Project Access Year Four Operations Analysis Report

Compiled for the Central Plains Regional Health Care Foundation

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Table of Contents

Executive Summary

The Project Access partnership continues to provide a valuable service to the community by providing donated medical services to low-income uninsured residents. The demographic characteristics, medical diagnostic categories, and procedure codes are relatively similar in all four years. Physical and mental health status of enrolled patients improved substantially from enrollment to disenrollment; however, health scores remain well below U.S. general population norms. Employment status and insurance coverage was unchanged from enrollment to disenrollment.

Analysis of combined donated physician office and hospital costs reveals the annual median donated service charge for physician office and hospital combined, was $4,902, $5,204, $4,888, and $6,308 in years four, three, two and one, respectively. Findings indicate that just over 50% of patients were served for $5,000 or less. Results this year suggest there are two populations of patients served, those with acute health problems and those with chronic health problems. The mean length of stay continues to climb upward for the fourth consecutive year, although most patients have only one or two encounters with the hospital system. Donated physician office service charges increased substantially this year, largely due to oncology treatment in the office setting. As in previous years, the handful of patients with extremely high charges inflates the average charge dramatically**.**

To date, more than $26 million in donated medical care services have been provided by area physicians and hospitals. Hospitals have donated more than $18 million (70%) while physicians have donated nearly $8 million (30%) in medical care. Using a cost-of-care estimate formula provided by the federal funding agency, cost savings in Sedgwick County range between

$2,302,000 and $2,647,300 for patients enrolled through Project Access in year four. Between $10.4 and $12.0 million dollars of cost savings has been achieved during the past 4 years.

As in previous years, a small percentage of those patients receiving care in year four, had extremely high treatment costs, repeated hospitalizations, and multiple physician office visits. Of the 600 plus hospitalized patients, only 29 patients were extreme outliers in terms of resource consumption. This finding suggests that a case management system, which assists these patients directly, may be an effective method for reducing and equalizing utilization of health care services. The participating hospitals may elect to design and implement a method of identifying Project Access (and other self-pay patients) who are readmitted to the hospital within 30 days of discharge. Substantial savings could be achieved if even 25% of the readmissions could be prevented. This technique may be helpful to participating physicians as well. In conclusion, the analyses suggest that local physicians, hospitals, and other health care providers, as well as Project Access, are providing valuable, cost-effective service to low-income uninsured residents of Sedgwick County.

Project Access Year Four Operations Report

The aim of this analysis serves to:

1) Assess physician office and hospital services provided during the fourth year of operations,
2) Identify the major diseases affecting the low-income uninsured,
3) Analyze the amount of donated services associated with caring for Project Access patients during the fourth year of operations, and
4) Compare selected indicators from years one, two, three, and four.

Methodology

This report provides descriptive analysis of the fourth year cohort of Project Access patients from September 2002 through August 2003. Project Access data includes information from three sources:

1) CARES database which contains demographic descriptors of patients enrolled in Project Access,
2) Hospital data which contains administrative data including disease diagnostic codes, donated service charge amounts, admission and discharge dates, and procedure codes, and
3) Physician office administrative data including disease diagnostic codes, donated service amounts, dates of service, and procedure codes.

Data sets were cleaned and analyzed separately before linking and merging them for final analysis. In year four, there were more than 1,151 patients in the CARES data set, 644 patients in the hospital data set (with 1,666 duplicated lines of data), and 1,151 patients in the physician office administrative data set (with 13,238 duplicated lines of data). Due to limitations with the structure of the existing database and an increase in re-enrollment, patients who have re-enrolled in the

program more than once during the year, have their information "written over." A new database has been designed and constructed and is now being tested. The new database will eliminate this problem in the future. See Table 1 and Graph 1 for year one, two, three, and four comparisons. It should be noted that all financial information reflects **services donated by physicians and hospitals** participating in Project Access.

Graph 1 Number of Project Access Patients Enrolled and Served by Physician Office and Area Hospitals from 1999 to 2003 (Years 1, 2, 3, and 4)

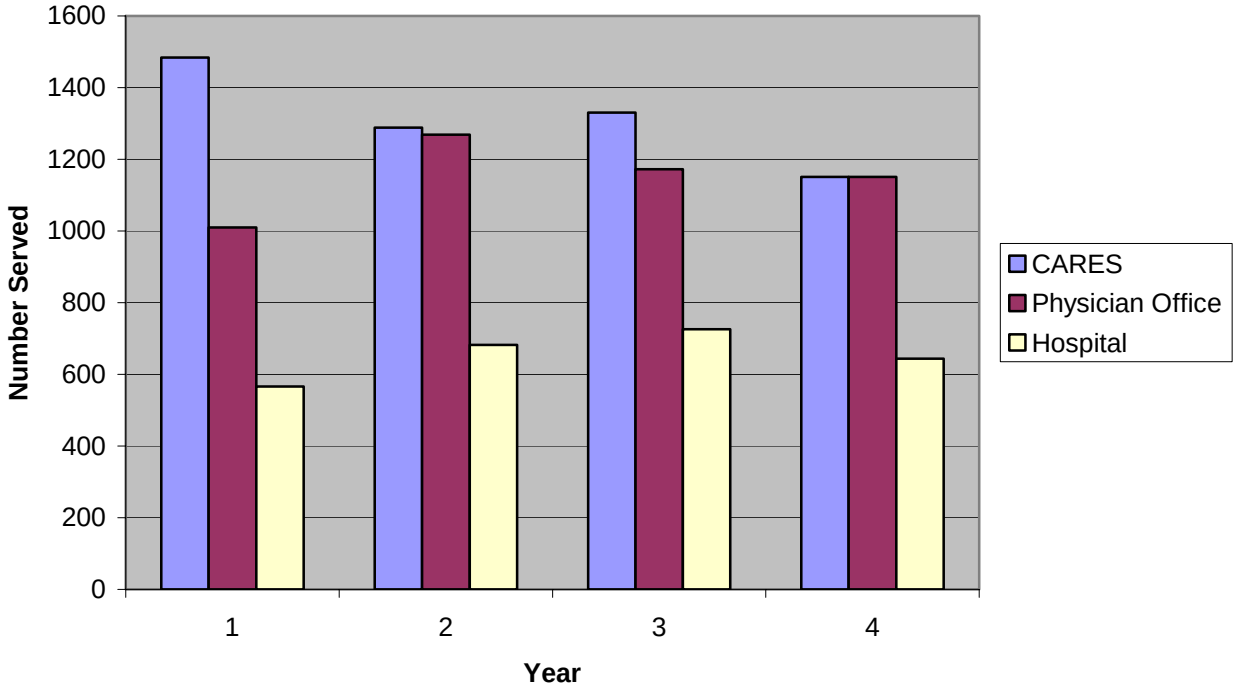


Table 1: Project Access Data Sets for Years One, Two, Three, and Four

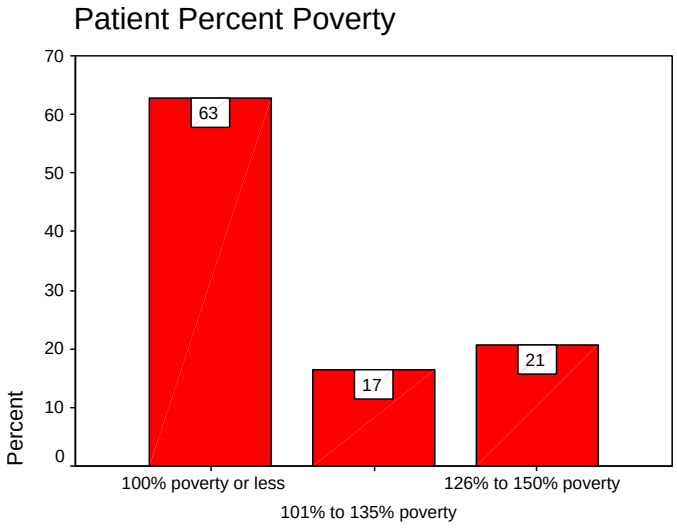
Year	CARES	Hospital	Physician Office
1	N =1,484	N = 566	N = 1,010
2	N =1,288	N = 682	N = 1,269
3	N = 1,313	N = 726	N = 1,172
4	N= 1,151	N= 644	N = 1,151

Results

Year Four Demographics

The demographic characteristics of Project Access patients have changed little during the fourth year of operations. Of the 981 Project Access patients, most are female (64%), middle-aged (31-50 years), and unmarried (64%). Approximately 37% are racial minorities, and 23% report owning their home while 47% report renting. Nearly 65% report high school education or less, and approximately 52% report one-person family status. While 55% reported being employed, 9% report receiving unemployment insurance, less than 10% report SSI, Social Security or pension, and the remaining 22% report no income. Approximately 81% meet the 100% of federal poverty guidelines, higher than previous years by at least 10%. Similar to previous years, the majority of program participants were enrolled for 61-80 days (51%). Additionally, 27% of those served were enrolled for more than 100 days. Graph 2 illustrates the characteristics of year four patients.

Graph 2 – Patient Percent Poverty



Most patients were disenrolled because their eligibility expired (63%). Forty-two individuals (4%) were disenrolled due to noncompliance. Although 22% (n=212) disenrolled for "other" reasons, approximately 9% of applicants (94 people) were enrolled in Medicaid through the efforts of Project Access staff, or became insured, or were enrolled in another program.

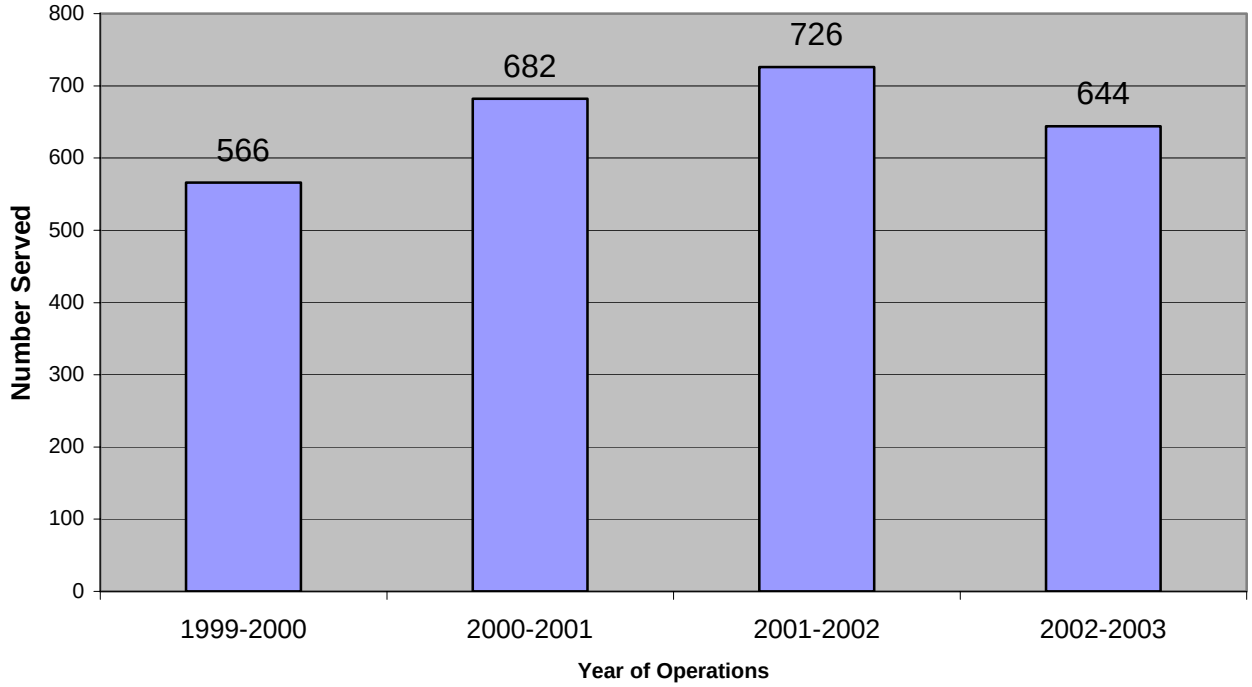
Hospital Services, Donated Service Amounts and Diagnostic Categories

In year four 644 patients received donated hospital services, a decrease of 82 patients from year three (N = 726) (see Graph 3)**.** Of those patients receiving care in a physician's office, 56.0% also received hospital services. Donated hospital services for year four of Project Access totaled $4,654,492, approximately $9,000 more than year three ($4,645,398). Graph 4 describes total donated hospital services for the first four years of operation, while Graph 5 exhibits the donated hospital service charges for the first four years with respect to ranges of costs. These graphs illustrate where shifts in donated service charges are occurring during the same time frame. In year four the average donated service charge per encounter, including inpatient and outpatient activity was $7,227, approximately $3,000 higher than year three $4,044 ($3,320, $4,769), and year two $4,273 ($3,507, $5,309). Due to a small number of patients with extremely high charges, the median charge ($3,313) was more accurate in estimating the average in donated service charges.

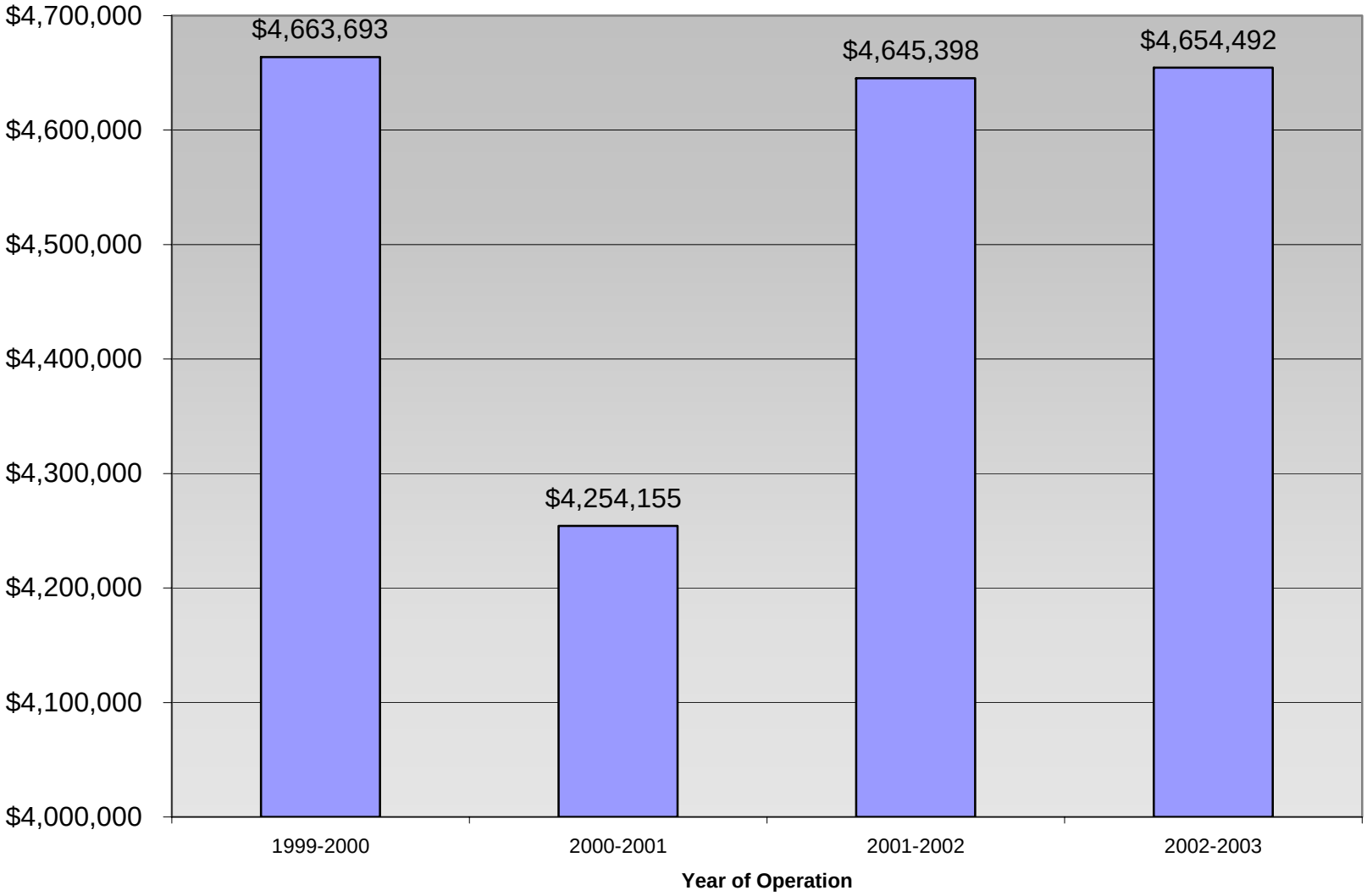
Within the hospital data set, observations with identical admit and discharge dates were coded as outpatient, whereas those observations with dissimilar admit and discharge dates were coded as inpatient. With a total of 1,666 hospital encounters, 81.0% were donated outpatient services, while 19.0% reflect donated inpatient services. The 1,666 encounters were unduplicated, so that each observation was associated with the patient who incurred the visit. Analysis of unduplicated hospital services shows that 67.7% (n=436) accessed outpatient services only, while

9.0% (n=58) used inpatient services only, and 23.3% (n=150) used both outpatient and inpatient services.

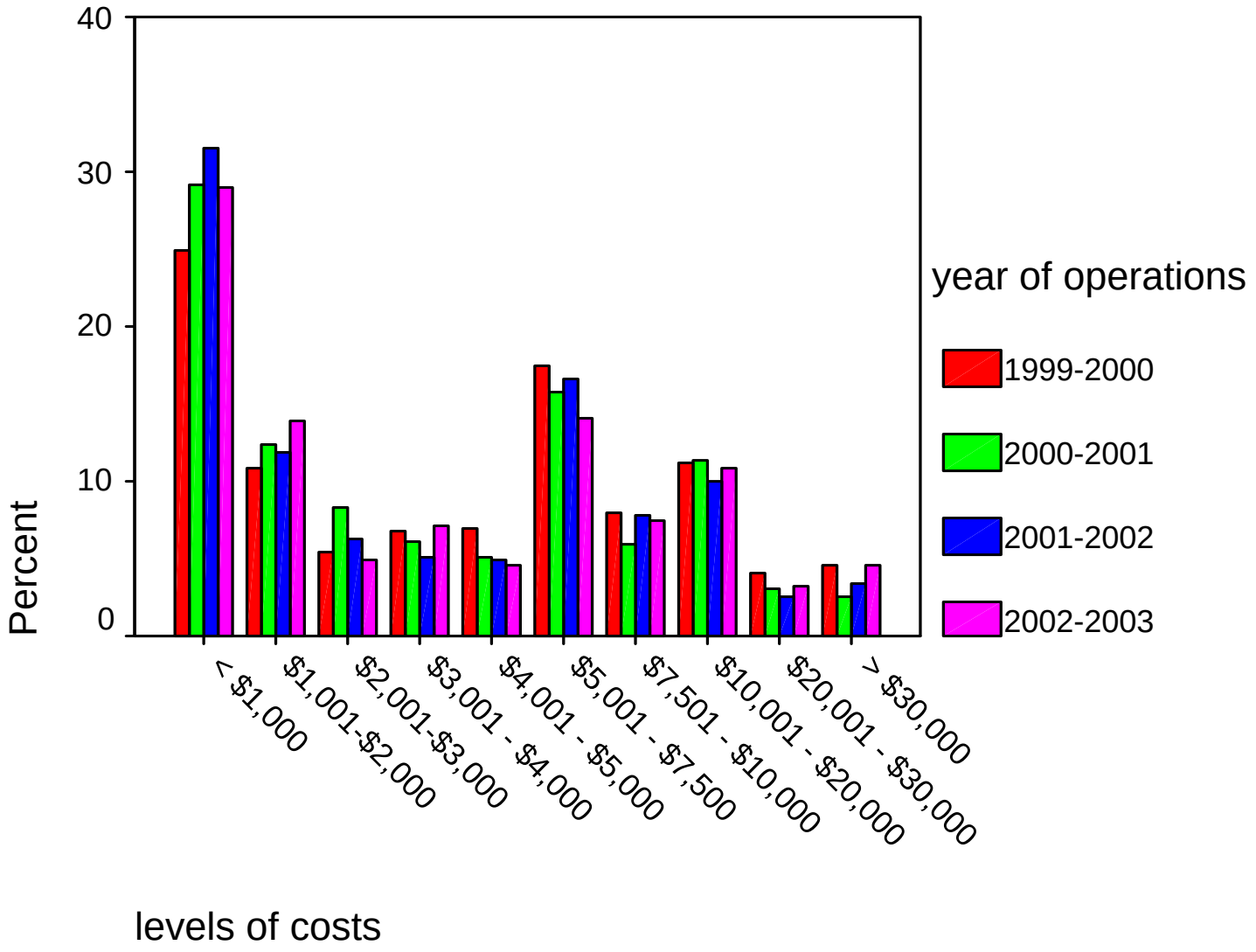
Graph 3– Number of Patients Accessing Hospital Services by Year



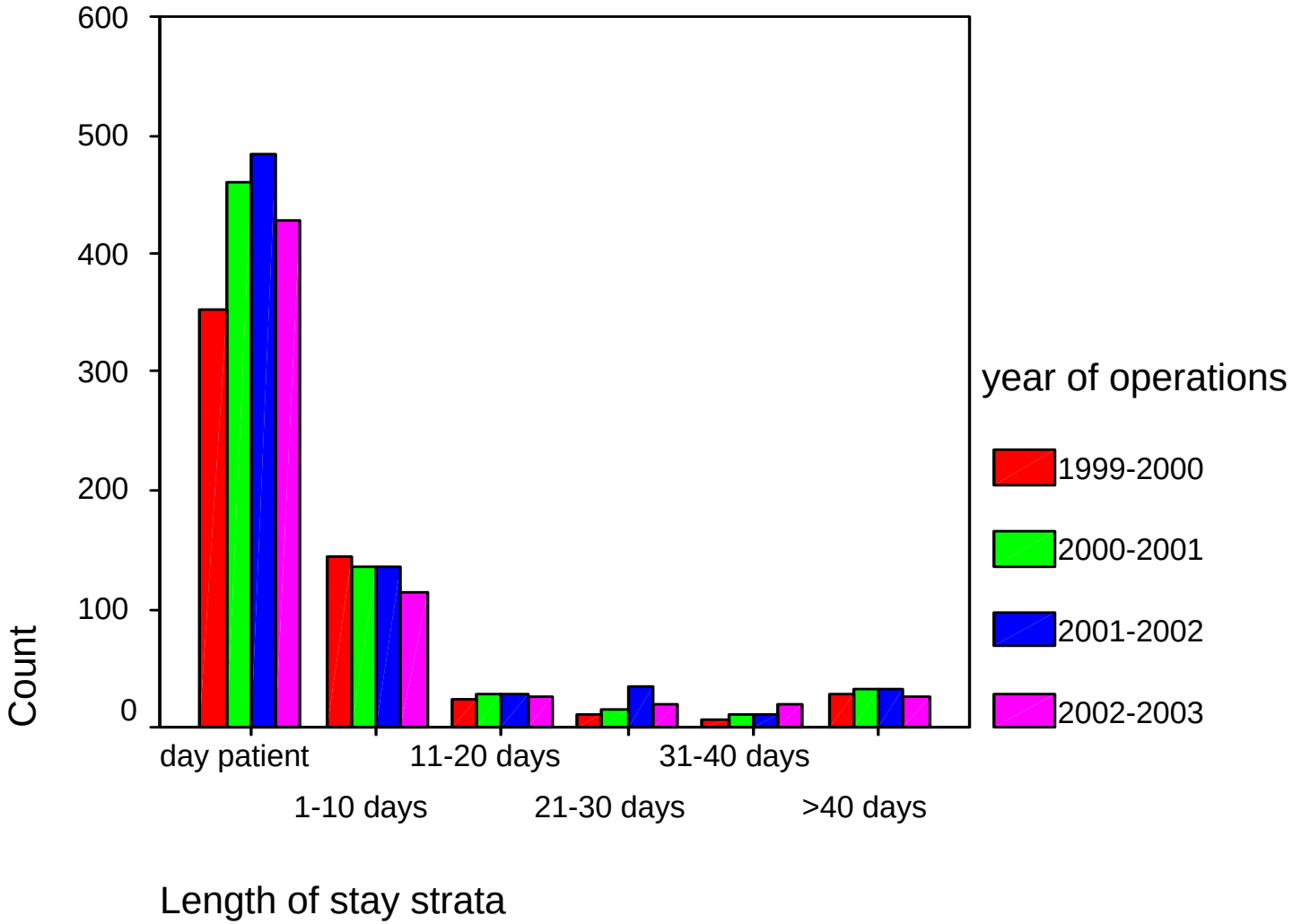
Graph 4 – Total Annual Charges of Donated Hospital Services by Year



Graph 5 – Comparison of Donated Hospital Services by Year



Graph 6- Project Access Years 1, 2, 3, 4 - Comparison of Hospital Services



Donated Inpatient Services

In year 3 (September 2001- August 2002), there were 363 inpatient visits among 200 patients, while in year 4 (September 2002- August 2003), there were 379 inpatient visits among 210 patients. The average number of inpatient admissions per patient was 1.8 (1.7, 2.0), which was, on average, two less admissions than year three hospital admissions at 4.1 (3.7, 4.6) and year two at 3.7 (3.2, 4.1) admissions. However the average length of stay of length of stay continues to climb. In year four, the average length of stay was 18.3 days (15.1, 21.4), increased by one day from year three at 17.3 days (14.4, 20.2).

Stratified length of stay analyses reveal that of the 208 inpatients, 55% experienced hospital stays between 2-10 days, while 13% were hospitalized for 11-20 days, 10% for 21-30 days, 10% for 30-40 days, and 13% for 41 or more days (see Graph 10 for comparison by year). There were 27 patients (13%) who had hospital stays totaling more than 40 days this year, slightly less than last year (n=33).

Of the 210 patients who utilized inpatient services, 58% (n=122) were admitted once, 22% (N=47) were admitted twice, 10% (n=21) were admitted three times, 5% (n=10) were admitted four times, 5 were admitted five times, 2 were admitted six and eight times, and 1 was admitted seven times. The mean total charge for inpatients was $14,939 ($12,424, $17,454), with a range from $226 to $100,307. This is a nearly $2,000 per patient increase from year three, $12,795 ($10,043, $15,547) and year two $12,358 ($10,017, $14,699). Additionally, the median total charge for year four, perhaps a more useful figure for charges due to extremely high charges for a handful of patients, was $8,975.

For this group of patients, the median number of days between admission one and two was 23 days, an increase of 7 days from year three (16 days). The median number of days between admission two and three was 18 days (a decrease of 4.5 days from year three).

Primary Diagnostic Codes for Inpatients

There were 337 primary diagnostic codes (excluding V-codes) for the inpatient group, and charges for these donated services totaled $2,078,984. (A description of 17 broad diagnostic categories is contained in Appendix 1.) The amounts of diagnostic groupings have remained relatively constant over the past four years (Graph 7), with higher volume categories including signs and symptoms and ill-defined conditions, musculoskeletal problems, genitourinary disease and digestive disease.

These diagnostic categories were rank ordered by amount of donated services and are listed in descending order, circulatory system disease, signs, symptoms and ill-defined conditions, neoplasms/tumors, genitourinary disease, musculoskeletal system, digestive disease, metabolic/endocrine conditions, injury and poisoning, respiratory system disease, nervous system, blood and blood forming disease, infections/parasitic disease, pregnancy complications, and mental health disease (see Graph 8).

Table 2: Donated Inpatient Service Charges and Encounters per Patient by Year

Year	1	2	3	4
Average total charge	$16,317 ($13,423, $19,210)	$12,358 ($10,017, $14,699)	$12,795 ($10,043 $15,547)	$14,939 ($12,424, $17, 454)
Average charge per admission	$6,903 ($5,678, $8,127)	$4,273 ($3,507, $5,039)	$4,044 ($3,320, $4,769)	$8,121 ($6,393, $9,850)
Average number of admissions	2.9 (2.6, 3.2)	3.7 (3.2, 4.1)	4.1 (3.7, 4.6)	1.8 (1.7, 2.0)
Average length of stay	15.0 (11.7, 18.4)	17.3 (14.3, 20.4)	17.3 (14.4, 20.2)	18.3 (15.1, 21.4)

Table 3: Donated Outpatient Service Charges and Encounters Per Patient by Year of Operations

Year	1	2	3	4
Mean (Confidence Interval)				
Average total charge per patient	$3,366 ($3,018, $3,714)	$3,284 ($2,896, $3,672)	$3,180 ($2,848, $3,512)	$3,496 ($3,022, $3,970)
Average charge per encounter	$2,564 ($2,293, $2,834)	$2,231 ($1,998, $2,464)	$2,134 ($1,907, $2,361)	$2,232 ($1,942, $2,522)
Average number of encounters	1.5 (1.4, 1.6)	1.8 (1.6, 1.9)	1.8 (1.7, 1.9)	2.0 (1.8, 2.1)

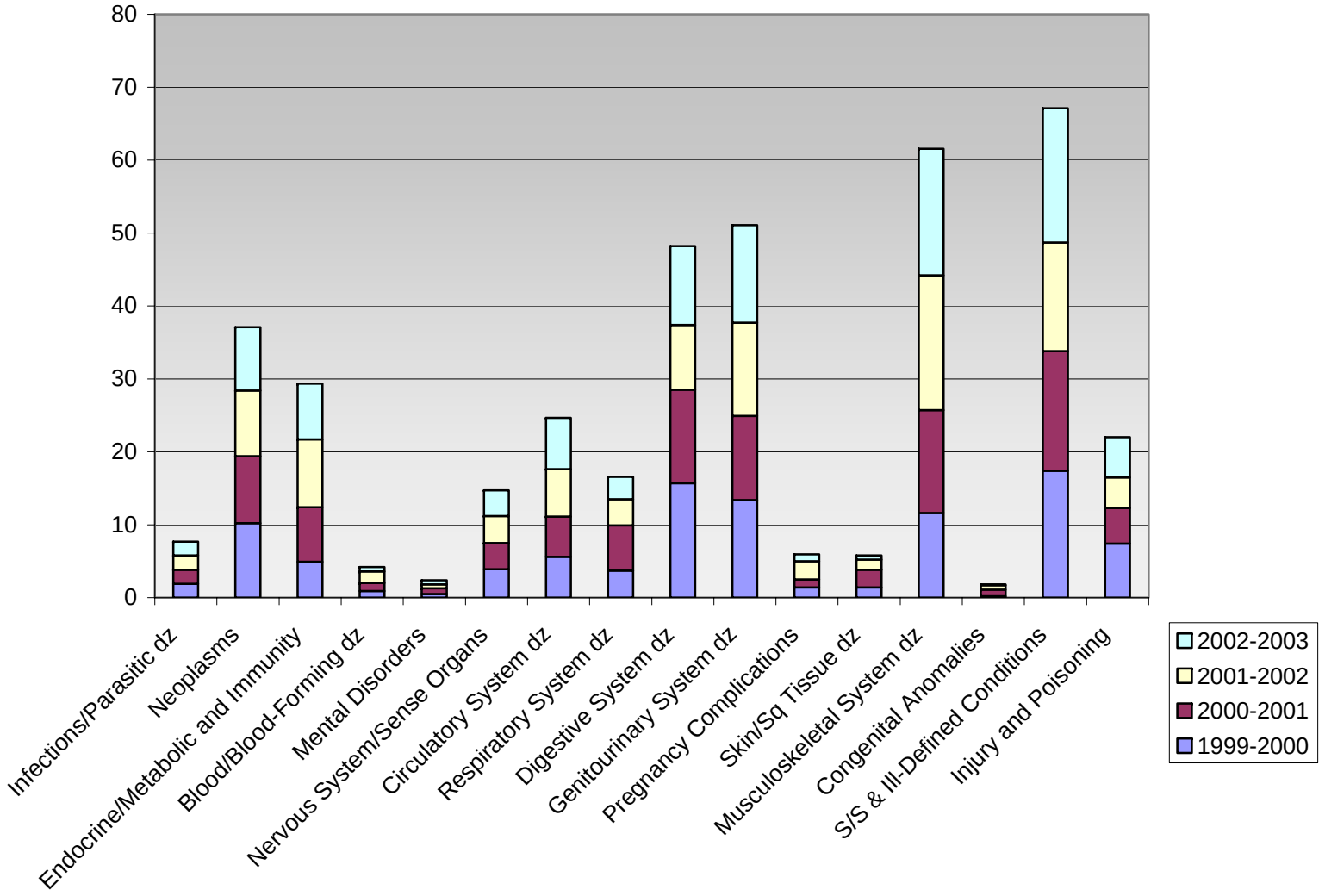
Donated Outpatient Services

In year four, there were a total of 1,287 outpatient interactions with an average of 2.1 per patient (1.7, 2.4). Most outpatients had only one (47.2%) or two (20.4%) outpatient visits, while 17 patients (2.3%) had between 10 and 27 encounters. In year 3, there were 1430 outpatient visits incurred among 627 patients, while in year 4, there were 1,287 outpatient visits incurred among 586 patients.

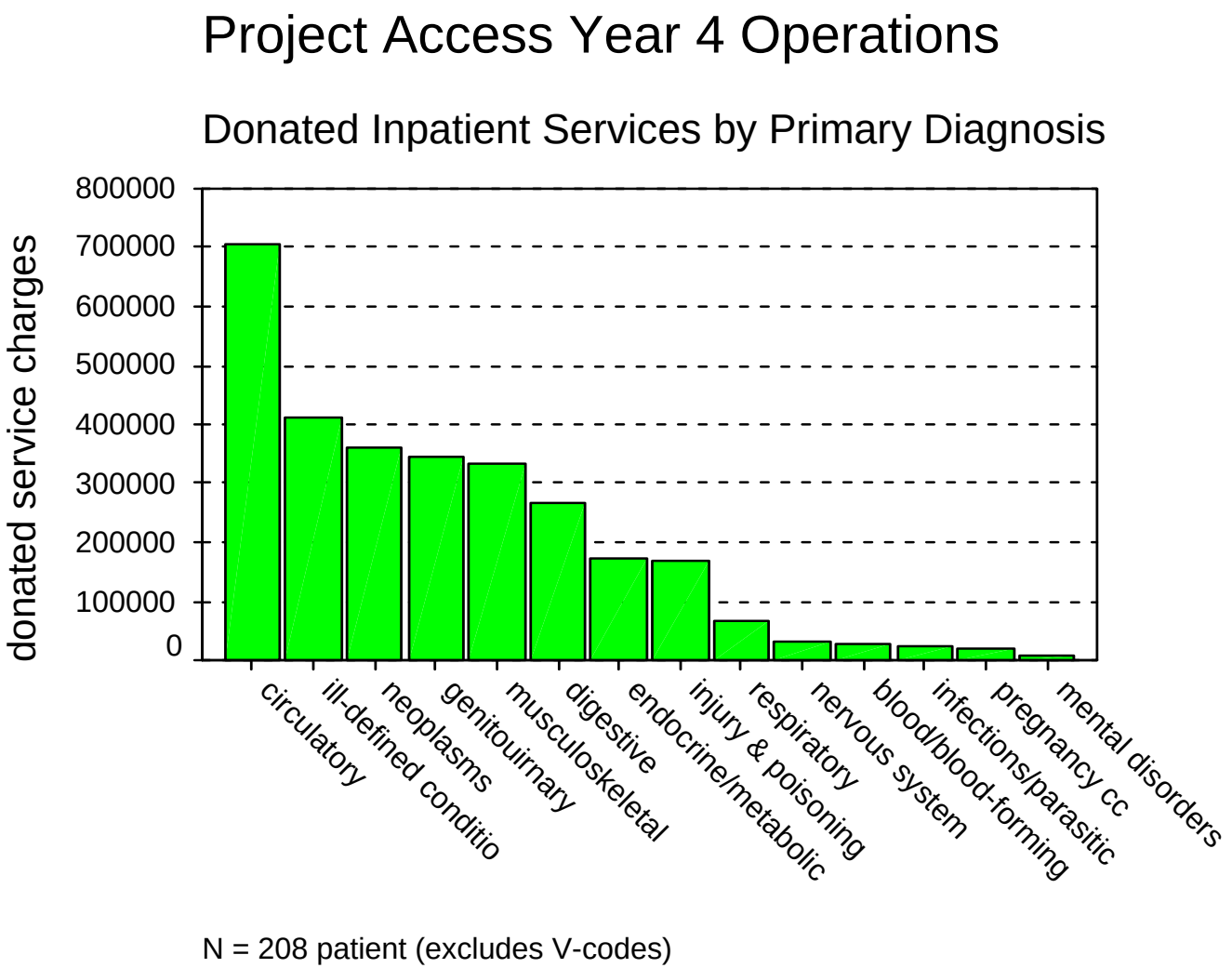
The average total donated treatment charge for outpatient services in year four was $3,496 ($3,022, $3,970), slightly higher, but comparable to the past three years. The average charge per encounter shows the same pattern as well, ranging from $2,564 in year one to $2,134 in year three. Outpatients, on average, had a similar number of encounters as year two, 2.0 (1.8, 2.1) visits.

There were 1,158 outpatient primary diagnostic codes (excluding V-codes), which represented $2,112,170 in donated service charges. These diagnostic categories were rank ordered by amount of donated services and are listed in descending order, digestive, signs, symptoms and ill-defined conditions, genitourinary disease, neoplasms (tumors), circulatory system disease, musculoskeletal system disease, nervous system, skin and tissue disease, infections/parasitic disease, metabolic/endocrine conditions, injury and poisoning, respiratory, blood and blood forming disease, pregnancy complications, and mental health disease (Graph 9).

Graph 7 – Primary Diagnosis Comparison by Year



Graph 8 – Donated Inpatient Services by Primary Diagnosis



Physician Office Services Donated Service Charges

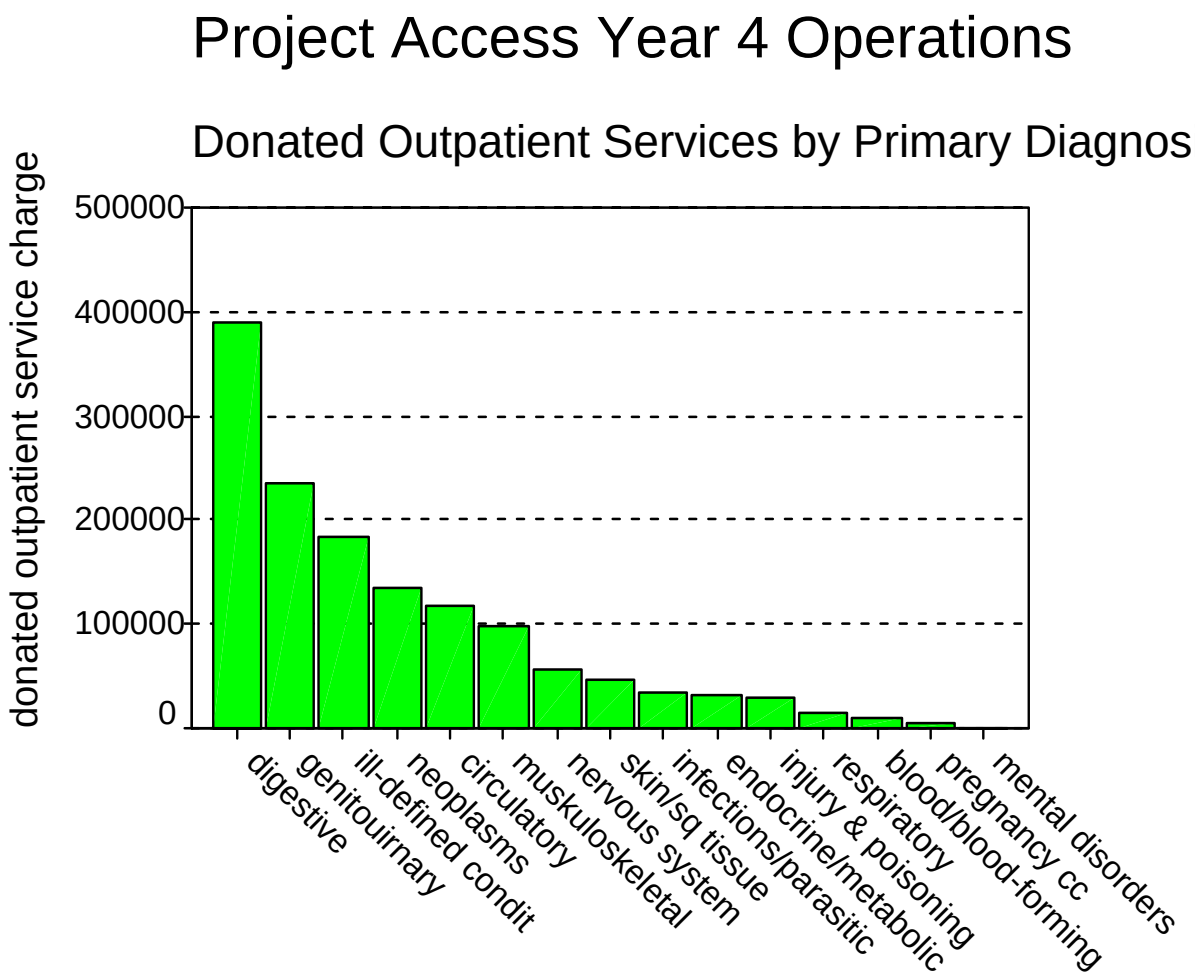
There were 13,238 individual physician office charges (several charges associated with each visit). During the fourth year of operations, 1,162 patients received donated physician services, 10 less than in year three (N = 1,172). The median number of physician office visits per patient was 2.0 for three of four years of operations (Table 4a), but a few extreme cases skew the mean upward each year. During the four years, the total number of office visits vary from a low of 3,360 in year 4 to a high of 5,710 in year 2. Nearly 80% of patients seen in physician offices have 5 or fewer office visits in one year, and 52% have only one or two office visit.

Volunteer physicians donated $2,083,184 in services for Project Access patients during year four, a sizable increase from year three ($1,614,449). Donated service charges per patient decreased with each successive year, with the exception of year four. In year one, the mean and median donated service charge per patient was $1,899 and $555, respectively. In year two, the mean and median donated services charges were $1,746 and $55, respectively. In year three, the mean and median donated service charges were $1,410 and $485, respectively. In year four, the mean and median donated service charges were $1,810 and 691, respectively (see Table 4). The most expensive charge was $84,213. With the average number of individual charges at 11 (with a range of 1 to 339), the average charge per patient was $176 (with a range of $6 to $2,240).

Table 4a: Comparison of Physician Office Visits, Years 1 through 4

Year	Patients Served	Mean	Median	Minimum	Maximum	Total Visits
1	1,010	4.2	2	1	66	4,220
2	1,254	4.6	3.0	1	103	5,710
3	1,172	4.1	2	1	104	4,838
4	1,162	2.9	2	1	41	3,360

Graph 9



N = 434 patients (excludes V-codes)

Table 4b: Total Donated Physician Charges Per Patient

Year	Mean	Median
1	$1,899	$555
2	$1,746	$559
3	$1,410	$485
4	$1,810	$691

The majority (42%) of total physician charges per patient were less than $500. Seventeen percent of the charges were between $501 and $1,000, and another 18% rested between $1,001 and $2,000. Another 16% of the charges were between $2,001 and $5,000. It is notable that only 7% of the patients incurred charges greater than $5,000. Seventy-six (7.0%) had charges ranging from $5,000 to nearly $30,000, and an additional five patients had charges ranging from $33,372 to $84,213. These 81 patients collectively had donated service charges of $974,512, an increase of $321,951 from year three.

In general, 19% of the diagnoses were S/S and ill-defined conditions, 13% were musculoskeletal systems, and 11% were genitouirnary, 11% were circultory, and 10% were endocrine/metabolic. The primary diagnoses of the high cost patients were cancer/ neoplasms (32%), circulatory system (19%), and S/S and ill-defined conditions (16%).

For patients treated by volunteer physicians, representing $2,083,184 (as opposed to year three at $1,651,340 in donated service charges, there were 9,087 primary diagnostic codes (excluding V-codes). These diagnostic categories were rank ordered by amount of donated services and are listed in descending order, neoplasms (tumors), signs, symptoms and ill-defined conditions, genitourinary disease, musculoskeletal system disease, digestive, circulatory system disease, metabolic/endocrine conditions, injury and poisoning, blood and blood forming disease, nervous system, respiratory, skin and tissue disease, infections/parasitic disease, mental health

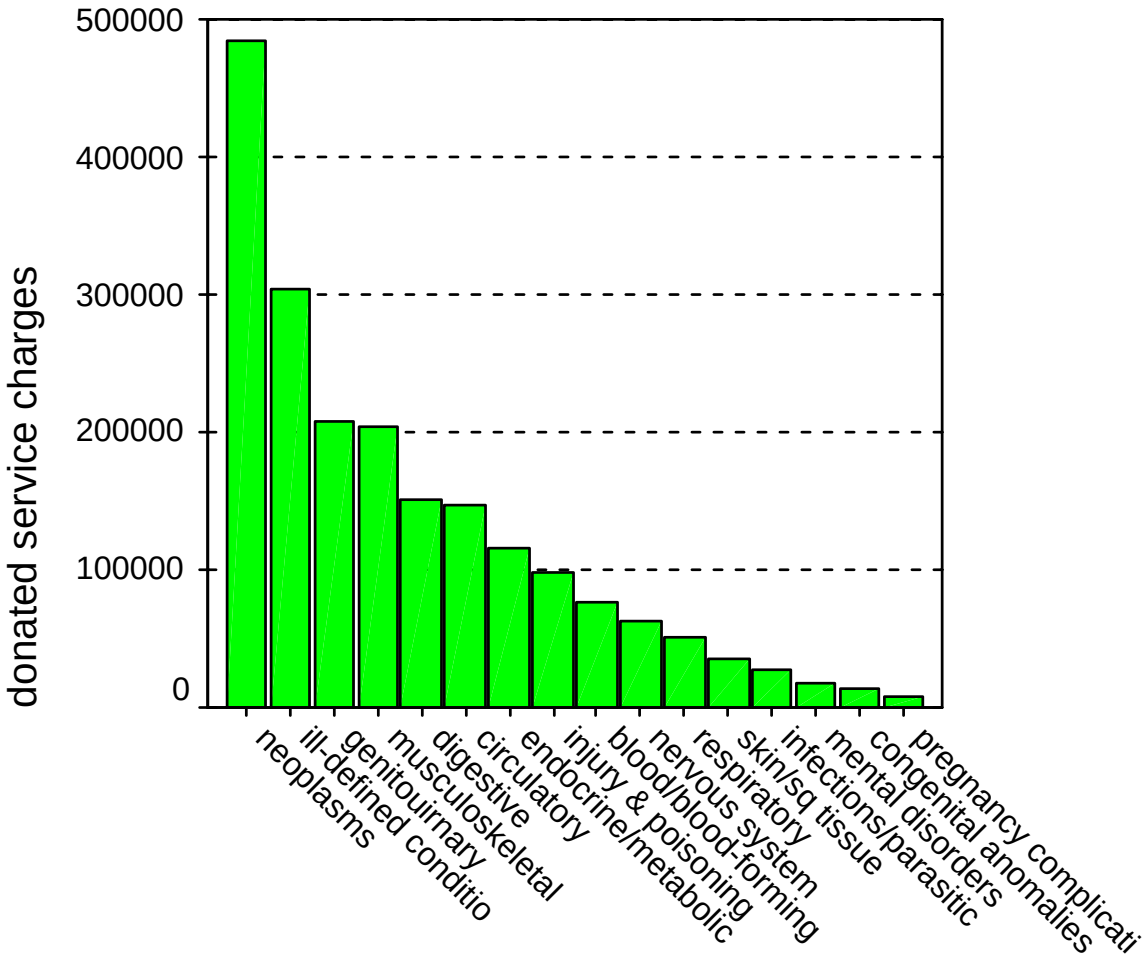
disease, congenital anomalies, and pregnancy complications, (see Graph 10). The mean charge for neoplasms, by far the largest contributing physician charge category, was $7,338 ($3,818, $10,857), with the smallest charge at $62, and the largest charge at $84,213.

Physician Office CPT Codes

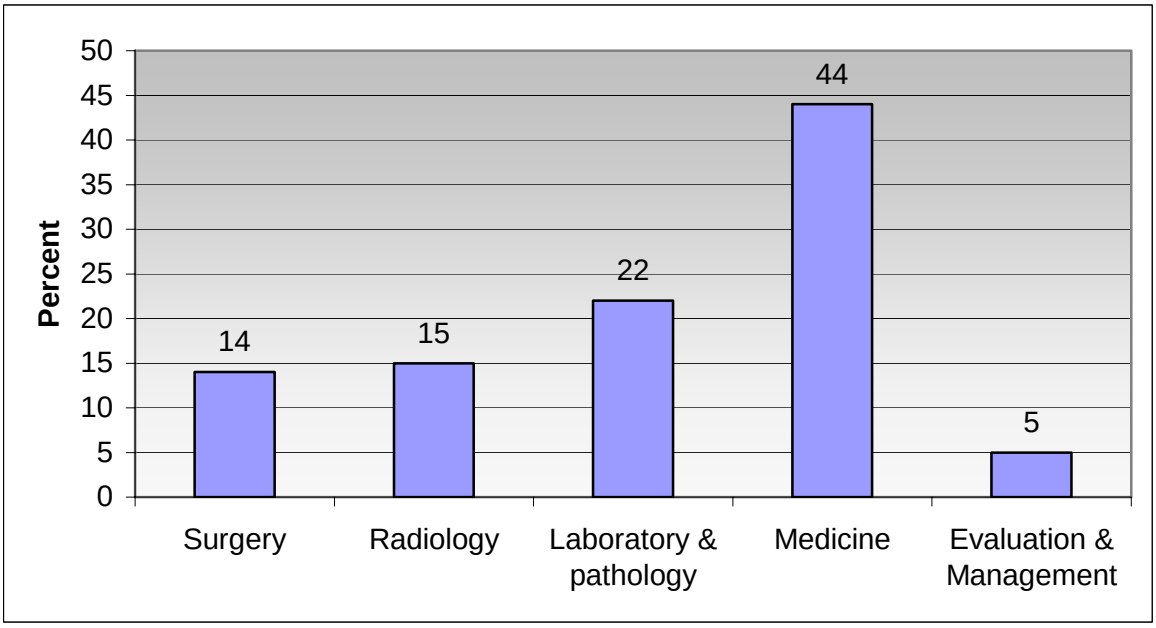
A description of CPT code categories is contained in Appendix 2. Analysis of CPT codes by medical specialty for Project Access patients reveal that medical procedures represent approximately 44% of all procedures donated during the year, followed by laboratory and pathology (22%), radiology (15%), surgical procedures (14%), and evaluation and management (5%) (Graph 11). The percentages are largely unchanged from last year.

Similar to year three, diagnostic radiology (61%) was the most frequent category of radiologic procedure, followed by organ and disease oriented radiology (25%) (Graph 12). The most frequent surgical procedures performed were on cardiovascular problems (36%), followed by digestive (16%), musculoskeletal (14%), and female genital surgical (13%) procedures (Graph 13). Of laboratory and pathology procedures, hematology and coagulation studies were performed most frequently (34%) followed by chemistry (31%), and then urinalysis (11%) (Graph 14). Although 61% of medical procedures were office or outpatient services, 10% were cardiovascular in nature (Graph 25). Eighty-eight percent of evaluation and management procedures are for outpatient consultation, and 11% are for initial inpatient consultation (see Graph 16).

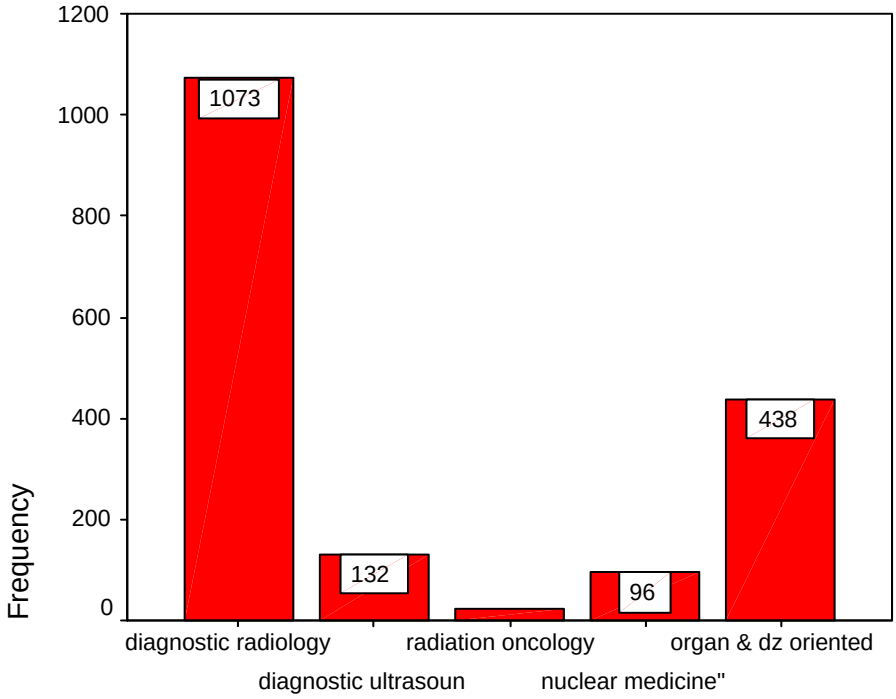
Graph 10 – Physician Office Donated Services by Primary Diagnosis



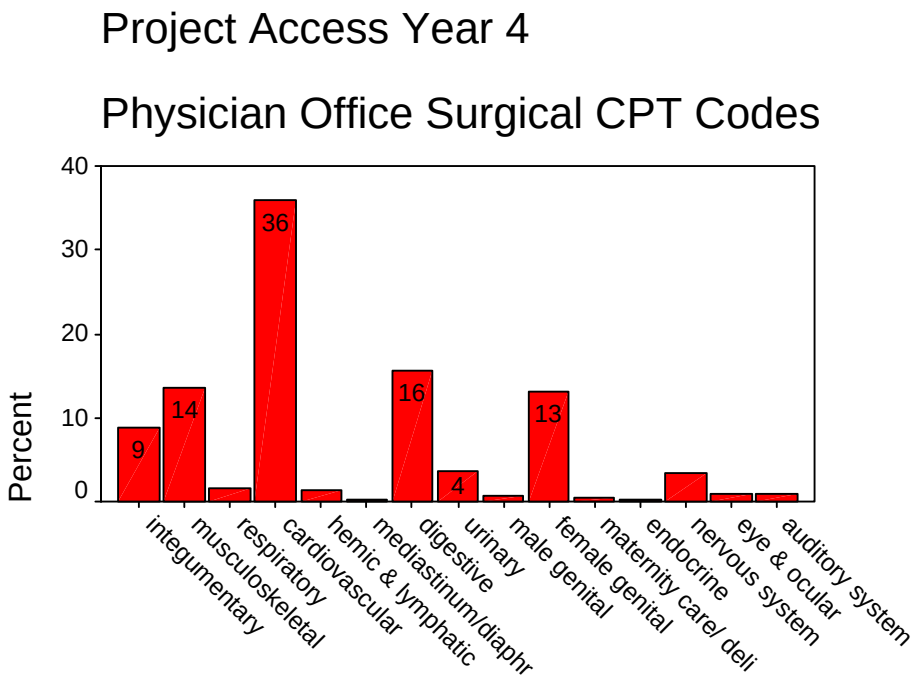
Graph 11 –Physician Office Procedure Codes



Graph 12 – Physician Radiologic CPT Codes



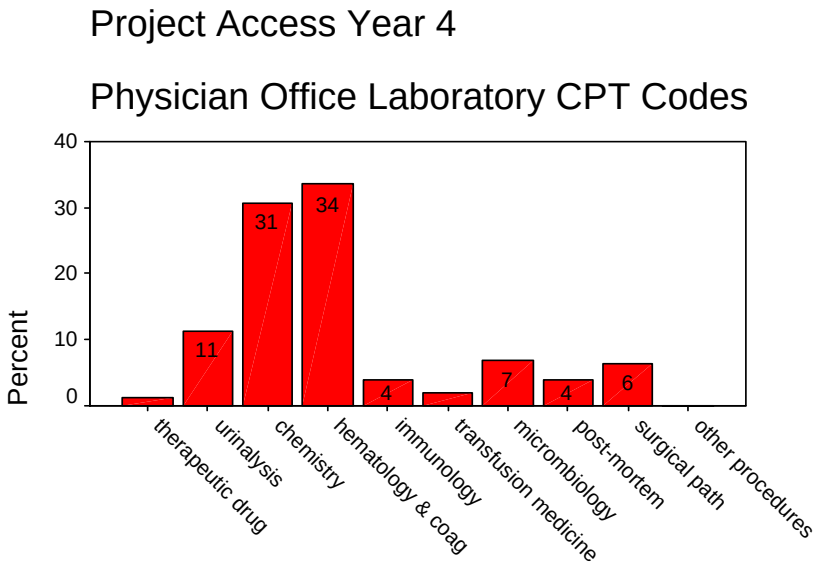
Graph 13 – Physician CPT Codes



N=1,488 codes

Reflects patients from September 2002-August 2003

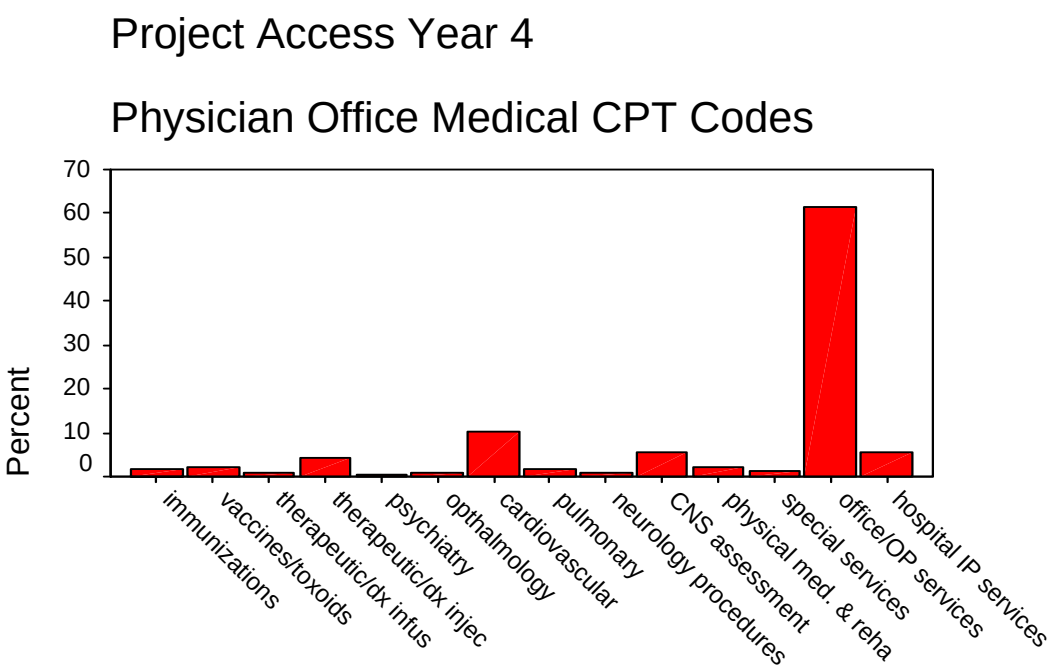
Graph 14 – Physician Office Laboratory CPT Code



N=2,745 codes

Reflects patients from September 2002-August 2003

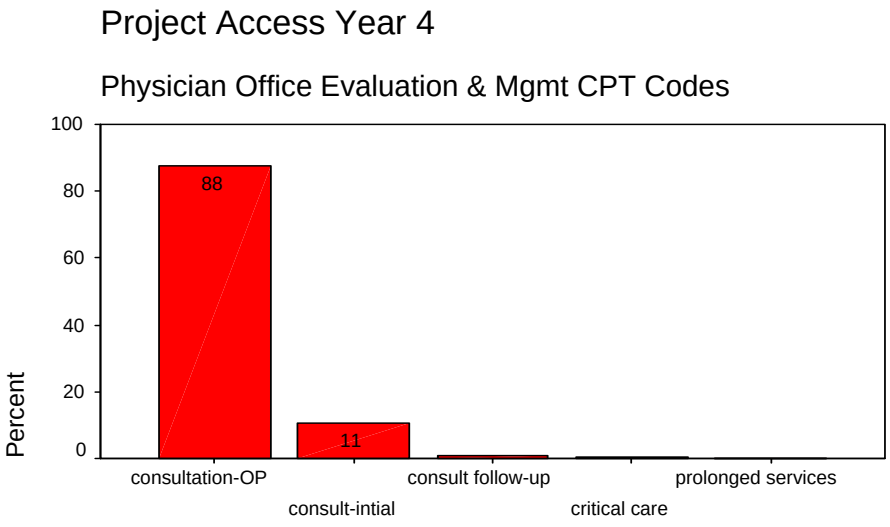
Graph 15 – Physician Office Medical Codes



N=5,353 codes

Reflects patients from September 2002-August 2003

Graph 16 – Physician Office Evaluation and Management CPT Codes



N=481 codes

Reflects patients from September 2002-August 2003

Combined Donated Service Charges for Physician Office and Hospital

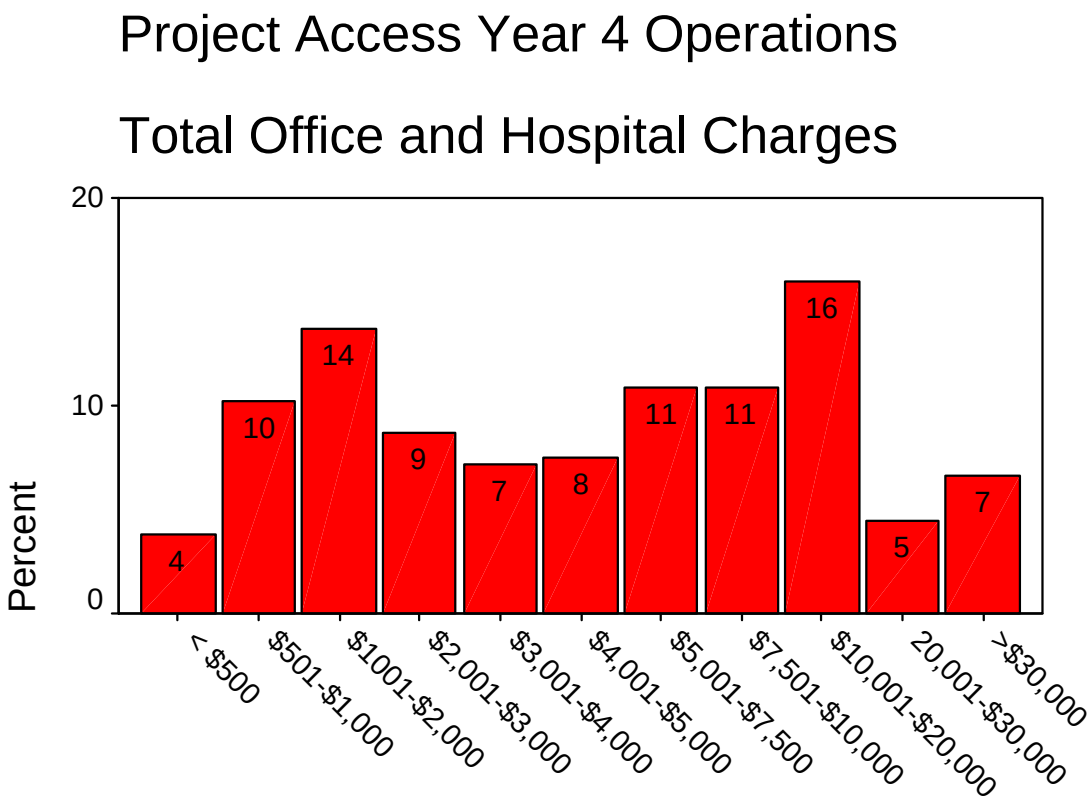
The hospital and physician office data sets were merged, which resulted in 599 matches between the two data sets. Analysis of donated physician office and hospital costs combined reveals that the mean donated service charge per patient in year four was $ 10,087 ($8,789, $11,385), in year 3 $8,755 ($7,501, $10,009), year 2 $9,004 ($7,652, $10,356), and $11,888 ($9,978, $13,798) in year one. **As in previous years, the handful of patients with extremely high charges inflates the average charge dramatically** (see Table 5). The median combined charge, which better reflects the true average, total donated service charge per patient, was $4,902 in year 4, $5204 in year three, $4,888 in year two, and $6,308 in year one.

When combined donated service charges for office and hospital treatment are compared from year one to year two operations, 14.0% were treated for less than $1,000 in charges (year 3 = 18.0%, year two = 14.1%, year one = 16.5%) (Graph 17). Moreover, 37.1% of patients had combined donated service charges of $1,001 to $5,000 (year three 32.0%, year two = 34.7%, year one = 27.5%). Approximately 51.0% of patients who had both hospital and physician office treatment in year three were treated for $5,000 or less, compared to 48.0% in year three, 50% in year two and 41.7% in year one operations. Furthermore, approximately 73% of the patients were treated for $10,000 or less compared to 75% in year three and 60% in year two. Approximately 3.5% of patients had combined donated treatment charges $20,001 to $30,000, and 6.5% with charges in excess of $30,000. Table 5 lists the total donated hospital and physician office service charges of patients with extremely high charges.

Table 5: Project Access Year 4
Patients with Elevated Charges

Patient	Hospital	Physician Office
1	31,546	10,259
2	32,344	10,416
3	33,488	10,592
4	34,633	10,698
5	34,985	10,751
6	36,014	11,046
7	37,632	12,642
8	40,244	12,643
9	42,043	12,646
10	44,352	12,841
11	45,916	13,363
12	48,238	14,451
13	49,195	15,180
14	49,995	15,638
15	51,049	18,178
16	51,361	18,584
17	54,747	19,127
18	60,532	23,148
19	60,824	25,367
20	61,341	28,700
21	63,187	29,494
22	63,408	33,372
23	64,559	45,266
24	67,836	52,171
25	79,577	64,972
26	85,630	84,213
27	88,210	
28	91,541	
29	100,307	
Total	**$ 1,604,734**	**$ 615,757**

Graph 17



Patient days per 1,000 is slightly higher in year four, but remains comparable to previous years. In year 4 patient days per 1,000 was .0060, and .0058, .0056, and .0057 for years three, two and one, respectively. When patients with higher donated service charges (greater than $30,000) are removed from the data set, the patient days per 1,000 are much more similar ranging from a high of .0050 in year 2 to .0045 in year 1. Years three and four are the same at .0047. (See Table 6 and Table 7).

Table 6: Comparison of Patient Days per 1,000 for Project Access Patients Years 1, 2, 3 & 4 with and without Donated Service Charge Outliers

	Year of Operations			
	1	**2**	**3**	**4**
Patient days per 1,000 (all patients)	.0057	.0056	.0058	.0060
Patient days per 1,000 (w/o outlier patients)	.0045	.0050	.0047	.0047

Table 7: Total Donated Service Charges for Project Access Patients Years 1, 2, 3 & 4 (1999-2003)

	Year of Operations			
	1	2	3	4
Hospital	$ 4,663,694	4,254,255	4,645,398	4,654,492
Physician	$ 1,950,516	2,215,094	1,651,165	2,083,184
Total donated services	$ 6,614,210	6,469,349	6,296,563	6,737,676

High Charge Patients

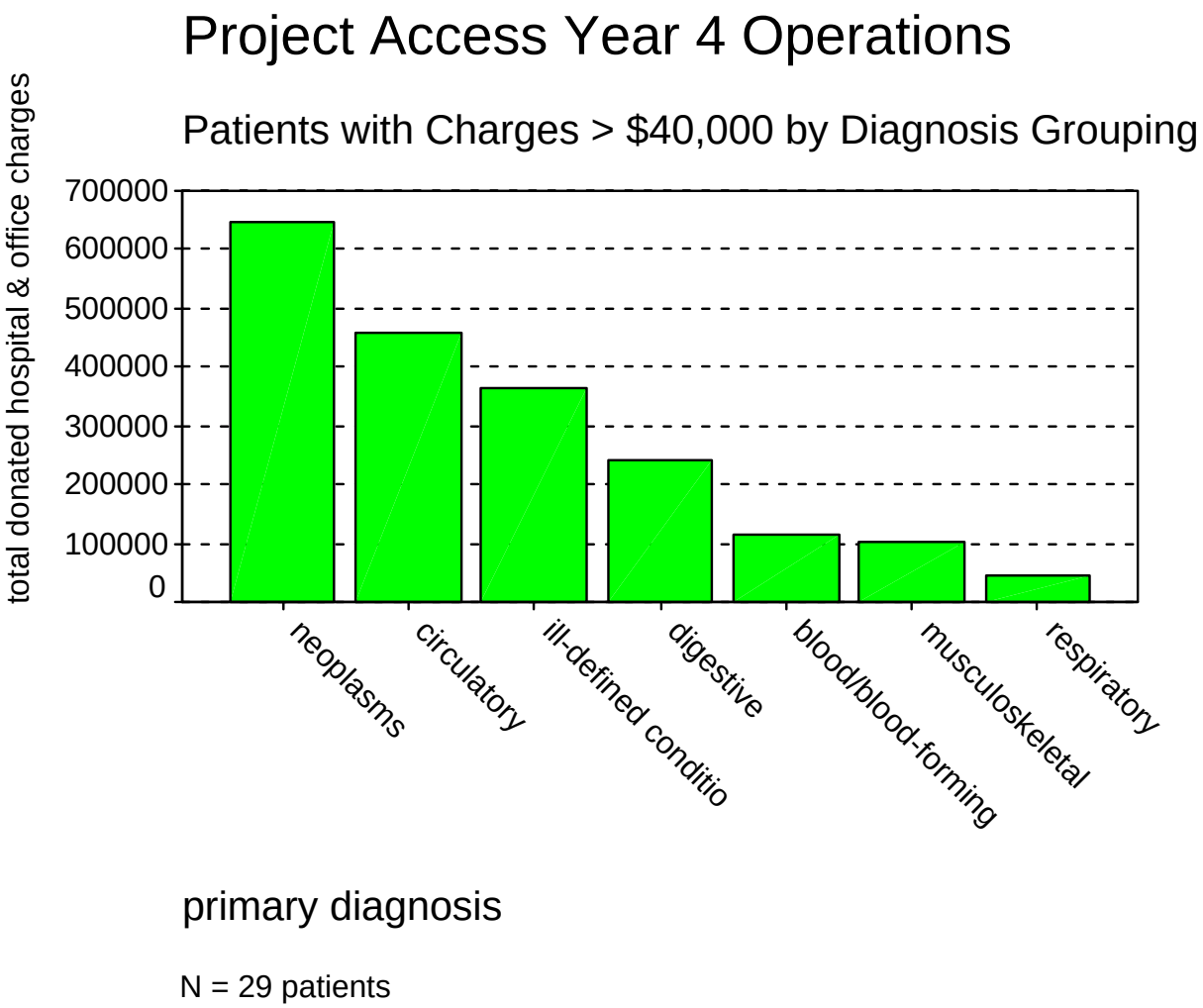
Each year a small number of patients with extremely high charges in both the office and hospital setting continue to inflate charges. In the office setting, 26 patients represented of 30.0% of donated service charges $613,757, nearly twice that of year 3 ($344,978). In the hospital setting 29 patients represented $1,604,734 donated services charges, or 35% of overall hospital charges, a nearly 5% increase from year 3 (30.2%) (see table 5). Graph 18 visually depicts the total donated service charges (hospital and physician office) exceeding $40,000 by primary diagnosis code for patients in year four, while Graph 19 demonstrates the impact of the high charge clients on the group mean.

The removal of patients with combined hospital and office charges greater than $40,000 reduces the donated service charge variability considerably. The mean total donated service charge is reduced by nearly $3,000 dollars from approximately $10,087 to $7,010 with these 29 patients removed. The median charge per encounter is reduced by approximately $400 from $4,902 to $ 4,592. The mean number of encounters per patient is essentially unchanged, with a reduction from 2.7 to 2.4 encounters. The mean total days per patient is reduced, however, by one day (5.8 to 4.7 days) when outlier patients are excluded.

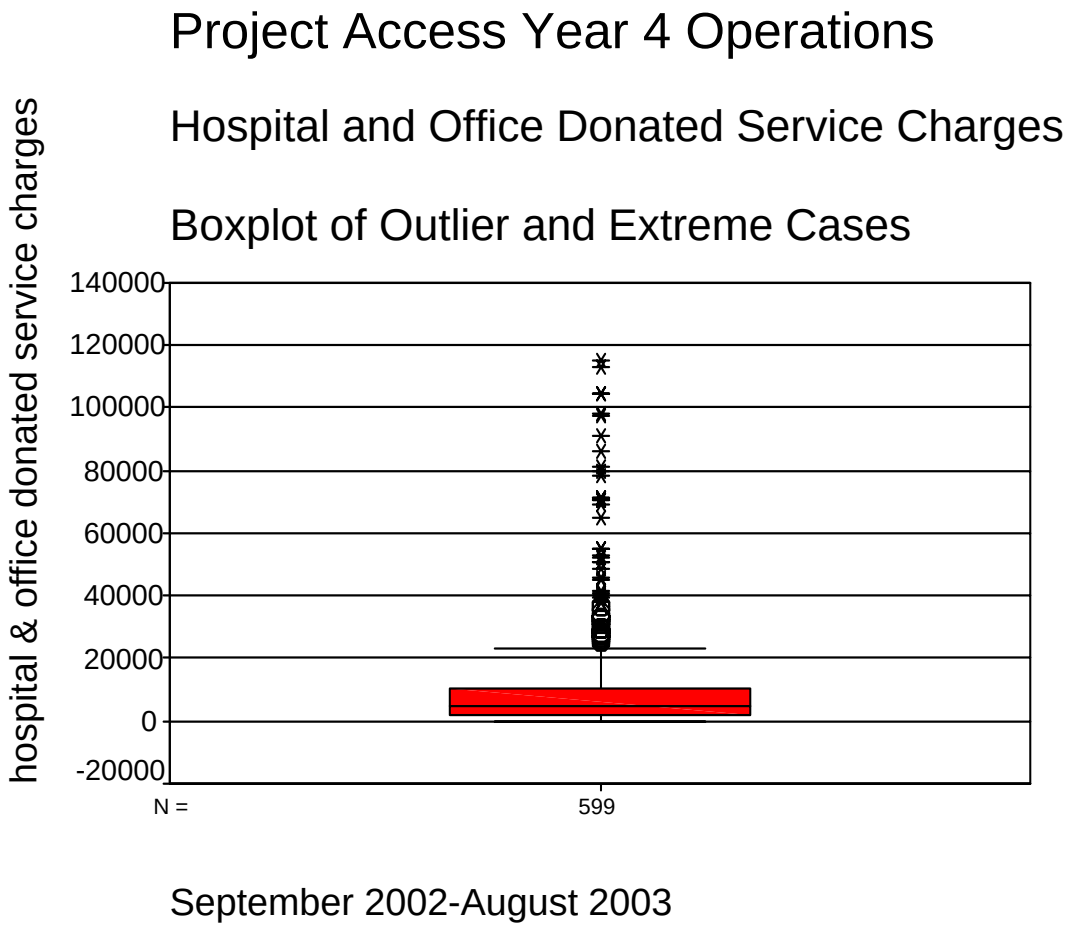
In year four there were two major groupings of diagnoses, cancer and cardiovascular disease. More than half of the 29 were cancer-related including neoplasms (tumors) of the breast, trachea/lung, colon, bladder, spinal cord, and secondary malignant unspecified sites, as well as Hodgkin's disease. Another high charge patient had diagnoses of autoimmune hemolytic anemia, lymphoma and pulmonary collapse. Five patients had cardiovascular diseases such as chest pain, angina, cardiomegaly (enlarged heart), endocarditis, mitral stenosis with

insufficiency, and coronary atherosclerois. One patient had multiple female problems associated with endometriosis and congenital doubling of the uterus. Co-morbid conditions for some of the patients included diabetes, hypothyroidism.

Graph 18

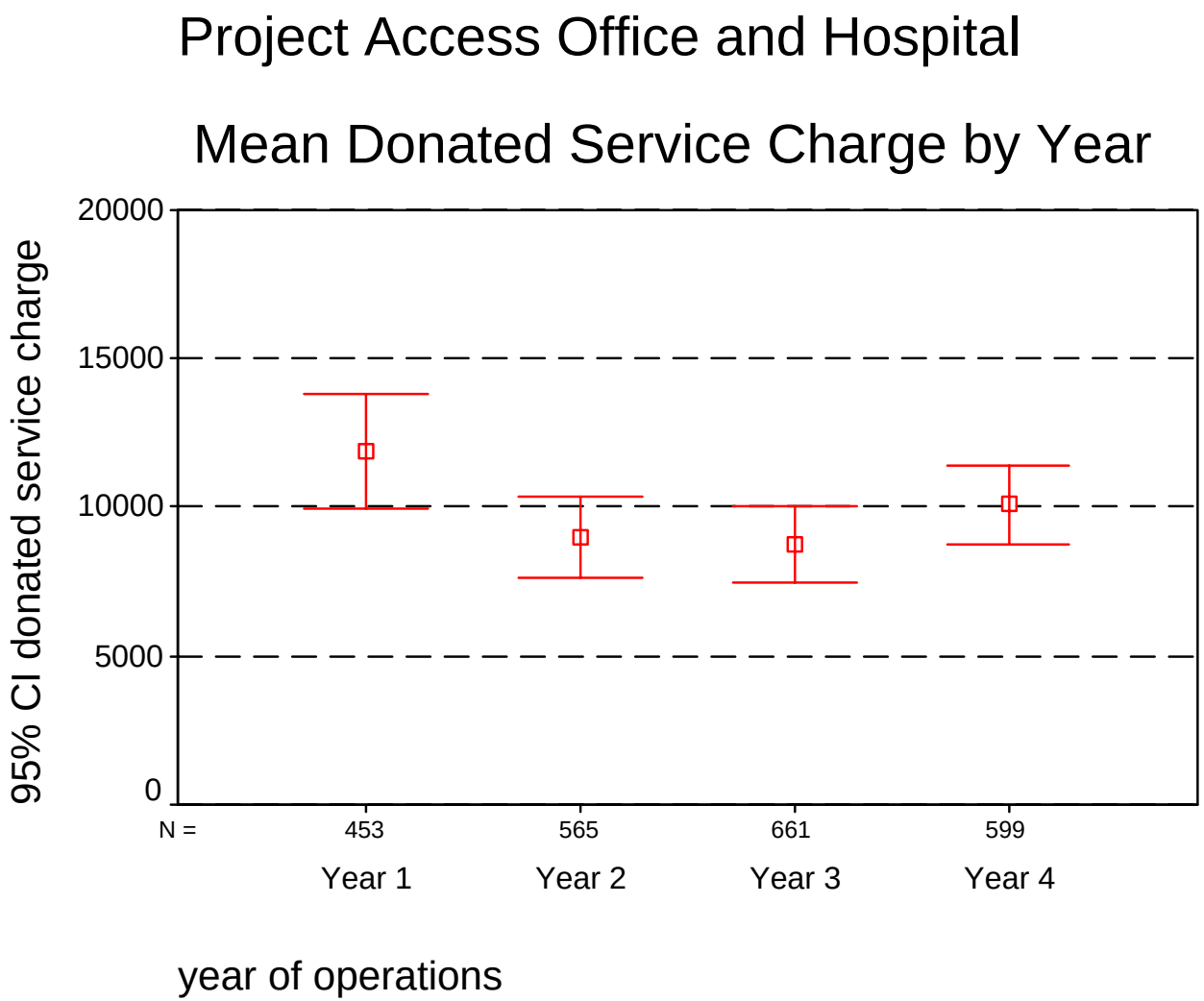


Graph 19

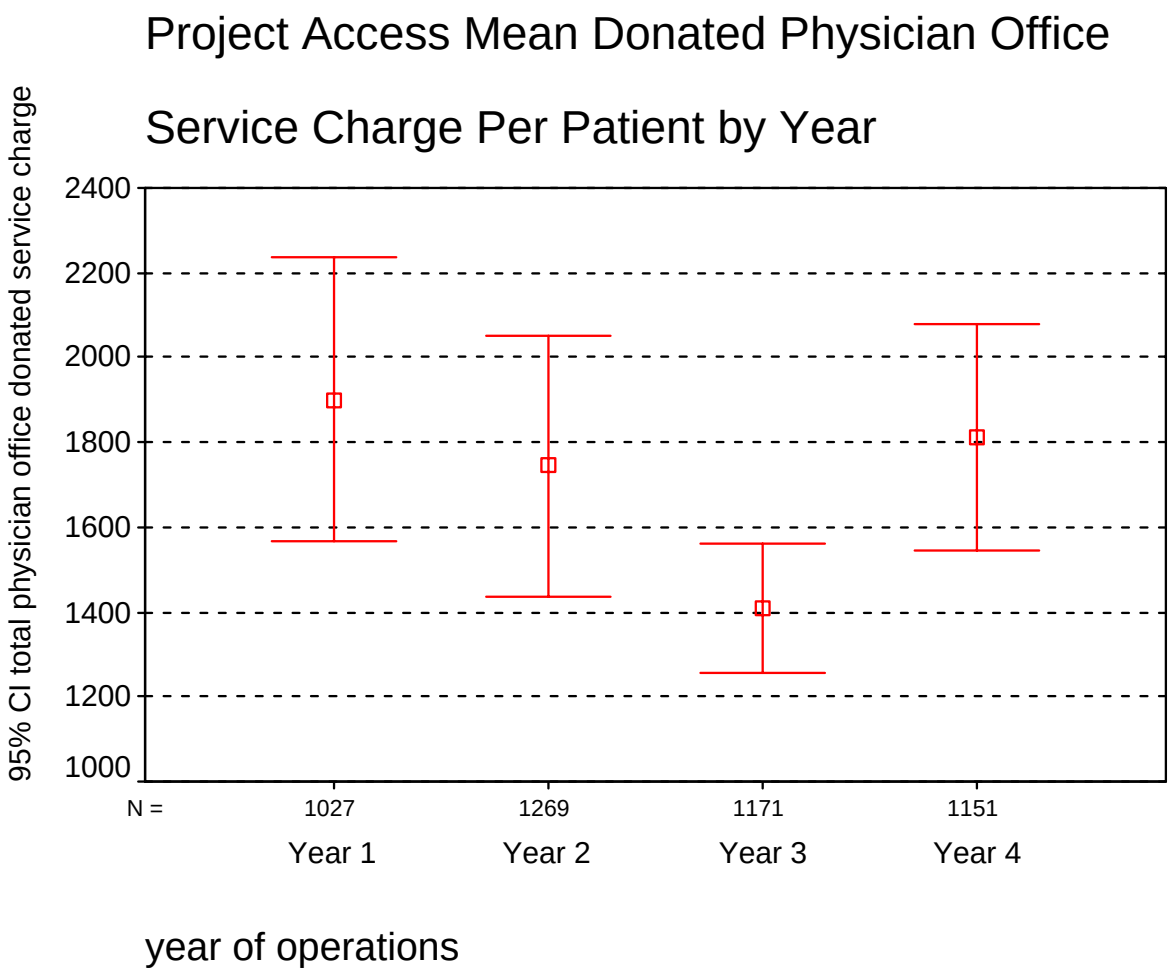


Graphs 20-21 illustrate provide comparisons of key utilization measures by year of operations. These graphs provide insight to sources of variation and components that may, in part, contribute to overall costs, and to overall trends in use. Donated hospital outpatient services encounters and charges have increased slightly from previous years. Inpatient encounters decreased, but inpatient service charges, and length of stay increased substantially. Donated physician office service charges increased, on average, approximately $200 per patient.

Graph 20


Project Access Office and Hospital
Mean Donated Service Charge by Year
95% CI donated service charge
20000
15000
10000
5000
0
N =
453
565
661
599
Year 1
Year 2
Year 3
Year 4
year of operations

Graph 21


Project Access Mean Donated Physician Office
Service Charge Per Patient by Year
95% CI total physician office donated service charge
2400
2200
2000
1800
1600
1400
1200
1000
N =
1027
1269
1171
1151
Year 1
Year 2
Year 3
Year 4
year of operations

Health Status Measurement

Within the SF-8, eight health concepts are measured, and include:

1. physical functioning
2. bodily pain
3. role limitations due to physical health problems
4. role limitations due to personal or emotional problems, emotional well-being
5. social functioning
6. energy/fatigue
7. general health perceptions
8. perceived change in health

These eight health concepts comprise the physical and mental health composite scores. SF-8s were completed on 606 clients at enrollment, and 206 of these patients also completed the instrument at disenrollment. The median physical health score for the general US population is 51.89, while the mental health score is 51.84. A higher score indicates a higher perceived physical functioning. The median physical health score of Project Access patients is 36.86, approximately 15 points lower than the general US population (poorer perceived physical health than general population). The other noteworthy piece of information is that the median mental health functioning score (poorer perceived mental health scores than general population) is 44.93, approximately 6 points lower than the national norm. See table 1.

Comparison of Pre/Post Physical and Mental Health Scores

Comparison of SF-8 physical and mental health scores at enrollment vs. disenrollment reveals a statistically significant improvement in perceived physical and mental health status. Among the 206 patients with measures at enrollment and disenrollment, there was a statistically significant increase in perceived physical health status ($t=4.664$, $df=205$, $p=<.001$) from 36.6 at enrollment to 40.2 at disenrollment. However, this remains approximately nine points below US population norms for physical health. Results of analysis of perceived mental health status showed the same pattern, although less dramatic. Mental health status improved, on average, two points from a mean score of 43.7 to 45.5 ($t=2.389$, $df=205$, $p=.02$), a statistically significant improvement. Mental health scores for Project Access patients at disenrollment remain below US population norms. (see Table 2). Graph 22 provides a visual display or pre/post SF-8 measures.

Table 8: Comparison of SF-8 Composite Scores for Sedgwick County Project Access Patients to General US Population Norms

		Current Project Access patients	SF-8 Norms for General US Population	Current Project Access patients	SF-8 Norms for General US Population
		physical health composite score	physical health composite score	mental health composite score	mental health composite score
N		606	N= 7,472	606	N= 7,472
Mean		37.36	49.20	43.71	49.19
Median		36.86	51.89	44.93	51.14
Percentiles	25	27.30	43.95	34.11	44.18
	50	36.86	51.89	44.93	54.14
	75	46.08	55.93	53.91	57.46
SD		46.27	9.07	11.28	9.46

Table 9: Comparison of Initial vs. Follow-Up SF-8 Scores for Project Access Patients

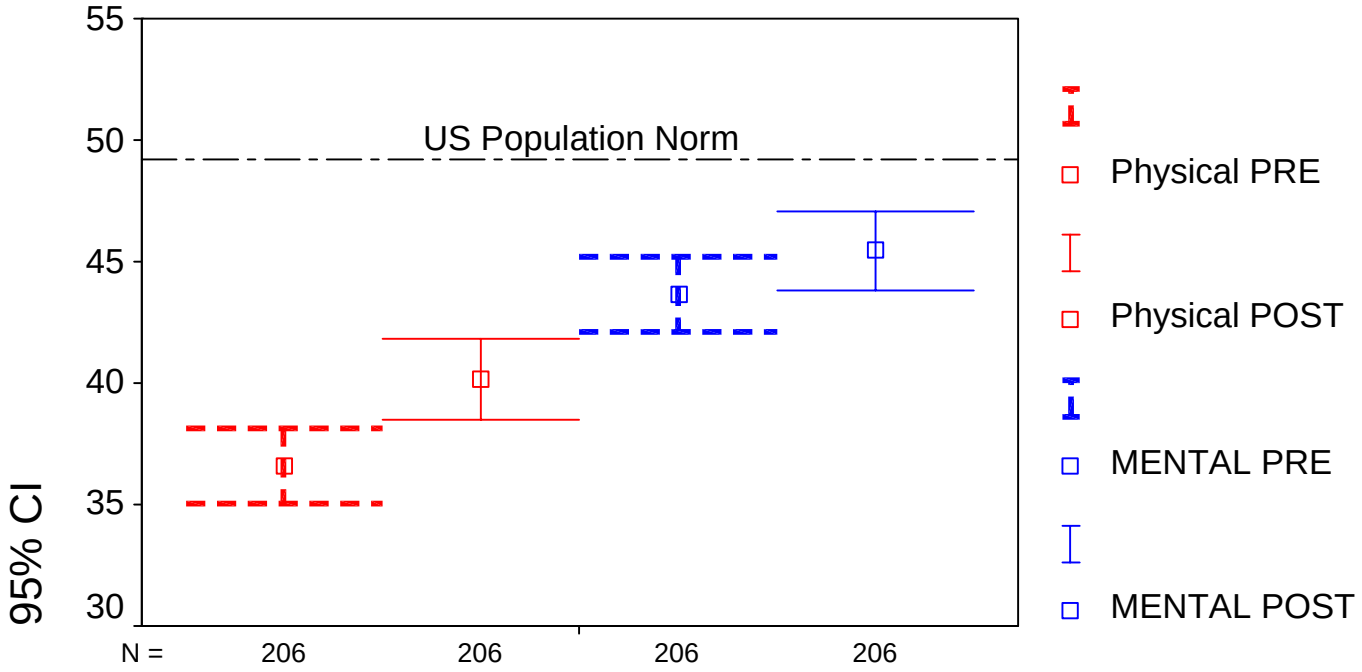
	Initial SF-8 Mean (SD) N=186	Post SF-8 Mean (SD) N=186	Paired t-test	SF-8 Norms for General US Population N= 7472
Physical health composite score	36.6(11.5)	40.2 (12.2)	t=4.664, df=205, p=<.001	49.20 (9.07)
Mental health composite score	43.7 (11.3)	45.5 (11.8)	t=2.389, df=205, p=.02	49.19 (9.46)

Graph 22

Project Access Patients

Change in Physical and Mental Health Scores

Enrollment vs. Disenrollment



October 2002 - February 2004

Employment and Insurance Status

From January 2002 to March 2004, there were 792 Project Access patients completed the employment survey. At enrollment, 81% reported being new enrollees, and 19% reported being re-enrollees. Seventy-five percent completed the survey once, and 20% completed the survey twice. Employment shows little change from enrollment to disenrollment. At enrollment, approximately 33% of respondents (250 people) reported being employed in some capacity. Of these respondents, 48% were working full time and 46% were working part time (Graph 23).

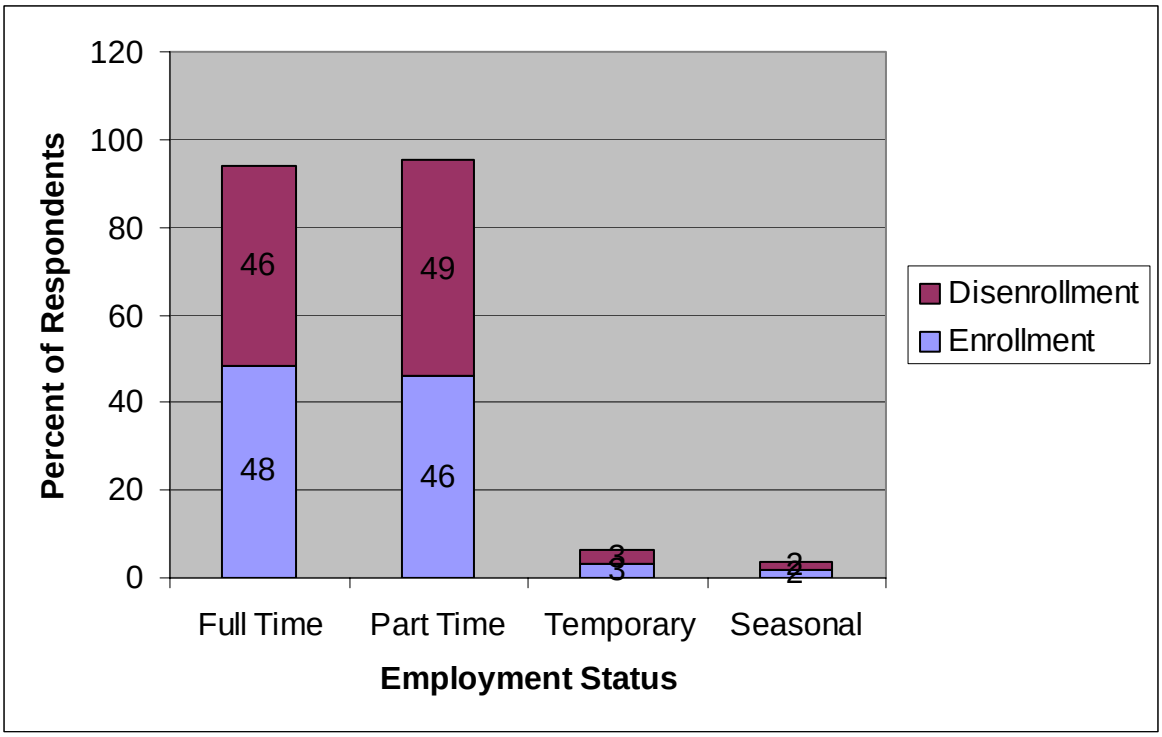
The majority of respondents reported working part-time jobs. At enrollment, twelve percent of participants reported working 40 or more hours, while 40% reported working 30-40 hours, 25% working 20-30 hours, and 14% reported working 10-20 hours. At disenrollment, hours worked tended to decrease (see Graph 24). Although at enrollment, 40% indicated having their current job less than six months, 37% reporting having their current job for 24 or more months. At disenrollment, 47% reported having their current jobs 24 or more months, and only 32% reported working in their current job for less than six months (Graph 25).

The number of sick days taken due to participants' ill health remained similar from enrollment to disenrollment (Graph 26). The majority of respondents at enrollment (56%) and at disenrollment (62%) reported taking no days off work in the past six months for visits to doctors (Graph 27). Similarly, the majority of respondents at enrollment (79%) and disenrollment (75%) reported taking no days off work in the past six months due to the illness of a family member. The majority of respondents at enrollment (56%) and disenrollment (62%) reported taking no days off work without pay in the past six months due to health problems in the last six months (Graph 28).

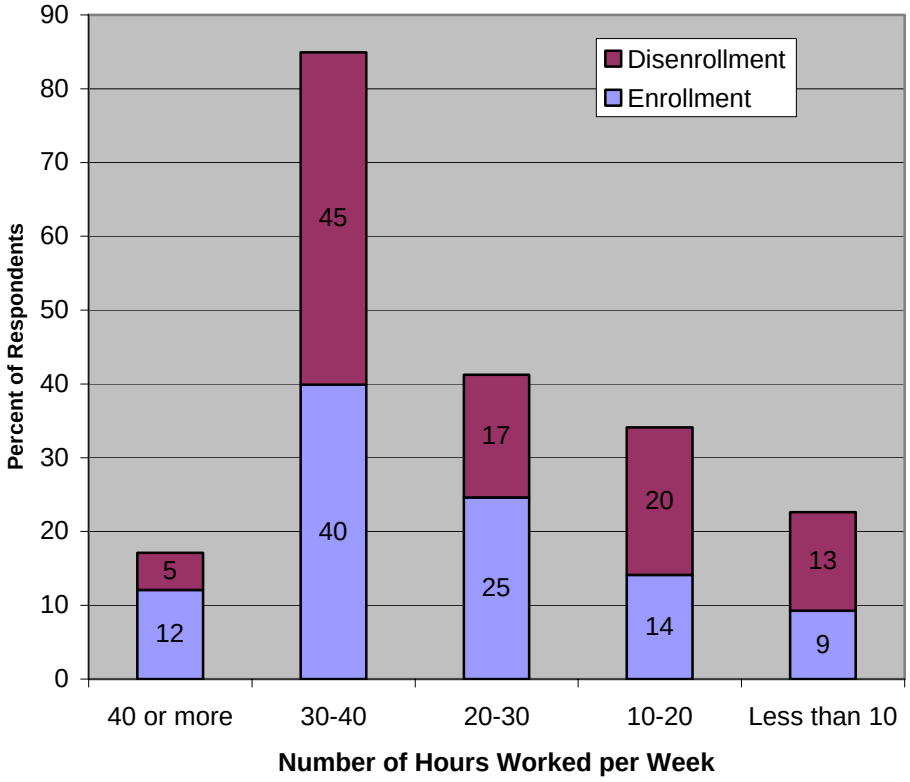
For those who reported being unemployed, 46% at enrollment and 49% at disenrollment identified their reason for unemployment as being disabled or having health problems (Graph 29). However, family members' poor health does not keep the majority of respondents from having a job; 65% at enrollment and 64% at disenrollment indicate they have their family members' health status has not kept them from having a job.

Note that 92% of respondents at enrollment and 93% at disenrollment report not having any type of medical payments support. For those who did report having medical payment support at enrollment and disenrollment, most reported receiving Medicaid, although MediKan and commerical payment support methods are also fairly well used.

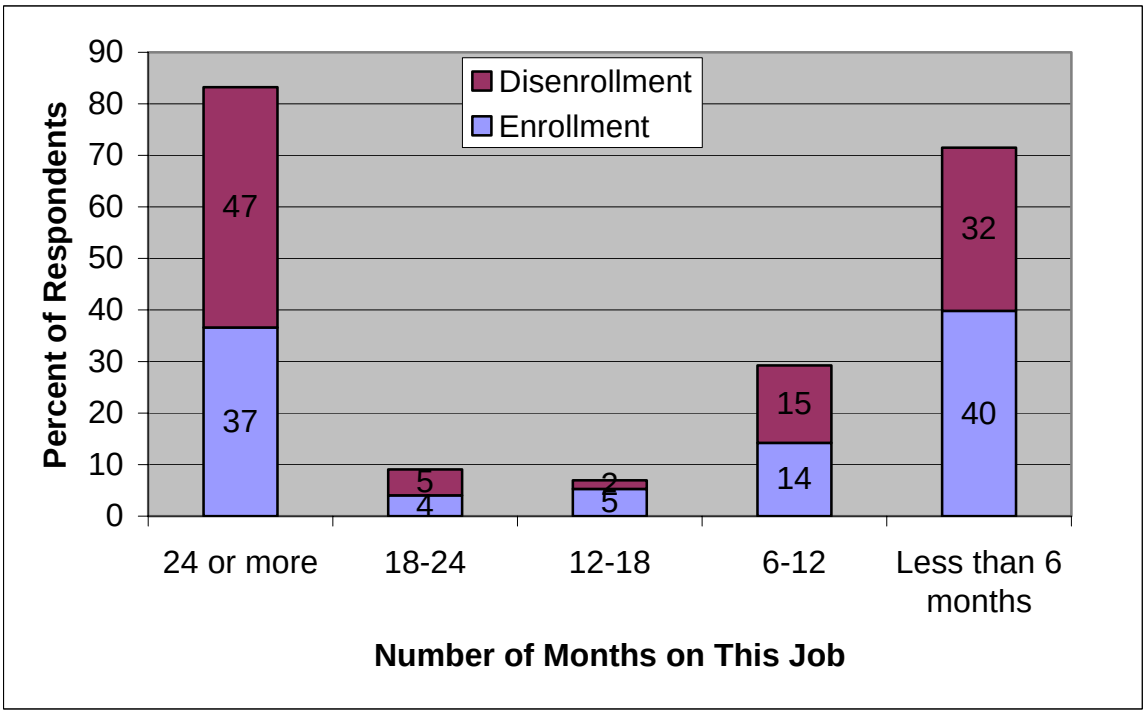
Graph 23 – Employment Status



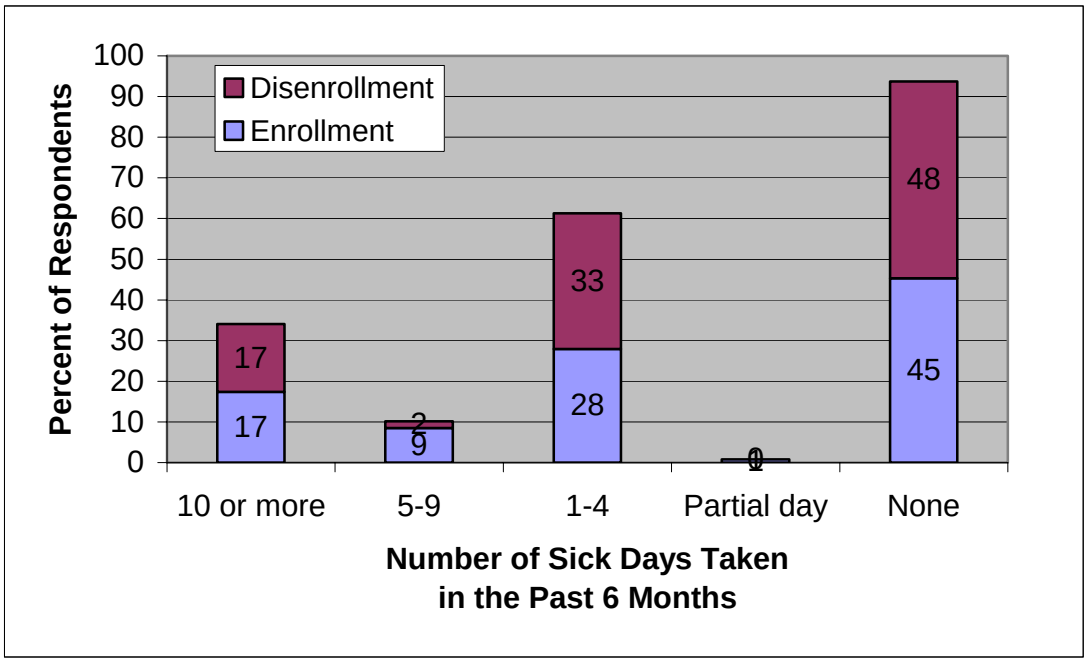
Graph 24 – Percent of Participants' Number of Hours Worked per Week



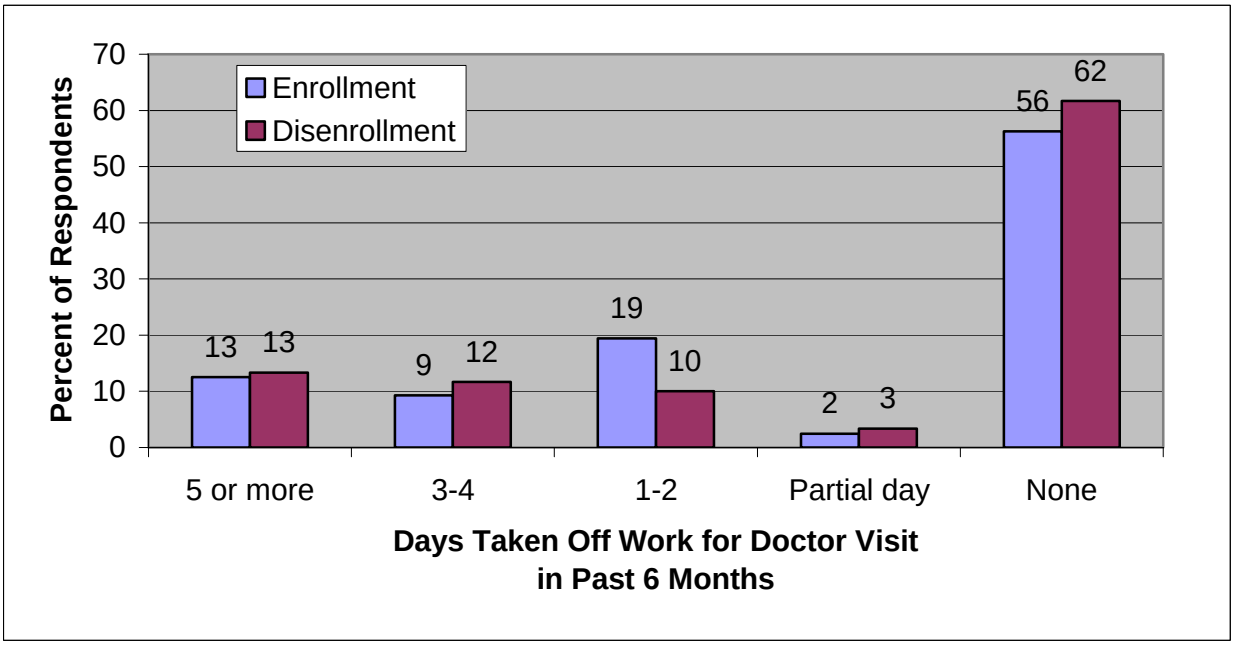
Graph 25 – Percent of Participants' Number of Months in Current Job



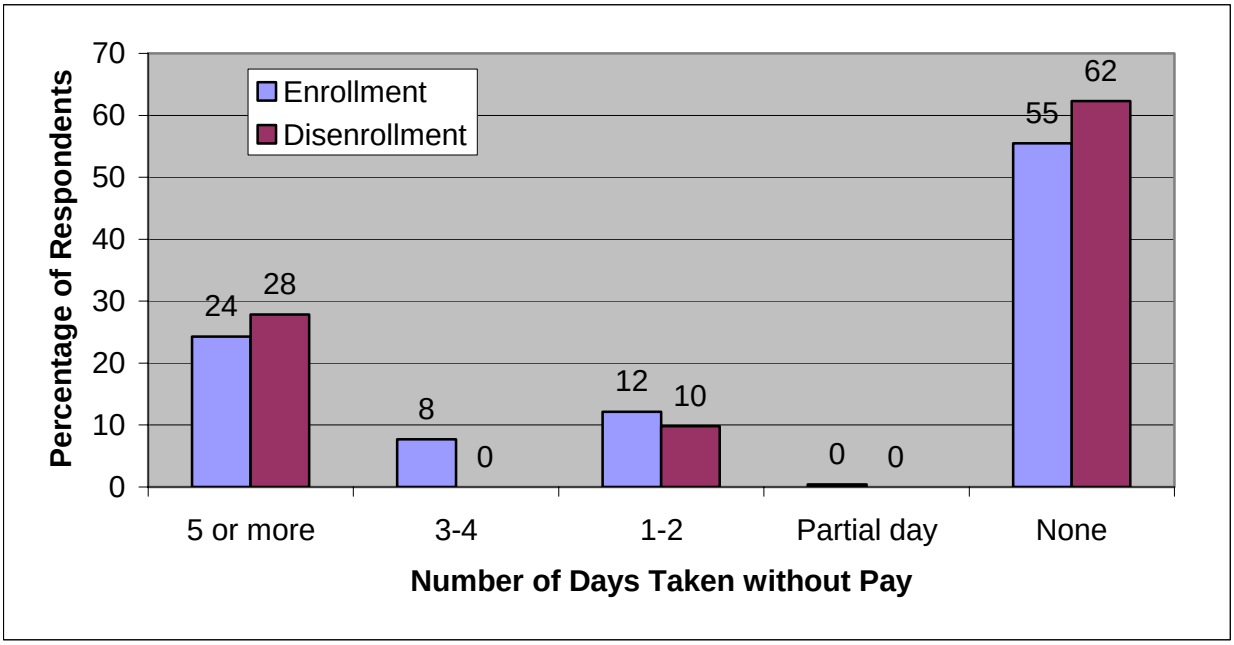
Graph 26 – Percent of Participants' Self-Reported Number of Sick Days Taken in the Past Six Months



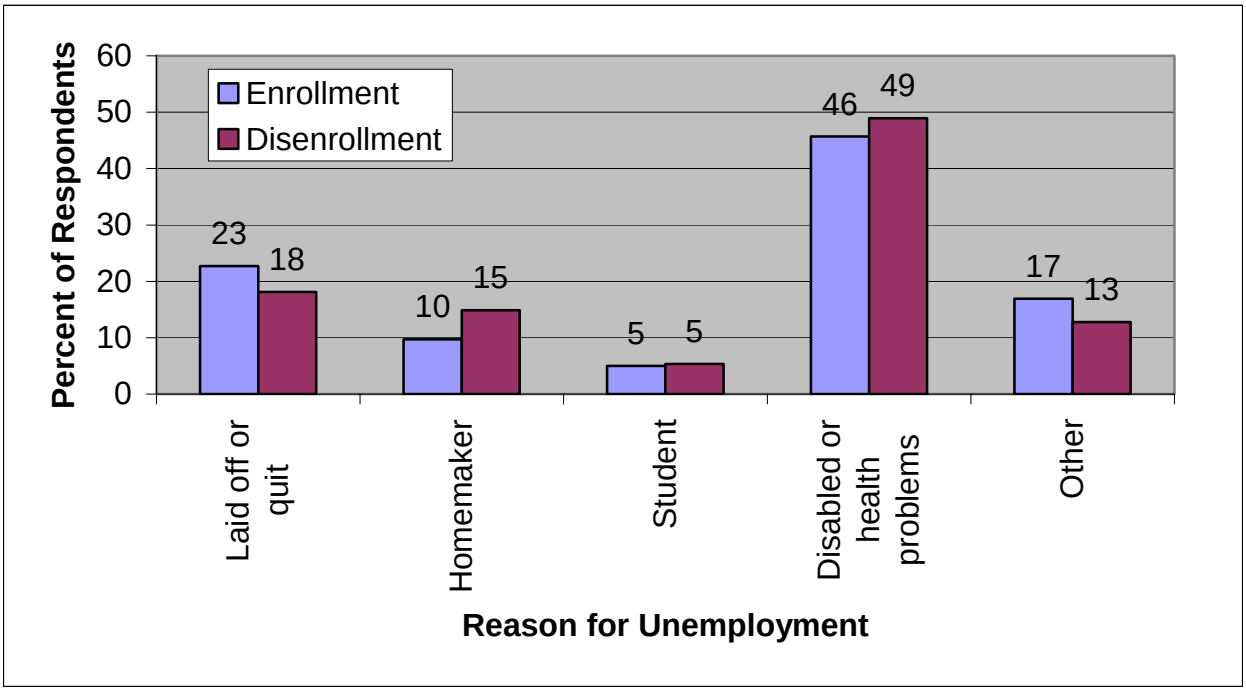
Graph 27 – Percent of Respondents Taking Days off Work in the Past 6 Months for Doctor Visits



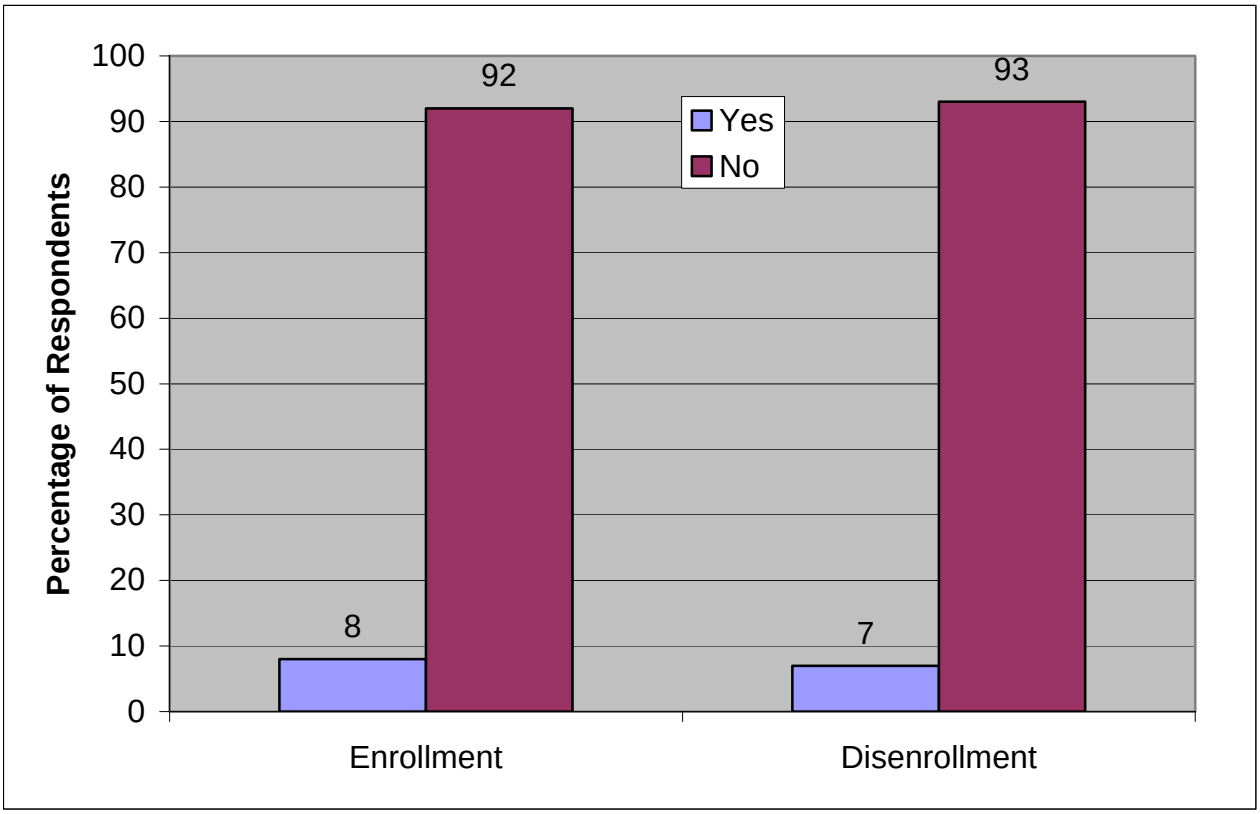
Graph 28 – Percent of Respondents Taking Days off Work in the Past 6 Months Without Pay Due to Health Problems



Graph 29 – Reasons for Unemployment



Graph 30 – Percent of Respondents Reporting Medical Payment Support



Conclusions and Recommendations:

The Project Access partnership continues to provide a valuable service to the Wichita/Sedgwick County community. Area hospitals, physicians, and other health care providers are serving a large number of ill Sedgwick County residents who would otherwise, be unable to access medical care. Although the demographic characteristics, medical diagnostic categories, and procedure codes are relatively similar in all four years, the average donated service charge was higher in year four, as compared to the previous two years.

Analysis of donated physician office and hospital costs combined reveals the median donated service charge for physician office and hospital combined, was $4,902 in year 4, $5204 in year three, $4,888 in year two, and $6,308 in year one. As in previous years, the handful of patients with extremely high charges inflates the average charge dramatically**.**

Findings indicate that just over 50% of patients are served for $5,000 or less. Moreover, results this year suggest there are two populations of patients served, those with acute health problems and those with chronic health problems. The mean LOS continues to climb upward for the fourth consecutive year, although most patients have only one or two encounters with the hospital system. Donated physician office service charges increased substantially this year, largely due to oncology treatment in the office setting. To date, more than $26 million have been donated by area physicians and hospitals to provide medical care to those who would otherwise be unable to access care. Hospitals have donated more than $18 million (70%) while physicians have donated nearly $8 million (30%) in medical care.

According to D.P. Rogoff (HRSA Healthy Community Access Program consultant), the average cost for uncoordinated care is between $6,000 and $6,500 per person per year, whereas coordinated care costs between $3,700 and $4,500 per person per year. Using this formula, the costs savings in Sedgwick County, through the volunteer health care providers efforts, ranges between $2,302,000 and $2,647,300 for those 1,151 patients enrolled through Project Access in year four (Table 10). Between $10.4 and $12.0 million dollars of cost savings has been achieved during the past 4 years. Hospitals have donated more than $18 million (70%) while physicians have donated nearly $8 million (30%) in medical care.

Mental and physical health status improves dramatically among patients enrolled in Project Access. Comparison of SF-8 physical and mental health scores at enrollment vs. disenrollment reveals a statistically significant improvement in perceived physical and mental

health status. However, both physical and mental health status remains well below US population norms. Employment status appears to be largely unchanged from enrollment to disenrollment. The number of sick days taken due to participants' ill health remained similar from enrollment to disenrollment as well.

As in previous years, a small percentage of those patients receiving care in year four, had extremely high treatment costs, repeated hospitalizations, and multiple physician office visits. A low-income family or individual must cope not only with a lack of resources needed to meet daily requirements such as food, rent, utilities, and transportation, but must also perform the cooking, cleaning, provide childcare, work when needed, and help older children with homework. Additional tasks can become overwhelming, making it easier to continue in the cycle of chaos than to try to cope with one more task. Many low-income families, particularly single mother families, exist one step away from chaos. In the daily struggle to meet daily living requirements such as shelter, food, clothing, and transportation, these families may not have the social or material resources required to provide self-care and return to health. They become ill again, with repeated visits to the physicians office or return visits to the hospital.

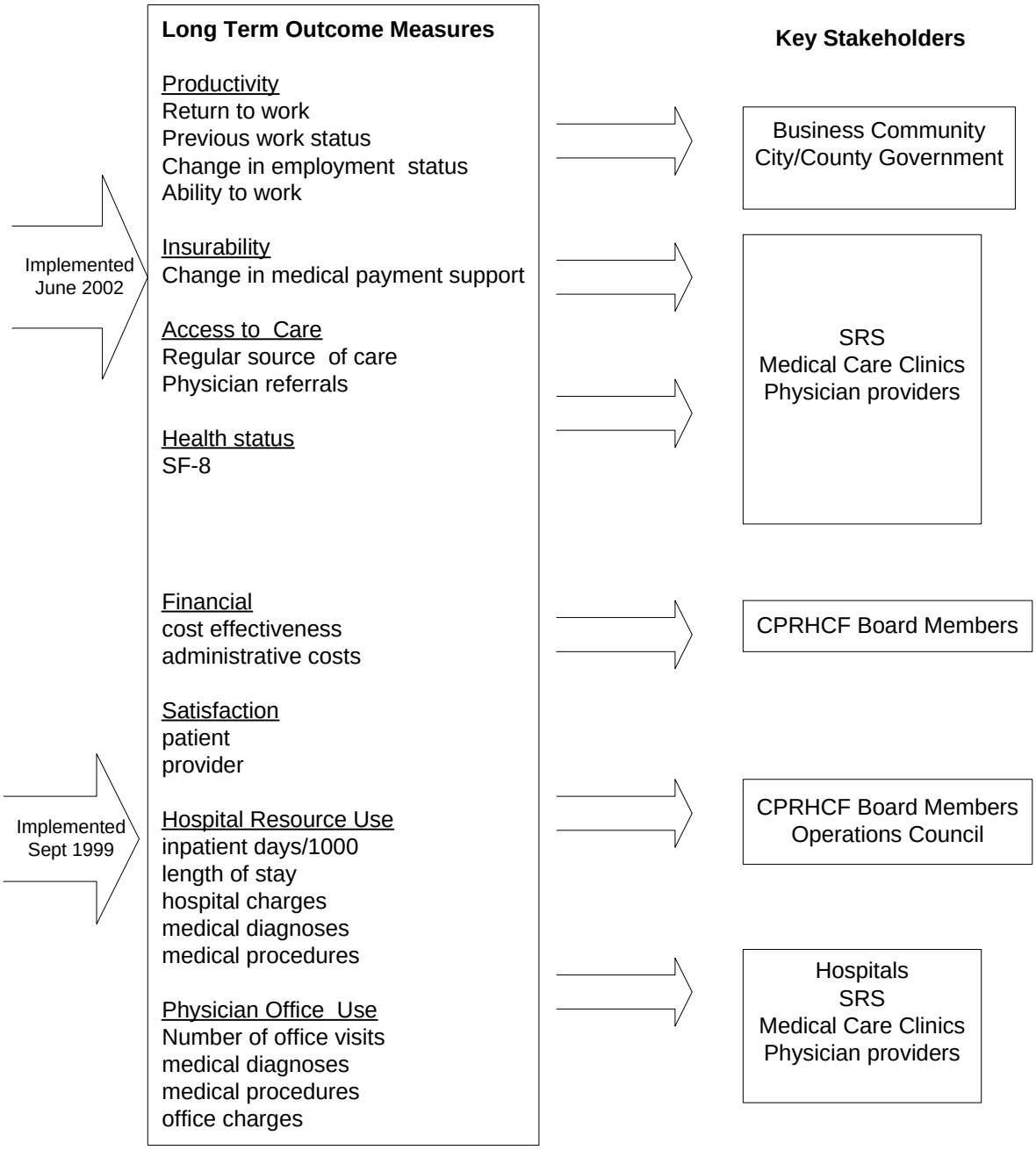
Of the 600 plus hospitalized patients, only 29 patients were extreme outliers in terms of resource consumption. This finding suggests that a case management system, which assists these patients directly, may be an effective method for reducing and equalizing utilization of health care services. The participating hospitals may elect to design and implement a method of identifying Project Access (and other self-pay patients) who are readmitted to the hospital within 30 days of discharge. Substantial savings could be achieved if even 25% of the readmissions could be prevented. This technique may be helpful to participating physicians as well.

In conclusion, the analyses suggest that local physicians, hospitals, and other health care providers, as well as Project Access, are providing valuable, cost-effective service to low-income uninsured residents of Sedgwick County.

Table 10- Estimated Cost Savings of Providing Fragmented vs. Non-Fragmented Care in Sedgwick County, Ks. 1999 through 2003

Year	1	2	3	4	Total Served
Number of Patients Served	1,484	1,288	1,330	1,151	4,102
Cost savings with high estimate ($6,000 - $6,500)	$ 3,413,200	$ 2,962,400	$ 3,059,000	$ 2,647,300	$ 12,042,800
Cost savings with low estimate ($3,700 - $4,500)	$ 2,968,000	$ 2,576,000	$ 2,660,000	$ 2,302,000	$ 10,472,000

Sedgwick County Project Access Participants Evaluation Plan



Appendix 1: Description of Diagnostic Categories

The Health Care Financing Administration (HCFA) Prospective Payment System classifies disease(s), diagnostic and surgical procedures using a coding system. For this analysis, codes applicable for the acute care setting, DRGs (diagnosis related-groups) and ICD-9 codes were used. A DRG is one of 495 classifications of diagnoses in which patients demonstrate similar resource consumption and length of stay patterns, whereas ICD-9 codes are quite specific to diagnoses of disease, types and sites of surgical procedures, as well as diagnostic procedures such as radiological and laboratory exams.

The principle or primary diagnosis is the condition established after study to be chiefly responsible for the hospital admission for care. Whereas all other diagnoses, second, third or fourth, may exist at the time of admission or develop subsequently during the hospitalization, these additional ICD-9 codes affect treatment received and/or the length of stay. A co-morbidity is a preexisting condition that, due to its presence with a specific diagnosis, causes an increase in the length of stay.

Due to the extensive use of "medicalese" for DRG and ICD-9 codes, a body systems grouping mechanism was used to provide a sense of the volume and severity of disease that uninsured patients are experiencing. The following is a description of the 17 categories of disease, diagnoses and procedures observed from September 1999 through July 2000.

1. **Infections and parasitic diseases**: Patients in this category had diagnoses such as hepatitis B, viral hepatitis with or without complications during their hospitalization.
2. **Neoplasms:** Patients with a wide variety of types and sites of cancers were treated. Neoplasms were located in all major body systems and included colon, rectum, gallbladder, mouth, trachea, larynx, lung, thyroid, breast, cervix and uterus, prostate, skin, brain, and spine.
3. **Endocrine, metabolic, nutritional disorders**: Diagnoses in this category included diabetes, goiter, thyrotoxicosis, and hypothyroidism.
4. **Blood and blood-forming diseases**: Patients in this grouping were treated for anemia, thrombocytopenia and lymphadenitis.
5. **Mental disorders**: Patients in this grouping had diagnoses of psychoses, depression, and anxiety disorder.
6. **Nervous system and sense organs**: A wide range of diagnoses were represented in the category—including neuritis, hydrocephalus, corneal ulcers, chronic otitis media and hearing loss.
7. **Circulatory system diseases**: Diagnoses in this category included heart disease, hypertension, heart attack, atherosclerosis, dysrhythmias, enlarged heart, arteriosclerosis, peripheral venous insufficiency, and hemorrhoid.
8. **Respiratory system diseases**: Patients in this category were treated for nasal cavity problems and sinusitis, bronchitis, bronchiolitis, chronic tonsillitis, pneumonia, chronic airway obstruction, breathing difficulties related to radiation therapy.
9. **Digestive system diseases**: Diagnoses in this category included tooth, pulp and other mouth diseases, esophagitis, peptic ulcer, reflux disease, gastritis and hemorrhage, appendicitis w/ peritonitis, hernia repair, ulcerative colitis, fistula, lower gastrointestinal hemorrhage, chronic hepatitis, gall bladder surgery, pancreatic disease.

10. **Genitourinary system diseases**: A wide range of diagnoses were observed in this category including acute and chronic renal disease, kidney stones in kidney and ureter, ureteral obstruction, blood in urine, disorders of make and female reproductive systems.
11. **Complications of pregnancy, childbirth and puerperium**: A small number of women were treated for problems such as threatened premature labor, pregnancy management for complicated births, excessive bleeding post delivery,
12. **Skin and subcutaneous tissue diseases**: Patients in this category were treated for cellulitis and abscesses, dermatitis, or skin ulcers.
13. **Musculoskeletal system**: This category is a high volume category affecting a large number of patients in the data set. The category includes such diagnoses as osteo and rheumatoid arthritis, spine and joint pain/procedures.
14. **Congenital anomalies**: This category was very low volume and involved the correction of anomalies on adult patient.
15. **Conditions** arising in the perinatal period: There were no observations of this category in the first year of operations.
16. **Ill-defined conditions, signs and symptoms**: A wide range of diagnoses were observed in this category including dizziness, sleep disturbances, malaise, and various types of chest pain, nausea, vomiting, abdominal pain, abdominal swelling, abnormal laboratory and radiological results.
17. **Injury and poisoning**: This category is also wide-ranging, and includes such diagnoses as fractures of the face, ribs and extremity, open wounds, contusions, burns, post procedure complications, and postoperative infections.

Appendix 2: Description of Physician Office Procedures

The Health Care Financing Administration (HCFA) Prospective Payment System classifies disease(s), diagnostic and surgical procedures using a coding system. For this analysis, ICD-9 codes and Current Procedural Terminology (CPT) codes applicable for the health care services were used. ICD-9 codes are quite specific to diagnoses of disease, types and sites of surgical procedures, as well as diagnostic procedures such as radiological and laboratory exams, whereas CPT codes describe intervention services associated with treatment procedures. ICD-9 disease codes were described previously. A broad, medical treatment and/or services category label was used to provide a sense of the types and volume of services rendered to uninsured patients. The following is a description of the five categories of treatments and procedures observed from September 1999 through July 2000.

1. **Surgical procedures**—includes "package" services of the actual surgical procedure, preoperative, perioperative, and normal, uncomplicated postoperative care.

2. **Radiology** services regularly employ imaging, diagnostic and treatment procedures. Diagnostic procedures include computerized tomography (CT), magnetic resonance imaging (MRI), or diagnostic ultrasound, while interventional radiology procedures may include radiation oncology or diagnostic therapeutic nuclear medicine, and other therapeutic technologies. Radiology procedures are comprised of two components: technical and professional. The technical component includes the provision of the equipment, supplies, technical personnel and costs attendant to the performance of the procedure. The professional component encompasses the physician's work in providing the service, including supervision, interpretation and report of the procedure.

3. **Laboratory & Pathology** includes any laboratory tests that may be performed for diagnostic and/or treatment purposes in the care of the patient. Subsections include organ or disease-oriented panels, drug testing, drug screens, therapeutic drug assays (in which a drug level is measured), evocative/suppression testing (measure the effects of administered stimulating or suppressive agents upon the patient), consultation, urinalysis, chemistry (glucose, electrolytes, etc.), hematology and coagulation (hemoglobin/hematocrit, prothrombin time, INR, etc.), immunology, transfusion, microbiology (cultures, organism identification, and sensitivity studies), four types of pathology studies, anatomic pathology (post mortem), cytopathology (Pap smears), cytogenic (chromosome analysis), and surgical (gross and microscopic examination of specimens submitted from surgical procedures).

4. **Medicine** is a broad category including diagnostic and therapeutic services such as immunizations, injections, specialty-specific codes, and special services. The specialty services include psychiatry, therapeutic or diagnostic infusions (excluding chemotherapy) that require a physician's presence, biofeedback, dialysis, ophthalmology, cardiovascular (cardiography, echocardiography, cardiac catheterization, electrophysiologic studies), pulmonary, allergy and clinical immunology, neurology and neuromuscular procedures, sleep testing, central nervous system assessments, chemotherapy administration, physical medicine and rehabilitation, wound management, osteopathic or chiropractic manipulative treatment, anesthesia and special services and reports.

5. **Evaluation and Management** involves office visits (new and established), hospital visits (initial and subsequent), and consultations. These are face-to-face, professional services, and include assessment (chief complaint, past, present and social history, and a review of systems), diagnostic services and treatment interventions provided by the physician.