost to the proposed hospice project, and to assist V.B.M.C. in keeping their occupancy at a high rate
3. The hospice should be developed as an hospital-based home care hospice

4. The proposed hospice program should have a strong volunteer program to assist in patient care, and to assist in the elimination of paid staff positions
5. There should be a strong community involvement for volunteer support and donations
6. V.B.M.C. should consider absorbing the difference in the net operating deficit after donation until such time as the hospice reaches a break-even point
7. The facility should offer as many programs as it possibly can in order to demonstrate to the Texas Health Facilities Commission (for certificate of need) that they are indeed offering a service which is unique and different from anything currently being offered
8. The proposed project should break even shortly after the third year. This is not unusual for a program or business just starting out; however, V.B.M.C. should be willing and able to support the program during these beginning years
9. There should be further studies conducted to determine exactly how the community views this project. It is important from two points. The

first point is whether the community as a whole will support the concept and utilize the service, and the second point is the need for their continued financial support

10. This project should be reviewed very carefully considering the amount of patients needed to break even. If the program has the proper management it should be of benefit to both the community and to Valley Baptist Medical Center

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