

**Hospital Emergency Department Use in Travis, Hays
and Williamson Counties
1999 – 2001**

**By
Sandy Coe Simmons and Paul Gionfriddo
Indigent Care Collaboration**

January 2003

About the ICC and the Authors

The ICC is a collaboration of twelve safety net health providers in the three county region of central Texas aimed at developing affordable access to effective health care for all residents. The ICC was formed in 1997, and has worked to develop a variety of strategies to improve care delivery in the area since that time. The ICC receives funding from the federal Health Resources and Services Administration (HRSA) under their *Community Access Program (CAP)* as well as a *Communities in Charge* grant from the Robert Wood Johnson Foundation. Funds from both of these agencies helped to support the development of this report.

The data for this report were provided by ICC members in Travis County, Hays and Williamson Counties. Additional data were provided by two non-ICC member hospitals in Williamson County. This report was written by Sandra Coe Simmons, M.A., Director of Research and Evaluation for the ICC, and editorial assistance was provided by Paul Gionfriddo, Executive Director of the ICC. Questions about the report may be directed either to Ms. Simmons or to Mr. Gionfriddo at the ICC, at either 512-927-2677 or www.icc-centex.org.

Executive Summary

In a continuing series of studies and analyses for the communities of Central Texas, the Indigent Care Collaboration (ICC) recently participated in a study of Emergency Department (ED) data of eleven area hospitals in Travis, Hays and Williamson counties.

The following key questions were addressed by this analysis:

❖ Who uses Hospital Emergency Departments?

Hospital emergency departments are used by commercially insured¹, self-pay, Medicaid, and Medicare and other populations. Adults aged 18 – 64 had a total of over 675,000 visits for the three years from 1999 – 2001. Of these visits by adult patients, just over half (341,000 over the three year period) were by patients with commercial insurance, followed by self-pay patients with one-third (34%) of the total visits. The remaining adult ED visits were by Medicaid patients (7%), and all other payers (8%).

Visits by patients of all ages increased by nearly 12%, from 342,000 visits in 1999 to 382,000 in 2001, for a total of just over 1 million for all three years. Adult patients (age 18 – 64) accounted for nearly two-thirds (62%) of the overall visits each year, while children (age 0 –17) accounted for almost one-third (30%) each year, and elder patients (65+) represented the remaining 8% of the overall number of visits.

Visit data also reveal that the number of visits to Travis County hospital EDs by non-Travis County residents has steadily increased from 1999 to 2001. Similarly, there has been a consistent amount of ED visits to Williamson County hospital EDs by Travis County residents during the three-year time period. The number of ED visits to Hays County hospital EDs by Travis County residents, however, represents a much lower percentage of their overall number of visits.

❖ Which populations account for the increase in Hospital Emergency Department Use?

Overall, hospital emergency department use increased by 6% between 1999 and 2000 among adults and by 5% between 2000 and 2001. Around 65% of the increase in adult use from 1999-2000 was attributable to an increase in commercially insured patients, but approximately 85% of the increase from 2000-2001, which was roughly the same time frame when area primary care providers began to report severe stress on their systems of care, was attributable to an increase in self-pay or Medicaid patients.

¹ Commercially insured includes both commercial Managed Care (HMO and PPO) and Indemnity plans.

Emergency department use increased by 3% from 1999 to 2000 among children and 9% between 2000 and 2001. Most of the overall increase in use by children occurred among children either on Medicaid or other governmental sources of support, including the State Children's Health Insurance Program (SCHIP).

❖ *Are self-pay (i.e., uninsured) patients more likely to use Emergency Departments?*

Self-pay patients are more likely to use EDs. While the largest number of users of emergency departments is that of the commercially insured, the most over-represented group using hospital emergency departments is the self-pay group, which for the adult population (age 18 – 64) accounts for 34% of the visits but only 25% of the adult population (age 19 – 64) in Central Texas in 2000.

❖ *Are self-pay patients more likely to misuse Emergency Departments?*

This research is not designed to measure “misuse” of emergency departments. These data do suggest, however, that self-pay patients utilize the emergency departments in nearly the same manner that commercially insured patients use emergency departments. Just as in the commercially insured population, approximately half of the visits for self-pay patients were found in the analysis to be preventable or avoidable². Utilization patterns by time of day and by gender were also very similar between self-pay and commercial patients.

On the other hand, for both uninsured children and the entire Medicaid population, most of the ED visits were considered preventable, and gender and utilization patterns are generally distinct from either self-pay or commercial patients.

❖ *What can be done to reduce burden on hospital emergency departments?*

There is no single solution to this complex problem. However, we estimate from this analysis that 10,000 to 15,000 *excess* visits to emergency departments among self-pay adults could be handled in community-based settings if more community-based non-emergency care were available and accessible to this population. The problem is that safety net primary care providers are already overstressed – a recent ICC report³ indicated that they are already 6% over capacity. While providers have stepped forward, increasing clinic capacity and launching the utilization of volunteer providers through Project Access, it is clear that more will need to be done. Because all classes of patients are in the EDs together, system and region-wide solutions will be needed that affect us all.

²As defined by the NYU ED data algorithm. See Introduction for algorithm definitions.

³“Recent Trends in the Use of and Capacity for Primary Health Care Services Among Travis County Safety Net Providers”, May 2002

Introduction

As a companion to an earlier report reviewing use and capacity in Travis County safety net primary care providers, the ICC undertook an analysis of emergency department use in a set of Travis, Hays and Williamson County hospitals.

The ICC conducted their analysis based upon an Emergency Department (ED) data algorithm developed by the Center for Health and Public Service Research at the Robert F. Wagner School of Public Service at New York University (NYU). The ICC membership includes four hospitals within the St. David's Healthcare Partnership network, and five hospitals within the Seton Healthcare Network, which have hospitals in Travis and Williamson counties. One of the hospitals within the Seton Healthcare Network was not included in this study since it was not in operation during the entire timeframe of the study.

The ICC membership also includes the only hospital in Hays County, Central Texas Medical Center. The ICC also approached the two other major hospitals in Williamson County for this study, namely, Georgetown Healthcare System in Georgetown, and Johns Community Hospital in Taylor. Hospital ED data from 1999 through 2001 for these hospitals and systems were subjected to the NYU data algorithm. Data set included all 1999-2001 ED visits except those of the Heart Hospital of Austin, which represented only 1.3% of the total for the whole tri-county area.

The NYU algorithm categorizes ED visits into one of four categories. These categories were developed based on sample ED data that captured a patient's initial complaint, vital signs, procedures performed and resources used in the ED, and the final discharge diagnosis. Alcohol and drug related diagnoses, mental health diagnoses, injuries and poisonings and anything that is not classified on the ED record are tracked in separate categories as "Other" ED visits. The four categories are defined as:

- ❖ Non-Emergent – based on information on the record, care was not needed within 12 hours.
- ❖ Emergent, Primary care treatable – treatment was required within 12 hours, but care could have been provided in a primary care setting.
- ❖ Emergent, ED Care required but Preventable/Avoidable – emergency care was needed, but the condition may have been potentially preventable or avoidable had effective or timely primary care services been available. For example, a diabetic flare-up would fit into this category.

- ❖ Emergent/ED Care need, not Preventable/Avoidable – emergency care was needed and could not have been prevented, such as appendicitis or heart attacks.

The first three categories listed above are considered “preventable” visits for the purposes of this report.

The data gathered for this report included data about children, adults, and elders, including commercially insured, Medicaid, self-pay, and other populations. The primary focus of this report, in keeping with the mission of the ICC, however is on the use patterns of the uninsured, or self-pay adult population. While most of the conclusions that can be drawn from the data will be left to the reader, it will be clear that meeting the needs of the uninsured present some vexing problems to providers and policy leaders alike, both the Medicaid and commercially insured populations present challenges of their own, and these will also need to be addressed as part of any local community system-wide solution.

Narrative

Utilization

Hospital ED use overall increased by nearly 12%, from over 342,000 visits in 1999 to over 382,000 visits in 2001, in a sample of eleven hospitals serving Travis, Hays and Williamson Counties.

62% of visits to EDs during this three-year period from 1999 to 2001 were by adults, (ages 18 to 64.) Almost one-third, 30%, of the visits were by children (age 0 to 17). The remaining small percentage was for elders (age 65 and older.) Among all three groups combined, ED visits increased by 5% between 1999 and 2000, and by 6% between 2000 and 2001. See Figure 1.

Number of ED Visits by Children, Adults, and Elders (1999-2001)

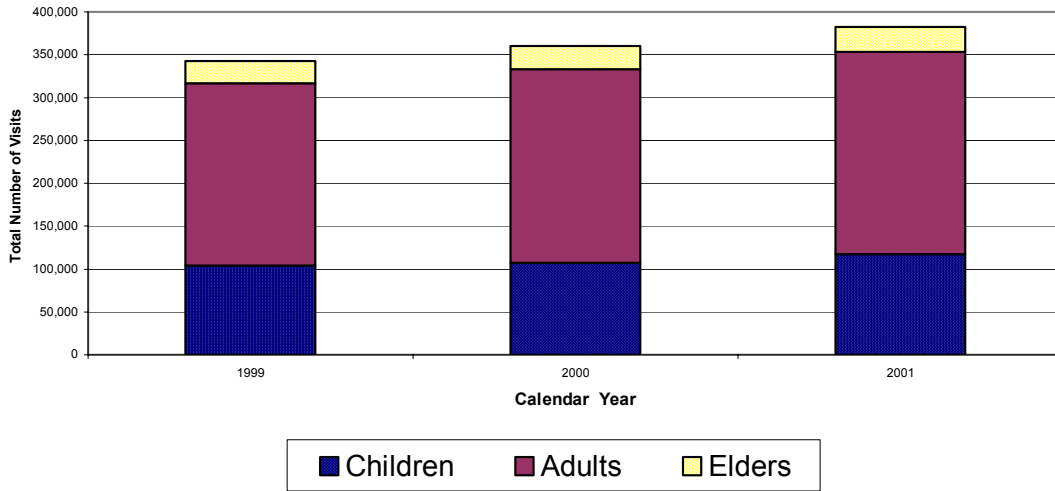


Figure 1

Between 1999 and 2001, the hospitals in the study experienced an increase in ED use by adult patients from nearly 213,000 visits to over 236,000 visits. ED use among adults increased by 6% from 1999 to 2000, and by 5% from 2000 to 2001. Nearly two-thirds of the increase in between 1999 and 2000 was attributable to an increase in the number of commercially insured patients seen, but *nearly 85% of the increase between 2000 and 2001 was attributable to an increase in the number of self-pay and Medicaid patients seen.* See Figure 2.

Percent of ED Use Attributable to Payor Source

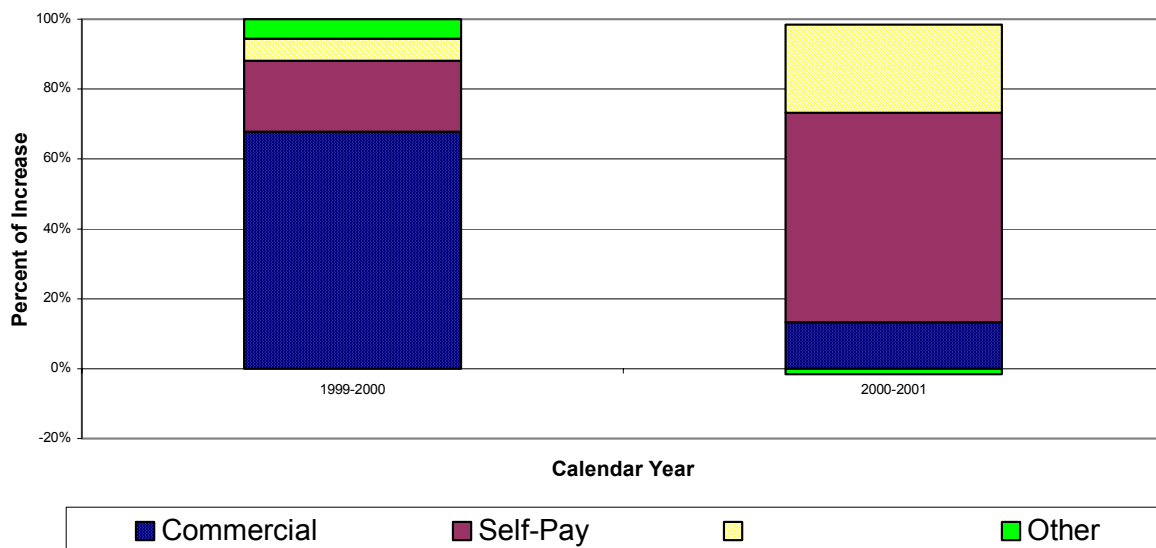


Figure 2

The task of absorbing the increase in self-pay adult patients over the two-year period was distributed among the hospitals in the study. Nine of the eleven hospitals participating in this study experienced an increase in the number of self-pay patients from 1999 to 2001. Six of the eleven hospitals had double-digit increases in self-pay adults during this time, ranging from 14 to 44%.

Among self-pay adult patients using the ED in Central Texas, the greatest growth between 1999 and 2001 was at the Round Rock Medical Center, with a 44% increase. The North Austin Medical Center, and Central Texas Medical Center (CTMC) had the second largest percentage increase in adult self-pay patients, with 30%, and the Georgetown Healthcare System was a close third with a 29% increase. The most consistent growth during the two-year period occurred at Round Rock Hospital, St. David's Medical Center, North Austin Medical Center, CTMC and Johns Community Hospital in Taylor.

Self-pay adult patients accounted for approximately one-third of ED visits during all three years. However, the percentage of uninsured persons in the population at large was estimated to be between 20% and 30% of the population during the study years. If the additional percentage were considered to be a measure of "excess" ED use among that population, then an estimated 10,000 to 15,000 visits in 2001 could have been handled in primary care settings, *if* there had been more room and the patients had known they could potentially go there for care.

The actual number of visits for children increased from over 103,000 in 1999 to 107,000 in 2000 to almost 117,000 in 2001. Most of the increase between 2000 and 2001 occurred among children either on Medicaid or other governmental sources of support, including SCHIP.

Uninsured adult patients are over-represented in Hospital Emergency Departments, and this means a more substantial part of their cost of care must be absorbed by the hospitals directly. Historically, hospitals have been able to shift some of this burden to commercial insurers, but over the past two decades, with both managed care and utilization review more prominent parts of the health care landscape, cost-shifting has been much more limited. In addition, with fewer than half the patients paying "full freight" to begin with, there are fewer commercial insurers to whom any costs can be shifted at all.

The two largest groups of adult ED users were commercially insured patients (49%) and self-pay, or uninsured, patients (32%). The remaining users were Medicaid patients or those covered by other sources of funding. Overall, these percentages suggest that self-pay patients are over represented in the EDs, and commercially insured patients are under represented.

For the three year time period, for adults (age 18-64):

- ❖ Commercially insured patients had just over 341,000 visits (50% of all adult ED visits)
- ❖ Self-Pay patients had over 227,000 visits (34%)
- ❖ Medicaid patients had just over 50,000 visits (7%)
- ❖ Patients of all other payer types had just over 55,000 visits (8%)

Data from the Kaiser Family Foundation for 1999-2000 indicate that 68% of adults (age 19-64) in Texas had commercial health insurance through an employer or individual insurance policy. According to the most current data available from the Texas Department of Health, 25% of the adult population (19-64) in Travis County in 2000 had no health insurance, and 8% of the county's population was Medicaid eligible. For Williamson County, 21% of the adult population had no health insurance and 5% were Medicaid eligible in 2000. Twenty-seven (27) percent of adults age 19-64 in Hays County did not have health insurance, and 7% of their adult population was Medicaid eligible.

Avoidable versus Emergent Visits

The algorithm utilized in this ED use analysis does not measure misuse or inappropriate use of Emergency Departments in and of itself. Non-emergent ED visits however may reflect a provider shortage, a patient's lack of understanding as to how to manage their chronic disease, or a care seeking preference of the patient in general.

About half the ED visits for the entire commercially insured population and the adult self-pay populations were considered preventable. However, for both uninsured children and the entire Medicaid population, nearly two-thirds to three-fourths of the ED visits were considered preventable.

For example, in 2000, 50% of all ED visits by commercially insured adult patients were for emergency visits that the study's analysis determined to be preventable or avoidable, while 12% were considered emergent, not preventable and the remaining 37% were considered other visits (Other visits are defined by the study as: alcohol and drug related diagnoses, mental health diagnoses, injuries and poisonings and anything that is not classified. These diagnoses were found to be inconsistently coded, or were unclear as to whether or not they were truly emergent or not.) Among the adult self-pay population in 2000, very similar results were found as 51% of the ED visits were preventable, 9% were not preventable, and 40% were for other visits. See Tables 1 and 2. While the percentage of truly emergent visits to the ED varies slightly between the two groups, the percentage of preventable ED visits is very consistent between the two.

Table 1
Summary of
Commercially Insured Adult
ED Visits by Year
 (due to rounding, not all totals add to 100%)

Calendar Year	Total Preventable	Total Emergent	Total Other
1999	51%	12%	36%
2000	50%	12%	37%
2001	51%	13%	36%

Table 2
Summary of
Self-Pay Adult ED
Visits by Year
 (due to rounding, not all totals add to 100%)

Calendar Year	Total Preventable	Total Emergent	Total Other
1999	51%	9%	40%
2000	51%	9%	40%
2001	52%	10%	38%

The adult Medicaid population utilization was significantly different in 2000, however, with 60% of all adult Medicaid ED visits being preventable, 11% being true emergencies, and 28% being other visits. In other words, the data suggest that even though adult Medicaid recipients often have a primary care provider and/or a source for primary care services, they are still more likely to use hospital emergency departments than either the uninsured or commercially insured individuals. In fact, 9 of the 11 survey hospitals had double-digit increases in adult Medicaid visits between 1999 and 2001, ranging from a “low” of 16% to a 71% increase in the two year time span. The overall increase across all the study hospitals was 23%.

A breakdown of the Other ED Visits by payer type reveals that the majority of all Other ED visits fall under the category of Injury or Poisoning. According to the researchers at NYU, alcohol and drug related diagnoses, mental health diagnoses and injuries and poisonings were not included in their algorithm because they could not be confident of their categorization based on the data they received from the medical record. In other words, a laceration, sprain or broken bone may be primary care treatable if they are not too deep or severe, but that distinguishing information was not available in the data submitted, so these items were excluded from the “Preventable” vs. “Emergent” categorization. The researchers are reconvening

their ED physician panel to study this further, and hope to resolve this issue in later versions of the algorithm.

Table 3
Summary of
Medicaid Adult ED
Visits by Year
 (due to rounding, not all totals add to 100%)

Calendar Year	Total Preventable	Total Emergent	Total Other
1999	61%	11%	28%
2000	60%	11%	28%
2001	61%	11%	28%

For children, a clear majority of ED visits were considered preventable for both the Medicaid and the self-pay populations, but not so for the commercially insured child. See Tables 4 - 6. In 2000, 73% of all Medicaid visits for children and 63% of all Self-pay children ED visits were preventable. Commercially insured children ED visits, however, were only 49% preventable across all ICC study hospitals.

Table 4
Summary of
Commercially Insured Children
ED Visits by Year
 (due to rounding, not all totals add to 100%)

Calendar Year	Total Preventable	Total Emergent	Total Other
1999	50%	6%	44%
2000	49%	6%	45%
2001	50%	7%	43%

Table 5
Summary of
Self-Pay Children
ED Visits by Year

(due to rounding, not all totals add to 100%)

Calendar Year	Total Preventable	Total Emergent	Total Other
1999	64%	6%	30%
2000	63%	6%	31%
2001	64%	7%	29%

Table 6
Summary of
Medicaid Children
ED Visits by Year

(due to rounding, not all totals add to 100%)

Calendar Year	Total Preventable	Total Emergent	Total Other
1999	73%	7%	20%
2000	73%	7%	20%
2001	74%	8%	19%

A further breakdown of these data reveal that the total preventable visits are primarily comprised of Non-Emergent and Emergent but Primary Care treatable visits, as shown in Table 7. This utilization pattern may reflect all parents' anxieties when faced with a child with a high fever, a recurring ear infection, or perhaps a serious stomach virus. If primary care clinics are closed, or an appointment is not available and/or a nurse triage call center hotline services are unavailable, the parent may see the ED as their best option.

Table 7
Breakdown of Total Preventable ED Visits
Among Children Age 0-17 by Payer in 2001

Payer Type	Non-Emergent	Emergent, Primary Care Treatable	ED Care Needed, but Preventable
Medicaid	27%	37%	10%
Self Pay	25%	30%	8%
Commercial	21%	22%	8%

Time-of-Day Use Patterns

The adult population utilization patterns for the ED by time of day are also very similar for self-pay and commercially insured patients, with only minor variations. Generally, the percentages of preventable visits were at their peak in the mornings but decreased throughout the day when access to community-based primary care services should have been more available. Commercial patient's percentage of preventable visits increased again during the overnight hours (10pm to 6am), while the increase for self-pay patients during this time period was more often for truly emergent or other visits than preventable visits. See Tables 8 and 9.

Table 8
Commercial Adult Patient Visits 1999 – 2001
by Time of Day

Time of Day	Total Preventable	Total Emergent	Total Other
6:00 am – 9:00 am	56%	15%	29%
9:00am – 12:00pm	53%	13%	34%
12:00pm – 5:00pm	50%	12%	38%
5:00pm – 10:00pm	49%	11%	40%
10:00pm – 6:00am	51%	14%	35%
All Hours	51%	12%	36%

Table 9
Self-Pay Adult Patient Visits 1999-2001
by Time of Day

Time of Day	Total Preventable	Total Emergent	Total Other
6:00 am – 9:00 am	56%	11%	33%
9:00am – 12:00pm	54%	10%	36%
12:00pm – 5:00pm	52%	9%	39%
5:00pm – 10:00pm	51%	9%	40%
10:00pm – 6:00am	48%	10%	42%
All Hours	51%	10%	39%

Neither of these trends held true of the Medicaid population, however, where the time of the visit made little difference in whether or not it was determined to be

preventable. See Table 10. For the adult Medicaid population, the data are consistent and nearly constant throughout the day. Regardless of the time, nearly two-thirds of all visits were preventable.

Table 10
Medicaid Adult Patient Visits 1999-2001
by Time of Day

Time of Day	Total Preventable	Total Emergent	Total Other
6:00 am – 9:00 am	63%	11%	26%
9:00am – 12:00pm	62%	11%	27%
12:00pm – 5:00pm	61%	11%	28%
5:00pm – 10:00pm	61%	11%	29%
10:00pm – 6:00am	59%	13%	28%
All Hours	61%	11%	28%

Gender Use Patterns

The ED utilization patterns were also similar between the commercial and Self-pay adults in terms of gender. Fifty-eight (58%) of the total adult self-pay ED visits by females were preventable, 10% were truly emergent, and the remaining one-third (32%) were other visits, primarily Injuries or Poisonings (23%). Among adult self-pay males, 44% of all ED visits were preventable, 9% were emergent, and 47% were other visits. For commercially insured adults, the numbers were very similar, with 56% of female visits being preventable, 12% emergent, and 32% being for other issues, such as Injuries or Poisonings (24%). Adult male commercial visits were 45% preventable, 13% emergent and 43% were for other issues.

Again, the Medicaid adult population varied slightly in their utilization patterns by gender from the self-pay or commercially insured adult patients. Both male and female adults on Medicaid had higher rates of preventable visits with 55% and 62% respectively. Both male and female adult Medicaid patient visits were truly emergent 11% of the time, and other visits accounted for 34% and 27% of the remainder of all visits respectively.

Regional Use Patterns

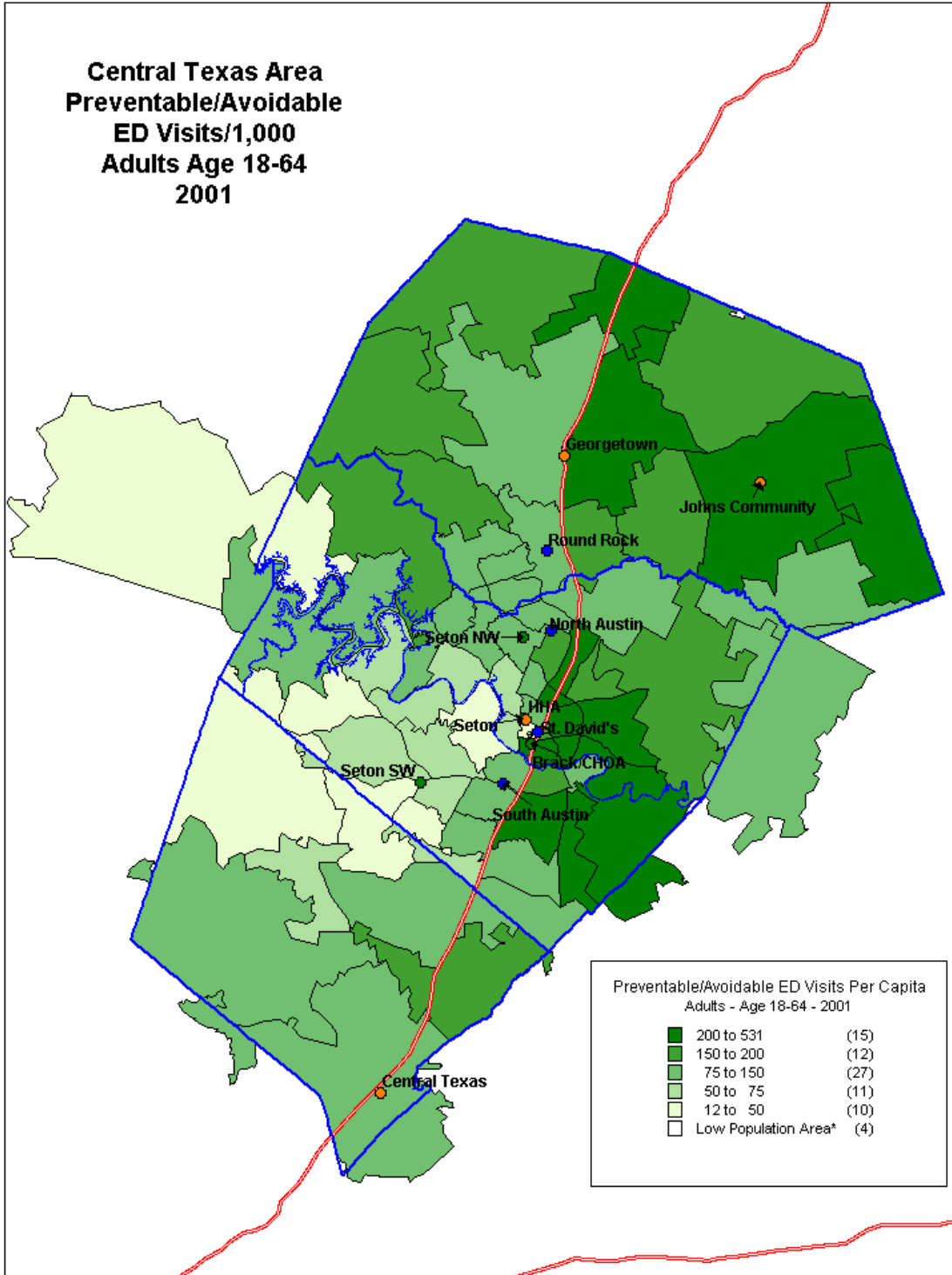
A map of the ED data in this study reveals that the greatest number of preventable or avoidable visits per capita occurs primarily east of IH 35, with significant pockets also north and east between the communities of Georgetown and Taylor. The area east of IH 35 in Travis County represents those areas that have traditionally

included higher numbers of lower income families. The high per capita rates in the areas surrounding Taylor and Georgetown may reflect a lack of primary care services in a traditionally rural area. See the map on Page 16.

A preliminary drill down of the ED data over the three year time period further revealed that nearly 100,000 ED visits across all payer types, many of which were preventable, occurred in hospital facilities that were outside the patient's county of residence. Slightly more than 60,000 visits, or 20% of all ED visits to Travis County hospitals in 2001 were from patients with zip codes outside of Travis County. This number was up from just over 52,000 visits in 1999 by non-Travis county residents.

On the other hand, from 1999 – 2001, nearly 35,000 ED visits, or 17% of all visits, at Williamson County facilities were from patients with Travis County zip codes, and approximately 2,000 (2%) ED visits at Central Texas Medical Center were from patients with Travis County zip codes. Clearly, further analysis is needed, but it appears that as the population of the Central Texas region has grown and expanded, especially north towards Williamson County, the choice of which facility to use in an emergent, or non-emergent situation, depends more on proximity for all patients regardless of payer, than any sense of county specific loyalty.

**Central Texas Area
Preventable/Avoidable
ED Visits/1,000
Adults Age 18-64
2001**



Conclusions and Recommendations

There is no single answer or single solution to the issue behind what causes people to access the Emergency Department over other sources of care, especially when care is often available. As these data indicate, people within our community who do have access to a regular source of primary care, consistently utilize the Emergency Departments for preventable or non-emergent causes.

However, the ICC estimates from this analysis that 10,000 to 15,000 *excess* visits to emergency departments among self-pay adults could be handled in community-based settings if more community-based non-emergency care were available and/or readily accessible to this population. The problem is that safety net primary care providers, as documented by another recent ICC report, are already serving more individuals than they truly have the capacity to serve.

Data from the Nurse Triage Call Center of the Seton ED system has indicated that over the past year especially, the capacity issue at the local primary care clinics has resulted in a greater number of referrals to the emergency rooms, even though of all the callers, 53% who said they intended to go to the Emergency room were able to be redirected to an urgent care center, a primary care provider, or were able to care for their symptoms at home.

Patients at community based provider facilities are being turned away on a more regular basis than ever before, leaving them with no other option than to access care in a facility where they cannot be turned away. Increasingly, safety net providers report that these patients are no longer 'just' the low-income working poor, but include recently laid off workers who are now beginning to lose (or are no longer able to afford) their continued health insurance option through the federal COBRA option.

Nevertheless, providers have stepped forward. Several have expanded services in recent years, others have planned expansions moving forward, and all have banded together through the ICC both to improve system efficiency and to develop in concert with the Travis County Medical Society a Project Access initiative that will open up more volunteer physician doors to this population. As of November 2002, nearly 500 physicians had signed on to provide services to over 3,700 clients and/or to donate nearly 800 hours of time in local clinics. Williamson County officials are also in discussion regarding plans to implement this program in their area.

It is clear though, that while providers are doing all they can, more will need to be done. At even \$100 a visit (considered to be an average cost of a comprehensive primary care visit), 30,000 excess emergency room visits cost \$3 million per year. While it may be argued that this cost is "absorbed" in the system, the truth is that this cost, multiplied many times over in the long run, is eventually passed along to

anyone and everyone, including area employers and employees who have it show up in higher insurance rates and all area citizen who shoulder higher tax rates.

Beyond the excess visits, there is a considerable cost associated with the high percentage of preventable visits among all populations using the emergency departments at these hospitals. It would be impossible to suggest that all of these visits could be seen elsewhere; after all, a layperson can't be expected always to know in advance the difference between indigestion and a heart attack, but the indigestion diagnosis will be recorded as preventable. Some percentage – and probably a reasonably large one – of preventable/avoidable visits will always take place, and should always take place, in the emergency department.

What it is possible to suggest, though, is that emergency departments are currently clogged with all kinds of patients, and that this problem is getting worse as the numbers grow larger. Also, it is literally the case that “we’re all in this together,” i.e., the stressed emergency department serves everyone, insured or not, and unless we develop solutions to this problem that affect everyone, the situation is not likely to improve dramatically. System and region-wide solutions will be needed that affect us all, or any of us may be faced with the prospect of no care available when we feel that we need it the most.