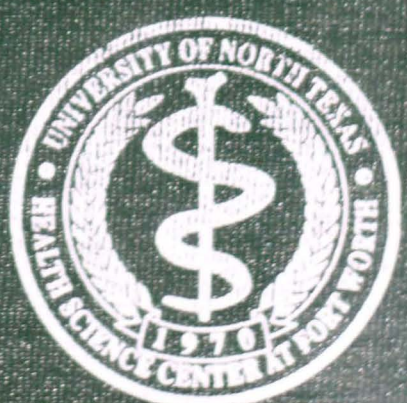
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DEMOGRAPHICS OF A UNIVERSITY BASED GERIATRIC MEDICINE HOUSE CALL PROGRAM

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DEMOGRAPHICS OF A UNIVERSITY BASED GERIATRIC MEDICINE HOUSE CALL PROGRAM

INTRODUCTION

There has been a steady decline in the frequency of house calls by physicians during the 20th century. The reasons most commonly given for not making house calls are time constraints and poor reimbursements for the amount of time spent (1). Unlike younger age groups, those 65 and older tend to have physical limitations that prohibit routine visits to clinics (2). In a university based geriatric practice, there is a subgroup of individuals who are unable to access health care or see a physician without considerable expense and effort via ambulance transportation services. Without a physician house call visit, these older adults would not have routine access to health care (3). The Gerontology Assessment and Planing Program (GAP) at the University of North Texas Health Science Center at Fort Worth (UNTHSC) is involved in providing a physician directed house call program.

By 2030, it is estimated that the older adults will comprise 25% of the total population (4). Encouraging independent living supported by community-based services will result in a greater number of homebound older adults requiring house calls by physicians (5). The challenge is to determine those likely to require house call services and the medical conditions and physical disabilities leading to the need for in home services. To understand the conditions and needs of these geriatric patients, a retrospective chart review was conducted. The study reviewed the demographic

characteristics of the patients seen through the house call program, prevalent sources of referrals, health assessment at the point of admission into the house call program, profile of primary care givers and factors in the decision making process that physicians used to place patients on the service. Outcome data are presented including hospital admissions and deaths while on the house call program.

METHODS

A retrospective chart review was conducted of all patients currently being seen through the house call program at the Division of Geriatrics at UNTHSC at Fort Worth in 1998. These charts show that 25 patients have been active in the house call program from January 1991 to January 1998. The service area was limited to the metropolitan area of Fort Worth within Tarrant County. Traditional demographic data were collected including gender, age and ethnicity. All charts were reviewed to determine health status; assessment data collected included prevalent medical conditions, current medications, Mini Mental Status Examination (MMSE), and mobility status obtained from the comprehensive assessment completed when the patient entered the geriatric practice. From the patient medical records, outcome data were collected on the medical causes of death and admissions to nursing facilities and hospitalizations. Health insurance information and use of community-based home health services were also collected.

ANALYSIS AND RESULTS

Using the Statistical Package for Social Sciences (SPSS) 8.0, analysis included frequencies to obtain descriptive information. Data were gathered and coded in binary

format by one person thus minimizing the likelihood of variability or errors in defining of categories and coding. Because the entire population of patients currently in the house call program was studied, inferential statistical methods were not used.

Social Demographics

The patients' current involvement with the house call program ranged from 8 months to 85 months. All were urban residents of Fort Worth. Table 1 reports the gender distribution of this cohort.

Table 1: Gender Distribution

Gender	Percentage
Male	12%
Female	88%

The gender representation of the study cohort reflects the longevity of women over men as age increases. For this study, "older adults" is defined as those 65 years and older. Table 2 shows the distribution by age range for the study population when compared with Tarrant County demographics (6).

Table 2: Age Distribution
Study Cohort and Tarrant County

Age Range	Study Cohort	Tarrant County
<65	4%	91%
65-74	16%	5%
75-84	32%	3%
85 +	48%	1%

The 1990 Census Report shows that approximately 8.3% of the population in Tarrant County are 65 and older (5). This study included only older adults. The mean age of the study group was 84 years with an age range of 44 to 106. What should be noted is that while the percentage declines as age increases, for the study cohort, there is a dramatic increase in percentage of house call patients with increase in age. Clearly the house call program is serving an appropriate age cohort determined to remain within independent living environments. The UNTHSC Gerontology Assessment and Planning Program cares primarily for the Medicare eligible 65-year-old population or those who are functionally impaired. One person in the study was under the age of 65. The oldest age group (85-106) accounted for almost half of the house call study population.

The ethnic distribution of the study cohort and Tarrant County are shown on Table 3 (6). The study population appears to be representative of older adults in Tarrant County.

Table 3: Ethnic Distribution

Ethnicity	Study Cohort	Tarrant county*
Caucasian	84%	86.6%
African American	12%	9.31%
Hispanic American	4%	3.38%
Asians	0	.68%

*Percentage of total population; 65+.

Patients on house call programs are committed to living independently (not in long term care facilities) and are likely to require assistance from someone else in the

household or neighborhood. Of the 438,634 households in Tarrant County, 5% are households with one person who is 65+ and 16% are households with 2 or more persons who are 65+(6). It is recognized that most older adults do not participate in a house call program. However, these data indicate that many older adults reside with someone else and are likely to receive assistance from those family members to access health care services. Eighty-eight percent of those included in this study lived with a family member or friend while 12% lived alone. Of those living with someone, 44% lived with an adult child, 16% with a spouse, and 28% with a non-family member, either significant friends or paid helpers.

A further demographic characteristic of this study group is the type of insurance used as payment for health care services. Table 4 shows the distribution of primary insurance for the study group.

Table 4: Insurance

Type	%
Medicare	88%
Medicaid	0%
HMO	8%
Private Insurance	4%

Prior Health Care and Sources of Referral

Prior to entering the house call program, the patients' site for health care included ambulatory clinics 88% of the time. Eight percent received no health care and 4% came

directly from the hospital. Patients gained entry into the program by referral from UNTHSC Geriatric Assessment Program (GAP) physicians 56% of the time, another physician 20% of the time, family preference 16%, family care conference at UNTHSC (GAP) and hospital discharges, 4% each.

After enrolling in the house call program, the physician completed a comprehensive assessment in the patient's home. The geriatric comprehensive assessment included evaluation of the impairments of patients in multiple areas. The comprehensive assessment data consisted of coexisting medical problems, complete medication lists, nutritional status, cognitive and emotional function, mobility and continence status. At the time of the initial assessment the physician decided if any in-home referrals were needed for community based services. Ancillary services were an integral part of patient management. Eighty-eight percent of the patients were referred for ancillary services, which included home health and hospice. The physician made follow up home visits to the patient's house on a four-month cycle. There were no emergency calls made.

Baseline Medical Diagnosis

The typical house call patient has multiple medical problems (Table 5). The most common medical diagnosis was dementia occurring in 68%. Hypertension occurred in 48% of the patients. A history of cerebral vascular accidents and gastrointestinal problems occurred 40% of the time in these patients. Other medical conditions listed occurred in less than 40% of the patients.

Table 5: Baseline House Call Program Diagnoses

Diagnosis	Percentage
Dementia	68%
Hypertension	48%
Gastrointestinal Problems[a]	40%
Cerebral Vascular Ischemia [b]	40%
Congestive Heart Failure	36%
Psychiatric Disorders[c]	36%
Visual Impairment	32%
Urinary Incontinence	32%
Chronic Obstructive Pulmonary Disease	28%
Neurologic Disorders	28%
Peripheral Vascular Disease	20%
Diabetes	20%
Coronary Heart Disease[d]	16%
Malignancy	12%
Amputations	8%
Chronic Renal Failure	4%
Infectious Disease[e]	4%

[a]Ulcer or GI Bleeding.

[b]Complete strokes.

[c]Depression, agitation, excludes dementia.

[d]Including angina, myocardial infarction.

[e]Includes pneumonia, urosepsis, pyelonephritis, urinary tract infection.

Medication Use

The patients involved in the house call program require multiple medications. The medications are reviewed on entry to the program. The frequency of medications used by this cohort is noted in Table 6. Only four percent of the patients were on no medications. Eight percent were on two medication categories, 20% were on three medications, 24% were on four medications, 12% were on five medications, 8% were on six medications, and 24% were on seven or more medication categories. Sixty-eight percent of the patients were admitted into the program on five or fewer categories of medications. This is similar to the study performed on geriatric patients utilizing medications for chronic medical problems by Perkel, et.al, which found that 75% of house call patients were taking five or less drugs (7).

Table 6: Medication Categories at Time of Entry to the House Call Program.

Medication	Percentage
Diuretics	44%
Gastrointestinal Medications	44%
Antihypertensive	44%
Cardiovascular [Digoxin, anticoagulant]	40%
Hormone Medications	36%
Vitamins	32%
Otolaryngology Medications	24%
Antipsychotic	24%
Pain Medications	24%
Pulmonary Medications	20%
Neurological Medications	20%
Antidepressant	20%
Antiinfective	12%
Dermatological	12%

Mobility Status

The mobility status of the patients was divided into three categories: (1) bed bound; (2) mobility independent; and (3) minimal assistance. Forty percent of the patients involved in the house call program were bed bound, 44% were in need of assistance and only 16% were independent. Independent mobility status patients were in this program because they had either limited available transportation and/or a geographic location near other patients who were not independent in mobility status and on the house call program.

Hospital Admissions, Death and Withdrawals from the Program

The review evaluated the number of hospital admissions from 1994 to 1998 beginning in January of each year. Some patients were on the house call program longer than this four-year period. In January to December 1994, there were no admissions due to initiation of the small number of patients. In January to December 1995, there were two admissions. In January of 1996 to December of 1996, there were eight admissions. In January of 1997 to December of 1997, there were eleven admissions.

The program reviewed of the number of emergency room evaluations with one occurring in the calendar year of 1994, two in January to December of 1995, and eight in January to December of 1996, and five in January to December of 1997. The increasing number of hospital admissions and emergency room visits reflects the growth of the program. Withdrawals from the program occurred for two reasons: moved (4%) and

death (16%). There were four deaths during the eight-year span covered by currently enrolled patients. The cause of death in the four patients was infection related (urinary tract infection and sepsis).

DISCUSSION

The age range of this program is expected. The oldest old has the greatest frailty and functional impairment (8). While the house call patients are living at home, they appear to require someone living with them and depend on community-based ancillary services to continue living at home. Remembering that this study includes a very small sample size, generalization beyond the study would be inappropriate. Previous studies cited in this paper tended to include larger sample sizes or studied different aspects of the house call programs. As an example, Meyer, et al. found that 94 % of the house call patients came from their established patient population; in contrast, 54% of this study population were similarly referred (9). This review compares to data from another study done on geriatric patients with chronic medical problems. Relative to diagnosis, Perkel, et. al, found that 75% of house call patients were taking five or fewer drugs (7). The data trend of this review demonstrated a principal diagnosis of 68% dementia, 48% hypertension, and 40% for cerebral vascular ischemia or gastrointestinal problems. This differs from the data presented in the study conducted by R. Perkel, which demonstrated 61% had hypertension, 40% heart disease, 27% gastrointestinal pathology, and 29% cerebral vascular ischemia (7). The diagnosis of dementia was statistically significant in the difference between this study cohort and Dr. Perkel's study population to an alpha of.05.

The difference in the trends of the data may reflect the emphasis of our department on dementia. A large portion of the house call patients was referred from the Geriatric Assessment Program.

There were 4% Hispanic and no Asians involved in the program, while Hispanics make up almost 3.38% of the population and Asians 0.68% of the population (6). There was no statistical difference between Tarrant County and the study cohort ethnic percentage to an alpha of .05. This data indicates several possibilities. These populations are aware of the program. The Asian groups may have cultural or language barriers to seeking out medical care, especially at a university setting. An outreach program to the Asian community could help this problem. Assuming the presence of increased fiscal and personnel resource demands, this would require an increase in the financial support to the house call program to meet the increased use.

The number of admissions to the hospital and emergency room visits increased; this may reflect an increase in the program size and the chronic illness of the study population. Since there is no provision of urgent house calls by physicians, this commitment could further reduce hospital admissions. This may not reduce total costs as home care costs would rise but hospital costs would decrease (10).

If this program were expanded, it would open a new area of training instruction for residents and students. The students and residents could be exposed to the joys of family care and love in a home setting allowing trainees to see how patients live in their own context. They would be exposed to training away from the sterile hospital to a real life

situation of chronically ill people with multiple problems who are struggling at home to deal and cope with these problems. The determination of the value of a house calls program is no easy task. For the caregiver and families, this is a way they can receive care in the most efficient and least traumatic way to their loved ones. To the physician involved, it offers a new style of practice with many challenges and rewards not available in a hospital or clinical setting.

A further recommendation would be to increase the current reimbursement to physicians from $45.86 for house call visits on established patients to a level of $90 to $100 to encourage more physicians to take part in this type of practice. This would be justified since each house call takes approximately sixty minutes to complete due to travel time to the patient, complexity of management for patient with multiple chronic diseases and functional impairment.

The importance of house call programs to older adults will only grow as the population ages. Programs of house call visits will allow older adults to remain out of institutions longer and may allow patients to stay at home until their death.

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