COMMUNITY HEALTH NEEDS ASSESSMENT:
A STUDY OF SUPPLY OF AND DEMAND FOR HEALTH AND SOCIAL SUPPORT SERVICES IN BRAZOS COUNTY

by

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EXECUTIVE SUMMARY

COMMUNITY HEALTH NEEDS ASSESSMENT:
A STUDY OF SUPPLY OF AND DEMAND FOR HEALTH AND
SOCIAL SUPPORT SERVICES IN BRAZOS COUNTY

Introduction

The purpose of the study was to identify: 1) current supply of health and
social support services in Brazos County, 2) current demand for existing services, and
3) need for additional health and social support services. Need was determined by
contrasting number, location, and demographic profiles of those that demanded care
to similar characteristics of target census groups with the greatest need.

A questionnaire survey of available health and social support services in
Brazos County was conducted in the fall, 1993. Eighty-five agencies participated
(response rate = 99%), providing aggregate data about clients who used their services
in the prior fiscal year. Target populations were identified in the 1990 census data
and enumerated according to categories equivalent to those in the user populations.
These target populations provided a valid and reliable, yet conservative estimate of
need, and therefore, would tend to underestimate the level of real need in the
community.

Summary of the Findings

1) Inpatient Care: In the two local acute care hospitals, the discharge rate was
higher than the national average, particularly for elderly. Average length of stay was
shorter than national and state averages. Blacks had disproportionately higher
discharge rate than expected according to national norms.

   Recommendations: Greater need for home health services. Investigate access
to primary and preventive care for Blacks. Investigate increasing use of outpatient
surgical procedures.

2) Emergency Services: In the local hospitals and the student health center, ER use
was less than US rates but higher than Texas rates. ER use by children and young
adults was greater than US rates but use by elderly was almost half of the US rate.
ER payment source was more from private insurance and out-of-pocket payments
than U.S. norms, and was less than the percent paid by governmental sources.

   Recommendations: Greater need for walk-in services for pediatric and young
adult patients.
3) **Physician Supply:** Physician supply was comparable to other university towns in Texas, but less than other university towns with medical centers. Location of physicians was clustered around the hospitals and large clinics, regardless of the distribution of the target population in need.  
**Recommendations:** Need for frequent transportation services and adequate parking around areas with physician clusters.

4) **Nursing Home Care:** The local bed to elderly population ratio was higher than Texas or U.S. rates, but comparable or lower than other university towns in Texas.  
**Recommendations:** Enhance support services and home care for elderly to enable them to remain in the community as long as possible. Examine alternatives for retirement communities.

5) **Home Health Care:** Three home health agencies were identified that provided services to the general community, with another agency operational after the data collection period was completed. Home health care was the largest area of need for hospital patients needing follow-up care. This need was expected to increase as length of hospital stay decreased. 91% of home health clients were elderly (65+), and a high percentage were female. A disproportionately high percentage of home health care was provided to minorities, perhaps due to their higher hospitalization rate in this community as well as due to successful outreach and case finding. The capacity of available home health services was far below the need in the community, reaching less than 3% of a target group needing these types of services, i.e., disabled adults with self-care limitations.  
**Recommendations:** Expand availability of affordable home health services.

6) **Preventive Reproductive Health Services:** Three agencies provided comprehensive reproductive health services to the general community, regardless of ability to pay. These agencies served 19% of the female population (12-64 years) in Brazos County. A disproportionately high percentage of adolescent, minority, and low income clients were served, indicating successful outreach and case finding.  
**Recommendations:** Expand availability of services to reach higher proportion of women who do not have access to reproductive care offered in the private sector. Expand services to include evening and weekend hours to reduce barriers to the working poor.

7) **Preventive Social Support for Pregnant Teens:** One agency provided comprehensive social support services for pregnant or parenting adolescents to complete high school. The need for this type of program exceeded the available capacity.  
**Recommendations:** Expansion of this type of program throughout the community.

8) **Preventive General Health Care:** Eight programs provided a range of services for diagnostic screening, counseling, communicable diseases, newborn and well-child care. A disproportionately high percent of visits were made by adults, with minimal use by school-aged children.  
**Recommendations:** Continue outreach programs to provide access to preventive care.

9) **Immunizations:** The County Health Department gave approximately 20,000 immunizations annually for protection against childhood communicable diseases. An additional 1,875 were immunized during the "Shots Across Brazos" campaign, with the largest group (31%) between 17-24 years old. 22% of these immunizations were
given to children less than 5 years old. State Health Department data indicated that children in public schools and registered family homes had very high immunization levels, but that children in private schools and day care centers had immunization levels below the State's 90% goal.

The campaign, "Shots Across Brazos Valley" administered over 25,000 flu shots compared to 8,250 reported given in the prior year by local clinics and physicians. Over half (61%) of the flu shots in this campaign were given to adults aged 20-59. Although the elderly would be a high risk target group, less than 6% of these flu shots were given to elderly over 60 years, comprising approximately 12% of the elderly population in Brazos County.

Recommendations: Target childhood immunizations at day care centers and private schools. Provide more convenient hours at immunization clinics for working parents. Target the elderly for flu shots by providing mobile units to senior centers, nursing homes, churches, and retirement centers.

10) Mental Health and Retardation Support Services: Three programs, under the auspices of MHMR, provided services to support mentally disabled patients and their families. These programs provided respite services, in-home family support, and a broad range of other services for special education, counseling, training, outpatient medication, vocational and residential support, screening, referral, and case management. These services were available to the general community without payment restrictions. Assessment of mental illness treatment services was beyond the scope of this study.

These programs reached 2,723 clients, providing 78,115 visits per year. The average age of clients was 35, with only 5% of patients aged 65 or older. These programs served a disproportionately high percentage of minority clients, reflecting successful outreach to minorities who may not have resources to purchase mental health/retardation services in the private sector. However, only approximately 2% of the community was served by these programs compared to an estimated 10-20% of the general population needing mental health services.

Recommendations: Expansion of available support services, with increased outreach to family members of mentally disabled elderly and very young children. Expansion of hours of services to support working family members. The availability and affordability of mental health treatment services in Brazos County should be the topic for a separate study.

11) Elderly Support Services: Eight programs provided a variety of social support services to the elderly, including meals on wheels. Although each of these programs served a large number of clients, the capacity of these available services reached only 13% of the elderly in the community, and 27% of a target population defined as the most needy, i.e., disabled elderly with mobility and self-care limitations. These programs served a disproportionately high percent of minority clients, reflecting a successful outreach to minorities who may not have resources to purchase support services privately.

Recommendations: Expand availability of social support service programs to elderly. Develop centralized information and referral network for activities and services offered for elderly, coordinated with church, neighborhood, and other programs in private sector.

12) Day Care for Handicapped and Disabled Children and Adults: Except for MHMR programs, only one other program was identified to provide social and educational support for handicapped and disabled children in the community—the Regional Day School for the Deaf. Although the number of disabled children in the
county could not be determined, the capacity of this single program fell far short of
the needs of disabled children in this community.

Two programs were available for adult day care. The capacity of these two
available programs would accommodate only 5% of the adult disabled population in
the County. Moreover, these two programs operated Monday through Friday, with no
extended hours for families who worked nontraditional hours or weekend shifts.

**Recommendations**: Expand social support programs for disabled and
handicapped children and adults. Although there were day care, educational, and
recreational programs in the County that accommodate disabled individuals, the need
for specially trained staff to enhance the development and quality of life for these
individuals and their families is critical.

13) **Early Childhood Day Care**: In 1993, 158 licensed facilities and registered
family homes could accommodate a maximum capacity of 5,314 children. This would
serve 56% of children aged 0-<6 in Brazos County. A subgroup in the community
representing the target population of need was children with both parents working
(N=4255) or single-parent working (N=1447). Even with this target group as a
minimal estimate of need and an overestimate of the capacity of available services,
not all the need could be met for this group--93% of the target population could be
served with this available capacity.

While the largest concentrations of children with working parents lived on the
outskirts of College Station and Bryan, the greatest concentration of day care
providers were within city limits. Thus, working parents who lived outside city limits
would encounter travel barriers unless the provider were located on the way to work.
Day care facilities tended to be along major thoroughfares. The day care homes were
fairly evenly distributed through Bryan and College Station. In order to meet the
additional demand for day care services, new providers may want to consider on-site
locations at the place of employment.

Day care for non-traditional hours or weekends and care for sick children were
not available to the community at large. Arrangements may be made privately, but no
formal programs were offered in Brazos County.

**Recommendations**: Need for increasing number of day care programs, and an
immediate need for providing affordable services for working parents with special
needs. Develop a clearinghouse of coordinated information regarding the capacity and
quality of services.

14) **School-Aged Childcare**: After-school programs in both Bryan and College
Station school districts served 1,075 elementary and middle-school children. Four
community-based centers provided supervised programs for 2,037 kindergarten
through high school children. However, these programs served only 28% of the
target population of children (6-17 years old) with working parents.

In addition to the sizable need for latch-key programs, there were no
organized programs for sick child care and limited programs available for supervised
activities during release or vacation days during the school year that were available to
the community at large. Although there were a variety of summer programs, there
was no coordinated information and referral mechanism for parents to identify
opportunities or to determine the quality of those programs.

**Recommendations**: Expand affordable and convenient after-school programs
that offer enriching opportunities with high quality supervision. Expand latch-key
programs to include release and vacation days. Initiate a coordinated, centralized
"bulletin board" for the variety of programs available. Provide a list of participating
parents to contact about the quality of these programs.
Conclusions and Recommendations

In this *International Year of the Family (1994)*, the assessment of community-based health and social support programs is an important component for improving the well-being of families in Brazos County. A number of high quality programs were available in this community. However, the needs in the community exceeded the capacity of these existing programs. Hopefully, this study will provide evidence for community programs and interest groups to expand health and social support services in this community.

Supply of inpatient, outpatient, and emergency medical services seemed adequate for Brazos County. However, there was considerable need for expansion of home health care and preventive health services. Also, expanding availability of these services to include evening and weekend hours would increase accessibility to working families.

Perhaps the most important finding of this study was the need to expand availability of social support services for all of the areas investigated: social support for mentally disabled children and adults, social support for elderly, programs for handicapped and disabled children and adults, day care for children and adults, and school-aged latch-key programs.

In addition to the recommendations implied above, other recommendations include:

- Establish a coordinated, centralized information and referral network to include all domains of social support needs. One number for everyone and everything that is user friendly and accessible 24 hours a day for the general community.

- Establish a consistent client information data base across agencies that uses categories consistent with census data. This information should be easy to access and manipulate in order to provide measures for program development proposals and program evaluation.

- Collaborate with Texas A&M resources for funding opportunities, internships and student workers for staffing.

- Collaborate with Employee Assistance Programs (EAPs) for information and referral base and for evaluation of effectiveness of services on absenteeism, turnover, and productivity of their workforce.

- Explore opportunities for employers to establish dependent care benefits—to make expansion of programs more cost effective.
INTRODUCTION

THE PROBLEM

There is an increasing strain on families to maintain their optimal functioning in the home and in the work place. This is acutely felt in an increasing proportion of families where both parents work and working single-parent families. Neither the private sector nor the public sector has been able to provide the types of support needed for these dual roles. Historically, support systems were provided by the extended family. But this source of support is becoming rare with more mobility of the family and greater focus on the nuclear family. Thus, the need is growing for cost-effective and qualified family support services.

Employers are looking for help solving absenteeism and turnover problems due to inability of families to have access to adequate support systems when a family member is ill. Not only does the worker miss work while providing care to dependents and transporting them to sources of care, but also this situation produces excessive stress on the family members due to the demands of the work place conflicting with family responsibilities. A primary outcome of stress on the family system may be reduced function in the workplace as well as increased vulnerability of other family members for further illness.

Community concerns are voiced about children's values and need for safe and healthy alternatives to substance abuse or antisocial behavior. But support systems do not exist for many parents to be able to assure safe and healthy supervision for their children when they are not in school unless a parent misses work or quits working. Outcomes of this dilemma include more possibility for exposure to antisocial behavior during unsupervised time, decreased opportunities for growth and development of the children, and perhaps increased incidence of childhood illnesses because of compromised nutrition and reduced attention to prevention techniques.

A more subtle outcome of these competing family and work demands may be reduced opportunity for career advancement along with less competitive performance for salary increases which would handicap a family's financial well-being. An illness in the family disrupts the family's ability to compete in the market place and be a contributing member of their community. Indirectly, the employer also is handicapped by lowered efficiency and effectiveness due to absenteeism and turnover. Turnover costs to employers include time and expenses for recruiting, interviewing, and training. However, there are indirect turnover costs from reduced quality and efficiency of production, reduced morale of co-workers expected to "pick up the slack" until another person can be hired.

Insurance premiums may rise due to increasing health care costs incurred by employees without support systems for dependent care. To avoid missing work, an employee may inappropriately use expensive emergency services because primary care was not available after work hours. They may wait longer to get treatment in order to not have to miss work, allowing conditions that could be prevented or inexpensively treated to become more severe, thus requiring more costly acute medical care. There may be more frequent readmissions for hospital care because
family members could not adequately manage patient care at home along with their other demands.

Employers support Employee Assistance Programs (EAP) to provide benefits to workers in order to maintain their family responsibilities without having to quit their jobs. Why not provide support services to enable these workers to not only keep their jobs, but also to go to work with peace of mind that family members are well cared for? Thus, family support services would enable employers to operate more efficiently and enable families to function in their social and work roles without having to compromise their family roles and responsibilities.

PURPOSE OF THE STUDY

The purpose of the Community Health Needs Assessment was to 1) assess the available supply of health and social support services in Brazos County, 2) identify the current demand for existing services, and 3) identify needs for additional health and social support services. A comprehensive listing of health and social agencies in Brazos County was periodically published by the Brazos County Community Council. Although this was widely used by organizations throughout the community, it was not readily available to individuals within the community. Even the telephone directory did not organize information about social support agencies so that it was easily accessible for individual users. Thus, one aim of the study was to identify the various sources of information about support services that were available within Brazos County.

Demand for health and social support services may be determined from existing use of those services. Although individual agencies kept records of use by their own clients/patients, these data were not collected consistently across agencies. Thus, the second aim of this study was to aggregate agency data about service use and to analyze geographic and demographic trends in utilization.

Services may be needed by individuals other than those that actually demand care. Reasons for unmet need may be due to problems with availability, accessibility, or affordability of services. Furthermore, individuals may simply not recognize that they have a need. Thus, case finding and community education would be appropriate to motivate those individuals toward demanding services. The aim of this study was to determine the scope of that unmet need by comparing census data of a target population expected to need specific set of services to the number who actually used those services. Discrepancies would show under- or over-utilization, indicating an inappropriate level of services to meet the community's needs. Although important, determining the nature of supply adequacy, accessibility barriers, or unrecognized need would require a complex community survey beyond the scope of this study. Thus, the findings identify areas of unmet needs and pose hypotheses for future studies concerning how the community could better meet the health and social support needs of its population.

Parallel to the purpose of providing information to health and social agencies about meeting support needs in the community, this study provided the opportunity for students to learn how to design and conduct a community-based survey under the auspices of a Laboratory in Community Health Systems Planning within the Department of Urban Planning, Texas A&M University. Input from community agencies throughout the study helped students learn how to better analyze findings.
that would be meaningful and useful for agencies to evaluate and develop service programs. Funding for the project was supported by local hospitals and social service agencies (alphabetically: Brazos Valley Community Action Agency, Brazos Valley Medical Center, Desert Hills Mental Health Center, St. Joseph’s Hospital and Health Center), thus fostering opportunities for collaborative exchange between the university's educational objectives and the agencies' community service objectives. Moreover, this project was conducted in conjunction with other initiatives at Texas A&M University (i.e., Faculty Senate, Faculty Women's Network, and Dept. of Human Resources) to investigate employee needs for dependent care and to determine meaningful programs that would help to improve quality of life for individuals who endeavor to balance family and work.

**STUDY OBJECTIVES**

1) To describe supply of available health services in Brazos County:
   - Inpatient care
   - Emergency services
   - Physician supply
   - Nursing home care
   - Preventive reproductive health care
   - Preventive adult and well-child health care
   - Immunization services
   - Home health care

2) To describe supply of available social support services in Brazos County:
   - Mental health and retardation disabilities social support services
   - Elderly social support services
   - Handicapped/disabled social support services
   - Early childhood day care
   - School-aged child care

3) To describe volume of demand for health and social support services in Brazos County, i.e., number using available services.

4) To compare demographic profiles of those that used health and social support services to demographic data of target census groups in the community in order to identify scope and characteristics of unmet need.

5) To provide baseline data for community agencies to use for evaluation of their program utilization, accessibility, and outreach.

6) To provide recommendations based on comparative data for developing programs to enhance social support systems in Brazos County.

7) To provide a format for community agencies to use for developing their own program evaluation measures and procedures.
METHODS AND PROCEDURES

The scope of the study and data collection process is summarized below and discussed in detail in Appendix A. Included in Appendix A are a) specific criteria for selecting the study population, b) the scope of the study, c) data collection procedures, d) time frame of the study, and e) definition of the variables.

SCOPE OF THE STUDY POPULATION

Three populations were identified for this study:

- Agencies that provided health and social support services in Brazos County.
- Clients of those agencies who used the services in the previous year.
- Subgroups in the census population in Brazos County according to an appropriate target group needing specified services.

1. Geographic: Eighty-six agencies with their primary location in Brazos Valley were identified as the study population. Their client population was narrowed to users who lived within Brazos County. Often clients were limited to those within municipalities of Bryan or College Station, with those outside the city limits noted as "out-county" users. Target populations were defined from the 1990 U.S. census data for Brazos County.

2. Demographic: Demographic characteristics of the user population were provided by the participating agencies according to records or summaries available to them at the time of the data collection. Most agencies reported their data according to "clients" as the unit of analysis. However, some agencies counted visits or admissions without the ability to determine duplication of clients during the study period. Thus, some client characteristics may be biased by those clients that had multiple use of the services during the study period. These potential biases are identified in reporting the findings. Other clients may be users of multiple agencies.

Characteristics of the users were reported in aggregate figures only to protect the anonymity of clients as well as the confidentiality of service patterns for the agencies who participated in the study. Demographic characteristics of the user population were categorized as closely as possible to available census categories. When there were discrepancies in these groupings, differences will be noted in reporting the findings.

3. Time: Data were collected during the fall of 1993 to include services used in 1992 in order to get a full year of quantity of use and user characteristics. Agencies were asked to report their patterns of use according to their own fiscal year. If data were not available in this format, then we tried to collect retrospective data from August 1992 till August 1993. In some instances, even this information was not available, in which case we generalized from data collected from the most recent month with available data.
Characteristics of the 1992 (or 1993) user population were compared to demographic and geographic characteristics of the County population from the most recent census data collected for the 1990 census. These census data were aggregated by census tract, by city (Bryan or College Station) or by county (Brazos County boundaries).

DATA COLLECTION

The process of conducting the Community Health Needs Assessment is described in detail in Appendix A. The types of activities are identified, along with a breakdown of the amount of time spent by the Laboratory Team. This information may be helpful for an agency to organize and budget their own effort for community assessments or market analyses or to determine appropriate consulting efforts that may be needed. Because of the academic setting for this study, the Laboratory Team conducting this study would likely spend more time on researching background of programs and comparative measures than would those working in an agency or consulting organization. Nevertheless, this would be an important activity to ensure valid and reliable data and conclusions. It should be noted that time spent by the director of the project, Dr. Sherry Bame, was not included in any of the calculations of project time or activities. Thus, the analysis of project time is based on the activities of project team members and two students as recipients of the Community Health Systems Fellowships who were responsible for coordinating project activities (Melissa Pindell and Joey Anderson).

1. Agency Data: Agency data were collected in October through December, 1993, by students in the Community Health Systems Planning Laboratory, Dept. of Urban Planning, Texas A&M University. A contact person was recommended by each agency's director or chief administrator to provide the requested data about the users of that agency. (See Appendix B: Master Contact List.)

The three page data collection form was mailed to each agency's contact person. (See Appendix C: Data Collection Forms.) This contact person reported retrospective information about client use of designated services for the agency's previous fiscal year. If no response was received within 2 weeks, an appointment was made to collect the data by interview. The completeness of the returned forms was reviewed, and follow-up calls were made to further clarify or complete information provided if the data were available. Data regarding referral networks and staffing characteristics were incomplete for almost every agency. Thus, these data were deleted from analysis.

2. Response Rate: Eighty-six agency programs were identified for the study and responses were received from 85 of these (response rate=99%). However, each of the participating programs, except for the hospitals, had incomplete data available about client demographic and geographic characteristics due to limitations of its own system of record-keeping. Thus, in aggregating the findings, the number of agencies will vary according to the completeness of information reported in this study.
3. **Comparative Census Data and Supply Standards**: Demographic characteristics of 1990 census data were compared to the demographic profiles of the client population. However, agency data were not always available according to census categories. These discrepancies will be noted in the discussion of the findings. Whenever possible, census data were aggregated to coincide with agency categories of client demographic and geographic characteristics.

When appropriate, demographic profiles of specific target groups in the census data were contrasted with characteristics of the user population. Distribution of providers were plotted according to the Brazos County map available through the Chamber of Commerce and compared to census tract distribution of population for specific target groups or for the County population as a whole. Whereas this did not provide specific neighborhood-level information, it was felt that the County was small enough to warrant aggregating information into census tracts.

Normative standards of utilization reported in the literature were used to contrast with use in Brazos County. These sources will be listed in the bibliography according to topic area (Appendix D: Bibliography). Some of the norms were state or national trends, whereas other norms were those reported anecdotally from case studies of appropriate health and social support programs.
HEALTH & SOCIAL SUPPORT SERVICES
IN BRAZOS COUNTY:

SUPPLY, DEMAND, & NEEDS

The findings of the community health and social support needs assessment included health services and social support services. Seven types of medically-related health services were identified:

• Inpatient care
• Emergency services
• Physician supply
• Nursing home care
• Preventive reproductive health care
• Preventive adult and well-child health care
• Immunization services
• Home health care

Although of the above health services had components of social support included in their spectrum of services, this was secondary to their purpose for delivery of health services and will not be discussed as social service programs. Five types of social support programs were identified:

• Mental health and retardation disabilities social support services
• Elderly social support services
• Handicapped/disabled social support services
• Early childhood day care
• School-aged child care

The primary purpose of these social support services was to provide clients and their families support for dependent care needs.

It should be noted that the programs in this study reported their services at one point in time, 1992-93. Policy changes, funding changes, or demographic changes in the community may alter the scope and quantity of services. Also, the agencies included in this study were limited to those located in Brazos County providing direct services to the community as a whole. Our sample frame was limited to the Brazos County Community Council's Directory and the health agencies listed in the phone book. If eligible programs were missed, we encourage that they be included in future studies.
ACUTE INPATIENT CARE

Bed Supply: Two hospitals and Texas A&M's Student Health Service Infirmary provided general acute care beds for Brazos County. Although it appeared that the county was under-bedded overall, the rates of pediatric and obstetric beds was greater than the Texas or U.S. rates and the ratio of bassinets was comparable to the state and national rates (Table 1).

Given that the local hospitals did not have high occupancy rates, this low ratio of beds to general population may not be problematic, perhaps because of the biased age distribution of the county population due to the large university student population. On one hand, this young adult population typically uses less hospital care. On the other hand, these students may receive much of their medical care in their own home towns. Unless the local hospitals were to routinely exceed 90-95% occupancy, there seemed to be no evidence for expanding the number of hospital beds.

Discharge Rates: Another approach to comparing the availability of inpatient acute care was to examine hospital discharge rates. The rates reported in this study do not include care at the Student Health Service Infirmary. As seen in Figure 1, the rate of discharges from the local hospitals was comparable or greater than U.S. rates for adult and elderly populations. Although the availability of pediatric beds per pediatric population was greater than that available nationally, hospital use by children (1-19 years) and young adults (20-24 years) was lower than national rates. The college-age adults may be cared for by the university's health center, lowering these rates in the community hospitals. Reasons for lower pediatric hospital use are only speculative, perhaps from out-migration to medical centers elsewhere or from greater use of procedures on an outpatient basis.

The disproportionately greater use of hospitals as age increased may indicate a local trend toward more use of costly inpatient care when procedures may be conducted on an outpatient basis elsewhere. Supporting this hypothesis was the consistent trend of a greater number of inpatient surgical procedures per hospital bed locally than was typical for other hospitals in the state or the U.S. (Figure 2) This trend may be due to practice patterns of local physicians, limited availability of equipment and ancillary personnel outside the hospitals, or lack of support systems or home care to enable patients to manage their care after outpatient procedures.

An indication of a striking problem in access to medical care in Brazos County was the remarkably higher hospital discharge rates for Blacks than for Whites. (Figure 3) Although the discharge rate for Whites in this community was comparable to Whites nationally, the rate for Blacks was almost twice that of Whites and 43% higher than the average for Blacks nationally. One would need to investigate whether Blacks in this community had higher rates of illness and injury. However, this contrast would also indicate that there was a lack of access to primary and preventive care for Blacks in this community. Thus, inpatient care for Blacks may be substituted for less costly ambulatory care or outpatient procedures and level of severity may be higher when finally gaining access to medical services.
**Length of Stay:** Although the local discharge rate was higher than state or national averages, the average length of stay was remarkably lower than regional or national rates. (Figure 4) This trend was consistent over time as well. (Figure 5) One would question whether less costly outpatient and home care in other communities substituted for the shorter inpatient stays observed in this community.

This lower length of stay was consistent across all age groups. (Figure 6) Whites and Blacks in Brazos County had comparable lengths of stay that were approximately 33% lower than their counterparts nationally. (Figure 7) This similar length of stay rate for Whites and Blacks reduces the likelihood that Blacks were more severely ill than Whites. In contrast, it lends support to the hypothesis that barriers to primary and preventive care contribute to the significantly higher hospital use by Blacks. Future studies should investigate whether there is a differential in insurance coverage by race. Lack of adequate insurance coverage may contribute to limited access to routine care, resulting in use of hospital care either covered by limited policies or charity care with no insurance coverage. Alternatively, more Blacks may be hospitalized for short periods to provide nursing and support care that may not be available or affordable for them in their home.

This trend in lower lengths of stay would be logical. The way to accommodate a high discharge rate in an environment with fewer beds would be to reduce the length of stay. Thus, practice patterns may have emerged to efficiently concentrate hospital services into fewer days of stay. However, this pattern would emphasize the importance of follow-up care and home care to avoid complications and readmissions. Future studies may investigate what portion of the unusually high discharge rate was due to readmissions.

**Summary and Recommendations Regarding Inpatient Care:**

- The combination of greater than average hospital use and shorter lengths of stay indicate a greater need in this community for nursing and support services for patients returning home.

- The disproportionally high use of hospital care by Blacks indicates possible barriers to access for primary care or for home care to prevent readmissions. Further research is needed to determine whether these patients are more acutely ill because of access barriers to primary and preventive care and whether they have a higher readmission rate.

- The disproportionally high rates of hospital use by the elderly may indicate a need for more surgical procedures to be performed on an outpatient basis, but this increase in outpatient procedures would further increase the need for home care and support services to accommodate the more acute care needs of these patients.
<table>
<thead>
<tr>
<th></th>
<th>U.S.</th>
<th>TEXAS</th>
<th>BRAZOS CO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beds/1,000 births</td>
<td>15.77</td>
<td>16.56</td>
<td>17.17</td>
</tr>
<tr>
<td>Newborn Nursery Beds</td>
<td>69,435</td>
<td>4,944</td>
<td>42</td>
</tr>
<tr>
<td># Beds/1,000 pop. 10-44 yrs.</td>
<td>14.70</td>
<td>9.65</td>
<td>26</td>
</tr>
<tr>
<td>Obstetric Beds</td>
<td>59</td>
<td>4.70</td>
<td>4.29</td>
</tr>
<tr>
<td># Beds/1,000 pop. 0-19 yrs.</td>
<td>27.95</td>
<td>9.66</td>
<td>31</td>
</tr>
<tr>
<td>Pediatric Beds</td>
<td>2.383</td>
<td>2.42</td>
<td>4.33</td>
</tr>
<tr>
<td># Beds/1,000 pop. 1-9 yrs.</td>
<td>17.71</td>
<td>27.90</td>
<td>16.93</td>
</tr>
<tr>
<td>Total Hospital Beds</td>
<td>77.12</td>
<td>34.0</td>
<td>24.83</td>
</tr>
<tr>
<td># Total Population</td>
<td>121,862</td>
<td>248,709</td>
<td>511</td>
</tr>
</tbody>
</table>

**Table 1: Number of Beds and Beds per Population Ratio**
FIGURE 1:
DISCHARGE RATE PER 10,000 BY AGE GROUP, 1993

DISCHARGES PER 10,000

1 TO 4
5 TO 14
15 TO 19
20 TO 24
25 TO 34
35 TO 44
45 TO 54
55 TO 64
65 TO 74
75 TO 84
85+

US
B/C/S
FIGURE 2:
TRENDS IN SURGICAL PROCEDURES, 1987-1992

SURGICAL PROCEDURES PER BED

1987
1988
1989
1990
1991
1992

0 5 10 15 20 25 30
FIGURE 3: COMPARISON OF DISCHARGES BY RACE, 1993

DISCHARGES PER 10,000 POPULATION

RACE

BLACK

1973

1980

1990

1993

US

US

US

US

500

1000

1500

2000
FIGURE 4:
COMPARISON OF AVERAGE LENGTH OF STAY, 1993

AVERAGE LENGTH OF STAY (DAYS)

0 1 2 3 4 5 6 7

B/CS 4.5
TEXAS 6.2
SOUTH 6.1
US 6.4
TRENDS IN HOSPITAL STAYS, 1987-1992

FIGURE 5
Comparison of Average Length of Stay by Age Group, 1993

FIGURE 6:
FIGURE 7: AVERAGE LENGTH OF STAY BY RACE, 1993

- BLACK
  - 6.8
  - 4.3

- WHITE
  - 6.5
  - 4.5
EMERGENCY SERVICES

Use of Emergency Room (ER) Services: ER use in Brazos County has caught up to and exceeded the average Texas rate between 1988-1992, but has remained below the national average. (Figure 8) When comparing the proportion of ER visits by age for local users to national norms, the local younger population (<24) used a considerably higher proportion of ER services than expected according to national norms and the elderly (65+) used approximately half of what would be expected elsewhere. (Figure 9) It is interesting to note that this trend was inverse to the inpatient discharge rate by age. (Figure 10) The highest proportion of both ER and inpatient use was by young adults, reflecting both the child bearing age of this group and the disproportionately high percentage of university students in this community. Unfortunately, data regarding ER use by race were not available to identify whether there was disproportionate use by minorities in the community.

ER utilization has been used in the literature as an indicator of access barriers to primary care, including affordability and convenience barriers. Also, patients may seek emergency care if they do not have a regular source of care, or if their doctor used the ER in lieu of seeing patients in his/her office after hours. Thus, children and young adults may be more likely to rely on the ER as a source of primary care, particularly for the college-aged population who tried to rely on their home-town medical care as well as for adolescents who have "outgrown" their pediatrician but have not chosen another primary care provider.

Alternatively, local physicians may tend to admit older patients to inpatient care whereas they would monitor and treat younger patients in the ER. Injuries and urgent conditions may involve more subtle complications in the elderly, thus appropriately requiring more lengthy monitoring and acute treatment in an inpatient setting. Many typical causes of morbidity in children and young adults may be time-limited and treated more appropriately in emergency and walk-in settings, e.g., accidents, food-borne illnesses, vomiting, fever, rash. Nevertheless, this trend may reflect lack of access to primary care because of limited evening and weekend hours of local physicians and limited availability of "walk-in" clinics to substitute for the expensive emergency visit.

ER Payment Source: A considerably higher percentage of local ER visits were paid by private/commercial insurance or out-of-pocket by the patient than expected according to national norms. (Figure 11) This reliance on private insurance was also seen as the major source of payment for inpatient services. (Figure 12) Unlike a lower than expected proportion of ER visits paid by governmental sources, a considerable percentage of inpatient care was paid by Medicare and Medicaid. However, it should be noted that these proportions are based on the number of paid ER visits and paid hospital admissions. Data regarding unpaid ER use were not available for this study, but would be an indicator of affordability barriers to primary care, particularly if broken down by age and race.

It is not known whether a greater proportion of the local community was covered by private insurance than expected nationally. However, this percentage may simply be an artifact of reasons for the other sources of payment being atypically
lower than expected. The higher proportion of out-of-pocket payment may be due to use by the university student population with limited insurance coverage for services off-campus. The lower percentage of Medicare payment may be due to the smaller proportion of elderly in this university community and further compounded by lower ER use by the elderly. The lower percentage of Medicaid payment may be due to the more stringent eligibility in Texas than in many other states. Nevertheless, a disproportionately high percentage of ER use in this community was paid by the private sector rather than through governmental insurance programs. Again, it is important to note that these percentages do not reflect the percentage of unpaid ER visits. Further studies could identify the proportion of unpaid emergency and inpatient care and readjust the percentages according to total ER use.

Summary and Recommendations Regarding ER Services:

• Further data are needed to identify ER use by time of day and day of week to determine convenience barriers to primary care resulting in inappropriate ER use, particularly for children and young adults who may have school or work commitments during physicians' office hours.

• Evidence of convenience barriers would indicate need for walk-in services, with triage at the ER, in order to substitute for inappropriate costly ER use.

• Further data are needed to identify ER use by unpaid visits and investigate this incidence by race and age in order to determine affordability barriers to primary care resulting in inappropriate ER use.

• Evidence of affordability barriers would indicate a greater need for primary care community clinics for minority, low income, and under- or uninsured populations.
ER USAGE BY AGE AS A PERCENTAGE OF TOTAL VISITS

FIGURE 9:
Figure 10: Emergency Room Utilization Versus Inpatient Cases by Age Group
Figure 1.2: Comparison of Payment Source
PHYSICIAN SUPPLY

Availability of Physicians: Number of physicians practicing in Brazos County was identified from a 1992 list provided by the County's Medical Society and supplemented with more recent names listed in the 1993 local phone directory. There were a total of 210 physicians identified in 1993. After excluding pathologists, radiologists and full-time administrative or teaching physicians, it was assumed that the remaining 171 (81%) physicians were involved in direct delivery of patient care services. Psychiatrists were also excluded as their services were beyond the scope of this study. The physician/population ratio for Brazos County was 17.2 MDs per 10,000 population based on 1990 census figures.

To focus on availability of primary care in Brazos County, three types of physician specialties were enumerated:

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
<th>% of Total MDs</th>
<th>Rate per 10,000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care*</td>
<td>59</td>
<td>28.1</td>
<td>4.8</td>
</tr>
<tr>
<td>Pediatric</td>
<td>12</td>
<td>5.7</td>
<td>4.0</td>
</tr>
<tr>
<td>OB/GYN</td>
<td>15</td>
<td>7.1</td>
<td>3.8</td>
</tr>
<tr>
<td><strong>Total Primary</strong></td>
<td><strong>86</strong></td>
<td><strong>40.9</strong></td>
<td><strong>7.1</strong></td>
</tr>
</tbody>
</table>

* Registered as internal medicine, family practice, or general practice.

Although internal medicine physicians, pediatricians and obstetricians/gynecologists (OB/GYN) may deliver specialized care, a large proportion of their patients typically rely on them for primary and preventive care. The remaining 85 physicians were involved in direct delivery of specialized patient care services.

Comparison of Physician Supply: In Table 2, the number of total physicians and those involved in primary care services in Brazos County were compared to equivalent numbers available for the U.S., Texas, and other communities comparable in size and university affiliation (Lubbock, TX; Denton, TX; Waco, TX; Pullman, WA; and Champaign, IL). The total physician/population ratio of Brazos County was comparable to that of Texas, but less than that for the U.S. as a whole. The total physician ratio locally was similar to ratios in the other university-based communities but less than communities with a medical school campus (i.e., Lubbock and Champaign). Although Texas A&M University has a medical school, its clinical campus is located in Temple, TX, and thus, the added supply of physician faculty would be located elsewhere.

The ratios of primary care and of pediatric physicians in Brazos County were considerably higher than both State and U.S. ratios, as well as greater than the ratios in other comparable communities except those with medical schools. The ratio of OB/GYNs locally was fairly equivalent to State and U.S. ratios, adjusting for population size for women of child bearing age. Again, these local ratios of OB/GYNs were similar to those of other university-based communities, but remarkably less than communities with medical schools. It is interesting to note that
although Pullman, Washington, seemed to follow the same pattern as other university-based communities, they had a significantly greater proportion of primary care practitioners and a comparatively smaller proportion of pediatricians and OB/GYNs.

**Distribution of Physician Supply:** A Geographic Information System (GIS) analysis was used to compare the distribution of population per census tract in Brazos County to the distribution of physicians' offices. Primary care physicians were located in more densely populated areas of Bryan and College Station and were often situated near major thoroughfares. (Figure 13) None were found to be located in the "out-county" areas or in North Bryan. Pediatricians were concentrated near the hospital sites and large multi-specialty clinic which were centrally located yet not in the areas of the greater concentrations of pediatric population. (Figure 14) OB/GYN physicians were also concentrated near the hospital sites and large multi-specialty clinic and these locations were amongst the highest concentrations of women of child bearing ages. (Figure 15)

Thus, although physicians involved in delivering primary care were centrally located near their target populations, they were not well distributed throughout the community. The implications of this would be a need for inexpensive public transportation that served these sites frequently, along with adequate parking facilities for those with private transportation.

**Summary and Recommendations Regarding Physician Supply:**

- The physician/population ratios for primary care were typically greater than those for the State and the U.S., and comparable to ratios in similar university-based communities. Thus, there appears to be an adequate available supply of primary care physicians for the population.

- Further data are needed regarding use of physician services, i.e., number of patients and number of visits annually. This would more accurately indicate adequacy of population served.

- Further data are needed to identify office hours and waiting times for physician services to determine unmet need and convenience barriers to the available supply.

- Further data are needed to identify cost of physician services in order to identify affordability barriers to the available physician supply.

- Physicians delivering primary care were clustered around hospital and large clinic sites, regardless of the distribution of the target population in need. Thus, there would be a need for a transportation system to serve these areas on a frequent basis, along with adequate parking for convenient access.
<table>
<thead>
<tr>
<th>Age of OB/GYN per 10,000 Female Pop. 10-44 yrs.</th>
<th>Female Pop. 10-44 yrs.</th>
<th>% of Total Physicians</th>
<th>OB/GYNs/# of Physicians</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-64</td>
<td>6.22</td>
<td>1.995</td>
<td>0.148</td>
</tr>
<tr>
<td>55-59</td>
<td>6.930</td>
<td>2.06</td>
<td>0.186</td>
</tr>
<tr>
<td>50-54</td>
<td>7.47</td>
<td>2.03</td>
<td>0.199</td>
</tr>
<tr>
<td>45-49</td>
<td>8.06</td>
<td>2.58</td>
<td>0.221</td>
</tr>
<tr>
<td>40-44</td>
<td>8.59</td>
<td>2.84</td>
<td>0.256</td>
</tr>
<tr>
<td>35-39</td>
<td>9.05</td>
<td>3.22</td>
<td>0.294</td>
</tr>
<tr>
<td>30-34</td>
<td>9.52</td>
<td>3.65</td>
<td>0.336</td>
</tr>
<tr>
<td>25-29</td>
<td>10.04</td>
<td>4.05</td>
<td>0.377</td>
</tr>
<tr>
<td>20-24</td>
<td>10.53</td>
<td>4.44</td>
<td>0.417</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Obstetricians/Gynecologists per 10,000 Pop. 0-19 yrs.</th>
<th>Population 0-19 yrs.</th>
<th>% of Total Physicians</th>
<th>Obstetricians/# of Physicians</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.921</td>
<td>1.995</td>
<td>0.319</td>
<td>1.667</td>
</tr>
<tr>
<td>5.392</td>
<td>2.06</td>
<td>0.511</td>
<td>2.186</td>
</tr>
<tr>
<td>6.912</td>
<td>2.03</td>
<td>0.652</td>
<td>2.752</td>
</tr>
<tr>
<td>8.432</td>
<td>2.58</td>
<td>0.794</td>
<td>3.417</td>
</tr>
<tr>
<td>10.000</td>
<td>2.84</td>
<td>0.942</td>
<td>4.171</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pediatrics per 10,000 pop.</th>
<th>Total Population</th>
<th>% of Total Physicians</th>
<th>Pediatrics/# of Physicians</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.22</td>
<td>16.965</td>
<td>0.115</td>
<td>0.115</td>
</tr>
<tr>
<td>2.62</td>
<td>16.965</td>
<td>0.148</td>
<td>0.148</td>
</tr>
<tr>
<td>3.00</td>
<td>16.965</td>
<td>0.186</td>
<td>0.186</td>
</tr>
<tr>
<td>3.37</td>
<td>16.965</td>
<td>0.221</td>
<td>0.221</td>
</tr>
<tr>
<td>3.75</td>
<td>16.965</td>
<td>0.256</td>
<td>0.256</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary Care per 10,000 pop.</th>
<th>Total Population</th>
<th>% of Total Physicians</th>
<th>Primary Care/# of Physicians</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.18</td>
<td>16.965</td>
<td>0.115</td>
<td>0.115</td>
</tr>
<tr>
<td>3.65</td>
<td>16.965</td>
<td>0.148</td>
<td>0.148</td>
</tr>
<tr>
<td>4.12</td>
<td>16.965</td>
<td>0.186</td>
<td>0.186</td>
</tr>
<tr>
<td>4.59</td>
<td>16.965</td>
<td>0.221</td>
<td>0.221</td>
</tr>
<tr>
<td>5.05</td>
<td>16.965</td>
<td>0.256</td>
<td>0.256</td>
</tr>
</tbody>
</table>

TABLE 2: Physicians by Specialty and Physician Population Ratios

<table>
<thead>
<tr>
<th>U.S.</th>
<th>Waco</th>
<th>Denton</th>
<th>Waco</th>
<th>Pulman</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>IL.</td>
<td>WA.</td>
<td>TX.</td>
<td>TX.</td>
<td>TX.</td>
<td>TX.</td>
</tr>
<tr>
<td>IL.</td>
<td>WA.</td>
<td>TX.</td>
<td>TX.</td>
<td>TX.</td>
<td>TX.</td>
</tr>
</tbody>
</table>
FIGURE 13:

PRIMARY CARE PHYSICIANS BY LOCATION RELATED TO TOTAL POPULATION

- PRIMARY CARE PHYSICIANS

- TOTAL POPULATION > 8000
- TOTAL POPULATION LE 4500 AND > 3000
- TOTAL POPULATION LE 8000 AND > 4500
- TOTAL POPULATION LE 3000
FIGURE 14:

PEDIATRIC PHYSICIANS BY LOCATION RELATED TO PEDIATRIC POPULATION

- PEDIATRICS

- PEDIATRIC POPULATION > 2000
- PEDIATRIC POPULATION LE 1000 AND > 850

- PEDIATRIC POPULATION LE 2000 AND > 1000
- PEDIATRIC POPULATION LE 850
FIGURE 15:

OB/GYN PHYSICIANS BY LOCATION RELATED TO CHILD BEARING POPULATION

+ OBSTETRICS AND GYNECOLOGY

- CHILD BEARING AGE POPULATION > 3000
- CHILD BEARING AGE POPULATION LE 3000 AND > 1300
- CHILD BEARING AGE POPULATION LE 1300 AND > 500
- CHILD BEARING AGE POPULATION LE 500
NURSING HOME CARE

Nursing Home Bed Supply: Nursing home was defined as a facility with three beds or more that was either licensed as a nursing home by the State, certified as a nursing facility under Medicare or Medicaid, or identified as a nursing care unit of a hospital or retirement center. There were 593 nursing home beds identified in Brazos County. Information regarding occupancy rates or waiting lists were not available for this study. Assuming full occupancy, this was a ratio of 73.48 beds per 1,000 elderly population (65 and older).

In Table 3, the ratio of nursing home beds per elderly population of Brazos County was compared to State and U.S. ratios as well as those of other university-based communities. The ratio locally was remarkably higher than both U.S. and Texas ratios; however, it was comparable or even less than the nursing home bed ratios of other university-based communities, except Champaign, IL. Thus, the supply of nursing home beds in the community may be considered adequate, or maybe even abundant compared to state and national norms. Enhancing support services and home care for the elderly may enable this population to remain in the community as long as possible. Also, short-term intermediate care provided at residential retirement homes may help to delay the commitment to costly long-term nursing home placement.

Summary and Recommendations Regarding Nursing Home Care:

• Nursing home bed per elderly population ratios indicate that local supply was adequate.

• Further data are needed to determine occupancy rates and waiting lists of local nursing homes to indicate unmet need.

• Developing support systems and additional home care for the disabled elderly may help keep more elderly in the community longer. Particular attention should be given to support for families caring for dependent elderly relatives.

• Expanding the number of short-term intermediate care beds provided at residential retirement homes and at local hospitals may delay the commitment to costly long-term nursing home placement.

• Further data are needed to determine the demographic and socioeconomic characteristics of nursing home residents compared to the distribution of those characteristics in the community's elderly population. Discrepancies in the proportions would indicate that subgroups in the population had differential access to support systems that enable them to remain in their homes.
<table>
<thead>
<tr>
<th>Population 55+ yrs per 1,000</th>
<th>Home Beds</th>
<th># Nursing Home Beds per Total Pop.</th>
<th>% Elderly Pop. 65 and Older</th>
<th>Population Total Population</th>
<th>U.S.</th>
<th>Texas</th>
<th>Brazos</th>
<th>Llano</th>
<th>Denton</th>
<th>Williamson</th>
<th>Travis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.20%</td>
<td>9.89%</td>
<td>115.524</td>
<td>19,190</td>
<td>248,000,000</td>
<td>16,986,510</td>
<td>12,718,629</td>
<td>222,630</td>
<td>66,250</td>
<td>191,900</td>
<td>1,395,103</td>
<td>4,884,846</td>
</tr>
<tr>
<td>8.13%</td>
<td>8.11%</td>
<td>155.556</td>
<td>1,955</td>
<td>1,713,576</td>
<td>1,121,864</td>
<td>711,872</td>
<td>711,872</td>
<td>66,250</td>
<td>191,900</td>
<td>1,395,103</td>
<td>4,884,846</td>
</tr>
<tr>
<td>10.09%</td>
<td>6.62%</td>
<td>77.999</td>
<td>931</td>
<td>31,241</td>
<td>831,831</td>
<td>831,831</td>
<td>831,831</td>
<td>66,250</td>
<td>191,900</td>
<td>1,395,103</td>
<td>4,884,846</td>
</tr>
<tr>
<td>8.44%</td>
<td>4.33%</td>
<td>174.344</td>
<td>1,869</td>
<td>1,734</td>
<td>1,121,864</td>
<td>711,872</td>
<td>711,872</td>
<td>66,250</td>
<td>191,900</td>
<td>1,395,103</td>
<td>4,884,846</td>
</tr>
<tr>
<td>8.44%</td>
<td>4.33%</td>
<td>174.344</td>
<td>1,869</td>
<td>1,734</td>
<td>1,121,864</td>
<td>711,872</td>
<td>711,872</td>
<td>66,250</td>
<td>191,900</td>
<td>1,395,103</td>
<td>4,884,846</td>
</tr>
<tr>
<td>9.99%</td>
<td>4.33%</td>
<td>174.344</td>
<td>1,869</td>
<td>1,734</td>
<td>1,121,864</td>
<td>711,872</td>
<td>711,872</td>
<td>66,250</td>
<td>191,900</td>
<td>1,395,103</td>
<td>4,884,846</td>
</tr>
</tbody>
</table>

**TABLE 3: NURSING HOME BEDS AND RATE PER ELDERLY POPULATION**
HOME HEALTH CARE

The home health care population is increasingly frail due to both demographic trends and changes in health care policy. Policy changes, such as restrictions on the construction of nursing home beds and on hospital discharge practices have resulted in expansion of the home care industry. Nevertheless, family caregivers are the key to maintaining the frail elderly in the community. Increasingly, more families are providing more care and more difficult care to more older persons over longer time periods. Caring for the impaired can be extremely stressful to the family, resulting in deterioration in the caregiver’s physical and/or emotional health. The use of public funds to support nonmedical sources of help is a policy alternative which may reduce the caregiver’s burden and allow the elderly to remain in the community.

With greater than expected proportion of patients hospitalized in Brazos County, especially elderly, and shorter than expected lengths of stay, the importance of home health care would be evident. Discharge from the hospital to home health care was the most common type of referral made, other than those 88% with routine discharge to home. (Figure 16)

Supply of Home Health Care: Three agencies were identified as providing home health care in Brazos County, with a fourth agency developed after the data collection period was completed. Each of the three agencies served between 77 and 534 clients annually during 1992-93. This number included approximately 500 hospice clients receiving bereavement care. Excluding these, a total of 25,917 visits were made annually to approximately 214 home care clients. This was an average of 36 visits per client per year, compared to the national average of 44 visits per home health patient.

Not only was the number of visits fewer than expected according to national norms, but also the number of patients served was considerably below that expected according to a target population of disabled individuals in Brazos County with a significant mobility or self-care limitation according to 1990 census reports (N=8304). Although not all individuals in this target population would require home care, less than 3% of them would have been served by the available home care services delivered. Even if the target population were limited to disabled elderly (N=3999), less than 6% of these elderly who would be expected to need care would have received home health services. Added to this underserved population would be additional patients of all ages needing short-term help with post-op care, treatments, and support for hygiene and activities of daily living while recovering.

Nationally, the number of Medicare-certified home health agencies increased by 250% over a 15-year period, from 1967 to 1992. Approximately 85% of the 7,000 home health agencies in 1991 were Medicare certified. After Medicare added hospice benefits in 1983, the number of hospices increased by several hundred percent over a 10 year period. Approximately 65% of the estimated 1,000 hospices in 1992 were Medicare certified. Almost 3.3 million persons had received home health care annually during 1991-92, with approximately 1.2 million patients nationally receiving home health care and 47,200 patients receiving hospice care at the time of the 1992 National Home and Hospice Care Survey conducted under the auspices of the National Center for Health Statistics.
Demographic Characteristics of Home Health Care Clients: In Table 4, the demographic characteristics of the local home health patients were compared to those of home health patients nationally. Similar to the characteristics of patients nationally, home health care patients in Brazos County were most likely to be elderly, female, and White. However, a much larger proportion of the local home care patients were elderly, indicating an underserved younger adult and pediatric population.

Another discrepancy between local and national norms was the remarkably greater proportion of Blacks who received home health services in Brazos County than nationally. This disproportionate percentage of Black patients (38%) was also much higher than the percentage of Blacks in the general population of the County (11%). The percentage of local home health services provided to other minorities was equal to their proportion in the general county population (Hispanic 15% and Asian 1%). Thus, Whites were underserved and Blacks were proportionately overserved in Brazos County. However, this pattern was consistent with the higher than expected hospitalization rate of Blacks locally. Also, this may indicate successful outreach and case finding. Or, Whites may purchase private-duty home nursing services because of the limited availability of agency services. Nonetheless, the capacity of available home health services was far below the need in the community.

Summary and Recommendations Regarding Home Health Care:

• Need to greatly increase home health care services available in the community.

• Need to increase number of average visits per patient to meet the national norm as an expected standard of quality of care.

• Need to increase outreach to Whites in the community.

• Need to increase discharge planning and case finding for non-elderly patients.

• Need for further data on number of visits by race and age to identify disproportionate distribution of services.

• Need to investigate number of hospital readmissions for home health care patients as an indicator of effectiveness.

• Need to examine home health care benefits in health insurance coverage provided by local employers.
# TABLE 4: HOME HEALTH PATIENT DEMOGRAPHIC CHARACTERISTICS

<table>
<thead>
<tr>
<th>DEMOGRAPHIC CHARACTERISTICS</th>
<th>BRAZOS COUNTY</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Home Health Patients</td>
<td>241</td>
<td>1,284,200</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 65</td>
<td>9%</td>
<td>25%</td>
</tr>
<tr>
<td>65 and older</td>
<td>91%</td>
<td>75%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>31%</td>
<td>34%</td>
</tr>
<tr>
<td>Female</td>
<td>69%</td>
<td>64%</td>
</tr>
<tr>
<td>Unknown</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>46%</td>
<td>69%</td>
</tr>
<tr>
<td>Black</td>
<td>38%</td>
<td>13%</td>
</tr>
<tr>
<td>Other</td>
<td>16%</td>
<td>18%</td>
</tr>
</tbody>
</table>
FIGURE 16:
Discharge Location Other than Routine (88.3%)
PREVENTIVE SERVICES

Three types of preventive services were assessed: 1) reproductive health services, 2) social support services for teen prenatal health, and 3) general preventive health services for adults and children. Immunization services will be discussed under a separate section. During the one-year study period, 28,606 Brazos County residents received some type of preventive service: 33.6% received reproductive health services, 0.4% had social support services available to them during their pregnancy, and 66% received general preventive health services.

Reproductive Health Services: Three clinics were identified in Brazos County that delivered reproductive health services to the general population regardless of ability to pay. Other medical clinics and private practitioners in the county offered obstetrical and family planning services, but were not included because of payment restrictions. As seen in Table 5, the three clinics served 9,612 clients of whom 98% were women (N=9,450). Services offered included pap tests, breast exams, screening for sexually transmitted diseases, pregnancy tests, counseling on birth control and family planning methods, distribution of contraceptives, and prenatal care. These services were typically available Monday through Friday from 8 am till 5 pm. Most services were available by appointment only, with walk-ins accepted only if a time slot was available.

Expansion of services to include weekend and evening hours and to accommodate walk-ins may reduce barriers that make these services unavailable to many working women, particularly lower income women who often have less flexibility in taking off during work hours. Of the reproductive services provided by these clinics, 69% were targeted to persons with low incomes ($14,999 or less; N=6,521 females). According to the 1990 census, 28% of women in Brazos County aged 12 to 64 were living at or below the poverty level (N=12,582). Thus, approximately 52% of women in this age group obtained reproductive health services at these clinics. Whereas these clinics have eliminated affordability barriers to reproductive services for poor women; convenience barriers remain that may block access by low income working women.

The three family planning and prenatal clinics provided services largely to women living in Bryan: 88.8% in Bryan, 10.9% in College Station, 0.2% from the out-county areas, and 0.1% from outside the County. This figure accounted for an average of 21% of the total female population aged 12-64 in Brazos County. The majority of the clients were from 18 to 24 years in age, with the youngest 12 years old and the oldest client 64 years old. Twenty-two percent of the clients were high-school aged or less (12 to 18 yrs). (Figure 17) Approximately 9% of the female population in the County was in this age range. These three clinics served 39% of the County's female population in this 12-18 age range. Approximately two-thirds of the women in the County were between 19 and 64 years old, and 19% of that group received reproductive health services from these community clinics. Although it was not known how many of these younger women would need family planning or other reproductive health services nor how many were seen by private practitioners, this disproportionately greater percentage of school-aged women served by these clinics indicated successful outreach and casefinding efforts by these programs.
Approximately 70% of the clients were minorities in contrast with 44% of minorities in Brazos County's female population aged 12-64. As seen in Figure 18, a highly disproportionate percentage of Black (74%) and Hispanic (41%) women in the community were served by these clinics, whereas Whites were underserved (9%). Thus, these clinics have successfully targeted a minority population for case finding and outreach. However, to avoid reverse discrimination, they may want to increase outreach to White patients, particularly those with low income. More data are needed to determine whether White women were adequately served by private practitioners. Also, data would be needed to determine the proportion of low income women by race. Regardless of race, there remains a significant percentage of low income women in the community not served by these clinics (48%) who may not have access to preventive reproductive services.

**Social Support Services for Teen Prenatal Health:** One program offered support services for pregnant or parenting teenagers in the Bryan public schools--Options for Young Parents. In the month current with the data collection, this program served 66 teens--1 male and 65 females--ranging in age from 14 to 19 years. Typically the average annual case load was 114 students. The purpose of the program was to provide social support for teen parents to help them remain in school and graduate. The program offered child care and transportation free of charge, Monday through Friday from 8 am until 5 pm.

As seen in Table 5, this social support program served only 1.5% of teenagers attending Bryan public schools (population of 14-19 year olds in Bryan = 4,240). However, further data would be needed to identify the actual number students who got pregnant during their school-aged years, particularly those that dropped out before graduating. This group would be the true target population. Of the teenagers in Bryan served by this program, a disproportionately greater percentage were minorities than represented in the general teenage population in Bryan. (Figure 19) This distribution of services by race would show appropriate case finding and outreach if the majority of teenage pregnancies occurred among minorities. Further data would be needed to confirm this. An even greater need would be among teenagers who had more than one pregnancy. Again, these data would need to be collected in order to identify this target population of high-level need.

**General Preventive Health Services:** General preventive services included health screening and communicable disease treatment services provided to the general public regardless of ability to pay. These services were provided through the Health Department, Early Periodic Screening, Diagnosis and Treatment (EPSDT) Program and Genetic Screening and Counseling Service. The following clinics were operated under the auspices of the Brazos County Health Department:

- Adult Health Screening
- Sexually Transmitted Diseases
- Tuberculosis Control
- Newborn Clinic
- Newborn Screening
- Well Child Clinic
Immunization services provided by the Health Department will be presented in a separate section.

The Health Department provided services to county residents for a $5 fee, Monday through Friday from 7:45 am until 6 pm. Each clinic operated independently with separate office hours and appointment requirements. Clinics were scheduled in individual time slots to limit overlap of services. Although this system may be more efficient for Health Department staffing, it may be more difficult and cumbersome for a client who needed to schedule multiple services. A coordinated appointment system for all Health Department Clinics may reduce the inconvenience and increase access for their patients.

The Genetic Screening and Counseling Service provided service for residents in a 12-county area; using a sliding scale fee based upon family income. This agency provided the following services: genetic counseling, diagnosis of genetic disorders, counseling regarding educational programs and recurrent risks, and service referral. In all these services, patients requiring medical follow-up would be referred elsewhere for medical services as none were provided by these programs.

These programs provided data on the number of visits, not on the number of clients served. The distribution of visits to Health Department Clinics were illustrated in Figure 20. No information was available regarding distribution of use by gender, race, or income. However, the volume of use by age provided a per capita rate of use that was highest for infants and children up to school age (0.19 visits/child) and somewhat lower for adult's use of these preventive services (0.17 visits/adult). (Table 5) The capacity for services at each clinic was not known; however, these rates represent low availability of preventive services to the community, with less than two visits per hundred in the target population(s). The lowest rate of use of preventive care was for school-aged children (0.01 visits/school-aged child). This low rate for school children may be expected, given that screening programs were typically provided during school to this captive population. However, no data were available as to the type or volume of preventive services provided in the local schools.

**Summary and Recommendations Regarding Preventive Health Care:**

- High proportion of minority patients served indicated good outreach and casefinding for population in need of preventive services, especially given the high hospitalization rate of minorities in the community.

- Need further data regarding minority population served in the private sector to determine whether the percentage not served by these preventive clinics remained in need of preventive and prenatal services.

- Need to improve outreach to White population, particularly to those with low incomes.

- Need further data to identify which clinics and practitioners in the private sector provided services on a sliding scale to supplement services to low income patients—48% of low income women not served by these clinics providing prenatal and preventive reproductive care to the general public regardless of ability to pay.
• Hours of operation for all types of preventive and prenatal services need to be expanded to include evening and weekend hours to increase availability to working poor and to school-aged patients.

• Need to consider increasing ability to accommodate walk-in patients for all types of preventive and prenatal services.

• Need further data regarding number of births by women with no prenatal care (admitted through the ER) by age, race, income, and educational status to better identify population in need.

• Social support program for school-aged parents needs to expand services to teens in College Station as well as to other young parents, particularly single parents.

• Social support services need to expand ability to deliver childcare and transportation services in evenings and weekends to help these young parents compete for jobs, job training, and scholastic achievement.

• Need to evaluate effect of Health Department fee and scheduling on creating affordability and convenience barriers, particularly for low income working families.

• Need further data regarding number and demographic characteristics of Health Department clients to determine proportion of community served.

• Need further data regarding number of referrals resulting from screening services, and then to compare this rate to expected incidence rates for the community according to demographic characteristics.

• Need further data regarding screening programs conducted in the schools and number of referrals resulting according to demographic characteristics.

• Need measures of success of preventive health programs to indicate:
  
  Reduction in number of low birth weight babies.
  Reduction in infant mortality.
  Reduction in maternal mortality.
  Reduction in hospital admissions and hospital days for prenatal complications.
  Reduction in number of teen pregnancies.
  Reduction in drop-out rate of teenage women.
  Reduction in number of pregnancies in teenage women.
  Reduction in number of births by women without prenatal care.
  Reduction in communicable disease rates.
### TABLE 5: PREVENTIVE HEALTH SERVICE PATIENT DEMOGRAPHIC CHARACTERISTICS

<table>
<thead>
<tr>
<th>REPRODUCTIVE HEALTH</th>
<th>CLIENTS PER YEAR</th>
<th>% OF TOTAL</th>
<th>BRAZOS CO. FEMALE POP</th>
<th>% OF FEMALE POP</th>
<th>% OF FEMALES SERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>9,612</td>
<td>100%</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td>Gender</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>162</td>
<td>1.69%</td>
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<td>na</td>
<td>na</td>
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<td>Female</td>
<td>9,450</td>
<td>98.31%</td>
<td>59,177</td>
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<tr>
<td>Age (Females)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 to 18</td>
<td>2,102</td>
<td>22.24%</td>
<td>5,448</td>
<td>9.21%</td>
<td>38.58%</td>
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<tr>
<td>19 to 64</td>
<td>7,510</td>
<td>79.47%</td>
<td>39,488</td>
<td>66.73%</td>
<td>19.02%</td>
</tr>
<tr>
<td>Race (Females)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2,942</td>
<td>31.13%</td>
<td>32,970</td>
<td>55.71%</td>
<td>8.92%</td>
</tr>
<tr>
<td>Black</td>
<td>3,618</td>
<td>38.29%</td>
<td>4,883</td>
<td>8.25%</td>
<td>74.09%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2,301</td>
<td>24.35%</td>
<td>5,621</td>
<td>9.50%</td>
<td>40.94%</td>
</tr>
<tr>
<td>Other</td>
<td>75</td>
<td>0.79%</td>
<td>1,462</td>
<td>2.47%</td>
<td>5.15%</td>
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<tr>
<td>Missing</td>
<td>514</td>
<td>5.44%</td>
<td>14,241</td>
<td>24.07%</td>
<td>3.61%</td>
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</table>

<table>
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<tr>
<th>PRENATAL SUPPORT</th>
<th>CLIENTS PER MONTH</th>
<th>% OF TOTAL</th>
<th>BRYAN POP 14-19 YRS</th>
<th>% OF BRYAN 14-19 POP</th>
<th>% OF BRYAN 14-19 SERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>66</td>
<td>100.00%</td>
<td>4,240</td>
<td>100.00%</td>
<td>1.56%</td>
</tr>
<tr>
<td>Gender</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
<td>1.52%</td>
<td>2,263</td>
<td>53.37%</td>
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</tr>
<tr>
<td>Female</td>
<td>65</td>
<td>98.48%</td>
<td>1,977</td>
<td>46.63%</td>
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</tr>
<tr>
<td>Age</td>
<td>14 to 19</td>
<td>66</td>
<td>100.00%</td>
<td>4,240</td>
<td>100.00%</td>
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<tr>
<td>Race</td>
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<tr>
<td>White</td>
<td>11</td>
<td>16.67%</td>
<td>1,036</td>
<td>24.43%</td>
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<tr>
<td>Black</td>
<td>29</td>
<td>43.94%</td>
<td>490</td>
<td>11.56%</td>
<td>5.92%</td>
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<tr>
<td>Hispanic</td>
<td>21</td>
<td>31.82%</td>
<td>421</td>
<td>9.93%</td>
<td>4.99%</td>
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<tr>
<td>Other</td>
<td>5</td>
<td>7.58%</td>
<td>30</td>
<td>0.71%</td>
<td>16.67%</td>
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<tr>
<td>Missing</td>
<td>0</td>
<td>0.00%</td>
<td>2,263</td>
<td>53.37%</td>
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</table>

<table>
<thead>
<tr>
<th>PREVENTIVE HEALTH</th>
<th>CLIENT VISITS PER YEAR</th>
<th>% OF BRAZOS CO. VISITS</th>
<th>% OF BRAZOS CO. POPULATION</th>
<th>% OF BRAZOS CO. COUNTY POP.</th>
<th>VISITS/CAPITA</th>
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<tbody>
<tr>
<td>Total</td>
<td>18,880</td>
<td>100.00%</td>
<td>121,862</td>
<td>100.00%</td>
<td>0.15</td>
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<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 to 5 yrs</td>
<td>1,870</td>
<td>9.90%</td>
<td>9,862</td>
<td>8.09%</td>
<td>0.19</td>
</tr>
<tr>
<td>6 to 18 yrs</td>
<td>215</td>
<td>1.14%</td>
<td>20,171</td>
<td>16.55%</td>
<td>0.01</td>
</tr>
<tr>
<td>19+ yrs</td>
<td>15,508</td>
<td>82.14%</td>
<td>91,829</td>
<td>75.35%</td>
<td>0.17</td>
</tr>
<tr>
<td>Missing</td>
<td>1,287</td>
<td>6.82%</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
</tbody>
</table>
FIGURE 18: 8 Percent Population Served by Race Clients Served, Brazos Co. Female Population Age 12-64 Reproductive Health Services
FIGURE 19:

Female Clients Served, Female Population Age 14-19
Options for Young Parents - BISD
Social Support Services

Race

- Other: 0.4%
- Hispanic: 0.8%
- Black: 0.9%
- White: 1.1%

Percent served
Figure 20:

Clinic Visits: 9-1-92 thru 9-31-93
Brazos County Health Department
IMMUNIZATIONS

Vaccines are one of the most cost-effective preventive health measures. It has been estimated that every dollar spent in vaccinating children will save $10 to $14 in future medical costs. In 1977, the U.S. Congress enacted the U.S. Initiative on Childhood Immunization which required all children to have proof of immunization before they enrolled in school. This was the minimum requirement, stating only that children must have evidence that they have begun their vaccination series. Completion of the series to protect against childhood communicable diseases must then be strongly encouraged by the child’s physician, school, and health department.

Ideally, every child should have completed their initial vaccination series by two years of age, insuring immunity against: measles, mumps, rubella, polio, hepatitis, meningitis, diphtheria, tetanus, and pertussis. Nationally in 1992, an average of between 44% and 60% of all 2 year olds were properly immunized according to the Communicable Disease Center in Atlanta. In Houston in 1992, only 17% of the 2 year olds completed their immunization series, with Whites having higher rates (23%) than Hispanics (15%) and Blacks (6%). According to Inside Magazine, less than half of the children in Brazos County, aged 5 and younger, were properly immunized.

Two types of immunizations were assessed to identify health needs in Brazos County: immunizations for "childhood" communicable diseases and influenza (flu) vaccinations. All data were acquired through two separate and independent channels. First, State and County Health Departments provided data regarding child immunization levels in Brazos County for 9/1/92 through 8/31/93. Second, the HealthSmart Coalition for a Healthier Brazos Valley provided data for their immunization campaign held in November, 1993, "Shots Across Brazos Valley." The goal of the HealthSmart Coalition and the greater effort by the State Health Department was to obtain a 90% immunization rate for all 2 year olds by 1996.

Health Department Immunizations: According to Texas Department of Public Health statistics, approximately 20,000 immunizations were reported given in Brazos County between 9/1/92 and 8/31/93. Whereas data regarding the number and type of shots were reported, information was not available regarding the number of individuals receiving immunizations and their demographic and geographic characteristics. Thus, the proportion of Brazos County served or target populations in need could not be determined.

Children under two years old received 56% of the immunizations given, with the largest proportion (37%) given to those less than one year old. (Figure 21) The percapita rate of shots per child under 2 years was 1.37 which indicated an immunization rate far below that required to complete the series. An additional 21% of shots were given to preschoolers 2-4 years old. This group had a percapita rate of 0.87, again below the rate expected to meet public health requirements for completing basic immunizations and boosters. School aged children (5-19 years) received 18% of the immunizations and adults received less than 4% of immunizations or boosters to protect against "childhood" communicable diseases. Although the distribution of immunizations in the population was not known, the percapita rates indicated that the children in Brazos Valley were under-immunized.
The Health Department administered a study in 1990 to identify immunization rates at local child care providers and schools. As seen in Figure 22, almost all children in registered family homes (98%) and public schools (96%) had initiated their immunizations. In contrast, a much lower percentage of children in day care centers (88%) and private schools (86%) had initiated immunizations (or their records were incomplete) even though this was mandated by the State. Thus, an approach to improving the immunization rate in the County would be to target children in the locations with lower rates, bringing in a team to administer immunizations on site and helping these organizations keep updated records.

Approximately 8,250 flu shots were given in Brazos County between 9/1/92 and 8/31/93. Over half of these shots were given by Scott & White Clinic and local pediatricians. (Figure 23) The County Health Department administered 10% of the flu shots. Local hospitals gave 6%, presumably to high risk patients during their hospitalization.

Although the elderly would be a vulnerable population, only 1% of flu shots given in the County were targeted to this population at a local retirement community. No data were available as to the number of elderly vaccinated in the County; however, further efforts to provide flu shots at easily accessible locations such as senior centers, retirement communities, and nursing homes may prevent costly illnesses among this high risk population. Additional data would be needed about the demographic and geographic characteristics of those receiving flu shots to determine the proportion of population and target populations needing to be vaccinated in order to obtain a level of "herd immunity" which would significantly reduce the risk of debilitating flu illness in the community.

"Shots Across Brazos Valley" Immunization Campaign: In a 2 week period in November, 1993, the campaign "Shots Across Brazos Valley" administered 1,875 immunizations for childhood communicable diseases. (Table 6) The childhood immunizations were given to 1,423 individuals, more than half of whom were over 17 years old. (Figure 24) Only 9% of these shots were given to children less than 2 years, approximately 3% of the eligible County population of this age. An additional 13% of the shots were given to children between 2 and 5 years old, but this comprised less than 3% of the eligible population of this preschool age. Thus, this outreach campaign to increase the percentage of the population immunized against childhood diseases had only a small effect.

Although the number of childhood immunizations given was below that expected to meet the goal, there was a remarkable response by the public to obtain flu shots during this campaign. Approximately 25,000 flu shots were given, with over half (61%) to adults 20-59 years. (Figure 25) Although this group would be low risk for complications from the flu, their vaccination would increase the community's "herd immunity." In many of the age groups, 20-30% of the County's population was vaccinated for the flu during this campaign. (Table 6) Unfortunately, one of the populations at greatest risk for complications from the flu--the elderly--had the lowest proportion of flu shots given and the lowest percentage of the population vaccinated. Thus, the 2-week campaign seemed successful at providing immunizations for the community; however, additional measures would need to be taken in the future to target and provide outreach services for high risk groups, namely, children under 2 for childhood immunizations and elderly for flu vaccinations.
Summary and Recommendations Regarding Immunizations:

- The per capita rates of immunization in Brazos County indicated that the community was under-immunized, thus not providing the "herd immunity" to prevent outbreaks.

- Need data regarding number of clients immunized and vaccinated and further information on their demographic characteristics and geographic distribution to identify proportion of population immunized and which groups in the population to target for special outreach services, and to determine the "herd immunity" of the community.

- Outreach immunization campaigns to target young children in day care centers and in private schools to administer immunizations and to help the organizations to update and maintain their immunization records.

- To collect data from day care programs and from schools regarding proportion of children with incomplete immunization series, and to identify demographic characteristics and geographic distribution in order to develop outreach campaigns targeted to these children in need.

- Provide routine flu vaccinations at places with captive populations of elderly at risk, e.g., retirement communities, nursing homes, and senior centers.

- Continue to conduct special outreach campaigns, such as "Shots Across Brazos Valley," to target high risk populations at sites and times which would be convenient for the target under-immunized populations.
**TABLE 6: IMMUNIZATIONS—SHOTS ACROSS BRAZOS VALLEY CAMPAIGN, NOVEMBER 1993**

<table>
<thead>
<tr>
<th>CHILDHOOD IMMUNIZATIONS</th>
<th># Shots</th>
<th># Clients</th>
<th>County Population</th>
<th>% of County Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 to &lt;2</td>
<td>380</td>
<td>106</td>
<td>3,261</td>
<td>3.25%</td>
</tr>
<tr>
<td>2 to &lt;5</td>
<td>309</td>
<td>143</td>
<td>4,992</td>
<td>2.86%</td>
</tr>
<tr>
<td>5 to &lt;12</td>
<td>190</td>
<td>131</td>
<td>10,597</td>
<td>1.24%</td>
</tr>
<tr>
<td>12 to &lt;17</td>
<td>91</td>
<td>76</td>
<td>6,113</td>
<td>1.24%</td>
</tr>
<tr>
<td>17 to &lt;24</td>
<td>483</td>
<td>354</td>
<td>40,163</td>
<td>0.88%</td>
</tr>
<tr>
<td>24+</td>
<td>422</td>
<td>309</td>
<td>56,736</td>
<td>0.54%</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
<td>304</td>
<td>0</td>
<td>na</td>
</tr>
<tr>
<td>Total</td>
<td>1,875</td>
<td>1,423</td>
<td>121,862</td>
<td>1.17%</td>
</tr>
</tbody>
</table>

**INFLUENZA VACCINATIONS**

<table>
<thead>
<tr>
<th>Age</th>
<th># Shots</th>
<th># Clients</th>
<th>County Population</th>
<th>% of County Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to &lt;9</td>
<td>2,759</td>
<td>2,759</td>
<td>14,450</td>
<td>19.09%</td>
</tr>
<tr>
<td>9 to &lt;11</td>
<td>962</td>
<td>962</td>
<td>3,017</td>
<td>31.89%</td>
</tr>
<tr>
<td>11 to &lt;20</td>
<td>4,283</td>
<td>4,283</td>
<td>19,835</td>
<td>21.59%</td>
</tr>
<tr>
<td>20 to &lt;30</td>
<td>5,732</td>
<td>5,732</td>
<td>39,535</td>
<td>14.50%</td>
</tr>
<tr>
<td>30 to &lt;40</td>
<td>4,359</td>
<td>4,359</td>
<td>17,088</td>
<td>25.51%</td>
</tr>
<tr>
<td>40 to &lt;50</td>
<td>3,243</td>
<td>3,243</td>
<td>10,609</td>
<td>30.57%</td>
</tr>
<tr>
<td>50 to &lt;60</td>
<td>2,019</td>
<td>2,019</td>
<td>6,599</td>
<td>30.60%</td>
</tr>
<tr>
<td>60+ years</td>
<td>1,332</td>
<td>1,332</td>
<td>10,729</td>
<td>12.41%</td>
</tr>
<tr>
<td>Unknown</td>
<td>368</td>
<td>368</td>
<td>0</td>
<td>na</td>
</tr>
<tr>
<td>Total</td>
<td>25,057</td>
<td>25,057</td>
<td>121,862</td>
<td>20.56%</td>
</tr>
</tbody>
</table>
FIGURE 22: 

Vaccination Levels by Location - FY 1990

BRAZOS COUNTY

Type of Vaccination

- Mumps
- Rubella
- Measles
- Polio
- DTP

Vaccination Level

- 99.1%
- 97.7%
- 94.4%
- 95.7%
- 96.2%

Day Care Centers
Public Schools
Private Schools
Registered Family Homes
FIGURE 23:
Flu Shots Given by Location 9-1-92 thru 6-31-93
BRAZOS VALLEY

- 36% Scott & White Clinic
- 6% Local Retirement Community
- 1% Local Hospitals
- 10% County Health Department
- 1% Other Group Practices
- 13% Texas A&M Health Center
- 22% Local Pediatricians

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Figure 24: Shots Across Brazos Valley
Number of Individuals Immunized by Age Category - November 1993
MENTAL HEALTH AND RETARDATION SUPPORT SERVICES

Support Service Programs: Mental health services included in the study population were limited to those that provided support services to mentally ill and retarded patients and/or their families and were available to the general public without affordability barriers. Assessment of mental illness treatment services was beyond the scope of this study. Services provided under the auspices of the Mental Health and Mental Retardation programs (MHMR) in Brazos County provided:

- Children's intervention program--case management and counseling
- Crisis hotline/resolution
- Genetic screening/counseling
- Infant/children special education
- Outpatient medication services
- Vocational counseling services
- Residential service--halfway house, social development center
- Screening and referral
- Sheltered workshop and training
- Substance abuse counseling.

In addition to these services, MHMR provided a Respite Program which offered relief to family members and other caretakers to reduce the stress of caring for a seriously mentally ill person. A purpose of providing respite services was to reduce the cost associated with institutionalizing the seriously mentally ill by enabling the family to care for the person longer than would be usually possible without such support. These services were offered Monday through Friday, 8 am to 5 pm. If funding allowed, one recommendation would be to expand this type of service to be available evenings and weekends in order to provide relief for working family members.

Another MHMR program, In-Home Support, assisted persons with mental disabilities to live independently. This program provided attendant care, family counseling, respite care and other support services to enable its clients to remain in the community. The hours of operation were Monday through Friday, 8 am to 5 pm. Similar to the other support programs, this type of program would be valuable to families if it were expanded to include evening and weekend hours as well.

User Population: A total of 2,723 clients were served annually with 78,115 visits, averaging 29 visits/client/year. (Table 7) The Respite Program was small, serving only 35 clients annually, with an average of 5 visits/client/year. The In-Home Support Program served 140 clients per year, but only averaged 3 visits/clients/year. The clients of these social support programs comprised approximately 2% of the County population. Although it was not known what support services were offered in the private sector, this small percentage and the low visit rate indicated a considerable need in this community for expansion of social support services for mentally ill and retarded clients and their families.
The average MHMR client was 35 years old. As seen in Figure 26, the percentage of clients who were infants and children under 5 years old was greater than their proportion in the general population. Thus, outreach and casefinding was successful in helping families cope with mental disabilities of these young children. The percentage of services to school-aged children was much lower than their proportion in the population. However, it is likely that services for this age group may be coordinated through the schools, taking advantage of resources in the school system for special education and counseling services. Nevertheless, support services for the family would be limited unless they could afford to use services in the private sector. Approximately 5% of the clients were 65 or older in contrast to their comprising 7% of the general population. However, with less than 2% of the elderly population of the County receiving these social support services (Table 7), social support needs of mentally disabled elderly and their families would be underserved.

Although the greatest number of clients were White, these programs served a disproportionately higher percentage of Blacks when compared to the proportion in the County's general population. The percentage of Hispanic clients was almost equal to their proportion in the general population. (Figure 27) Hence, these programs seemed to have successful outreach and casefinding for minorities.

Yet the actual volume of services was well below what would be needed in the community. Estimates in the literature indicated approximately 10-20% of the general U.S. population needing mental health services in contrast to approximately 2% of Brazos County receiving these services. Thus, a significant increase in funding would be needed to expand these support services in the public sector to increase availability to a larger number of clients without affordability barriers and to increase access to services during evening and weekend hours to better support families in caring for mentally ill and retarded clients.

**Summary and Recommendations Regarding Mental Health and Retardation Care:**

- Current services offering successful outreach and casefinding to minority clients, particularly Blacks, yet still need to expand the availability to a higher percentage of the population.

- Need for increased funding to expand services to the elderly to help them to remain in their homes longer rather than being institutionalized.

- Need for increased funding to expand access to respite services to include evening and weekend hours to better meet the needs of working family members.

- Need for further information regarding availability of mental health and mental retardation services through the schools and the characteristics of their user population.

- Need for data regarding the prevalence of mental illness and retardation in the community and demographic characteristics and geographic distribution of those in need.

- Need for a study of mental health treatment availability and needs in the community.
<table>
<thead>
<tr>
<th>Race</th>
<th>Total</th>
<th>Hispanic</th>
<th>Black</th>
<th>White</th>
<th>Male</th>
<th>Female</th>
<th>Other</th>
<th>Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>74,762</td>
<td>278</td>
<td>930</td>
<td>1,421</td>
<td>21</td>
<td>21</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Age</td>
<td>%</td>
<td>0.07%</td>
<td>10.08%</td>
<td>4.38%</td>
<td>1.95%</td>
<td>7.36%</td>
<td>0.00%</td>
<td>1.42%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>2.91%</td>
<td>3.32%</td>
<td>4.75%</td>
<td>3.80%</td>
<td>1.25%</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>County</td>
<td></td>
<td>2.25%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>Population Served</td>
<td>% Population</td>
<td>2.25%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td></td>
</tr>
</tbody>
</table>

**Table 7: MHMR Social Support Services**
FIGURE 26:

AGE GROUP

- 65+
- 5 TO 18
- 3 TO 5
- 1 TO 3
- 0 TO 1

PERCENT OF TOTAL

- 18%
- 7%
- 5%
- 5%
- 5%
- 4%
- 4%
- 3%
- 3%
- 3%
- 3%
- 9%

MENTAL HEALTH OUTPATIENT UTILIZATION VERSUS CENSUS CHARACTERISTICS

BRAZOS COUNTY CENSUS

MENTAL HEALTH OUTPATIENT CLIENTS
ELDER SUPPORT SERVICES

The U.S. General Accounting Office published a report in 1994 that identified approximately 6 million older Americans living at home who needed help with day-to-day activities such as eating, bathing, shopping, and housecleaning. Most of the care for these disabled elderly was given by family members and friends, mainly women. In Texas, a 1991 study of dependent care identified more than 50% of women who cared for elders in the home worked outside the home. However, these informal arrangements were increasingly strained as there was greater geographic separation among family members, smaller families, and more women in the workforce. Little is known locally about the extent of the need for elder care and the availability of services to enable the elderly to remain in the community.

Community-Based Support Services for the Elderly: Eight programs were identified as providing social support services in Brazos County for the elderly and their families. Five programs provided miscellaneous social support services, including benefits counseling, home weatherization, help with utility bills, daily phone calls, social activities, information sharing regarding coping strategies, and support groups for caregivers. Three programs provided home-delivered nutritious, affordable meals to elders who were homebound. The cost of the meals depended on ability to pay. Meals were offered free of charge to very low income persons and at a modest cost for others who were able to afford this service. When meals were delivered, trained drivers routinely conducted a visual assessment of the client's physical condition and initiated referrals when appropriate.

The various programs were available Monday through Friday, with hours varying from 7 am to 5 pm depending on the program. The Alzheimer's Disease Support Group program met only once per month. However, no services were available to the general public regardless of cost that were offered after work hours in the evenings or on weekends. Thus, an area of need would be to expand accessibility of dependent care for the elderly to include extended hours.

User Population: The three home meals programs were serving 148 current cases at the time of the data collection. Each agency provided meals for 24 to 70 clients, five days per week. In the previous year they had delivered a combined total of 38,350 meals. The general support programs provided 10,121 visits and 21,900 phone calls of reassurance per year to an estimated total of 919 clients. The combined total of 1,067 elderly clients served by these eight programs represented 13% of the elderly population in Brazos County (N=8,070). If the target population of need for elder support services were further narrowed to include just the disabled elderly with mobility or self-care limitations (N=3,999), these programs would serve 27% of those in need. This capacity for services falls far short of this estimated need, especially recognizing that this target population is biased on the side of under-estimating the real amount of need in the community.

The demographic characteristics of the elderly clients demonstrated further biases in distribution of services. Although two-thirds of the elderly in the County were women, an even greater proportion (79%) of the clients of these programs were women. On one hand, it has been shown that women seek support services more
readily than men. On the other hand, elderly men may have more living spouses or family to provide this support for them. Nationally, 14% of elderly males lived alone compared to 41% of elderly females. Thus, this disproportionate use of services by women would be expected.

A difference in family resources for social support may further explain the bias found in racial distribution of the clients. Whereas 75% of the elderly in the County were White, only 38% of the clients of these services were White. (Figure 28) In contrast, 25% of the County's elderly population were minorities; however, almost two-thirds (62%) of the clients of these support programs were minorities. In particular, the percentages of Black and Hispanic elderly were disproportionately high compared to their percentage in the population of elderly in Brazos County. Financial and social support by family and friends may be less available for minorities than for Whites in this community. If so, the casefinding and referral networks for elderly support services was successful in emphasizing outreach to minorities.

**Summary and Recommendations Regarding Elder Support Services:**

- Evidence of successful casefinding and outreach to women and minority elderly clients.

- Need to expand availability of services to greater number of elderly in the community.

- Need to expand accessibility of services to include evening and weekend hours.

- Need to develop centralized information and referral network for activities and services offered for elderly, coordinated with church, neighborhood, and other programs in the private sector.

- Need for coordinated case management between home health care, mental health support services, and elder social support services.

- Increase availability of housekeeping and hygiene services to postpone the time before disabled elderly need to be institutionalized.
DAY CARE FOR HANDICAPPED AND DISABLED

Services for Handicapped and Disabled Children: Excluding special education programs in the schools and the MHMR programs discussed above that served mentally disabled children, only one other program was identified in Brazos County that was designed to serve disabled or handicapped children—the Regional Day School for the Deaf. This was a focused type of service, providing sign language classes, counseling, parent support, and services to deaf children. Of the 68 children served, 38% lived in Brazos County (N=26). Although the number of disabled children in the County was not identified, it is apparent that this single program would fall far short of meeting the needs of the community to help care for handicapped and disabled children, with a total population of 33,713 children. Even the needs for hearing impaired children would likely be underserved with this single program already operating at capacity. Thus, a significant need of the community would be to develop services specifically designed for handicapped or disabled children that would not only provide support systems for their parents and family members, but would also provide trained personnel to help these children integrate themselves into the community to the best of their abilities. Although there were day care, educational, and recreational programs in the County that accepted disabled/handicapped children, the need for specially trained staff to enhance these children's development and opportunities would be critical.

Services for Handicapped and Disabled Adults: Two day care programs were available in Brazos County for disabled or handicapped adults. These two programs served 437 current cases, providing social support services for care in the home or at a community center. Preferences were given to serving clients who had limited financial resources determined according to the Department of Human Services poverty guidelines (monthly income of $1,302 for individuals/$2,604 for couples, and assets of $5,000 for individual and $6,000 for couples). Both agencies operated Monday through Friday during daytime working hours. Thus, there were no adult day care resources for families who worked nontraditional hours or weekend shifts.

The 1990 census indicated 8,304 adults in Brazos County with nonwork-related mobility limitation and/or self-care limitation, comprising 7% of the county population aged 16 and older. The number of disabled elderly comprised approximately 50% of the elderly population, with the largest proportion living outside city limits. Disabled adults 16-64 comprised approximately 4% of this similarly aged population in the County, with the largest group living in Bryan. Unfortunately, no demographic information was available in the client data to compare to census demographics for the disabled population. Taking this disabled census population as a conservative estimate of a target group in need, the adult day care services were available to only 5% of the adult disabled population in the County. Moreover, this disabled population was a biased underestimate of the actual level of need in the population, assuming that a number of adults needing day care would not fit the narrow census definition of "disability." Thus, the proportion of adults needing day care would be even greater, indicating a considerable need for increasing the availability of adult day care services.
Summary and Recommendations Regarding Day Care for Handicapped and Disabled Children and Adults:

- Need to expand the availability of affordable services to meet the needs of a greater number of handicapped and disabled children and adults.

- Need to expand the accessibility of day care services to extended evening and weekend hours to better support working family members of handicapped and disabled clients as well as family members who work nontraditional hours.

- Need further data regarding the demographic characteristics and geographic distribution of clients served to determine discrepancies indicating target population in need according to the demographic and geographic characteristics of the disabled population enumerated in the 1990 census.

- Need to develop a clearinghouse of community resources for families with handicapped and disabled members to identify services that would be available, affordable, and convenient in the private sector.

- Need to coordinate casefinding with medical, hospital, and home care providers to develop a referral network to facilitate access to social support resources for these clients and their families.
EARLY CHILDHOOD DAY CARE

Supply of Day Care Providers for Infant, Toddler, and Preschool Children (0 to < 6 years old): Care for infants, toddlers, and preschoolers in Brazos County was provided through licensed day care facilities and registered family homes, both of which were licensed by the Texas Department of Protective and Regulatory Services. Licensing guidelines for home centers included safety, staffing requirements, and building inspections. Registered family homes were monitored and subjected to random unannounced visits to ensure compliance with guidelines.

A list of licensed facilities would be available to anyone who inquired at the Dept. of Protective and Regulatory Services. However, the only information given on this list was the name, address, phone, age range, and licensing capacity. Further information about the quality of the day care would be available only through word-of-mouth. There was no available clearinghouse of information in the community for providers to advertise vacancies nor for families to indicate willingness to be referral contacts. This would be an important role for a coordinated information and referral system.

In the Bryan/College Station area, 58 licensed child care facilities and 100 registered family homes were identified as of September, 1993. The capacity of a day care facility or home varied according to the ages of the children, with more allowed if they were older. A maximum capacity of 5,314 children could be accommodated in licensed day care in Brazos County. This would serve 56% of all children aged 0-5 years in Brazos County (N=9,564 total).

Geographic Distribution of Child Care Needs and Supply: Optimal location of day care may be perceived in two ways--either near home or near the workplace. Information regarding distribution of working parents by worksite was not available for this study. Therefore, the distribution of children with working parents or single parent who worked was plotted according to census tract of their home address. (Figure 29) It should be noted that aggregate numbers of total children were illustrated rather than the concentration of children per population.

As seen in Figure 29, the greatest concentration of day care providers was within city limits. Day care facilities tended to be on or near major thoroughfares. The day care homes were fairly evenly distributed through Bryan and College Station, except for west Bryan. In contrast to the distribution of day care providers, the largest number of children of working parents lived in the outskirts of College Station, with the location of the next largest number living in south College Station, north Bryan, and outside Bryan city limits. Thus, working parents who lived outside the city limits would encounter travel barriers unless the provider were located on the way to work. Otherwise, the geographic distribution of day care providers appeared appropriate for this limited target population. In order to meet the additional demand for day care services, new providers may want to consider on-site locations at the place of employment.
Day Care Needs for Young Children: A target population of those that would need child day care was identified as the number of children under 6 years old with both parents working (N=4,255) or with the single-parent working (N=1,447). Even with this conservative estimate of a target group, not all the need could be met for this group with the available capacity of day care providers—93% of the target population could be served with the maximum available capacity.

Admittedly, not all children of working parents would need a licensed facility, e.g., if grandparents helped or if parents worked different shifts. However, many families with a non working parent would also feel a need for day care for their children, e.g., for socializing with other children, for preschool enrichment, for enabling parent(s) to attend school or to volunteer. Even with this bias of underestimating the target population and overestimating the capacity, not all the need was met. Thus, there was a need for expanding child day care services in Brazos County, especially for infants. But this expansion must include some ability to assure the quality of the services. A coordinated information and referral program could incorporate an evaluation component, such as a list of parent-users to contact to identify their perceptions of the quality of day care received.

Day care for non-traditional hours or weekends was not available in Brazos County according to information available. Although drop-in day care centers were available on an hourly basis for weekends and extended hours, the aim of these centers was to provide short-term, back-up supervision rather than continuity of care and developmental stimulation. Arrangements for non-traditional hours may be possible through non-licensed providers, but this information was not available through any formal listing of day care providers. Day care for sick children was also not available to the community at large. Again, arrangements may be made privately, but no formal programs were offered in the County. Thus, not only was there a need for expanding the availability of day care during traditional working hours, but also there was an immediate need for providing affordable, quality services for working parents with special needs. These types of arrangements would have a significant impact on reducing absenteeism and increasing productivity of employees with dependents.

Summary and Recommendations Regarding Day Care for Infants, Toddlers, and Pre-Schoolers:

- Maximum capacity of licensed day care providers could serve 93% of the target population of working parents in need of early childhood day care.

- Families with one or no working parents who would want day care for their children would create additional demand for the available supply.

- Need to expand day care services in the County, particularly for infant care.

- Locating day care at the work site may help reduce travel barriers, particularly for the high number of families in need who live in the out-county areas.

- Need to develop coordinated referral system for parents to identify the quality of day care providers.

- Need a clearinghouse of information in the community for providers to advertise vacancies.
• Need to develop day care providers for parents who work non-traditional evening and weekend hours.

• Need to develop day care arrangements for sick children.

• Need to develop day care and pre-school arrangements for children with special needs, e.g., handicapped disabilities, developmental disabilities, language difficulties.
FIGURE 29:

DAYCARE PROVIDERS BY TYPE AND LOCATION RELATED TO CHILDREN WITH WORKING PARENTS

DAYCARE CENTER
REGISTERED FAMILY HOME

- CHILDREN AGES 0 - 5 > 700
- CHILDREN AGES 0 - 5 LE 700 AND > 300
- CHILDREN AGES 0 - 5 LE 150
SCHOOL-AGED CHILDCARE

Supply and Users of Day Care for School-Aged Children (6 to < 18 yrs.): Once a child entered school, the childcare needs of a family would change, particularly in terms of the time frame when care was needed. In 1993, after-school childcare in both Bryan and College Station school districts provided organized programs at the local schools for approximately 1,075 elementary and middle-school children. Four community-based centers provided supervised programs for after-school care for 2,037 kindergarten through high school children (i.e., North Bryan Community Center, Girls Club of Brazos County, Shennanigans Teen Center, Boy's and Girl's Club). These programs served approximately 20% of the total Brazos County school-aged population (N=15,226 total aged 6 to < 18 yrs.).

Although 48% of all school-aged children in the County were female, 70% of the children who used these after-school programs were female. The reasons for this discrepancy would only be speculative. It is unlikely that working parents would have such a disproportionately high number of female children. Thus, a high number of male children received alternative latch-key arrangements. Unfortunately, there were not sufficient data available about race of those who used the after school programs to compare to the distribution of race of the target population.

Need for After-School Care: A conservative target population of need would be school-aged children who had both parents working (N=7,958) or single-parent working (N=2,931). This target group comprised 73% of the total number of children in Brazos County aged 6 to <18. Assuming that the current available after-school programs were at capacity, they served only 28% of this target population, i.e., less than a third of the children who would need such programs. Thus, additional organized childcare would be needed for approximately 7,800 additional school-aged children. Even though not all these children may need after-school or release-day supervision, other children from families where there was a non-working parent would be expected to at least balance this need.

Additional drop-in centers were available in the community along with after-school extracurricular activities that provided qualified supervision. Although not included in these data, private schools and churches in the community also provided after-school programs. Even with these additional programs, there would be a sizable population whose need would not be met by the latch-key programs currently available in the community.

Need for Supervision During Release and Vacation Days: Many of the after-school programs discussed above have extended their program to include organized supervision for school release days. However, there were a limited number of programs for supervised activities on vacation days during the school year that were available to the community at large. Furthermore, no programs were available in the community to provide supervision for sick children who would be ambulatory and alert but not yet allowed to return to school. These types of programs would be expected to significantly reduce absenteeism and increase productivity of working parents.
Although not associated with initiatives from employers, some community and private groups have begun to offer supervised programs for school-aged children during release and vacation days during the school year (e.g., The Arts Council, Brazos Valley Museum, Aerofit, 'Magination Station). Summer programs were also offered through these organizations as well as through the school districts, recreational groups, scout groups, religious groups, and other interest groups. Although there was a large variety of summer programs, there was no coordinated information and referral mechanism for parents to identify opportunities and to determine the quality or capacity of those programs. Thus, the community has been actively initiating day care and after-school programs; however, the need has exceeded the supply and the lack of a centralized, coordinated information and referral network masks the awareness that many such programs may be available.

**Summary and Recommendations Regarding School-Aged Childcare:**

- After-school programs available to the community at large served 28% of the population in need, based on target population of children with working parents.

- After-school programs served a disproportionately high percentage of females, thus, underserving the males in this age group.

- Further need for data regarding race and income of children attending programs in order to compare to demographic characteristics of target population in need.

- Need employer-based initiatives to support after-school, sick-child, and vacation day programs to reduce absenteeism and to increase productivity of working parents.

- Need centralized, coordinated clearinghouse to identify quality and capacity of programs for school-aged children.
SUMMARY AND CONCLUSIONS

A comprehensive study of health and social support needs in Brazos County was conducted in 1993. The findings of this study indicated that the supply of medical services in the community seemed adequate for inpatient, emergency, physician, and nursing home care compared to national and state norms. In contrast to the supply of medical care providers, the needs of the community for social support services exceeded the available supply of each type of social support system investigated: preventive care, home health care, mental health and retardation care, elder support services, day care and support services for handicapped/disabled children and adults, and day care for early childhood and supplementary day care for school-aged children. By comparing the size of a target group defined from census data to the number of individuals served by existing programs provided an estimate of how well the available capacity was able to meet the community's level of need. This estimate was always biased low to underestimate the real level of need in order to minimize chances for recommending unnecessary or inappropriate program development.

In each of the categories of social support services investigated, the capacity of services available in the community was not sufficient to accommodate even the conservative estimate of need in the community. This in no way implied that the existing services were inadequate in their quality or scope. Rather, it meant that this community needs more of these types of services to accommodate even the minimum level of need existing in the community. Moreover, some types of need had extremely limited community-wide programs, such as social support services for handicapped/disabled children and adults, day care for non-traditional hours, sick child care, respite care for elderly. Access to the existing available community-wide programs was further hampered by the lack of a coordinated, centralized information and referral service.

With national attention focused on universal access to medical care, ability to afford medical services, and quality of medical care received, the critical importance of social support systems should not be overlooked. Available, affordable, convenient, and high quality community-based social support services may enable families to better cope with the stress of medical crises and even everyday illnesses and injuries. This support structure may help to prevent further illness in other family members, thus reducing the cost of care to the family as a whole. Perhaps more importantly, by supporting family members to maintain their functioning roles during times of medical or other types of crises, the community gains a more productive and stable work force and student population. The cost of implementing additional social support services should be measured in terms of reduced absenteeism, lowered turnover, higher productivity, less truancy, lower dropout rates, and lower health expenditures for the family as a whole. Although more difficult to measure, perhaps the most important advantage to expanding social support services is to increase the quality of life for those living in the community.
RECOMMENDATIONS

At the end of each section in the report, a list of recommendations was summarized for each specific topic area. The lists included suggestions to reduce access barriers to available services, to develop additional services to meet community needs, and to identify further data that will help to better document the degree of success in meeting health and social support needs in the community. More general recommendations are discussed below according to feasibility of success—immediate, short term, long term.

**Immediate Goals:**

- Identify existing committees and working groups where multiple health and social service agencies are represented.

- Consolidate the activities of these representative groups to develop coordinated objectives and mechanisms to evaluate the outcomes of their programs.

- Coordinate efforts of health and social support agencies to develop a centralized information and referral clearinghouse about available services that would be easily accessible and no cost to the general public.

- Coordinate participation by the local educational institutions for focused student projects that would meet agency needs as well as educational objectives.

- Coordinate participation by local educational institutions for student intern-/externship and volunteer activities in community health and social support agencies.

- Coordinate computer resources used by health and social support agencies to enable networking among the agencies.

- Coordinate client record format and data collection efforts to enable aggregating anonymous data across agencies and to facilitate comparisons to census data.

**Short-Term Goals:**

- Coordinate collaboration with faculty at local educational institutions for creating projects that would enhance program development and evaluation and facilitate measurement of client outcomes.

- Document limitation of available resources to meet extent of community's needs for health and social support systems and then provide this to faculty to use for proposal development for grant funding of research or development projects.

- Sponsor periodic conferences in collaboration with local educational institutions to take advantage of regional, national, and international consultants in topic areas of interest as well as opportunities to present feedback and outcomes from student projects.
• Develop a newsletter that communicates common goals and steps toward meeting those goals, faculty/student/agency collaborative projects, and opportunities for participation in program development.

• Establish a library collection of annual reports, pamphlets, or other materials that document agency activities and achievements.

• Collaborate with other community groups (e.g., churches, schools, business and professional groups, civic groups) to develop an outreach and casefinding clearinghouse to identify need in the community; and then, coordinate with a referral clearinghouse to provide appropriate help.

**Long-Term Goals:**

• Coordinate with local industries and businesses to develop "Family and Work" programs, perhaps as extensions of their Employee Assistance Programs (EAPs), that would expand employee benefits to include support services for dependent care.

• Evaluate outcomes of increasing availability and access to social support programs in terms of reduced morbidity and mortality, increased employee productivity, decreased student truancy and dropout.

• Increase program development funding through collaborative grant proposals and fund-raising activities (e.g., industrial associates program).

• Communicate accomplishments nationally and internationally through professional, business, and public media.

In this *International Year of the Family*, Brazos County has an opportunity to address needs of the community for programs to better support families in their effort to cope with illness or injury of family members yet maintain their functioning in work and community roles. Local employers could be at the forefront of establishing innovative family and work programs that would enhance the quality of work life for employees and their dependents as well as lower absenteeism and turnover, thus increasing productivity. Local health and social support agencies could develop and expand programs that not only improve the health and well-being of clients and their families but also increase quality of life in the community.
APPENDIX A:

METHODS AND PROCEDURES

A. DEFINITION OF THE STUDY POPULATION

Three study populations were identified for this study:

1) Programs that provided health and social support services in Brazos County.
2) Clients of those programs who used the services in the previous year.
3) Census population in the County who would be an appropriate target group needing specified services.

1. Available Supply of Services: Eighty-six agencies were identified as eligible to participate in this study. Criteria for including an agency in the study were:

   a) Direct delivery of services to clients.
   b) Primary location in Brazos County.
   c) Services available to the general community.
   d) Program in operation for the full year of 1992.
   e) Public access to program/agency information, e.g., Community Services Directory (Brazos County Community Council), phone book, County Medical Society, Texas A&M University Directory.

   Health services were defined as medically-oriented services, i.e., in-patient acute care, emergency services, home care, nursing home care, and physician services.
   Not included in this study were:

   • Ambulatory outpatient care and walk-in clinics.
   • Residential senior housing.
   • Chiropractic services.
   • Non-traditional (e.g., homeopathic, acupuncture) medical care.
   • Physicians not involved in direct patient care, i.e., pathologists, radiologists, full-time administrators, full-time faculty, full-time researchers.
   • Pharmacies, equipment supply organizations, and referral therapists, e.g., physical, occupational, speech, respiratory.

   Social services were defined as agency programs that delivered services providing social support to clients in Brazos County. This included case management and referral services. Not included in this study were:

   • Administrative or information coordinating programs.
   • Programs solely concerned with funding or determining eligibility for funding.
   • Programs operated for an exclusive clientele, (e.g., based on limited religious, neighborhood, or ethnic characteristics), thus not meeting the eligibility criteria of availability to the general community.

   Psychological services were limited to social support for mentally ill or retarded patients and their families in the community regardless of ability to pay. Not included in this study were:
• Psychological or psychiatric treatment services paid for by individuals, employers, or with special program funds.
• Psychological or psychiatric services provided as a component of other medical or social services.
• Psychological or psychiatric services provided as a component of educational programs.

2. Demand for Care: Demand for care was defined as use of services during the agency's 1992-93 fiscal year. In most cases, agencies reported number of patients/clients that had used their services. However, some agencies reported the number of visits made, without ability to identify whether particular patients made multiple visits at that agency. Moreover, in order to maintain anonymity, there was no mechanism to identify clients who used multiple agencies. Whether data were collected as visits or clients is reported in the findings and care is taken to note the differences when aggregating utilization data.

It should be noted that this population did not include individuals that may have needed care but did not have access to services or were not aware of the availability of services. Nor did this population include individuals who did not yet recognize that they needed care either because their symptoms were subtle or they denied feeling a need. Thus, this user population represents clients motivated to seek services that were accessible to them.

3. Need for Care: Need for care was determined for selected types of services where a target population could be defined from census data according to specific age, gender, race, income, disability status, or work status characteristics. Distribution of characteristics of the target population were contrasted to those of the comparable user population to identify discrepancies between the population who potentially could use a specific type of service versus those who actually used that service.

• Pediatrician physician supply per pediatric population.
• OB/GYN physician supply per female population of child-bearing age.
• Nursing home bed supply per elderly disabled population with self-care limitations.
• Home care services per disabled adult population with self-care limitations.
• Elder support services per elderly disabled population.
• Adult day care per adult disabled population.
• Immunization services per pediatric population.
• Early childhood day care per population 0 to < 6 with working parents.
• After-school care per school-aged population with working parents.

When available in the literature (See Appendix D: Bibliography), norms or standards of supply available in other populations will be compared to assessed ratios in Brazos County in order to determine adequacy of supply and to formulate recommendations to improve accessibility.

Although assumptions may be debated in using census-based target groups as comparison populations, these target groups from 1990 census data provided the most recent, valid, and reliable baseline data of groups within the community that would have potential need for the specific designated services. In fact, the narrow definition of these target groups would tend to underestimate the level of need in the community, providing a conservative bias to the potential amount of need.
B. SCOPE OF THE STUDY

1. Geographic: The study population was limited to agencies with their primary location in Brazos Valley. The client population was narrowed to users who lived within Brazos County. Users from outside the county were noted separately. Often clients were limited to those within municipalities of Bryan or College Station, with those outside the city limits noted as "out-county" users. Target populations were defined from the 1990 U.S. Census Data for the Standard Metropolitan Statistical Area (SMSA), with boundaries equivalent to Brazos County.

Distribution of providers and target populations were analyzed with a Geographic Information System (GIS) to highlight discrepancies between availability of services and need based on geographic distribution of a target population by census tract within Brazos County.

2. Demographic: Demographic characteristics of the user population (age, gender, and ethnicity) were provided by the participating agencies according to records or summaries available to them at the time of the data collection. Additional eligibility criteria were noted (income, race, religion, family status, language, occupation and employment status). If any information was unclear or uncertain, it was coded as missing and excluded from analysis.

Most agencies reported their data according to "clients" as the unit of analysis. However, some agencies counted visits or admissions without the ability to determine duplication of clients during the study period. Thus, some client characteristics may be biased by those clients that had multiple use of the services during the study period. Other clients may be users of multiple agencies. The analysis of agency networks with common referral patterns may indicate biases of demographic characteristics based on common patterns of client use across agencies. Unfortunately, data collected about referral networks was incomplete and unreliable. Thus, this remains an area for future study.

Because of the unusual nature of this community dominated by a large university, demographic characteristics may be biased, particularly in regards to age. To test this bias, comparisons were made with "university communities" of comparable size within Texas and nation-wide, i.e., Champagne-Urbana (Univ. of Illinois); Pullman (Washington State); Lubbock (Texas Tech.); Denton (North Texas State) and Waco (Baylor Univ.). The supply of hospital beds, nursing home beds, and physicians were then compared to national and state norms and those of comparable university communities to determine appropriateness of supply. Norms for other types of support services were not known due to lack of available information about the other communities.

Characteristics of the users were reported in aggregate figures only to protect the anonymity of clients as well as the confidentiality of service patterns for the agencies who participated in the study. Demographic characteristics of the user population were categorized as closely as possible to available census categories. When there were discrepancies in these groupings, differences will be noted in reporting the findings.

3. Time: Data were collected during the fall of 1993 to include services used in 1992-93 in order to get a full year of quantity of use and user characteristics. Agencies were asked to report their patterns of use according to their own fiscal year.
If data were not available in this format, then we tried to collect retrospective data from August 1992 till August 1993. In some instances, even this information was not available, in which case we generalized from data collected from the most recent month with available data.

Characteristics of the 1992-93 user population were compared to demographic and geographic characteristics of the County population from 1990 data collected for the most recent census. These census data were aggregated by census tract, by city (Bryan or College Station) or by county (Brazos County SMSA).

C. DATA COLLECTION

1) Data Collection Format: Three areas of information were collected from each agency: a) utilization, b) agency referral networks and funding, and c) staffing characteristics. (See Appendix C: Data Collection Forms.) First, utilization data identified volume of services demanded. The outpatient volume was indicated according to either number of clients or number of visits or both. Frequently, agencies had only one method of identifying volume of clients from their records. Agencies that provided inpatient services were asked to indicate number of admissions and hospital days. The responding agency was to circle the unit of time that corresponded to the volume of use, i.e., per day/week/month/year. The preference was to collect this information for the complete fiscal year prior to the onset of data collection. The next type of utilization information was to list the aggregated number of clients/visits according to demographic (gender, ethnicity, age) and geographic (zip code) categories. Last, agencies were asked to identify any eligibility requirements they may have that would bias or limit utilization of their services.

The second page of the data collection form asked for agencies or groups that referred clients to them or agencies to whom they sent clients. The purpose of these data was to create a map of agency networks according to client needs. Unfortunately, these data were incomplete and biased by availability of agencies to accept referred clients either by constraints on funding or on available staff. In other words, some agencies reported that they do not bother referring to certain agencies those patients who cannot pay or they avoid referrals to agencies with long waiting lists. Moreover, the list was limited to recall of the particular agency contact person rather than a comprehensive list of referral agencies used by all staff. Thus, analysis of these data was not included in this study, but further investigations regarding referral networks are recommended.

At the bottom of the second page, agencies were asked to check the source of their primary, secondary, and other funding. We did not want to breach any confidentiality of amount that agencies were funded or even their proportion of funding. However, we were interested in whether a large proportion of agencies would be dependent on specific sources of funding that would make them vulnerable to changes in legislation or reduction in revenue. These data were incomplete from many agencies, and therefore not included in the analysis.

The third page of the data collection form asked agencies to identify the number of full-time, part-time, and volunteer staff according to staff's demographic characteristics. This information was to calculate the staff/client ratio and to be compared to the demographic distribution of clients. Unfortunately, these data were incomplete for many agencies and therefore were excluded from analysis.
An addressed, stamped envelope was included to return the mail questionnaire to Dr. Bame at Texas A&M University. If responses were not received within 2 weeks, the students offered to pick up the questionnaire or to fill it out over the phone. If this was not successful, an appointment was made to interview the agency's administrator face-to-face using the structured questionnaire.

2) Agency Contacts: A critical component of the study was collection of primary data from community agencies. This activity comprised approximately a quarter of the project's time effort. A large amount of the time for data collection was spent making repeated contacts until data collection was completed from a participating agency. While this was a frustrating aspect of this type of primary data collection, it was essential for this survey in order to assure a response rate necessary for valid data. As noted in the methods section of the report, the response rate for this study was 99%, with only one agency not returning the data collection form.

A total of 167 contacts were made to the 86 agencies, with 36% of those requiring more than one contact in order to collect the data. A majority of agency contacts were made by phone (87%), with 10% of the interviews conducted face-to-face at the agency and 3% of the contacts made by FAXing the data collection form to the agency for them to complete and mail or FAX back. Forty percent of the phone contacts required further follow-up compared to only 6% of the face-to-face attempts requiring another contact to complete the data collection. This analysis demonstrated that although phone interviews would be less expensive than face-to-face visits, the study design must budget for multiple attempts needed in order to complete an interview. Thus, survey design for community health needs assessment should be flexible in budgeting adequate resources to pursue agency contacts until completed.

3) Time Effort for Conducting the Study: The amount of time spent on the Community Needs Assessment was logged by the students participating in the laboratory project over two semesters (8 students in the 1st semester and 6 students in 2nd semester). This information would be helpful to budget such a study in the future. However, the amount of time spent by the director of the project, Dr. Sherry Bame, was not included in this analysis, and thus, the time analysis only includes efforts of the project team members.

The amount of time taken by all project team members was as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
<th>Percent of Total Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1739.05</td>
<td>100%</td>
</tr>
<tr>
<td>Research</td>
<td>603.25</td>
<td>35%</td>
</tr>
<tr>
<td>Survey</td>
<td>353.40</td>
<td>20%</td>
</tr>
<tr>
<td>Class time</td>
<td>345.75</td>
<td>20%</td>
</tr>
<tr>
<td>Administration</td>
<td>185.65</td>
<td>11%</td>
</tr>
<tr>
<td>Analysis</td>
<td>251.00</td>
<td>14%</td>
</tr>
</tbody>
</table>

Research activities included reviewing the relevant literature and census data for appropriate measures and comparative standards. During the first 7 weeks of the project, an average of 60 hours per week was spent in research activities which involved defining the measures to use in the survey through review of relevant literature and comparison to census data. After this initial period, research activities
continued throughout the duration of the project but the amount of time dropped to approximately 5 hours per week.

Survey activities included data collection as well as developing, pilot testing, and printing the data collection form, identifying the study population, and travel and waiting time to administer the questionnaire. Survey activities also included coding and aggregating the data, and preliminary presentations to check the validity and reliability of the findings. Data collection began in mid-October (week 7), with 3-5 hours per week spent in selection of the study population and preparation of data collection forms prior to that time. An average of 30 hours per week was spent throughout November and December (weeks 9-16), with the project team conducting the data collection, coding and compiling the findings, and making presentations of the preliminary findings.

Class time included meeting twice a week for presentations of the conceptual framework of community needs assessment process, presentations by selected community agencies, debriefing survey activities, and feedback regarding strategies for data collection process and compiling the findings. Class time was consistently 5 hours per week for the first semester and 4 hours per week for the second semester.

Administrative activities by the team leaders involved meeting weekly or as needed with the director of the project (Dr. Bamie) to organize activities and plan the logistics of the survey as well as prepare the graphics for presentations. These team leaders were the recipients of the Community Health Planning Fellowships: Melissa Pindell and Joey Anderson. During the first semester, the two of them spent an average of 20 hours per week. After one graduated, the other team leader typically spent 10 hours per week coordinating and organizing the study activities.

Analysis involved describing the findings, comparing to census target groups, and summarizing the findings for presentations, including developing graphics and geographical information systems analyses. A small amount of analyses were conducted at the end of the first semester. During the second semester, typically 50% to 60% of the average 30 hours per week was spent on analysis of the data (weeks 17-29). This included comparative analyses with census data and findings in the literature and analyses with geographical information systems regarding the distribution of need and supply. Included in analysis time was presentation of the findings to community and university groups.

In total, an average of approximately 17 hours per student per week was spent on the study. Although time differed greatly during the progress of the study and from student to student, this breakdown of time and activities may be helpful to budget this type of study. However, it must be remembered again, that time of the project director was not included in these calculations.

**D. TIME FRAME OF THE PROJECT**

**Fall, 1992:** The Community Health Needs Assessment Project was initiated by Dr. Sherry Bamie in August, 1992. During the fall, 1992, she conferred with various social service agency and hospital administrators locally and nationally to identify the ability of these organizations to determine the current needs in their community for social support systems and the desires of these agencies for valid and reliable measures of health and social support needs. These types of measures would
Appendix A

Demographic Characteristics
- Gender--Male/Female
- Ethnicity--White, Black, Hispanic, Asian, Other. These were enumerated as mutually exclusive categories according to how the agency classified clients.
- Age--Two sets of measures were recorded: 1) the minimum, maximum, and average age of clients, and 2) number or percentage of clients according to age groupings of infant (0<1), toddler (1<3), preschool (3<5), school age (5<18), and 65 or older. The number of adults between school age and elderly were derived by subtracting the sum of these groups from the total.

Geographic Distribution
- Number of clients according to their home zip code--77801, 77802, 77803, 77840, 77841, 77843, 77844, 77845.
- Census tracts--zip codes were mapped over census tracts to compare survey data with variables in the census data. Although census data by zip code were available, the census tracts provided a more focused analysis of data by neighborhoods than by the larger zip code areas.

Eligibility Criteria
- Income--Agencies in the study population were to be available to low income families.
- Race--Agencies in the study population were to be available to all races, even though a large part of their clientele may be predominantly from one race.
- Religion--Agencies in the study population were to be available to clients of all religions, even though a large part of their clientele may be predominantly from one type of religion.
- Family Status--Agencies in the study population were to be available to clients regardless of marital status.
- Language--Agencies in the study population were to be available to clients regardless of ability to speak a foreign language. Services provided only in a foreign language would be excluded from the study population. However, ability to speak English or availability of translators was not assessed (other than number of staff who spoke Spanish).
- Sliding Scale--Availability of a sliding scale of fees would make the program more accessible.
- Occupation--Programs limited to certain occupational or organizational groups according to insurance contracts would be excluded from the study population.
- Employment Status--Agencies in the study population were to be available to clients regardless of employment status or insurance coverage from the employer.
- Student Status--Agencies in the study population were to be available to clients who were students in the community. One agency, Beutel Health Center, had limited access for clients who were not students enrolled at Texas A&M University.

If agencies had aggregate data only on clients seen during the month concurrent with data collection, client demographic and geographic profiles were generalized to reflect activity throughout the year. However, the number of clients served in any one month was not assumed to be independent and additive because it was likely that some clients would be served for more than one month, i.e., the number served monthly could not be multiplied by 12 for a quantity of clients served annually.
If agencies had "guessimates" regarding demographic or geographic characteristics of their clients, these were used to calculate demographic profiles that could be compared to census data. For example, when some agencies provided approximate percentages of clients that were Black, Hispanic, and Asian, these percentages were used to derive the number of clients by race by multiplying each percentage times total clients served then subtracting the number of minorities to give the number of remaining clients that were assumed to be White.

**Need:** Population totals and distribution of demographic characteristics of 1990 census data were compared to the number of clients and their demographic profiles to identify appropriate representativeness of the user population in contrast to that of the community as a whole. Agency data were not always available according to census categories. These discrepancies were noted in the discussion of the findings. Whenever possible, census categories were aggregated to coincide with agency's categorization of client demographic and geographic characteristics.

When appropriate, demographic profiles of specific target groups in the census data were contrasted with characteristics of the user population. Distribution of providers were plotted according to the Brazos County map available through the Chamber of Commerce and compared to census tract distribution of population for specific target groups or for the County population as a whole. Whereas this aggregated neighborhood-level information, it was felt that the County was small enough to find the boundaries of census tracts useful.

- Total population--Total number in SMSA corresponding to Brazos County boundaries.
- Newborns--Number of births.
- Infants--Number 0 to < 1 years old.
- Pediatric population--Number of county population 0 to 19 years.
- Early childhood population needing day care--number of children < 6 years old with both parents working or with single parent working.
- School-aged population needing day care--number of children 6 to 17 years old with both parents working or with single parent working.
- High School Population--14 to 19 years old
- Child-bearing population--Number of women 10 to 44 years.
- Elderly population--65 years and older.
- Disabled population--reported non-work related disabling mobility and/or self-care limitation, 16-64 years and 65 or older.
- Low income population--at or below poverty level of $14,999 per household for family of 4.
APPENDIX B:
Master Contact List

A&M United Methodist Church, Elder Aid
Sara Loeppert
Yolanda Young
P.O. Box 9629
College Station, Texas 77842

Adult Protective Services
Albert Benavides
3000 East Villa Maria
Bryan, Texas 77802

Advanced Home Health
Linda Davis
Lou Zgabay
1908 Greenfield Plaza
Bryan, Texas 77802

Alliance Health Providers of Brazos Valley, Inc.
3608 East 29th Street
Bryan, Texas 77803

Alzheimer's Disease Foundation Support Group
Pat Stirling
P.O. Drawer 1428
Bryan, Texas 77802

AM/PM Clinic #1
3820 South Texas Ave.
Bryan, Texas 77802

AM/PM Clinic #2
401 South Texas Ave.
Bryan, Texas 77801

AM/PM Clinic #3
2305 Texas Ave. South
College Station, Texas 77840

Boy's and Girl's Club of Brazos Valley
Martha Cortes, Director of Programs
900 West William J. Bryan Parkway
Bryan, Texas 77803

BCCC - Telephone Reassurance
Mary Oliver
307 South Main, Room 102
Bryan, Texas 77803
Appendix B

Brazos County Health Department
Ken Bost, Executive Director
Dr. Conklin
Re Donna Christian, Health Educator
210 North Texas Avenue
Bryan, Texas 77803

Brazos County Senior Center
Martha Ungar
1402 Bristol
Bryan, Texas 77802

Brazos Prenatal Care Clinic
Mary Ellen Pate, Director
1720 Barak Lane
Bryan, Texas 77802

Brazos Valley Community Action Agency
Dale Marsico, Chief Administrator
Eric Todd
401 South Washington
Bryan, Texas 77803

BVCAA - Associated Home Services
Diane Wyrick, Director of Nurses
401 South Washington
Bryan, Texas 77803

BVCAA - Bryan Head Start
Velma Spivey, Parent Involvement Volunteer Coordinator
100 West William J. Bryan Parkway
Bryan, Texas 77803

BVCAA - Child Care Management Services
Carolyn Summers, Director
3131 Briarcrest, Suite 516
Bryan, Texas 77802

BVCAA - Family Planning & Medicaid Outpatient Clinic
Linda Salser
Sally Thane, Administrator
3400 South Texas Ave.
Bryan, Texas 77802

BVCAA - Neal Child Development Center
Tracy Lemons, Director
703 West 29th Street
Bryan, Texas 77803

BVCAA - The Bryan Center
Adilia DeFrazer, Director
711 Houston
Bryan, Texas 77803
Appendix B

BVAR - The Pines
Julia Bonifazi, Nurse
100 West Brookside
Bryan, Texas 77801

BVAR - Meals on Wheels, Home Delivered Meals, & Direct Pay Meals
Bill Ray, Administrator
504 East 27th Street
Bryan, Texas 77803

Brazos Valley Coupon Club
Mrs. Gray
1009 West 18th Street
Bryan, Texas 77803

Brazos Valley Development Council
Tom Wilkinson
1706 East 29th Street, #B
Bryan, Texas 77803

BVDC - Area Agency on Aging
Roberta Lindquist
1706 East 29th Street, #B
Bryan, Texas 77803

BVDC - Carrier Alert
Roberta Lindquist
1706 East 29th Street, #E
Bryan, Texas 77803

BVDC - Long Term Care Ombudsman
Roberta Lindquist
1706 East 29th Street, #B
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BVDC - Indigent Health Care
Jill Hyde, Coordinator
Mary Lou Zerega
3006 East 29th
P.O. Drawer 4128
Bryan, Texas 77805

BVDC - Nursing Home Ombudsman
Gail Treece
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Bryan, Texas 77805

BVDC - Senior Information Service
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Brazos Valley Geriatric Center
Meryl Peterson, Dir. of Social Services
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College Station, Texas 77840

Brazos Valley Medical Center - Senior Friends
Gina Rikard
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Brazos Valley Medical Center
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Kathy Jinkins
Ken A. Stein, Director of Staff Development
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Brazos Valley Regional Day School Program For the Deaf
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Brazos Valley Rehabilitation Center
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Brazos-Robertson County Medical Society
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Bryan, Texas 77803

Bryan ISD - Options for Young Parents
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2200 Villa Maria
Bryan, Texas 77802

CarePlus Medical Center
Sharon Farmer
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College Station, Texas 77840

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210 Judson
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Appendix B

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Wanda Allen, Parent Involvement Coordinator
Peggy Schaffer, Director
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College Station, Texas 77840

College Station ISD - After School Programs
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P.O. Box 3653
Bryan, Texas 77805
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Bryan, Texas 77805

Hospice of Brazos County
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Bryan, Texas 77802

Lincoln Recreational Center
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Dan Monson
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Bryan, Texas 77805

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MHMR - Respite Program
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Bryan, Texas 77805

North Bryan Community Center
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Planned Parenthood - Family Planning
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Appendix B

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Bryan, Texas 77802

Social Security Administration
Daniel Bowline
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Bryan, Texas 77805

St. Joseph Hospital & Health Center
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Sr. Gretchen Kunz, President
Kendall Turton
John Turton, Administrative Assistant
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Bryan, Texas 77802

St. Joseph Hospital & Health Center
Connie Beltrand, Director - Gold Medallion & Lifeline Emergency Response
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Regina Ragan
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Bryan, Texas 77803

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Carey Lacina
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Bryan, Texas 77803

TDHS - Nursing Home Certification
Carey Lacina
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Bryan, Texas 77803

Texas Department of Protective and Regulatory Services
Mary Brook, Child Care Licensing Representative
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Bryan, Texas 77801
Community Health Systems Planning
Survey Form

Organization:__________________________________________________________

Address:______________________________________________________________

Person Contacted & Title:_________________________________________________

Phone No:__________________ Contacted By:_________________________ Date:____

UTILIZATION DATA

Outpatient:

# Clients Served per (year / current cases)
# Visits per (day / week / month /year)

Inpatient:

# Admissions per (day / week / month /year)
# Inpatient days per (week / month / year)

CLIENT DEMOGRAPHICS

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<thead>
<tr>
<th>Gender:</th>
<th>Male</th>
<th></th>
<th>Female</th>
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<tr>
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<td></td>
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<tr>
<td>Age:</td>
<td>Min. &amp; Max.</td>
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<td>Ave (mean/median/mode)</td>
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# (or %) Clients:
Infant (0-<1yr)
Toddler (1-<3yrs)
Preschool (3-<5yrs)
School age (5-18yrs)
65yrs +

# CLIENTS (or %) BY ZIP CODE

77801:__________________________ 77802:__________________________ 77803:__________________________
77840:__________________________ 77841:__________________________ 77843:__________________________
77844:__________________________ 77845:__________________________

ELIGIBILITY (Specify)

Income:__________________________ Sliding Scale:__________________________
Race:__________________________ Occupation:__________________________
Religion:__________________________ Employment Status:__________________________
Family Status:__________________________ Student Status:__________________________
Language:__________________________

Page 1
C1
REFERRAL

Agencies or groups that refer clients to your organization:

Agencies or groups that your organization refers clients to:

FUNDING SOURCES (Do not include $ amount or %)

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## NUMBER OF STAFF BY DEMOGRAPHIC CHARACTERISTICS

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<tr>
<td><strong># Spanish Speaking:</strong></td>
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<tr>
<td><strong>Education: (if available)</strong></td>
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<td>&lt; High School</td>
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<td>Grad or Prof'l. Deg.</td>
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<td><strong>Turnover:</strong></td>
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<tr>
<td># New Staff since last year at this time</td>
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</table>

Ask for Annual Report. If available, please mail to:

Dr. Sherry Bame
Department of Urban Planning
Texas A&M University
College Station, TX 77843
APPENDIX D:

BIBLIOGRAPHY

Adult Day Care


Care Givers


Child Care


Appendix D


Appendix D


**Community Needs Assessment**


**Health Care**

Appendix D

Health Systems Analysis


Home Health Care


Appendix D


**Hospice**


**Hospital Utilization**
1990 US Census

A biopsychosocial profile of the geriatric population who frequently visit the emergency department.

Gender differences in the utilization of emergency department services.


Inpatient utilization falls sharply: Growth in outpatient slows.


Primary care and public emergency overcrowding.


The sagging safety net: Emergency departments on the brink.


Immunizations


Appendix D


Injury/Trauma Utilization


Appendix D


Poole, G.V., Griswold, J.A., Thaggard, V.K., & Rhodes, R.S. Trauma is a recurrent disease. Surgery, 113, (6), 608-11.


Mental Health

Preventive Medical Care


Respite Care


Turnover


Appendix D


Appendix D


