Elderly Health Needs in Brazos County

by

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Texas A&M University; April 2000

HEALTH NEEDS OF THE ELDERLY IN BRAZOS COUNTY

According to a recent survey of adults of all ages in the United States conducted by the National Council on Aging (NCOA), an overwhelming 84 percent of all Americans said they would be happy if they lived to be 90 years old. But are there enough health services to meet the needs of today's elderly? What types of services will be needed to better care for the increase in chronic conditions of our aging society?

The purpose of this study was to a) determine the nature and amount of health needs of the elderly in Brazos County and b) identify availability and barriers to services to meet those needs. Students in the Health Systems Planning and Policy course (PLAN 631) collaborated with Brazos County League of Women Voters to assess local health needs of the elderly. The League of Women Voter's project was part of a state-wide initiative to call attention to needs of our aging population.

First, the Texas A&M students researched health needs common to the elderly:

- heart disease
- cancer (prostate & cervical)
- stroke
- diabetes
- arthritis.

For each condition, students identified the nature of physical needs as well as emotional and dimensions. An episode of each illness was defined according to duration and severity. Appropriate types of services were associated with each phase of the episode. Relevant publications and electronic references were identified to facilitate research by others.

Next, these students and members of the League of Women Voters investigated scope of provided by Hospice Brazos Valley, St. Joseph's Rehabilitation facility, The Med Geriatric Center, Sherwood Nursing Home and Rehabilitation Center, Health For All Clinic and Practice Residency Program and Clinic. In addition, they interviewed over 50 other local and social service agencies that serve the elderly:

- cervical cancer screening
- hospice
- home care
- nursing homes
- pharmacies
- primary care
- rehabilitation services
- social support services.

The students calculated measures of local service capacity for each category and researched availability of these services state-wide and nationally.

Last, the students analyzed the findings to formulate recommendations. They compared measures of incidence, prevalence, and/or mortality to national and state data to determine age and racial groups in order to better target prevention and outreach services. They compared available local services to state and national norms to identify what services expanded and what services were abundant to serve elderly in the wider Brazos Valley.

The students noted cost and transportation barriers that consistently affected access to services regardless of the type of service. With further inevitable reductions in Medicare barriers will continue to rise and agencies will adjust service capacity. Thus, the elderly increasingly vulnerable to limitations in access and availability of health services.

ACKNOWLEDGEMENTS

We would like to thank the following individuals and organizations for their participation and support of the health needs assessment of the elderly in Brazos County. Inevitably, there are others who may have been left off of this list and we would like to apologize and express our appreciation for their help as well. We also apologize for any errors in the listings.

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Sr. Alice Warrick
Administrator of Assisted Living
St. Joseph Hospital and Health Center, Skilled Nursing Facility

Ms. Rachel Willard
Board of Directors, Health for All

COMMUNITY GROUPS:

Mr. Gary Balmain
Projects Coordinator, C.S. Community Development Office

Mr. Ronnie Gipson
Program Director, Area Agency on Aging

Acknowledgements: p. 2

Ms. Mary Lou Lavador
Bryan Community Development Office

Ms. Sara Loeppert
BVCAA-Elder Aid

Mr. Larry Mink
Adult Protective Services

Ms. Kay Parker
United Way of Brazos County

Ms. Donna Pena
Lincoln Recreation Center

Mr. Eric Todd
Administrator of Health Services, BVCAA

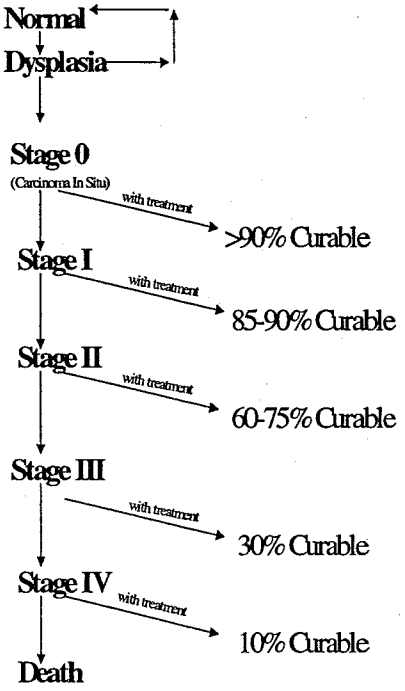
Mr. Tom Wilkinson
Executive Director, Brazos Valley Council of Governments

CERVICAL CANCER

Lara Davidson

In the year 2000, the American Cancer Society estimates that there will be about 12,800 new cases of invasive cervical cancer.[2] About 4,600 women will die from this disease.[2] Cervical cancer used to be one of the most common causes of cancer death for American women, but between 1955 and 1992 the number of deaths from cervical cancer declined by 74%.[2] The main reason for this change is the use of the Pap test to find cervical cancer early. Although universal screening could essentially reduce the cervical cancer death rate to zero, only 12% to 15% of women have routine Pap smears.[18] Prevention efforts must be maintained, at least at their current level, in order to keep the incidence of cervical cancer low. Cervical cancer screening is highly cost-effective—spending a few dollars on a Pap test once a year can save a patient from developing cervical cancer and from all of the associated medical costs involved in treating a cancer diagnosis.

Stages and Survivability of Cervical Cancer in U.S., 1990



Source: Webb, M. Morris, David; Kearsley, John; Williams, Chris (Eds.). (1990) Cancer: A Comprehensive Clinical Guide. Gordon & Breach Publishing Group, 199-201.

Risk Factors[1,2,17]

- Oral contraceptives for more than 5 years
- Multiple sex partners
- Having intercourse at a young age
- Smoking
- Obesity
- HIV infection
- Heredity factors
- Human papillomavirus infection
- Low socioeconomic status

- High rates for cervical cancer are found in the American South, particularly in Appalachia.
- Women between the ages of 50 and 64 years are at the greatest risk for developing cervical cancer
- Incidence rate among US women of Asian/Pacific Islander descent increased about 1.5% per year from 1990 to 1995.
- Blacks have a 56% 5-year relative survival rate compared with 70% for whites.
- African American women have the highest mortality rates from cervical cancer in all age groups.
- Hispanic women in Texas had 1.9 times the incidence rate of White women, and 1.4 times that of African-American women.

Diagnostic Screening: Symptoms and Treatment

Symptoms *may* include bleeding, heavier menstrual periods, pain, and increased vaginal discharge.[2]

Treatments for cervical cancer include combinations of the following: surgery, radiation therapy, cryotherapy, electrocoagulation, laser ablation and/or chemotherapy.[1]

Eighty-seven percent of cervical cancer patients survive one year after diagnosis.[1] Seventy percent of cervical cancer patients survive five years after diagnosis.[1]

> Oftentimes there are no physical symptoms in the early stages of cervical cancer. Therefore, routine screening is critical to detecting and treating pre-cancerous cells.

Progression through Service Providers Associated with Cervical Cancer

CERVICAL CANCER	Episode	Associated Service Provider
Pre-clinical stage	Pap Screening Irregular Pap Results Diagnosis	OB/GYN outpatient Women's Clinic's Histology Lab
Clinical stage	Surgery, Radiotherapy, Chemotherapy	Surgeon, Radiologist, Oncologist
Rehabilitation stage	Regular follow-ups every six months for five consecutive years	Oncologist Primary Care Physician

Implications of Having Cervical Cancer

Oftentimes, communities establish social and emotional support groups for cancer patients and their family members.

The emotional impact that cancer may have on women may be tremendous, affecting many areas of the patient's life.[7] Cervical cancer can be particularly difficult for women to maintain a positive self-image. This is because the disease affects her reproductive capabilities and can cause difficulties in sexual functioning, such as vaginal dryness, narrowed vagina due to radiotherapy, and/or anxiety. Also, it can be difficult for a mother to explain her cancer situation to her children and to manage their anxieties. This is especially true for daughters, who may worry that the disease will be passed on to them.

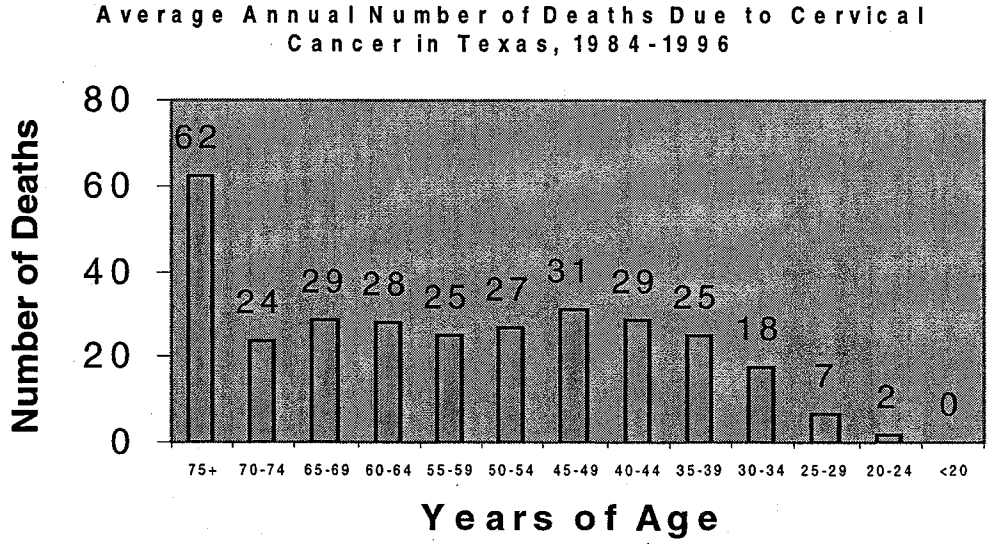
Measuring Incidence and Mortality in United States, 1997

	United States	Texas	Brazos County
Total Population	267,744,000[16]	19,355,000[16]	139,000[16]
Female Population	136,983,797[16]	9,776,564[15]	58,744[14]
Incidence Female rate/100,000 # in population	 10.6 14,500[4]	 12.3 1,200[4]	None reported
Mortality Female rate/100,000 # in population	 32.0 43,900[4]	 28.6 2,800[4]	None reported

Incidence and death rates have been declining since the beginning of this century and cervical cancer is no longer a major cause of death for women in the United States.[4,5] Incidence rates have steadily decreased by about half over the past several decades, declining from 14.2 per 100,000 in 1973 to 8.2 per 100,000 in 1993.[1] Mortality rates have also sharply declined over the past several decades. Use of the Pap smear has reduced the annual death rate from cervical cancer from 26,000 in 1941 to 4,800 in 1997 in a population group that has doubled in size.[18]

Texas- The incidence and death rates due to cervical cancer for women in Texas approximate the national rates. However, Texas ranked fiftieth among the states, having the lowest (89.5%) percentage of women who had ever had a Pap test.[3] Only 68% of Texas women over the age of 45 had a Pap test within the last two years. The national average for this age group was 73.4%.

Brazos County- In 1997, zero cervical cancer deaths were reported in Brazos County.[11] Based on state statistics the expected mortality of cervical cancer in Brazos County is 16.8 deaths per 100,000 women. Also, based on 1997 state statistics, Brazos County was expected to have 7.2 incidences of cervical cancer per 100,000 women. Inadequate record keeping, women seeking medical attention outside of Brazos County, and minority women not accessing the medical care system may be factors that contributed to the underreporting of expected cases of cervical cancer in Brazos County.



Source: [Texas Cancer Data Center]. (February 6, 2000) Texas Demographics and Statistics: Average Annual Number of Deaths Due to Cervical Cancer in Texas, 1984-1996. http://www.txcancer.org/impact/pg42b_2.html

Web References

1. [American Cancer Society]. (February 6, 2000) 1999 Facts and Figures: Uterine Cervix. http://www.cancer.org/statistics/cff99/selected_toc.html

2. [American Cancer Society]. (February 6, 2000) Cervical Cancer Overview. http://www.cancer.org/statistics/cff99/selected_toc.html

3. [American Cancer Society]. (February 6, 2000) Cancer Risk Report-1998: Cervical Cancer. http://www.cancer.org/statistics/98crr/cervical.html

4. [CA: A Cancer Journal for Clinicians]. (February 13, 2000) Table 4: Cancer Mortality by Site and State, US. 1997. http://www.ca-journal.org/articles/47/1/005-027/graphics/47_005-027_t03.gif

5. [CA: A Cancer Journal for Clinicians]. (February 6, 2000) Table 7: Fifteen Leading Causes of Death, U.S. 1997. http://www.ca-journal.org/articles/50/1/007-033/50_007-033.html

6. [CA: A Cancer Journal for Clinicians]. (February 6, 2000) Figure 5: Age-Adjusted Cancer Death Rates for Females by Site, United States, 1930-1996. http://www.ca-journal.org/articles/47/1/005-027/graphics/47_005-027_t03.gif

7. [CancerBACUP]. (January 28, 2000) Understanding Cancer of the Cervix. http://www.cancerbacup.org.uk/info/cervix.htm

8. [The National Cancer Institue]. (January 28, 2000) Cervical Cancer: Overview of PDQ. http://my.webmd.com/content/dmk/dmk_article_5462970

9. [Texas Cancer Data Center]. (February 6, 2000) Texas Demographics and Statistics: Age-Specific Mortality Due to Cervical Cancer in Texas, 1984-1996. http//www.txcancer.org/impact/pg43a_2.html

10. [Texas Cancer Data Center]. (February 6, 2000) Texas Demographics and Statistics: Average Annual Number of Deaths Due to Cervical Cancer in Texas, 1984-1996. http//www.txcancer.org/impact/pg42b_2.html

11. [Texas Cancer Data Center]. (February 6, 2000) Texas Demographics and Statistics: Custom Comparisons of Texas Cancer Death Rates: Brazos County and Texas. http//www.txcancer.org/impact/scripts/mgwns.html

12. [Texas Cancer Data Center]. (February 6, 2000) Texas Demographics and Statistics: Deaths Due to Cervical Cancer in Texas, 1984-1996. http//www.txcancer.org/impact/pg42a_2.html

13. [Texas Cancer Data Center]. (February 6, 2000) Texas Demographics and Statistics: Cervical Cancer Incidence Rates Among Texas Females, 1985 1991. http//www.txcancer.org/impact/pg43a_2.html

14. [Texas Cancer Data Center]. (February 13, 2000) Texas Demographics and Statistics: Texas Population Age Distribution: Texas 1997. http://tcdc.uth.tmc.edu/scripts/mgwns.html

15. [Texas Cancer Data Center]. (February 13, 2000) Texas Demographics and Statistics: Texas Population Age Distribution: Brazos County 1997. http://tcdc.uth.tmc.edu/scripts/mgwns.html

16. [U.S. Census Bureau]. (February 15, 2000) Population Estimates for the U.S. and States by Single Year of Age and Sex: July 1, 1997. http://www.census.gov:80/population/estimates/state/stats/ag9798.txt

17. [U.S. Department of Health and Human Services]. (January 28, 2000) Counseling to Prevent Gynecologic Cancers. http://my.webmd.com/content/dmk/dmk_article_5462879

18. [WebMD]. (January 28, 2000) Cervical Cancer: Well-Connected. http://my.webmd.com/content/dmk/dek_article_40017

19. [WebMD]: (February 16, 2000) Depression: Newly Diagnosed. http://my.webmd.com/newly_diagnosed?doi=dep&go.x=2&go.y=11

20. [WebMD]. (February 16, 2000) The Dying Adult: Coping and Letting Go. http://my.webmd.com/content/dmk/dmk_article_5461738

21. [WebMD]. (February 16, 2000) Loss in Late Life. http://my.webmd.com/content/dmk/dmk_article_5461747

References

22. Blake, P. Hannah Lambert; Robin Crawford (Eds.). (1998) Gynecological Oncology: A Guide to Clinical Management. Oxford University Press, 6, 7, 45-75.

23. Hugh B. (1988) Health Maintenance and Care of the Female Geriatric Population. Perimenopausal and Geriatric Gynecology. Macmillian Publishing Company, New York, 126-127, 240-241, 287-293.

24. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census. (September 1993) We, the American Women.

25. Webb, M. Morris, David; Kearsley, John; Williams, Chris (Eds.). (1990) Cancer: A Comprehensive Clinical Guide. Gordon & Breach Publishing Group, 199-201.

26. Yancik, R. Jerome Yates (Eds.). (1989) Cancer in the Elderly: Approaches to Early Detection and Treatment. Springer Publishing Company, New York, 164-173.

CERVICAL CANCER PREVENTION

Lara Davidson

Modern screening technology, i.e. the Pap smear, has significantly decreased morbidity due to cervical cancer. However, 100% prevention cannot be achieved because all women do not have access to and do not utilize preventative health options. In 1994, only 33-49% of women over the age of 50 had an annual Pap smear[3]. In 1997, 2.9% of all outpatient department visits in the US were for Pap tests administration[10].

National Cervical Cancer Screening and Prevention Program

In 1997, American women made 6,086,000 visits to Obstetrics and Gynecology clinics.[10] This accounted for 7.9% of all outpatient visits to ambulatory care providers. Pelvic exams are the procedure during which a Pap smear is performed. 3,896,000 visits were made to ambulatory clinics for the purpose of having a pelvic exam—this equates to 2.8% of the total US female population.

National Cervical Cancer Coalition (NCCC) operates an early detection program.[7] Their intent is to help ensure that the Pap smear will continue as a national screening test for cervical cancer with access always available for *all* women. In 1997, NCCC provided 690,560 Pap tests and 27,135 (4%) had abnormal results.[7]

The Breast and Cervical Cancer Mortality Prevention Act of 1990 authorized the Center for Disease Control (CDC) to implement a national program "to ensure that every woman for whom it is deemed appropriate receives regular screening for breast and cervical cancers, prompt follow-up if necessary, and assurance that the tests are performed in accordance with current recommendations for quality assurance".[7] In 1997, CDC received $140 million to establish greater access to screening and follow-up services, increased education and outreach programs for women and health care providers, and improved quality assurance measures for mammography and cervical cytology.

Common Barriers to Screening

Cervical Cancer

- Not wanting to discover cancer
- Cost ($$)—Many women cite cost as the reason they do not use early detection programs. Many are not aware of the availability of low-cost programs
- Transportation—inability to travel to the provider location
- Communication—provider styles and methods can be ill-suited to the needs of women seeking services.
- Lack of Physician Referral—Studies have shown that women are more likely to be screened if their physician recommends it.
- Lack of child care

Source: National Cervical Cancer Coalition (March 26, 2000) http://www.nccc-online.org/index.asp

TEXAS: State Prevention and Screening Program for Cervical Cancer

Breast and Cervical Cancer Control Program (BCCCP) is the Texas early detection program operator.[8] The BCCCP was authorized in 1990 by Public Law 101-354. The Texas Department of Health, Bureau of Chronic Disease Prevention and Control, oversees the Program from its Austin office. The BCCCP—and its local providers—are partners together with diagnostic and treatment centers, businesses, churches and many other community-based organizations. BCCCP lists seven providers for residents of Brazos County, however, none of these providers operate in Bryan/College Station.

Service Capacity for Pap Screening in Texas

As of March 2000, BCCCP had facilitated 112,472 cervical cancer screenings and found 1,648 cervical carcinoma in situ and 58 cases of invasive cervical cancer (1.5% abnormal).[8]

Pap Test Providers in Bryan/College Station, Texas, 2000

Brazos County	Location	# patients	Hours	Medical Staff
1. Scott & White Clinic	C.S., TX	~100/day	8am-5pm M-F	10
2. Texas Avenue Medical Clinic	Bryan, TX	unavailable	M-S 8-8pm, Sun.12-6pm	8
3. Health For All	Bryan, TX	~60/day	varies	80*
4. Anderson Smith Zivney and Associates	C.S., TX	50-70/day	8am-5pm M-F	9
5. Benson OB GYN Center	Bryan, TX	~30/day	8am-5pm M-F	3
6. Brazos Valley Women's Center	Bryan, TX	unavailable	8am-5pm M-F	unavailable
7. Family Medicine Center	Bryan, TX	no estimate	8am-5pm M-F	40+
8. Obstetrics Gynecology and Pediatrics Associations	Bryan, TX	25-30/day	8:30-5:30pm M-F	2
9. Individual providers of OB GYN services	varies	varies	varies	varies

* Hourly volunteers

Health Insurance Coverage, USA
Percent of Women 65 Years and Over Who Received Pap Tests in 1992

Medicare and private coverage	38.8%
Medicare and HMO	49.8%
Medicare and fee-for-service	37.0%
Medicare and Medicaid	28.5%
Medicare only	22.4%
Total	35.5%

Source: Makuc, Diane, and Virginia Freid. (August 1994) Health Insurance and Cancer Screening Among Women. Vital and Health Statistics of the Centers for Disease Control and Prevention / National Center for Health Statistics. Advance Data 254. Table 3.

References

1. Blake, P. Hannah Lambert; Robin Crawford (Eds.). (1998) Gynecological Oncology: A Guide to Clinical Management. Oxford University Press, 6, 7, 45-75.

2. Hugh B. (1988) Health Maintenance and Care of the Female Geriatric Population. Perimenopausal and Geriatric Gynecology. Macmillian Publishing Company, New York, 126-127, 240-241, 287-293.

3. Makuc, Diane, and Virginia Freid. (August 1994) Health Insurance and Cancer Screening Among Women. Vital and Health Statistics of the Centers for Disease Control and Prevention / National Center for Health Statistics. AdvanceData 254.

4. Webb, M. Morris, David; Kearsley, John; Williams, Chris (Eds.). (1990) Cancer: A Comprehensive Clinical Guide. Gordon & Breach Publishing Group, 199 201.

5. Yancik, R. Jerome Yates (Eds.). (1989) Cancer in the Elderly: Approaches to Early Detection and Treatment. Springer Publishing Company, New York, 164-173.

Web References

6. [National Cervical Cancer Coalition]. (March 26, 2000) Home Page: Mission and Profile. http://www.nccc-online.org/index.asp

7. [National Cervical Cancer Coalition]. (March 26, 2000) The National Breast and Cervical Cancer Early Detection Program. http://www.nccc-online.org/index.asp

8. [Texas Department of Health]. (March 19, 2000) Program Statistics and Description: Breast and Cervical Cancer Control Program. http://www.edh.texas.gov/bcccp/stats.htm

9. [U.S. Department of Health and Human Services]. (March 20, 2000) Health, United States, 1999: With Health and Aging Chartbook. http://search.cdc.gov/search97cgi/s97_cgi.exe?Action=Search&Collection=nchs&ResultTemplate=nchswww.hts&queryText=ambulatory+health+&SortField=Score

10. [Vital and Health Statistics of the Centers for Disease Control and Prevention/ National Center for Health Statistics]. (1999, June). National Hospital Ambulatory Medical Care Survey: 1997 Outpatient Department Summary. (Number 307). Linda F. McCaig. http://search.cdc.gov/nchs/data/ad307.pdf

PHARMACIES

Lara Davidson

In 1993, Texas spent $3,153,000 on purchases of prescription drugs, showing an average annual increase of 10.4% between 1990 and 1993.[3] Texans made up 6.5% of the national spending in 1993. Americans spent $48,840,000 on purchases of prescription drugs and showed an average annual increase between 1990 and 1993 of only 8.5%. The average annual change rates were down from the 1980-1990 averages for both Texas and the nation.

Pharmacies Listed in Brazos County, May 2000

Name	Location	Hours of Operation	Payment Options
Albertson's Food and Drug	Multiple	9am-9pm M-F 9am-7pm Sat. 10am-4pm Sun.	Medicaid Insurance
Bailey Prescription Pharmacy	Bryan	7am-6pm M-F 8am-12pm Sat.	Cash Only
Eckerd Drugs	Multiple	8am-10pm M-F 8am-8pm Sat. 10am-6pm Sun.	Medicaid Insurance
Good Neighbor Pharmacies	Multiple	8am-6pm M-F 9am-2pm Sat.	Medicaid Insurance
Kroger Pharmacies	Multiple	9am-9pm M-F 9am-7pm Sat. 10am-4pm Sun.	Medicaid Insurance
Medical Center Pharmacy	Bryan	8:30am-6pm M-F	Medicaid Insurance
The Pharmacy Shop	Bryan	8:30am-6pm M-F 8:30am-2pm Sat.	Medicaid Insurance
Scott & White Clinic	College Station	Unavailable	Unavailable
United Drug Stores	Multiple	8:30am-6pm M-F	Medicaid Insurance
WAL-MART	Multiple	9am-9pm M-F 9am-6pm Sat.	Medicaid Insurance

Bryan-College Station has a combined population of 123,400.[1] Bryan has 61,400 residents; College Station has approximately 62,000 residents. Brazos County population is approximately 130,000. There are 19 pharmacies in Bryan/College Station. This equates to one pharmacy per 5,495 Bryan/College Station residents.

Web References

1. [Bryan-College Station Chamber of Commerce]. (April 16, 2000) Bryan-College Station Quick Facts. http://www.bryan-collegestation.org/quick_facts.htm

2. [Texas Department of Health]. (March 19, 2000) Program Statistics and Description: Breast and Cervical Cancer Control Program. http://www.edh.texas.gov/bcccp/stats.htm

3. [U.S. Department of Health and Human Services]. (March 20, 2000) Health, United States, 1999: With Health and Aging Chartbook. http://search.cdc.gov/search97cgi/s97_cgi.exe?Action=Search&Collection=nchs&ResultTemplate=nchswww.hts&queryText=ambulatory+health+&SortField=Score

4. [Vital and Health Statistics of the Centers for Disease Control and Prevention/ National Center for Health Statistics]. (1999, June). National Hospital Ambulatory Medical Care Survey: 1997 Outpatient Department Summary. (Number 307). Linda F. McCaig. http://search.cdc.gov/nchs/data/ad307.pdf

DIABETES

Erin Howard

Diabetes is an endocrine disorder characterized by an imbalance between insulin supply and insulin demand (Polaski & Tatro, 1996). The prevalence of diabetes has increased steadily since the 1950s. This could be due to the growing aging population in the United States (CDC, 2000). The rapid increase in 1997 was partially due to changes made by the American Diabetes Association in 1997 in the recommended diagnosis of diabetes for persons with a fasting blood glucose level of 126 mg/dL or greater, rather than 140 mg/dL or greater (Konick-McMahan, 1999).

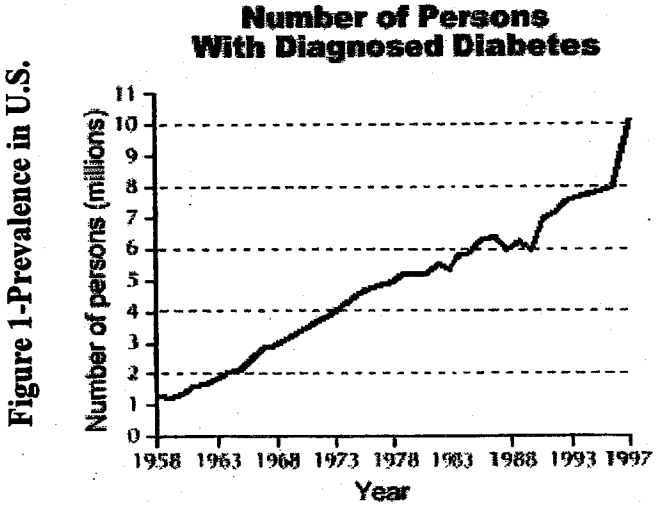


Figure 1-Prevalence in U.S.

Source: National Institutes of Health and Centers for Disease Control.
http://www.cdc.gov.diabetes/survl/surveill.htm

Symptoms

The onset of type II diabetes is insidious and early symptoms gradually become more pronounced (Polaski & Tatro, 1996).

Table 1: Early symptoms of diabetes

Early symptoms can last for years and include (Williams, 1994):

- Polydipsia (increased thirst)
- Polyuria (frequent urination)
- Polyphagia (increased hunger)
- Obesity

Table 2: Late symptoms of diabetes

Later, more serious symptoms, of uncontrolled type II diabetes include (Williams, 1994):

- Blurred vision
- Skin irritation or infection
- Muscle weakness
- Fatigue
- Neuropathy, usually pain in the feet (Polaski & Tatro, 1996)

Table 3: Diabetes risk profile

Risk of diabetes increased with:

- Obesity (Polaski& Tatro,1996)
- Age (CDC, 3/20/00)
- African-American or Hispanic race/ethnicity (3/20/00)

Table 4: Laboratory tests for type II diabetes

Laboratory tests on persons with uncontrolled type II diabetes will reveal (Williams, 1994)

- Glycosuria (presence of glucose in the urine)
- Hyperglycemia (high blood glucose level)- over 126 mg/dl
- Abnormal glucose tolerance
  - Fasting blood glucose <140 mg/100ml *and*
  - 2-hour blood glucose level >140 and <200 mg/100ml *with*
  - One intervening blood glucose level >200 mg/100ml after a 75 g glucose load

Table 5: Long-term effects of diabetes (CDC, 2000):

- Heart disease- the leading cause of diabetes-related deaths
- Cerebrovascular accident- diabetic people have 2-4 times greater risk for stroke
- Hypertension- affects most diabetic people
- Blindness- diabetes is the leading cause of new blindness in people ages 25-74
- Renal disease- diabetes is the leading cause of end-stage renal disease
- Nervous system disease- 60-70% of people with diabetes have nerve damage
- Amputations- more than half of lower limb amputations in the United States are performed on diabetic people
- Periodontal disease- occurs more frequently in diabetic people than in others

Table 6: Severe complications of diabetes (Williams, 1994):

- fluid and electrolyte imbalance
- diabetic ketoacidosis
- diabetic coma

Care and treatment for diabetes

Americans made an average of 3 visits to physician in 1997 (Woodwell, 1999). Persons with diabetes are recommended to visit primary care providers at least semi-annually (Texas Diabetes Council, 1998). The minimum practice recommendations for persons with diabetes can be found below.

Minimum practice recommendations for persons with diabetes

Examination/Test	Schedule
1. Complete history and physical (including risk factors, exercise & diet)	Initial
2. Weight	Every visit
3. Blood pressure Systolic<130 mm Hg Diastolic<85 mm Hg	Every visit
4. Dilated funduscopic eye exam by an opthamologist or therapeutic optometrist	Initial, then annually after 4 years. If retinopathy, persistently elevated glucose, or proteinuria is present, then annually.
5. Foot exam	Every visit
6. Dental inspection	Every visit
7. Glycosylated hemoglobin	Every 6 months
8. Lipid profile	Annually
9. Microalbuminuria	Annually
10. Influenza (flu) shot	Annually
11. Pneumonococcal (onu) shot	Usually once in a lifetime
12. Review of the management plan	Every 6 months
13. Diabetes education	Initial and at clinician's discretion
14. Nutrition counseling	Initial and at clinician's discretion

Source: Texas Diabetes Council, Texas Department of Health

Prevalence and mortality rates

The higher prevalence and mortality rates of diabetes in Texas in comparison to the prevalence and mortality rates of the United States makes sense in light of census data and population figures, which show that Texas has a higher proportion of Hispanic people. Compared with non-Hispanic whites, rates of type II diabetes are about 60% higher in African Americans and 110-120% higher in Mexican Americans and Puerto Ricans.

Prevalence of diabetes by gender, age, and race/ethnicity in Texas and the United States in 1997

	TEXAS		UNITED STATES	
	Prevalence	**Prevalence rate***	**Prevalence**	**Prevalence rate ***
Gender				
Male	340,000	50	8,100,000	82
Female	580,000	81	7,500,000	82
Age group				
45-64	460,000	121.3	Not available	Not available
65+	260,000	241.3	6,300,000	184
Race/Ethnicity				
Non-Hispanic Whites	470,000	55	11,300,000	78
Non-Hispanic Blacks	85,000	74	2,300,000	108
Hispanics	340,000	92	1,200,000	106**
Other	25,000	45	Not available	Not available

*per thousand population
**includes only Mexican-Americans
Sources: Texas Diabetes Council/Texas Department of Health (2/8/00). Texas diabetes fact sheet 1998. http://www.tdh.state.tx.us/diabetes/factshee.htm
Centers for Disease Control (CDC)(2/8/00). National diabetes fact sheet. http://www.cdc.gov/diabetes/pubs/facts98.htm

Mortality rates for diabetes

Deaths rates per 1,000 by race/ethnicity and gender over age 64- United States (1994)

Race	Male	Female	Total
White	2	1.7	1.8
Black	2.2	2.4	2.3
Hispanic	Not available	Not available	Not available
Other	1.9	.6	.4
Total	1.8	1.5	1.7

Source: Centers for Disease Control. (2/8/00). Number of deaths due to diabetes and rank of diabetes among top 15 causes of death by age, race, and sex, United States, 1994. http://www.cdc.gov/diabetes/survl/chap3/table2.htm

Deaths rates per 1,000 by race/ethnicity and gender over age 64- Texas (1997)

Race	Male	Female	Total
White	2.4	2	2.2
Black	3.1	3.8	3.6
Hispanic	2.7	2.4	2.6
Other	.7	.7	.7
Total	2.6	2.3	2.4

Source: Texas Department of Health (2/8/00). Texas mortality data. http://www.ehdp.com/vn/txu-uc/index.htm

Deaths rates per 1,000 by race/ethnicity and gender over age 64- Brazos county (1997)

Race	Male	Female	Total
White	1.2	2.1	1.7
Black	2.6	7.0	5.1
Hispanic	3.4	2.4	2.8
Other	0	0	0
Total	1.6	2.6	2.2

Source: Texas Department of Health (2/8/00). Texas mortality data. http://www.ehdp.com/vn/txu-uc/index.htm

Diabetic Episode

Since diabetes has such an insidious onset (Polaski & Tatro, 1996), a person with diabetes may not recognize the need for treatment for months, or even years. People are often diagnosed with diabetes when they are hospitalized for another condition. They may suffer from periods of hypoglycemia that are alleviated by consuming sugars or carbohydrates. However, a severe diabetic hyperglycemic episode could precipitate a diagnosis. Such an episode is caused by a build-up of ketones from metabolizing fats and proteins, which occurs gradually over a period of 1-12 months. The body requires large amounts of water to excrete these ketones, leading to dehydration. Dehydration can become so severe that mental status is altered. Left untreated, this kind of hyperglycemia will lead to diabetic coma, and possibly death. With treatment, blood sugar and insulin can be controlled within days of diagnosis (Grant, Murray, & Bergeron, 1990).

Diabetes	Episode	Associated Services
Pre-Clinical	Screening tests for diabetes (see Table 4)	Outpatient, clinics, primary care, health fair
Clinical	Physical symptoms become apparent or patient has a diabetic crisis	Outpatient, family medicine, endocrinologist, hospital care, health education, nutrition education
Rehabilitation	Blood glucose levels stabilize and patient manages disease	Outpatient, primary care, endocrinologist

Mental/emotional domain

- People who are newly diagnosed with diabetes may go through all of the stages of grief (Polaski & Tatro, 1996):
  - Fear
  - Denial
  - Anger
  - Bargaining
  - Depression
  - Acceptance
- Stress management is important for persons with diabetes because stress causes the release of higher than normal amounts of glucose into the bloodstream, leading to hyperglycemia (ADA, 2000).

Social domain

- It is necessary that significant others understand the disease so that they can participate in management of the disease (Polaski & Tatro, 1996).
- Diabetic people, male and female, are more prone to sexual dysfunction. Fifty to sixty percent of male diabetics over the age of 50 suffer from impotence (ADA,2000).

References

Grant. H.D., Murray, R.H. Jr., Bergeron, J.D. (5th ed.)(1990). Brady emergency care. Englewood Cliffs: Prentice Hall, 402-405.

Konick-McMahan, J. (1999). Riding out a diabetic emergency. Nursing99, 29(9), 34-39.

Polaski, A.L., Tatro, S.E. (1996). Core principles and practice of medical-surgical nursing. Philadelphia: W.B. Saunders Company, 1174-1203.

Williams, S.R. (6th ed.)(1994). Essentials of nutrition and diet therapy. St. Louis: Mosby, 413-432.

Web references

American Diabetes Association (ADA)(1998). The dangerous toll of diabetes. http://www.diabetes.org/ada/facts.asp

American Diabetes Association (ADA)(1998). Sex, pregnancy, and parenting. http://www.diabetes,org/ada/c50.asp

Centers for Disease Control (CDC)(1999). National diabetes fact sheet. http://www.cdc.gov/diabetes/pubs/facts98.htm

Centers for Disease Control (CDC)(1997). Number of deaths due to diabetes and rank of diabetes among top 15 causes of death by age, race, and sex, United States, 1994. http://www.cdc.gov/diabetes/survl/chap3/table2.htm

Centers for Disease Control (CDC)(1999). The public health of diabetes mellitus in the United States. http://www.cdc.gov/diabetes/survl/surveill.htm

National Institute of Diabetes, and Digestive, and Kidney Diseases (NIDDK)(1999). Diabetes diagnosis. http://www.niddk.nih.gov/health/diabetes/pubs/diagnosis/diagnosis.htm

National Institute of Diabetes, and Digestive, and Kidney Diseases (NIDDK)(1999). Diabetes overview. http://www.niddk.nih.gov/health/diabetes/pubs/dmover/dmover.htm

Texas Diabetes Council/Texas Department of Health (1998). Texas diabetes fact sheet 1998. http://www.tdh.state.tx.us/diabetes/factshee.htm

Texas Department of Health (TDH)(1998). Selected statistics for Brazos County. http://www.state.tx.us/dpa/cfs97/Brazos97.pdf

Texas Department of Health (TDH)(1998). Selected statistics for Texas. http://www.state.tx.us/dpa/cfs97/Texas97.pdf

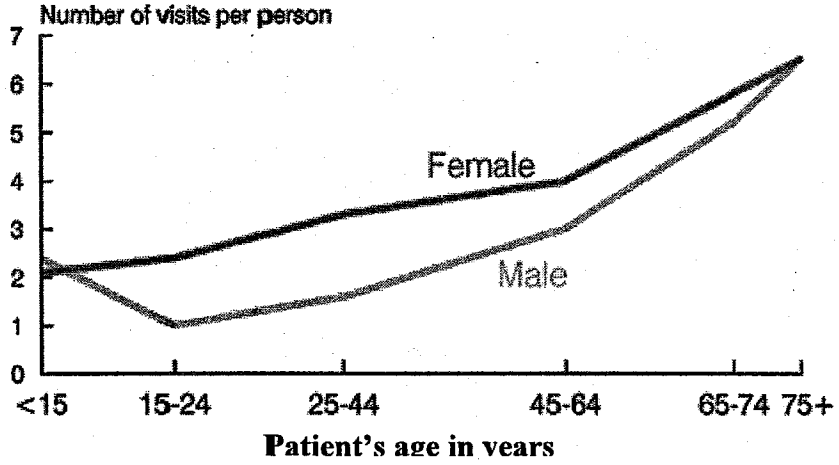
Texas Department of Health (TDH)(1999). Texas mortality data browser. http://www.ehdp.com/vn/txu-uc/index.htm

PRIMARY CARE

Erin Howard

In 1997, Americans made an average of 3 visits to ambulatory care providers (Woodwell, 1999). Of all of ambulatory care visits, 40.9% visits were made to physicians that specialize in internal, family practice, or general medicine, including doctors of osteopathy. After adolescence, the average annual number of ambulatory care visits increases with age.

Annual rate of visits to office-based physicians by patient's age in the United States in 1997



Source: CDC/NCHS, National Ambulatory Care Survey, 1997; U.S. Bureau of the Census, 1997

Proportions of Primary Care Providers to Population

Ratio of primary care providers to population	Brazos County*	Texas
Total population	1:1587	1:3706
Population age 45-64	1:193	1:688
Population over 64	1:101	1:375

*Includes only family practice, internal medicine, doctors of osteopathy, and general medicine specialists
Sources: Bureau of Primary Health Care (BPHC), Health Resources and Services Administration (3/2/00). *BPHC State Profiles.* http://www.bphc.hrsa.dhhs.gov ;
Texas Department of Health (2/8/00). Selected statistics for Brazos County. http://www.state.tx.us/dpa/cfs97/Brazos97.pdf;
Texas Department of Health (2/8/00). Selected statistics for Texas. http://www.state.tx.us/dpa/cfs97/Texas97.pdf

For the purposes of this report, primary care providers (PCPs) include family practice specialists, internal medicine specialists, general practice physicians, and doctors of osteopathy. National data was obtained through reports of the U.S. Centers for Disease Control and Prevention. State data was obtained through the Texas Department of Health and the Bureau of Primary Health Care. Brazos County data was obtained through Texas Department of Health and through searches of local phone directories.

Brazos County ratios show that Brazos County has more than twice the number of PCPs per population than the state of Texas. Brazos County numbers of PCPs per population ages 45 to 64, and population over 64 are more than triple that of the state of Texas. However, physicians in Brazos County also treat patients that reside in outlying counties.

Size of Practice

While Brazos County has approximately the same ratio of primary care providers in solo practice as the ratio in United States, there is a significantly higher ratio of Brazos County primary care providers who are in practice with 2 to 4 providers.

Number of primary care providers per practice

Number of providers per practice	Brazos County*	United States**
Solo	35%	35.1%
2-4 providers	50%	32.3%
5-9 providers	0%	22.6%
10-49 providers	15%	7.1%
50 or more providers	0%	2.9%

* Source: Bryan-College Station Yellow Pages, 1999
**Source: Woodwell, D.A. (1999). National ambulatory medical care survey: 1997 summary. Advance Data, 305.

Ownership

Brazos County has more primary care practices owned by physicians or groups than the United States average. The United States average number of practices owned by hospitals is more than twice that of Brazos County, the same is true of ownership by healthcare corporations or health maintenance organizations.

Ownership of primary health care practices

Ownership	Brazos County*	United States**
Physician/Group	85%	69.7%
Hospital	5%	10.3%
Healthcare corporation / HMO	5%	12.2%
Missing data	5%	7.7%

* Source: Bryan-College Station Yellow Pages, 1999
** Source: Woodwell, D.A. (1999). National ambulatory medical care survey: 1997 summary. Advance Data, 305

Adequacy of Service Capacity

While the supply of ambulatory appears adequate, the numbers are misleading because the distribution of primary care providers is uneven. Some communities are medically over-served while others are critically under-served (BPHC, 1998). Brazos County is not classified as a medically underserved county and the ratio of primary care providers to population is much greater than the Texas average. However, this can be misleading because Brazos County healthcare providers provide care to patients that reside in outlying areas, thus Brazos County may be considered a regional center of primary health care.

References

Bureau of Primary Health Care (BPHC)(12/30/98). *BPHC State Profiles: Texas*. [www document] http://www.bphc.hrsa.dhhs.gov/oear/Detail.CFM?stprof_STNAME=TEXAS

Woodwell, D.A. (1999). National Ambulatory Care Survey: 1997 Summary. *Advance Data, 305,* 1-26.

PROSTATE CANCER

Joelle Oishi

National statistics for the year 2000 estimate the diagnosis of 180,400 new cases and 31,900 deaths from prostate cancer.[10] It is the most commonly diagnosed cancer among men, and is second to lung cancer as the leading cause of death among American men. Of all tumors, prostate cancer is the one whose prevalence increases most rapidly with age. More than any other, this is a cancer of the elderly. Thus, 60% of all newly diagnosed prostate cancer cases and 80% of all deaths occur in men 70 years of age and older.[6]

High Risk Population Profile

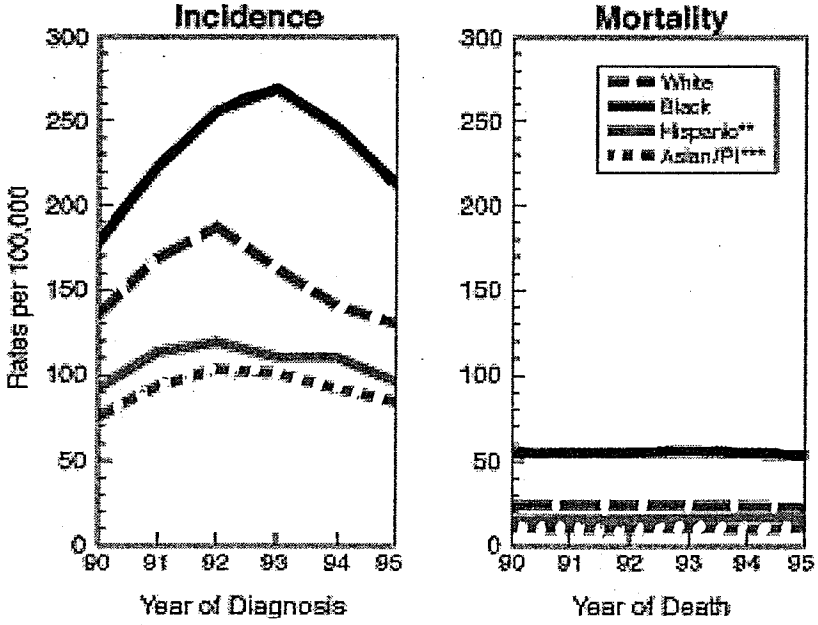
The fundamental risk factor for prostate cancer is age. Although men of any age can get prostate cancer, it is found most often in men over age 50. More than 8 out of 10 of the men with prostate cancer are over the age of 65.[10] African-American men, who are high risk also, have a 47% higher incidence and a 128% higher mortality rate than white men living in the same geographic location.[1,2]

- 75% five-year survival for African-American men[8]
- 90% five-year survival for white men[8]
- The U.S. age-adjusted incidence and mortality rate per 100,000 in 1990-1996 for different ethnicities was:[14]

	Incidence	Mortality
White	147.3	23.7
Black	222.9	54.8
Asian/Pacific Islander	81.5	10.7
Hispanic	102.8	16.7

- The mortality rate for African American men has remained consistently higher over time in comparison to all other races

U.S. Age-Adjusted Race Trends of Prostate Cancer, 1990-1995



[National Cancer Institute]. (February 7, 2000) Cancer Rates – Prostate Cancer, 1990-1995. http://rex.nci.nih.gov/massmedia/pressreleases/GRAPHS3_12/graphs2.html

Three Diagnosis and Screening Methods for Prostate Cancer[5,9]

- Digital rectal examination (DRE)
- Prostate-specific antigen measurement (PSA)
- Transrectal Ultrasound (TRUS)

Definition of Stages of Prostate Cancer[19]

Stage I: The cancer cannot be detected by rectal exam and causes no symptoms.
Stage II: The local tumor is felt in a rectal exam or detected by a PSA blood test
Stage III: The cancer has spread outside the prostate to nearby tissues.
Stage IV: Cancer cells have spread to lymph nodes or other parts of the body.

Survival / Mortality[9]

- 100% survive when diagnosed at an early, local stage
- 94.1% survive when diagnosed at a regional stage
- 30.9% survive when cancer is diagnosed at a distant stage

Treatment Options[3,4]

- Radical Prostatectomy (Stage I, II, III, and IV)
- Cryotherapy (Stage II and III)
- Transurethral resection (Stage III and IV)
- Chemotherapy (Stage IV and reoccurrence)
- Radiation therapy
  External-beam irradiation (Stage I, II, III and IV)
  Seed-Implant therapy (brachytherapy) (Stage I and II)
- Hormone therapy (Stage III and IV)
- Watchful waiting (used at all stages)

Prostate Cancer: Age-Adjusted Numbers and Rates for Males ≥ 50

1996	United States[1]	Texas[1]	Brazos County[2]
Population of Males	129,810,215	9,359,946	63,090
Incidence (#)	317,100	18,000	48
Incidence Rate per 100,000 males	249.53	198.67	144.71
Mortality (#)	41,400	2,300	10
Mortality Rate per 100,000 males	32.6	25.33	25.45

** Prevalence numbers could not be found for United States, Texas, and Brazos County
Cumulative incidence (within a five-year period) – Mortality = Prevalence

[1]Morgan, K. Morgan, S. (Eds.). (1996) Health Care State Rankings 1996 and Health Care in the 50 United States. Morgan Quitno Press, 243-244.

[2]Texas Cancer Data Center]. (February 8, 2000) Texas Demographics and Statistics: Custom Comparisons of Texas Cancer Death Rates 1970-1997. http://www.txcancer.org/scripts/mgwns.html

U.S. Age-Adjusted Race Trends of Prostate Cancer

The incidence of prostate cancer is 1 1/4 times lower in Texas than U.S., and Brazos County is 1 1/3 times less than Texas. Mortality from prostate cancer in Texas is 1 1/3 times less than U.S. rates. Brazos County mortality is equivalent to the mortality rate of Texas. It is unknown why the mortality rate in Brazos County is equivalent to that in Texas, when the incidence rate is lower in Brazos County than Texas. In Brazos County there was a disproportionately higher mortality rate than incidence, which indicates the need for early screening services and earlier intervention.

Trends

There was a three-fold increase in the incidence rate of prostate cancer from 1989 to 1991.[17] This artificial rise in incidence rate was due to the increased use of the prostate specific antigen (PSA) screening test that was created in 1989.[18] The death rate of prostate cancer may not be reliable nor valid because prostate cancer occurs at an age when other medical conditions, like heart disease and stroke, contribute to the cause of death.[17] Therefore, the actual number of deaths from prostate cancer can only be estimated. Population numbers include only males and rates and numbers are age-adjusted for men aged 50 and older.

Implications of Prostate Cancer

Prostate cancer creates anxiety over cancer diagnosis, treatment, side effects, and sexual function. Side effects such as incontinence and impotence may occur after treatment. Complications of radical prostatectomy may be short or long term. Studies show 5%-19% of men become incontinent, and 24%-62% become sexually impotent. Following radiation therapy, 25%-44% of men experience some degree of sexual impotence, and 0.5%-7% of men become incontinent.[17]

Episode of Prostate Cancer and Associated Services:

Prostate Cancer	Episode	Associated Services
Pre-Clinical; Stage I	Screening tests for prostate cancer (DRE, TRUS, PSA)	Outpatient, Clinics, Primary care
Stage II	Physical Symptoms become apparent, such as blood in urine (early localized stage) Prostate cancer is detected but has not spread past the prostate gland	Outpatient, Oncologists, Urologists, Radiologist, Hospital care, Chronic care, Support services (Pharmacies, technicians)
Metastasis, Stage III and IV	Cancer has spread past the prostate gland (Stage III but mainly Stage IV)	Homecare, Nursing Homes, Inpatient and Outpatient, acute care, Radiologist, Oncologist, Chemotherapist

References

1. Boring CC, Squires TS, Heath CW Jr: Cancer statistics for African Americans. CA Cancer J Clin 1992; 42: 7-17.

2. Baquet CR, Horm JW, Gibbs T, et al: Socioeconomic factors and cancer incidence among blacks and whites. J National Cancer Institute 1991; 83: 551-557.

3. Cassileth BR, Seidmon ED, Soloway MS, et al: Patient's choice of treatment in stage D prostate cancer. Urology 33 (5, Suppl): 57-62, 1989.

4. Graverson PH, Nielsen KT, Gasser TC, et al: Radical prostatectomy versus expectant primary treatment in stages I and II prostatic cancer: a fifteen year follow-up. Urology 36(6): 493-498, 1990.

5. Haas GP, Montie J, Pontes JE: The state of prostate cancer screening in the United States. Europe Urol 1993; 23: 337-347.

6. Miller BA, Kolonel LN, Bernstein L, Young, Jr. JL, Swanson GM, West D, Key CR, Liff JM, Glover CS, Alexander GA, et al. Racial/Ethnic Patterns of Cancer in the United States 1988-1992, National Cancer Institute. NIH Pub. No. 96-4104. Bethesda, MD, 1996.

7. Morgan, K. Morgan, S. (Eds.). (1996) Health Care State Rankings 1996 and Health Care in the 50 United States. Morgan Quitno Press, 243-244.

8. Ries LAG, Kosary CL, Hankey BF, et al: SEER Cancer Statistics Review, 1973-1994 (NIH Pub. No. 97-2789). Bethesda, MD, National Cancer Institute, 1997.

Web References

9. [American Cancer Society]. (February 2, 2000) 1998 Facts and Figures: Prostate Cancer. http://www.cancer.org/statistics/cff98/special.html

10. [American Cancer Society]. (February 15, 2000) Prostate Cancer: What is it? http://www3.cancer.org/cancerinfo/

11. [American Cancer Society]. (February 8, 2000) Age-Adjusted Cancer Death Rates, Males by Site, US, 1930-1996. http://www.cancer.org/statistics/cff2000/data/male_site.html

12. [American Medical Association]. (February 2, 2000) Understanding Prostate Cancer. http://www.ama-assn.org/insight/spec_con/prostate/prostat2.html

13. [CA: A Cancer Journal for Clinicians]. (February 9, 2000) Figure 8: Five-Year Relative Survival Rates by Race and Stage at Diagnosis, US, 1989-1995. http://www.ca-journal.org/articles/50/1/007-033/50_007-033frame.html

14. [CA: A Cancer Journal for Clinicians]. (March 16, 2000) Table 10: Incidence and Mortality Rates by Site, Race, and Ethnicity, US, 1990-1996. http://www.ca-journal.org/articles/50/1/007-033/50_007-033frame.html

15. [CancerNet]. (February 1, 2000) Recent Trends in Prostate Cancer Incidence and Mortality. http://cancernet.nci.nih.gov/Cancer_Types/Prostate_Cancer.html

16. [CaP]. (February 4, 2000) Treatment for Clinically Localized Disease Observation. http://www.cancer-Prostate.com/TreatmentFrame1Source1.html

17. [Center for Disease Control and Prevention]. (February 1, 2000) Prostate Cancer. http://www.cdc.gov/cancer/prostate/prostate.html

18. [Comed]. (February 4, 2000) Prostate Cancer: FAQs. http://www.comed.com/Prostate/Faqs.html

19. [National Cancer Institute]. (February 8, 2000) Prostate Cancer. http://cancernet.nci.nih.gov/wyntk_pubs/prostate.html

20. [National Cancer Institute]. (February 7, 2000) Cancer Rates – Prostate Cancer, 1990-1995. http://rex.nci.nih.gov/massmedia/pressreleases/GRAPHS3_12/graphs2.

21. [Texas Cancer Data Center]. (February 8, 2000) Texas Demographics and Statistics: Custom Comparisons of Texas Cancer Death Rates 1970-1997. http://www.txcancer.org/scripts/mgwns/html

SUPPLY OF NURSING HOME SERVICES

Joelle Oishi

In Texas (1997) there was a total of 1,221 nursing homes, with eight nursing homes located in Brazos County.[5] For nursing home accreditation, a licensed nursing home facility must meet strict state and federal government regulations. There are approximately 24 agencies that monitor licensed facilities on a regular basis.[3] Nurses make up the largest percentage of staff and include registered nurses, licensed vocational nurses, and nurse's aides. Although the Midwest had more nursing homes, the Southern region, which includes Texas, had the greatest number of nursing home beds.[4]

There was a greater supply of nursing homes in Brazos County, as compared to Texas and the United States. For each bed in Brazos County there were 10 individuals (> age 65). Whereas, in the U.S. there were 19 people (> age 65) for every bed, and in Texas there were 16 people (> age 65) for every bed. Since Brazos County has a greater supply of nursing homes, Brazos County serves as a regional source, providing other areas of Texas with nursing care services.

Comparison of U.S., Texas, and Brazos County Nursing Home Statistics, 1997

Total	Number of Providers	Number of Beds	Occupancy Rate[1]
U.S. Total	17,000	1,820,800	88.43%
Per age 50-64 population	1:2,175	1:20	--
Per age >65 population	1:2,011	1:19	--
Northeast U.S.	2,900	396,300	94.6%
Midwest U.S.	5,800	577,100	86.3%
South U.S.	5,400	600,300	87.5%
West U.S.	2,900	247,100	85.3%
Texas	1,221	118,791	69.8%
Per age 50-64 population	1:1,982	1:20	--
Per age >65 population	1:1,605	1:16	--
Brazos County	8	922	N.A.
Per age 50-64 population	1:1,471	1:13	--
Per age >65 population	1:1,117	1:10	--

[1]Occupancy rate is calculated by dividing residents by available beds

Sources: Gabrel, CS. An overview of nursing home facilities: Data from the 1997 National Nursing Home Survey. Advance data from vital and health statistics, no. 311. Hyattsville, Maryland. National Center for Health Statistics, 2000.
1999 Health and Aging Chartbook: Data from the Center of Disease Control and Prevention, Hyattsville, Maryland. National Center for Health Statistics, 1999.

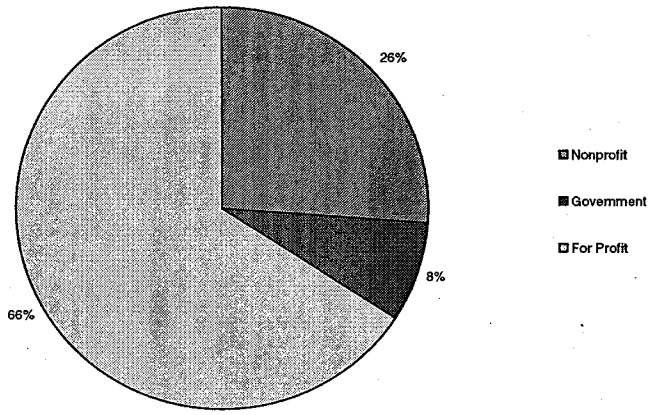
By Size

The number of nursing homes in the U.S. was 20% higher (from 14,050 to 16,840) in 1996 than in 1987. In Texas (1997) there were 1,221 nursing homes and a total of 118,791 beds available. The occupancy rate in Texas was 69.8% and the number of nursing home residents per 1,000 was 383.7. Both the ratio of nursing homes to individuals (> age 50) and nursing home beds to individuals (> age 50) is large; however, these numbers do not account for continual fluctuation in admissions and discharges. The number of beds per U.S. nursing home averaged to approximately 107.85. The average U.S. occupancy rate (found by dividing residents by available beds) was 88.43% and the average admissions per 100 beds was 110.85 due to high admissions in the Midwest region. Occupancy rates are high due to the increasing age of the overall population.

Ownership

In March 2000, for-profit corporations owned five of the eight (63%) nursing homes in the Brazos County. The other 37% were non-profit. In the U.S. for 1996, 26% of nursing homes were nonprofit, 8% were government owned, and 66% were proprietary.[4] The percentages for Brazos County and the U.S. are similar, because there are no government owned nursing homes in Brazos County. This data was from 1996, however, data from nine years earlier (1987) was similar.

U.S. Nursing Home Ownership - 1996

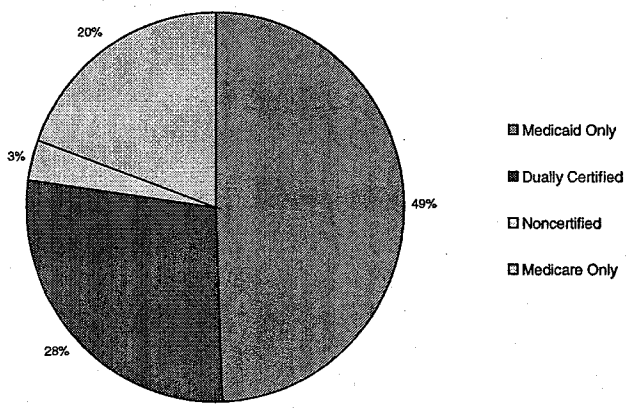


Rhoades, JA, Krauss, NA. Nursing Home Trends, 1987 and 1996. Rockville (MD): Agency for Health Care Policy and Research; 1999. MEPS Chartbook No. 3 AHRQ Pub. No. 99-0032.

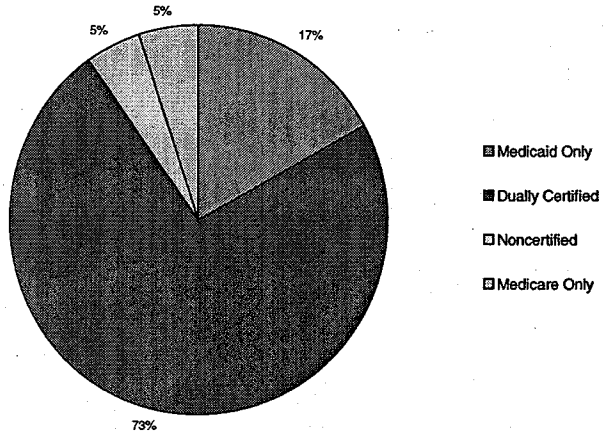
Adequacy of Service Capacity by General Population

Even though the number of nursing homes in the U.S. has increased by 20%, the supply of nursing home beds per 1,000 people aged 75 and older has declined.[4] In 1987 there were 141 nursing home beds per 1,000 people 75 years and older. In 1996 there were 117 nursing home beds for the same population, representing a 17.0% decrease in the supply of nursing home beds. In addition, nursing home occupancy rates have fallen by 4%. This suggests long-term needs are being provided by outside services such as home health care. Even though the occupancy rate has fallen, nursing homes are becoming more accessible due to dual certification. Each nursing home facility that is dually certified participates in both Medicare and Medicaid.

U.S. Nursing Home Certification Status - 1987



U.S. Nursing Home Certification Status - 1996



Rhoades, JA, Krauss, NA. Nursing Home Trends, 1987 and 1996. Rockville (MD): Agency for Health Care Policy and Research; 1999. MEPS Chartbook No. 3 AHRQ Pub. No. 99-0032.

Nursing Home Supply by Target / High Risk Population

Many of the nursing homes in the Brazos County and the United States contain skilled nursing units for patients that need a higher level of care. Dementia and heart disease were the most frequently occurring health conditions for nursing home residents over age 65.[4] The need to deliver skilled nursing care is important because nursing home residents are becoming older and have a greater degree of dependence. There are skilled unit beds available in Brazos County; however, the average charge per day is 50% more than an intermediate nursing home bed.

Nursing Homes in the Brazos County (table of Brazos County nursing homes)

Nursing home expenses can sometimes be partially covered by Medicare, Medicaid, and the Veterans Administration. Long-term care insurance allows residents to pay a known premium; however, there is no policy that covers all expenses fully. For intermediate bed care in a nursing home facility, there is a minimum cost of $69 per day for a semi-private room. The maximum cost for a private, skilled-unit bed is $420 per day. The average price of nursing homes in Brazos County is around $100 per day. The monthly fee that nursing homes charge covers nursing care, room and board, meals and snacks, and activities. Other services such as medical equipment, laundry services, medications, physician services, therapy services, and barber or beauty shop services are additional charges. A spreadsheet is included which illustrates details on cost and size measures of facility services.

Nursing Homes Listed in Brazos County, TX, May 2000

Nursing Homes	Address, Phone Number	Number of Intermediate Beds	Number of Skilled-Unit Beds	Medicare Participation	Medicaid Participation	Ownership
Brazos Valley Geriatric Center	1115 Anderson College Station, TX 77840 (409) 693-1515	Nursing Facility Beds: 136	Only nursing facility beds	Yes	Yes	For-Profit Corporation
College Station Medical Center	1604 Rock Prairie Rd. College Station, TX 77842 (409) 764-5151	Only skilled-unit beds	10	Yes	No	For-Profit Corporation
Crestview Retirement Community	2505 Villa Maria Rd. Bryan, TX 77802 (409) 776-4778	24	21	No	Yes	Non-Profit Church Related
Sherwood Health Care Inc.	1401 Memorial Dr. Bryan, TX 77802 (409) 776-7521	118	128	Yes	Yes	For-Profit Corporation
Southwood	1105 Rock Prairie Rd. College Station, TX 77845 (409) 694-2244	120	93 critical beds	Yes	Yes	For-Profit Corporation
St Joseph Hospital and Health Center SNF	1600 Joseph Dr. Bryan, TX 77802 (409) 776-2597	32 Assisted living beds	Only Assisted Living	Yes	No	Non-Profit Church Related
St. Joseph Manor	2333 Manor Dr. Bryan, TX 77802 (409) 821-7390	72 beds with nursing services	Alzheimer Care: 42 beds	No	Yes	Non-Profit Corporation
Bryton Inn Nursing Center	2001 East 29th St. Bryan, TX 77802 (409) 822-7361	106	20	Yes	Yes	For-Profit Corporation

Source of Information: Personal communication with administration at each facility, April, 2000.

References

1. Characteristics of Nursing Home Residents - 1996. Rockville (MD): Agency for Health Care Policy and Research; 1998. MEPS Research Findings No. 5. AHRQ Pub. No. 99-0006.

2. Gabrel, CS. An overview of nursing home facilities: Data from the 1997 National Nursing Home Survey. Advance data from vital and health statistics, no. 311. Hyattsville, Maryland. National Center for Health Statistics, 2000.

3. Phillip, WB, Anthony JL, Roberta, L, Linda KS. (1987) Long Term Care, Providing a Spectrum of Services to the Aged. Basic Books, Inc, New York.

4. Rhoades, JA, Krauss, NA. Nursing Home Trends, 1987 and 1996. Rockville (MD): Agency for Health Care Policy and Research; 1999. MEPS Chartbook No. 3 AHRQ Pub. No. 99-0032.

5. 1999 Health and Aging Chartbook: Data from the Center of Disease Control and Prevention, Hyattsville, Maryland. National Center for Health Statistics, 1999.

CONGESTIVE HEART FAILURE

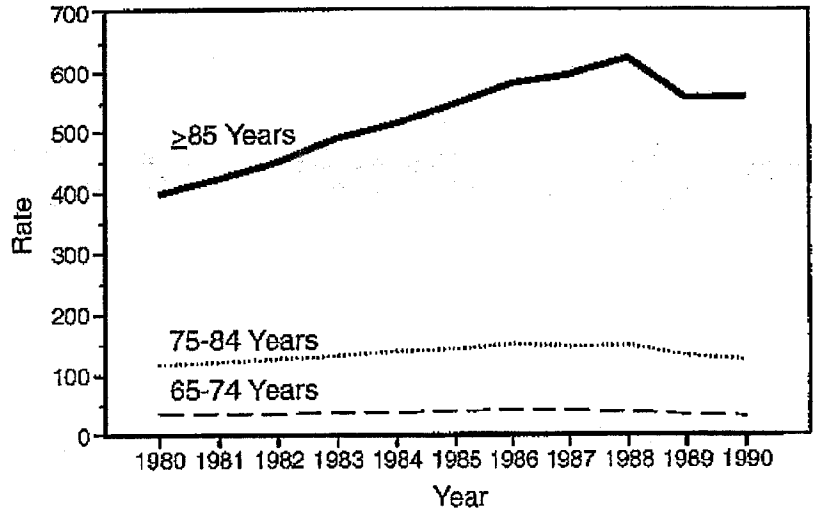
Farah Mensik

The Center for Disease Control and Prevention (CDC) estimated that 4.8 million people in the United States have congestive heart failure (CHF), of whom 70% are at least 60 years old (Heart Information Network, 2000). CHF kills nearly 250,000 people a year, and in people over the age of 65, it is the number one cause of death in the United States (Peckham, 2000). CHF is the first-listed diagnosis in 875,000 hospitalizations and the most common diagnosis in hospital patients age 65 years and older. In the 65 years and older age group, one fifth of all hospitalizations have a primary or secondary diagnosis of heart failure (NHLBI, 1997).

High Risk Population Profile

CHF is a widespread killer, but the disease's most likely targets are the elderly, black men and women, those with preexisting conditions (ie. hypertension, diabetes and a previous heart attack). Crude death rates for CHF per 100,000 persons were directly proportionate to age: at 85 years of age the rate was 559.1, at 75-84 the rate was 124.7, and at 65-74 the rate was 31.6. The age-adjusted death rate among persons 65 years or older was 143.9 for black males, 117.8 for white males, 113.4 for black females, and 97.5 for white females (CDC, 1998).

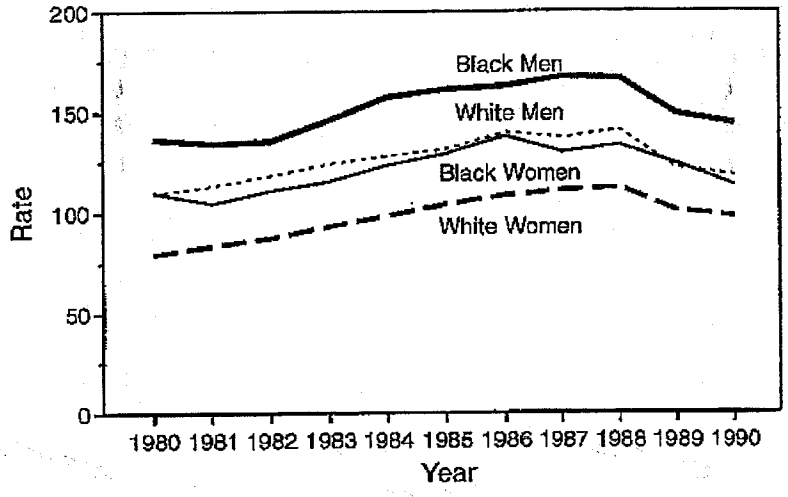
FIGURE 1. Age-specific crude death rate* for congestive heart failure† for persons aged ≥65 years, by age group — United States, 1980–1990



*Per 100,000 population.
†*International Classification of Diseases, Ninth Revision*, codes 428.0–428.9.

Center for Disease Control and Prevention (CDC) MMWR Weekly. (2/2/00). Mortality from congestive heart failure-United States, 1980-1990. Available: http://www.cdc.gov/epo/mmwr/preveiw/mmwrhtml/00024847

FIGURE 2. Age-adjusted death rate* for congestive heart failure† for persons aged ≥65 years, by race§ and sex — United States, 1980–1990



*Per 100,000 population; standardized to the 1980 U.S. Bureau of the Census population.
†*International Classification of Diseases, Ninth Revision*, codes 428.0–428.9.
§Race-specific denominator data were available only for blacks and whites.

Center for Disease Control and Prevention (CDC) MMWR Weekly. (2/2/00). Mortality from congestive heart failure-United States, 1980-1990. Available: http://www.cdc.gov/epo/mmwr/preveiw/mmwrhtml/00024847

According to the Framingham Heart Study, CHF is as common in men in as women (approaching 10 per 1000 population) after 65 years old years age. It is twice as common in persons with hypertension and five times greater in persons who have had a heart attack. The National Health and Nutrition Examination Surveys revealed that the prevalence of CHF is 2% of persons age 40 to 59, more than 5% of persons age 60 to 69 and 10% of persons 70 and older. Among the black population, the prevalence is as least 25% greater (NHLBI, 1996).

Trends in Congestive Heart Failure Mortality

Congestive Heart Failure Deaths in Texas

	1994	1995	1996	1997	Total
50 to 54	37	31	40	46	154
55 to 59	51	54	59	54	218
60 to 64	89	106	79	90	364
65 to 69	154	165	195	152	666
70 to 74	266	275	258	279	1078
75 to 99+	2180	2072	2266	2444	8962
Total	2777	2703	2897	3065	11,442

Texas Epigram, Texas Department of Health (TDH) Bureau of Vital Statistics. (2/20/00). Deaths: tabulated by cause of death and age (Texas, 1994-1997). Available: http://www.ehdp.com/vn/results/220wmkah.htm

Congestive Heart Failure Deaths in Brazos County

	1994	1995	1996	1997	Total
50 to 54	1	0	1	1	3
55 to 59	1	1	2	0	4
60 to 64	0	0	0	0	0
65 to 69	2	1	1	2	6
70 to 74	0	1	0	0	1
75 to 99+	17	10	3	15	45
Total	21	13	7	18	59

Texas Epigram, Texas Department of Health (TDH) Bureau of Vital Statistics. (2/20/00). Deaths: tabulated by cause of death and age (Brazos County, 1994-1997). Available: http://www.ehdp.com/vn/results/217pncak.htm

Congestive Heart Failure Death Rates (per 10,000)

	1994	1995	1996	1997
Texas	6.85	6.52	6.82	7.00
Brazos County	10.9	6.60	3.48	8.70

Texas Epigram, Texas Department of Health (TDH) Bureau of Vital Statistics. (2/20/00). Deaths: tabulated by cause of death and age (Texas, 1994-1997). Available: http://www.ehdp.com/vn/results/220wmkah.htm

Texas Epigram, Texas Department of Health (TDH) Bureau of Vital Statistics. (2/20/00). Deaths: tabulated by cause of death and age (Brazos County, 1994-1997). Available: http://www.ehdp.com/vn/results/217pncak.htm

Texas Epigram, Texas Department of Health (TDH) Bureau of Vital Statistics. (2/20/00). Population: tabulated by year and age (Texas, 1994-1997). Available: http://www.ehdp.com/vn/results/217pncak.htm

Texas Epigram, Texas Department of Health (TDH) Bureau of Vital Statistics. (2/20/00). Population: tabulated by year and age (Brazos County, 1994-1997). Available: http://www.ehdp.com/vn/results/221wppfa.htm

Comparing the death rates from 1994 to 1997 in Texas and Brazos County, Brazos County is consistently higher, with the exception of 1996. The death rates reflect the total number of deaths, aged 50 and older, per population, aged 50 and older. Another trend to be noted is the significant increase in deaths, for both Texas and Brazos County, as people age. I was unable to find national numbers for deaths due to CHF.

Social Impact

Because of the heart's reduced pumping capacity, patients lose the ability to perform physical activities, perform routine functions, and eventually are unable to perform social and occupational roles. Eventually they have difficulty even caring for themselves (NHLBI, 1997). With increasing severity, patients will be more sedentary and unable to leave their house. Combined with anxiety and restlessness, patients will lose their roles in the community. For example, they will be unable to attend work, church, and social events. The cost of cardiovascular disease and stroke in the United States in 2000 is estimated at $326.6 billion. (AHA, 2000).

Table 5: Estimated Cost of Congestive Heart Failure (in billions)
United States: 1999

Direct Costs	
Hospital/ Nursing Home	$15.5
Physicians/ Other Professionals	$1.5
Drugs	$1.1
Home Health/Other Medical Durables	$2.2
Total Direct Costs	**$20.3**
Indirect Costs	
Lost Productivity/Morbidity	Not Available
Lost Productivity/Mortality	$2.2
Grand Total	**$22.5**

American Heart Association (AHA). (3/31/99). Economic cost of cardiovascular diseases. Available: http://www.americanheart.org/statistics/10econom.html

Services/Episodes

The New York Heart Association developed a classification system to grade CHF by severity of symptoms, ranging from Class I with no limitations to Class IV with severe physical and respiratory limitations. Physicians use these classifications to help determine treatment options (Peckham, 2000).

Class I	Class II	Class III	Class IV
No limitation of physical activity. No shortness of breath, fatigue, or heart palpitations with ordinary physical activity.	Slight limitation of physical activity. Shortness of breath, fatigue, or heart palpitations with ordinary physical activity, but patients are comfortable at rest.	Marked limitation of activity. Shortness of breath, fatigue, or heart palpitations with less than ordinary physical activity, but patients are comfortable at rest.	Severe to complete limitation of activity. Shortness of breath, fatigue, or heart palpitations with any physical exertion and symptoms appear even at rest

Well-Connected & Peckham, C. (2/4/00). Congestive heart failure. Available: http://webmd.lycos.com/content/dmk/dmk_article_40018

Needs	Episode	Services, Providers/Facilities
Preclinical	Class I	Physician, exercise area
Clinical: Acute	Class III and Class IV	Physician, cardiologist, emergency services, ambulance services, intensive care, pharmacy
Clinical: Chronic	Class II, Class III, and Class IV	Physician, cardiologist, nutritionist, pharmacy
Rehabilitation: Acute	Class III and Class IV	Physician, cardiologist, occupational and physical therapist, nutritionist, pharmacy
Rehabilitation: Chronic	Class I, Class II, Class III, and Class IV	Physician, cardiologist, occupational and physical therapist, personal trainer, nutritionist, exercise area, pharmacy

By looking at CHF by needs and episodes, one can better determine what services/providers/facilities will be needed. At the preclinical stage, a patient is not having any limitations and is seeing their physician and possibly doing some type of exercise. At the clinical, acute stage, a patient is now having severe limitations and is in a hospital due to their symptoms. A patient in the clinical, chronic stage of CHF has already been in the hospital due to an episode of the disease, and is now living with the disease. Here the patient can range from coping quite well and not experiencing too many limitations to the patient that has severe damage to the heart and is a Class IV patient with severe limitations. The rehabilitation stage can be either acute or chronic. At the acute stage, a patient has just experienced a severe episode, Class III or Class IV, and is most likely still in the hospital. The chronic rehabilitation stage is for patients who have already had an episode and are living with CHF. Here the patient is living with the disease and the damage it has done to the heart. The patient can experience limited problems, Class I, or severe limitations, Class IV, or anything in between.

Reference List (Internet Sources)

American Heart Association (AHA). (3/31/00). Economic cost of cardiovascular diseases. Available: http://www.americanheart.org/statistics/10econom.html

Center for Disease Control and Prevention (CDC) MMWR Weekly. (2/2/00). Mortality from congestive heart failure-United States, 1980-1990. Available: http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/00024847

National Heart, Lung, and Blood Institute (NHLBI). (2/11/00). Data fact sheet: congestive heart failure in the United States: a new epidemic. Available: http://library.thinkquest.org/27533/facts.html

National Heart, Lung, and Blood Institute (NHLBI). (2/11/00). Facts about heart failure. Available: http://www.nhlbi.nih.gov/health/public/heart/other/hrtfail.htm

Texas Epigram, Texas Department of Health (TDH) Bureau of Vital Statistics. (2/20/00). Deaths: tabulated by cause of death and age (Brazos County, 1994-1997). Available: http://www.ehdp.com/vn/results/217pncak.htm

Texas Epigram, Texas Department of Health (TDH) Bureau of Vital Statistics. (2/20/00). Deaths: tabulated by cause of death and age (Texas, 1994-1997). Available: http://www.ehdp.com/vn/results/220wmkah.htm

Well-Connected & Peckham, C. (2/4/00). Congestive heart failure. Available: http://webmd.lycos.com/content/dmk/dmk_article_40018

Well-Connected & Peckham, C. (2/11/00). What are the lifestyle recommendations for congestive heart failure? Available: http://webmd.lycos.com/content/dmk/dmk_article_5462164

REHABILITATION SERVICES
Farah Mensik

Rehabilitation services are those agencies that provide an integrated, multi disciplinary program designed to upgrade the physical functions of handicapped, disabled individuals by bringing together, as a team, specialized rehabilitation personnel (TDH, 2000). Rehabilitation can be physical therapy, occupational therapy, speech pathology, social or vocational adjustment services, aqua therapy, etc., or any combination. The medical rehabilitation field is in the midst of a dramatic change in the way care is organized, delivered, and financed. Due to new technologies and improved medical care, increased numbers of people are surviving traumatic injuries and catastrophic illnesses. The new way of medical rehabilitation is increased independence, productivity, and participation in the community (CARF, 2000). The World Health Organization (WHO) estimates that more than 300 million people worldwide are disabled, with over 70% of them living in developing countries. Only about 1% to 2% of disabled persons in the developing world have access to rehabilitation (WHO, 2000).

Supply of Rehabilitation Services

Number of Rehabilitation Facilities per 100,000 Population
United States, Texas, and Brazos County (1997)

	Total Population	50+ Population	65+ Population
United States (2941)	1.10	4.13	8.6
Texas (230)	1.12	5.30	11.7
Brazos County (6)	4.30	29.0	67.1

Senior Options. (4/22/00). Senior Options: Online guide to senior services. Available: http://senioroptions.com/index.html

Texas Epigram, Texas Department of Health (TDH), Bureau of Vital Statistics. (2/20/00). Population: tabulated by year and age (Texas, 1997). Available: http://www.ehdp.com/vn/results/423hpqnb.htm

Texas Epigram, Texas Department of Health (TDH), Bureau of Vital Statistics. (2/20/00). Population: tabulated by year and age (Brazos County, 1997). Available: http://www.ehdp.com/vn/results/423krpge.htm

United States Census Bureau, Population Estimates Program, Population Division. (2/17/00). Resident population estimates of the Untied States by age and Sex: April 1, 1990 to November 1, 1999. Available: http://www.census.gov/population/estimates/nation/intfile2-1.txt

When comparing the number of facilities to the population for the United States, Texas and Brazos County, Texas and Brazos County are consistently above the national level. The Brazos County appears to have a four times higher supply of rehabilitation facilities than the United States and Texas and have a sufficient number of rehabilitation facilities for the population, but Brazos County is a regional health provider. Taking into account that it serves the region, the number of rehabilitation facilities in Brazos County then becomes more evenly distributed.

Number of Therapists by Type per 100,000 Population in Brazos County

	Total Population	50+ Population	65+ Population
Physical Therapist (17)	13.9	76.8	170.2
Occupational Therapist (8)	6.6	36.1	80.1
Speech Pathologist (3)	2.5	13.6	30.3

Personal Communication. April 20, 2000.

Texas Epigram, Texas Department of Health (TDH), Bureau of Vital Statistics. (2/20/00). Population: tabulated by age and year (Brazos County, 2000). Available: http://ehdp.com/vn/results/423scjky.htm

Looking at the rates of therapists by type, it is easy to see that there are more physical therapists than any other type that I compared. There are two times as many physical therapists and five and a half times more than speech pathologists in the total population. As the population ages and the numbers of people decreases and the rates of each therapist increases. For physical therapists, occupational therapists, and speech pathologists, the therapists per population aged 50 and over is 5.5 times greater than the total population and 2.2 times greater than the 65 and older population. I was only able to find consistent numbers for physical therapists, occupational therapists, and speech pathologists. Information was unavailable for two rehabilitation clinics and therefore was not included in these rates. I was unable to find numbers for national and state level services.

Conclusions

After comparing the numbers for rehabilitation services across national, state, and local levels, it can be concluded that the Brazos County has a sufficient number of facilities for its population. It may seem as though Brazos County has an oversupply of facilities, but this becomes more evenly distributed when it is taken into account that the Brazos County health services serves the region as well. Comparing therapists by type, Brazos County has sufficient numbers of physical therapists, but the rates for occupational therapists and speech pathologists are below that of physical therapists. With this information, it is important now to examine why there are higher rates of physical therapists and not occupational therapists and speech pathologists and if this is a problem of supply and demand.

Reference List (Internet Sources)

CARF: The Rehabilitation Accreditation Commission. (4/22/00). Today's rehabilitation. Available: http://www.carf.org/MedicalRehab/TodaysRehabilitation.htm

Senior Options. (4/22/00). Senior Options: Online guide to senior services. Available: http://senioroptions.com/index.html

Texas Department of Health (TDH). (4/22/00). Health facility compliance division. Available: http://www.tdh.texas.gov/hfc/rulelist.htm

Texas Epigram, Texas Department of Health (TDH), Bureau of Vital Statistics. (2/20/00). Population: tabulated by age and year (Brazos County, 2000). Available: http://ehdp.com/vn/results/423scjky.htm

Texas Epigram, Texas Department of Health (TDH), Bureau of Vital Statistics. (2/20/00). Population: tabulated by year and age (Brazos County, 1997). Available: http://www.ehdp.com/vn/results/423krpge.htm

Texas Epigram, Texas Department of Health (TDH), Bureau of Vital Statistics. (2/20/00). Population: tabulated by year and age (Texas, 1997). Available: http://www.ehdp.com/vn/results/423hpqnb.htm

United States Census Bureau, Population Estimates Program, Population Division. (2/17/00). Resident population estimates of the Untied States by age and Sex: April 1, 1990 to November 1, 1999. Available: http://www.census.gov/population/estimates/nation/intfile2-1.txt

World Health Organization (WHO). (4/22/00). About WHO: Rehabilitation. Available: http://www.who.int/aboutwho/en/promoting/rehabilitation.htm

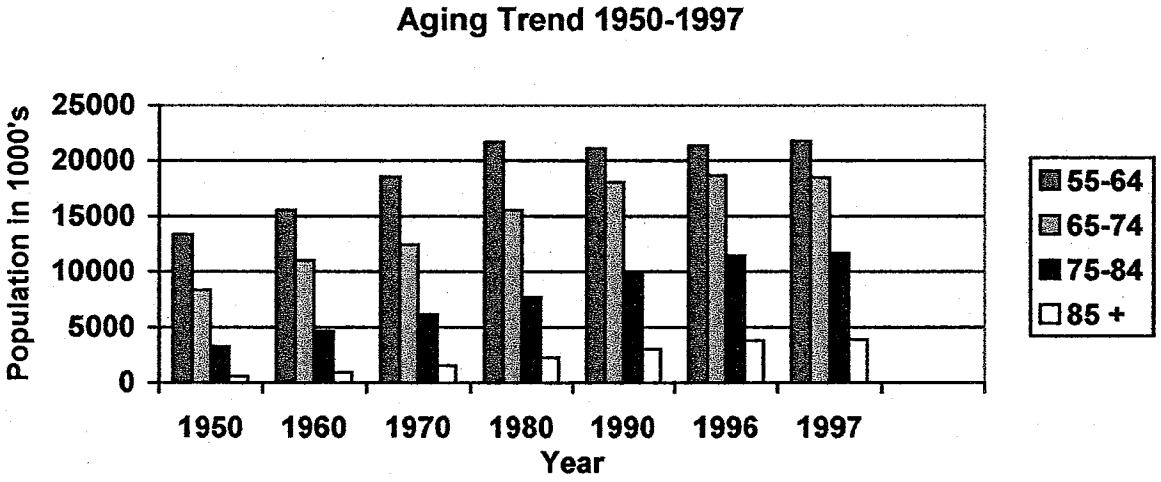
OSTEOARTHRITIS

Kristi Murphey

Approximately 80% of individuals age 50 and over may show signs of osteoarthritis with the use of an x-ray (Brandt, 2000). Because osteoarthritis is not a reportable disease by physicians, and because many individuals do not report pain that may be associated with osteoarthritis to their physicians, it is difficult to an accurate estimate of the incidence and prevalence of osteoarthritis (MMWR, 1994).

High Risk Population Profile

- Before age 45, osteoarthritis occurs more frequently in males (MedicineNet.com, 2000).
- After age 55 years, it occurs more frequently in females (MedicineNet.com, 2000).
- In the United States, all races appear equally affected.
- According to the American Medical Association, age is "strongly correlated" with osteoarthritis (AMA, 2000, pg. 1).



Prevalence per 1000 of Osteoarthritis by Geographic Location

Location	United States[1]	Texas[2]	Brazos County[3]
Population (1997)	267,744	19,439	139
Population > 45 years of age (1997)	71,171	5361	26
Est. population with osteoarthritis > 45 years of age [4]	15(+) million	Not available	Not available
Est. population with osteoarthritis > 45 years of age [5]	20.7 million	Not available	Not available
Est. population with osteoarthritis > 45 years of age [6]	56,937	4505	21

[1] Rates per 1000 persons. The Census Bureau Population Data for 1997.
[2] Rates per 1000 persons. Texas Department of Health Population Information for Texas, 1997.
[3] Rates per 1000 persons. Texas Department of Health Population Information for Brazos County, 1997.
[4] MedicineNet.com (02/20/00).
[5] Arthritis Foundation (02/16/00)
[6] Estimated rates per 1000 persons. (Brandt, 1996)

Emotional, Mental and Social Domain

Most individuals manage and live normal lives with occasional, brief acute episodes of osteoarthritis. However, some individuals live with chronic pain. As seen in the chart below, chronic pain can significantly impact quality of life and behavior disturbances may become a serious problem.

Effects of Chronic Pain on Quality of Life

Physical:
- Physical suffering
- Less able to do things
- Nausea, loss of appetite
- Poor sleep quality and quantity
- Medication side effects
- Loss of strength and mobility
- Inadequate pain control

Psychological:
- Decreased enjoyment of life
- Increased fear and anxiety
- Depression, sadness, distress
- Difficulty concentrating, memory loss
- Preoccupation with symptoms
- Loss of control over one's life
- May become dependent on others

Social:
- Loss of income
- Physical appearance may be changed
- Increased burden on others
- Decreased sexual function, loss of affection
- Quality and quantity of relationships may lessen
- Unable to take part in social/family activities
- Forced to deal with adversarial system

Spiritual:
- Increased suffering, questioning
- Life may take on a different meaning
- May feel disillusioned
- May look at religious beliefs

Services/Episodes

The intensity and duration of osteoarthritis is different than most diseases. Individuals may live with osteoarthritis for years in a preclinical state – perhaps not knowing they have the disease. Others may know they have osteoarthritis but are managed by diet, exercise, weight loss, rehab or by medication. Very few have an urgent and severe episode that leads to hospitalization.

Signs and Symptoms:

- Pain
- Swelling
- Crackling sounds
- Mild inflammation
- Most individuals have pain in one joint or bilateral at one level
- Generally occurs in hips, knees, hands, and/or spine
- Pain may increase and decrease in frequency and duration
- *Pain can become severe enough to halt activity*

Osteoarthritis	Episode	Associated Services
Pre-Clinical	At this time OA might be picked up on an x-ray without symptoms or occasional stiffness and aches.	Radiology
Chronic Clinical	Pain is interfering with activities of daily living and individuals are given pharmaceuticals for symptoms and pain management skills	Primary care physician, radiology, rheumatologist
Chronic Rehab	Pain management and physical activities to decrease progression of OA	Personal trainer, athletic trainer, dietitian, pharmacist
Acute Clinical	Debriedment of the joint or a total joint replacement is needed when pain is so severe or joint has deteriorated and/or daily activities have come to a halt.	Orthopedic surgeon, hospital, in-patient rehab center
Acute Rehab	Rehabilitation following a surgery to regain use of joint(s) and re-train in activities of daily living.	Primary care physicians, pharmacies, in-patient rehab, outpatient physical therapy

Conclusion:

Among the over 100 different types of arthritis conditions, osteoarthritis is the most common, affecting between 15 and 20 million people in the United States. Although there are speculations that osteoarthritis is caused by age, genetic factors, biomechanics, obesity, and heredity, ***there is no definitive cause***. Since osteoarthritis is strongly correlated with age, and our population is aging and living longer, one would want more research done to discover the cause(s) and advocate stronger representation for known interventions that slow or stop progression of osteoarthritis.

References:

AMA Health Insight [American Medial Association] (2/16/00) Arthritis. [On-line] Available at http://www.ama-assn.org/insight/spec_con /arthriti/arthrit2.htm

Arthritis Foundation (02/16/00). Estimated arthritis prevalence by characteristics. [On- line] Available at http://www.arthritis.org/resource/fs/arthritis_prevalence_ characteristic.asp

Arthritis Foundation (02/16/00). Arthritis fact sheet. [On-line] Available at http://www.arthritis.org/resources/fs/arthritis.asp

Brandt, K. (1996) Osteoarthritis (Chapter 2) Diagnosis and Nonsurgical Management of Osteoarthritis [on-line]. Available at http://orthopedics.medscape.com/ PCI/Osteoarthritis/osteoarthritis.c.../pnt-osteoarthritis.ch02.htm

CDC [Center for Disease Control]. Census Information [on-line]. Available at http://www.cdc.gov/nchswww/data

InfoMIN [Medical Information Network] (02/19/00). Effect of chronic pain on quality of life. [On-line] Available at http://www2.rpa.net/~lrandall/quality.html

MedicineNet.com [Medicine.com Doctor's Office] (02/20/00). Osteoarthritis. [On-line]. Available at http://www.medicinenet.com

MMWR Weekly [CDC]. Arthritis prevalence and activity limitations – United States, 1990. June 1994 / 43 (24); 433-438. [On-line]. Available at http://www.cdc.gov/ epo/ mmwr/preview/mmwrhtml/00031480.htm

Hospice Care

Hospice care is not about dying: it is about providing comfort by combining medical care, nursing care, emotional care and spiritual care when a cure is not a possibility. Hospice care does not delay nor accelerate death. Hospice care is provided to improve the quality of life during a patient's last days.

U.S. Hospice Care Facts (NHHCS)

- In 1996 the U.S. had 59,000 current hospice patients with 393,000 discharges.
- The U.S. average length of service was 156.4 days.
- Over 80% of discharges were because the patient was deceased.
- 10 % of discharges were because of transfer of care.
- 98% of current and discharged patients were served by agencies certified by Medicaid or Medicare.
- 85% of current and discharged patients were served by voluntary non-profit agencies.
- 78% of current patients and 68% of discharged patients were age 65 and older.
- Approximately half of current patients and discharge patients were female.
- 80% of current patients and 75% of discharged patients were living in a private residence.
- 9% of current patients and 15% of discharged patients were in a healthcare facility.

Comparison of Local, Texas, and US Hospice Supply

	Brazos County 1999	Texas 1999	United States 1994	United States 1999
Distribution				
Facilities	1	231	1300	3491
Provider types				
Hospice only	Yes	Yes	Yes	Yes
Home care	No	Yes	Yes	Yes
Hospital	No	Yes	Yes	Yes
Size				
Staffing	35 paid, 300 volunteer	Not Available	Not available	Not Available
# of patients	430		61,000	
Ownership				
Non-profit	1		1100	
For-profit	0		200	
Independent	1		900	
Chain	0		400	
Local	1		N/A	
Regional	0		N/A	
National	0		N/A	

Source for US data: CDC – Advanced Data from Vital and Health Statistics, March 6, 1997 and Senior Options, 1998

Comparison of Hospice per Population Ratio

	United States 1998	Texas 1998	Brazos County[3] 1997
General Population[1]	270,298,524	19,759,614	139,352
Target Pop.(age >50)[1]	72,802,621	4,667,318	26,139[4]
Target Pop. (age > 65)[1]	34,401,132	1,999,751	8,937
No. of Hospice facilities	3,491	231	1
Ratio Hospice[2] to all ages	1:77,427	1:85,539	1:139,352
Ratio Hospice to ≥50	1:20,854	1:20,205	1:26,139[4]
Ratio Hospice to ≥65	1:9,854	1:8,657	1:8,937

[1] Administration on Aging
[2] Senior Options, 1998
[3]Texas Department of Health
[4]Age 45 and over

It appears that in comparison, the United States, Texas, and Brazos County have similar ratios of number of hospice locations to population age 50 and over and age 65 and over. However, if one takes into consideration that Hospice Brazos Valley serves 19 counties, then Hospice Brazos Valley has a considerably higher population to facility ratio.

Adequacy of Service

- Adequacy of hospice care service nationally may become an issue in the near future.
- As a society Americans hesitate to discuss death and therefore most individuals are less likely to discuss what hospice is and what services it has to offer.
- The Federal Government utilizes restrictions that are decreasing service and payment of hospices.
- Federal restrictions state eligibility for hospice care must be six months or sooner from death. If the patient outlives that time period, hospice is responsible for the remainder of payments.
- Hospices cannot bill patients for costs beyond Medicare reimbursement level – therefore, it is a loss of money for hospice (Foster, 2000).
- Because the time of death is difficult to predict, doctors are hesitant to refer patient into hospice care.
- If a person is admitted to hospice care for one diagnosis, and reason for death is a different diagnosis (i.e. admitted for terminal cancer but dies from a stroke or heart attack) hospices cannot be reimbursed because cause of death was not the admitting diagnosis.

Recommendations:

Although it appears that Brazos County has similar hospice care providers as compared to Texas and the United States, one would still recommend attention to coverage and reimbursement of hospice services. No one can judge the exact time of death of an individual and therefore, the patient should not be punished for living. Hospice is about spending one's last days in as much physical, emotional and spiritual comfort as possible. Hospice is about dying with dignity.

Home Care

Home care agencies deliver home health care to a person where they live. They provide a broad scope of services including nursing, physical, occupational, speech and respiratory therapy and personal care and homemaker responsibilities. In addition, home care facilities employ social workers and dietitians to help not only the patient, but also the family, adjust to a loved one's health status. As a result, these services may enable a person to remain at home and delay or avoid having to move to an assisted living facility or to a nursing home.

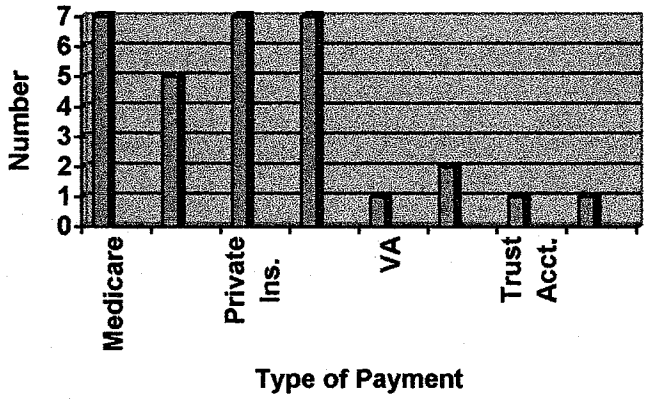
Comparison of Home Care per Population Ratio

	United States 1998	Texas 1998	Brazos County[3] 1997
General Population[1]	270,298,524	19,759,614	139,352
Target Pop.(age >50)[1]	72,802,621	4,667,318	26,139[4]
Target Pop. (age > 65)[1]	34,401,132	1,999,751	8,937
No. of Hospice facilities	25,221	2,940	7
Ratio Home care[2] to all ages	1:10,717	1:6721	1:19,907
Ratio Home care to ≥50	1:2,887	1:1,588	1:3,734
Ratio Home care to ≥65	1:1,364	1:680	1:1,277

[1] Administration on Aging
[2] Senior Options, 1998
[3] Texas Department of Health
[4] Age 45 and over

It appears that in comparison, the United States, and Brazos County have similar ratios of number of hospice locations to population age 50 and over and age 65 and over. Texas appears to have a higher ratio of home care facilities per population. However, if one takes into consideration that all of the home care facilities in the Brazos Valley serve surrounding counties as well, then the Brazos valley has a somewhat higher population to facility ratio.

Home care services are reimbursed by a variety of payment methods. In Brazos County, the seven home care facilities accept payment through the following methods:



References:

Administration on Aging [AOA] (1999). Census Estimates of the older Population [On-line]. Available: http://www.aoa.dhhs.gov/ala/stats/98pop/numberxstate.html [02/16/00]

Center for Disease Control [CDC]. (1998) March 6, 1997 report of hospice care patients. [On-line]. Available: http://www.cdc.gov/ [03/07/00].

Foster, John. (03/13/00). Hospice Brazos Valley. Personal Interview .

Hospice Foundation of America [HFA]. (2000). What is Hospice? [On-line] Available: http://www.hospicefoundation.org/virtual_html/whatis.htm [03/25/00].

Naierman, N. (1998). Letter from the President. American Hospice Foundation. Available: http://www.americanhospice.org/way.htm [03/07/00].

Senior Options (1998). Locating Hospice Locations. [On-line] Available: http://senioroptions.com [04/22/00]

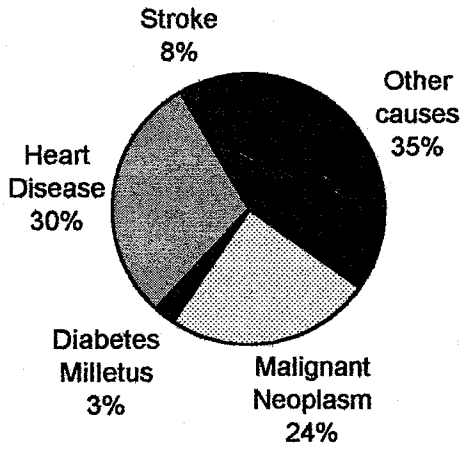
Texas Department of Health [TDH]. (1999). Selected Facts for Brazos County 1997. [On-line]. Available:http://www.tdh.state.texas.us/dpa [03/07/00]

STROKE

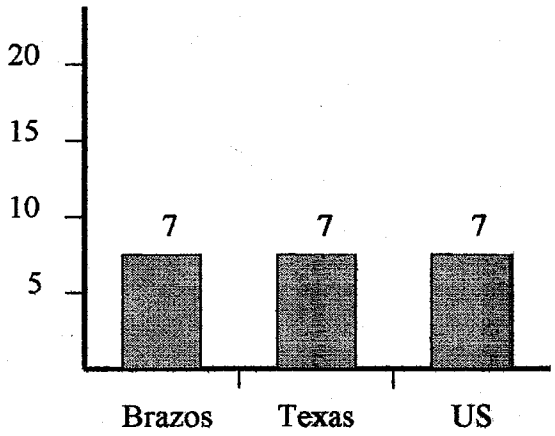
Scott E. Stewart

Stroke is one of the four leading causes of death among the elderly in the United States, and the leading cause of adult disability in the Industrial World. In 1998, in Brazos County, stroke accounted for 8% of all mortality.

Brazos County Deaths, 1998



Percentage of Deaths Caused by Stroke, 1997



Source: Texas Department of Health. (04/13/00). Data and Outcomes.

High Risk Population Profile of Stroke (National Health Center for Statistics)

- For each decade after the age of 55, the risk of stroke doubled in the nation.
- Past the age of 65, the risk of dying from stroke was seven times that of the general population in the United States.

Mortality Rates Caused by Stroke, 1997

Population	Population total (in 1000's)	Mortality (in 1000's) * except for Brazos Co.	Rate of Death (per 100,000)
US Total	267,744	158	59.011
US Female	134,430	97	72.156
US Male	130,760	63	48.180
US Blacks	33,973	18	52.983
US Whites	221,317	138	62.354
TX Total	19,355	10	51.666
TX Female	9,809	7	71.363
TX Male	9,546	4	41.902
TX Blacks	2,385	1	41.929
TX Whites	16,381	8	48.837
Brazos Co. Total	139	* 45	32.374

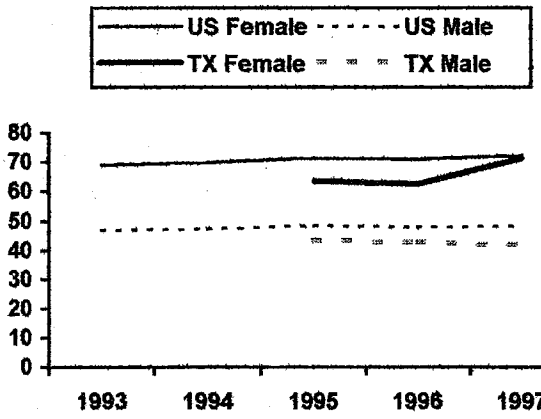
Sources: Texas Department of Health. (04/13/00). Data and Outcomes.
National Health Center for Statistics. (04/13/00). Vital Statistics.
US Census Bureau. (04/13/00). Estimates.
The National Stroke Association. (02/07/00). Stroke.

Note: Reported rates for stroke, by race and gender, were not available for Brazos County.

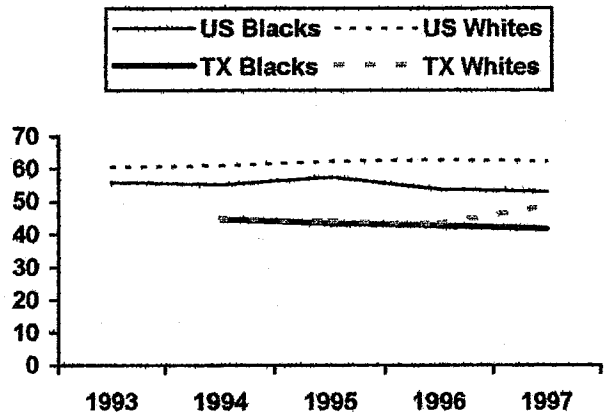
- Blacks have a lower mortality rate than Whites at the Texas and national level.
- Comparisons for Hispanics are difficult because they are not accounted for separately at the national level.
- Females at the Texas and national level suffer a death rate from stroke that is 50% higher than males.

Death Rate by Years

Male:Female Comparison

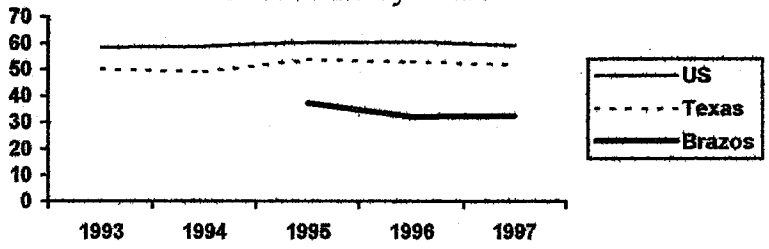


Black:White Comparison



Federal:State:County Comparison

Death Rate by Years



Sources: Texas Department of Health. (04/13/00). Data and Outcomes.
National Health Center for Statistics. (04/13/00). Vital Statistics.
US Census Bureau. (04/13/00). Estimates.

Implications of Stroke

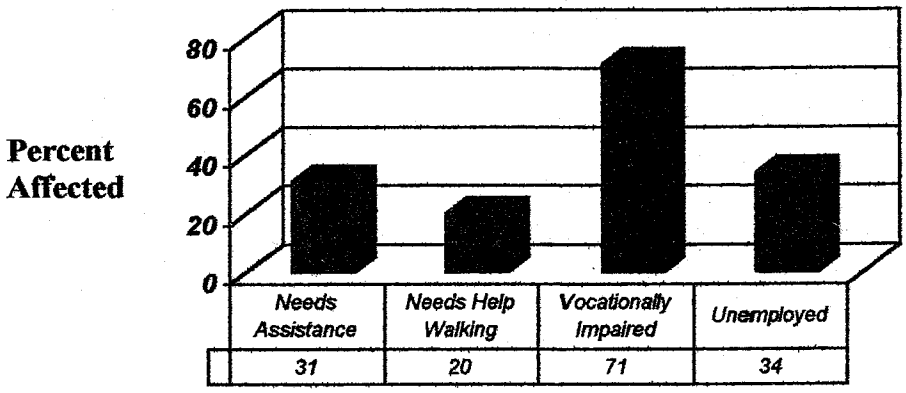
Mental Domains Affected by Stroke	After 1 Month After Onset
• Language 56%	• Language 37%
• Thinking 19%	• Thinking 37%
• Mood 19%	• Mood 21%

Social Domains Affected by Stroke	After 1 Month After Onset
• Family Roles 56%	• Family Roles 38%
• Mobility 31%	• Mobility 60%
• Work/Production 28%	• Work/Production 61%

Source: Williams, et al. 1999.

A poll taken in 1991, referred to as the Framingham Study, showed the following for the 2,930,000 stroke survivors, 7 years after their "brain attack", in the US:

Stroke Survivors' Impairment, US, 1991/1998



Source: The National Stroke Association. (02/07/00). Strokes.

Episode of Stroke and Associated Services

Phase	Service
Pre-Clinical	Physicians office; screening, prevention, education, and check-up
Clinical	Hospital; acute care
Rehab	Home and Specialists office; daily care, physical therapy, and periodic check-up

The two primary barriers, awareness and finances, affect the patient's access to screening - arguably the most important phase of treatment. A third barrier would be transportation, which primarily affects the elderly. Sustaining current prevention services is paramount to continued success in treating stroke. Improving access to transportation, community awareness, and financial assistance could only improve the community's ability to deal with stroke.

REFERENCE LIST

Text and Journals

Kubler-Ross, Elisabeth. 1991. *On Death and Dying*. New York City: Macmillan Publishing Company.

Millikan, Clark H., Fletcher McDowell, J. Donald Easton. 1987. *Stroke*. Philadelphia: Lea & Febiger.

Toole, James F., Aneel N. Patel. 1974. *Cerebrovascular Disorders*. New York City: McGram-Hill Book Company.

Williams, Linda S., Morris Weinberg, Lisa Harris, Daniel O. Clark, and Jose Biller. Development of a Stroke-Specific Quality of Life Scale. *Stroke* 30, no. 7 (1999): 1362.

Websites

American Heart Association. (02/06/00). Heart and Stroke A-Z Guide: Stroke. www.americanheart.org/

National Stroke Association. (02/05/00). All About Stroke: Type of Strokes. www.stroke.org/

Texas Department of Health. (02/09/00). Data and Outcomes. www.tdh.state.tx.us/

The Census Bureau. (02/11/00). Population Data. www.census.gov/

The Center for Disease Control. (02/09/00). Tabulated Data. www.cdc.gov/

The National Center for Health Statistics. (02/08/00). Statistics and Data Collection System. www.cdc.gov/nchs/

REFERENCE LIST

Website Links

1. US Stroke Mortalities:
   NHCS - Vital Statistics - Mortality Data - Tabulated Data - Statistical Tables About Death - GMWK250A - *Year*

2. Texas Stroke Mortalities; (Total, Race, 1994-1997):
   TDH - Data and Outcomes - Vital Statistics - Health Statistics - *Year* - Death Statistics - Table 16

3. Texas Stroke Mortalities; (Total, Race, 1993):
   TDH - Data and Outcomes - Vital Statistics - Health Statistics - 1996 - Table 18

4. Texas Stroke Mortalities (Gender):
   NCHS - Vital Statistics - Mortality Data - Tabulated Data - Statistical Tables About Death - GMWKIII - *Year*

5. Brazos County Stroke Mortalities:
   TDH - Data and Outcomes - Health Data - Texas Health Facts - *Year* - Brazos

6. United States Population (Total, Gender, Race):
   US Census Bureau - People - Estimates - National - Summary File No. 3 - Population Data

7. Texas Population (Total):
   US Census Bureau - People - Estimates - State - Chart No. 3

8. Texas Demographic Population (Gender):
   US Census Bureau - People - Estimates - State - Chart No. 10

9. Texas Demographic Population (Race):
   US Census Bureau - People - Estimates - State - Chart No. 12

10. Brazos County Population (Total, Race):
    US Census Bureau - People - Estimates - County - Chart No. 10 - "July 1, 1990 to July, 1998 Detailed Data File"

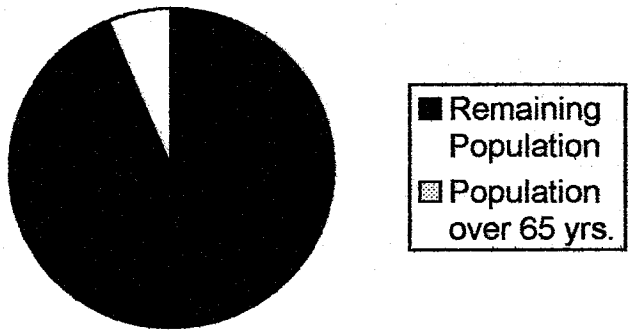
DAY CARE AND SUPPORT PROGRAMS

Scott E. Stewart

The Brazos County offers a wide spectrum of programs, both private and government, that provide assistance for those in need. These programs range from free to a sliding scale to fixed payment. While most programs are oriented towards the elderly, there are some programs that offer universal service to those of all ages.

Brazos County Population, 1997

8,937 (6%)



130,415 (94%)

Source: Texas Department of Health. (03/27/00). Data and Outcomes.

Total Agencies: 24

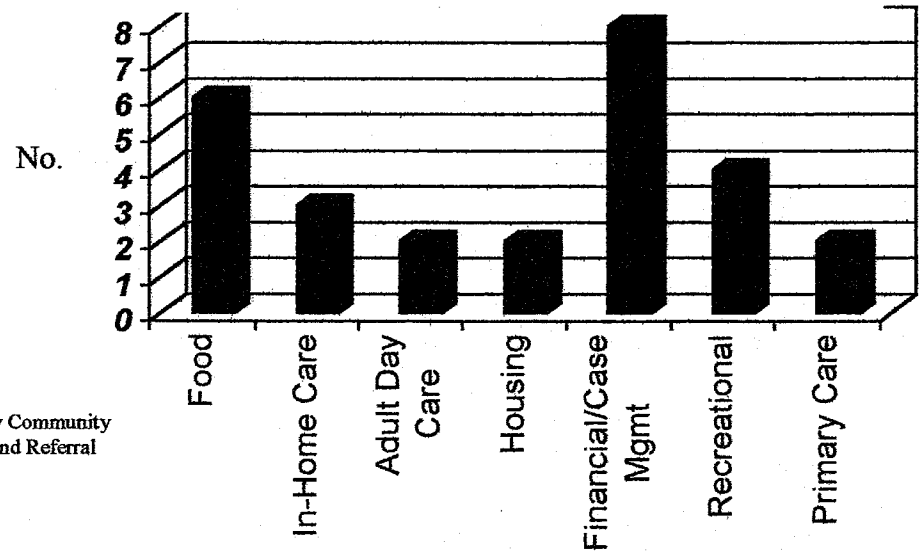
Agencies to Total Population Ratio
1:5806

Agencies to At-Risk Population Ratio
1:372

Service Programs Analysis

- 15 of the 24 services are free of charge.
- 1 of the 24 services operate on a sliding scale.
- 8 of the 24 services operate on a fixed payment system.
- 17 of the 24 services are oriented towards patients no younger than a certain age.

Total Number of Service by Type in Brazos County, 2000



Source: Brazos County Community Council, Information and Referral Service. 2000.

Day Care and Support Programs

AGENCY	SERVICES	ELIGIBILITY	FEE	HOURS	LOCATION	PHONE (409)	TRANS.	PERSONAL ERRANDS
Adult Protective Services	Investigate reports of abuse, neglect, and exploitation of elderly or disabled persons	65 years of age or older	None	M-F; 8-5	2400 Osborne Bryan, TX 77083	774-6740	N/A	N/A
Social Security Administration	Establish and maintain eligibility for Medicare, SSA retirement, and Suplemental Security Income	62 years of age or older	None	M-F; 9-4	4021 E. 29 Street PO Box 7200 Bryan, TX 77805	846-3768	All work done via telephone	N/A
Home Delivered Meals - BVCAA	Offers homebound senior citizens nutritionally sound meals	Over 60 years of age and homebound	Donations only	M-F; 8-5	203 W 30 Street Bryan, TX 77803	822-3684	Delivered	N/A
Community Café - TCM	Serves meals to men, women, and children	None	None	M-F; 12:15-5:15	503 N. Bryan PO Box 3490 Bryan, TX 77805	822-7511	N/A	N/A
Brazos Church Pantry	Volunteers who provide emergency food relief for the needy	Exist below poverty level	None	M,W; 1-3 T,R,F; 9:30-11:30 S; 10-12	304 W 26 Street PO Box 885 Bryan, TX 77806	822-2660	N/A	N/A
Lincoln Recreation Center	Recreational facility and workshops for senior citizens	Membership fees	$8.00 annually	M-F; 8-9	1000 Eleanor St. PO Box 9960 College Station, TX 77842	764-3770	Yes	N/A
Meals on Wheels, Direct - BVCAA	Serves meals to senior citizen's residence and senior citizen centers	Over 60 years of age	None	M-F; 7-5	203 W 30 Street Bryan, TX 77802	822-3684	Delivered	N/A
Years for Profit - BVCAA	Offers senior citizens nutrionally sound meals along with social and rehabilitative services	Over 60 years of age	$0.75 for lunch	M-F; 9-12:30	1000 Eleanor St. PO Box 9960 College Station, TX 77842	764-3779	Yes	Yes
Community Care for the Aged - DHS	Adult foster care, meals on wheels, home care services, and in-home and family support	Dependant upon age and income scale	None	M-F; 8-5	4000 E Villa Maria Bryan, TX 77806	776-1510	Yes, varies per service	Yes
Pines Adult Day Care - BVCAA	Provides positive day activities and health services for adults needing day supervision	Determined by the DHS. Private pay clients welcome	None for DHS clients; $4.25/hr for private pay	M-F; 7:45-5:45	100 W Brookside Bryan, TX 77801	268-7538	Yes	N/A

Day Care and Support Programs

Association of Home Health Care - BVCAA	Provides skilled medical personnel to render health care in the home	Anyone needing care ordered by a physician	Medicare, insurance, Medicaid, private pay	24 hours a day, 7 days a week	401 S Washington St. Bryan, TX 77803	779-5211	N/A	N/A
Health for All	Provides free medical, pharmaceutical, and vision care	Must meet HUD low-income guidelines	Donations only	Open weekdays by varying schedule	214 N Main PO Box 5913 Bryan, TX 77805	823-1466	N/A	N/A
Hospice Brazos County	Provide home medical care for terminal patient and emotional support for the family	Life expectancy of less than 6 months	None. Payments accepted when applicable	M-F; 8:30-5	205 E 29 Street Bryan, TX 77803	776-0793	N/A	Yes
Nursing Home Medicaid - DHS	Pays nursing home bill	Must be in nursing home and meet financial criteria	None	M-F; 8-5	3000 E Villa Maria Bryan, TX 77802	776-1510	N/A	N/A
Crestview Retirement Community	Retirement community apartments	Conducted through admissions	Based on sliding HUD scale; Medicaid	M-F; 8-5 S-S; 9-4	2505 Villa Maria Bryan, TX 77802	776-4778	Done through volunteers	Done through volunteers
Area Agency on Aging	Provides assistance with referrals to other agencies, benefits counseling, and in-home services	Over 60 years of age and based upon need	Donations only	M-F; 8-5	1706 E 29 Street PO Drawer 4128 Bryan, TX 77803	775-4244	Yes, varies per service	Yes, varies per service
Brazos County Senior Citizens Association	Provides social environment for the recreation of senior citizens	Over 55 years of age	$12.00 per year	M-F; 9-4	1402 Bristol Bryan, TX 77802	822-6873	N/A	N/A
Case Management - BVCOG	In-home visits and development of a care plan to assist person in obtaining services	Over 60 years of age	Donations only	M-F; 8-12 (noon), 1-5	1706 E 29 Street PO Box 4128 Bryan, TX 77805	775-4244	N/A	N/A
Elder Aid	Serves the elderly with transportation assistance, errands for the homebound, case management, and other complimentary services	Over 60 years of age	None	M-F; 8-5	1702-B S Texas Avenue Bryan, TX 77802	779-7250	Yes	Yes
Gold Medallion Club - SJRHC	Discounts for hospitalized patients, exercise classes, educational programs	Over 55 years of age	$20 per year; $30 for couples	M-F; 8-5	3030 E 29, Suite 102 Bryan, TX 77802	774-4653	N/A	N/A

Day Care and Support Programs

Lulak Oak Hill	Housing for the elderly	Over 62 years of age, or disabled, and meet HUD income guidelines	None	M-F; 8-5	1105 Anderson College Station, TX 77840	693-6676	N/A	N/A
Telephone Reassurance - BCCC	Daily calls to elderly and/or homebound to see how they are doing	Over 60 years of age, disabled, or homebound	None	M-R; 9-12 (noon), 1-4:30 F; 9-12 (noon)	307 S Main, Room 102 Bryan, TX 77803	822-1790	All work done via telephone	N/A
Senior Friends	Eduacational and social events to enhance the quality of life of senior citizens	Over 50 years of age	$15 per year; $25 per couple	M-F; 8-5	1605 Rock Prarie Rd., Suite 2 College Station, TX 77845	764-5107	N/A	N/A
Senior Health Center	Provides primary care, social services, nutrition counseling, and education	Over 65 years of age	Medicare, insurance, private pay	M-F; 8-5	1605 Rock Prarie Rd., Suite 1 College Station, TX 77845	764-5277	N/A	N/A

Source: Community Services Directory. 2000.

REFERENCE LIST

Unpublished Interview by the Author

Mason, Kay, registered nurse at the Senior Health Center. 2000. Interviewed by author, 8 March, College Station. Notes transcribed. The Senior Health Center, College Station.

Mink, Larry, case worker for Adult Protective Services. 2000. Interviewed by author, 24 March, College Station. Telephone Interview. Home residence, College Station.

Pena, Donna, manager for the Lincoln Recreation Center. 2000. Interviewed by author, 24 March, College Station. Telephone Interview. Home residence, College Station.

Robinson, Lois, manager for the Association for Home Health. 2000. Interviewed by author, 24 March, College Station. Telephone Interview. Home residence, College Station.

Davis, Barbara, manager for the Crestview Retirement Community. 2000. Interviewed by author, 24 March, College Station. Telephone Interview. Home residence, College Station.

Brown, Jenny, manager for Hospice Brazos Valley. 2000. Interviewed by author, 24 March, College Station. Telephone Interview. Home residence, College Station.

Mason, Kay, registered nurse at the Senior Health Center. 2000. Interviewed by author, 27 March, College Station. Telephone interview. Home residence, College Station.

Text and Journals

Brazos County Community Council, Information and Referral Service. 2000. *Community Services Directory*. College Station.

Websites

National Stroke Association. (02/05/00). All About Stroke: Type of Strokes. www.stroke.org/