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July 28, 2009

To: Supervisor Don Knabe, Chairman
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Supervisor Michael D. Antonovich

From: William T Fujioka
Chief Executive Officer

TRANSMISSION OF THE FINAL REPORT ON THE RESULTS OF THE ADULT LINKAGES PROJECT

With submission to your Board of the attached report, "Using the Adult Linkages Project for Determining Patterns and Costs of Services Use by General Relief Recipients," the Chief Executive Office (CEO) and the Department of Public Social Services (DPSS) have now completed their joint Adult Linkages Project (ALP). An Executive Summary for the report is also attached and highlights the larger report's main findings.

The ALP report looks at the costs County departments incur in providing services to General Relief (GR) participants and provides crucial information on the GR population's fiscal impact. Based on the figures presented in the report, the CEO and DPSS estimate that the combined grant and service costs for the General Relief (GR) population will reach $1 billion during Fiscal Year (FY) 2009-10. The magnitude of these expenditures adds impetus to the County's current efforts to restructure GR in ways that will make delivery of needed services to the program's participants more effective and efficient.

Background

The CEO's Service Integration Branch (SIB) launched the ALP in December 2006 after receiving funding for the Project from the Chief Information Office's Information Technology Fund and the Quality and Productivity Commission's Productivity Investment Fund. SIB partnered with DPSS for the purpose of conducting research that would reveal the multi-departmental patterns of service utilization within the County's GR population, as well as the costs involved in delivering these services. The information provided in the report could not have been generated without the collaborative efforts and cooperation of the

Departments of Children and Family Services (DCFS), Community and Senior Services (CSS), Health Services (DHS), Mental Health (DMH), Probation (Probation), Public Health (DPH), and the Sheriff. The assistance and careful review of the findings these departments offered enabled the ALP report to illuminate potential policy steps the County should take to create cost savings through the provision of targeted services to the GR population.

The ALP's Objectives and Accomplishments

The ALP has garnered recognition for its contribution to government practice from two national organizations. The National Association of Counties recognized the ALP's data integration methodology with a 2009 Achievement Award in the area of information technology solutions. Additionally, the MacArthur Foundation has recognized the Research and Evaluation Services unit (RES) within SIB as one of only ten known organizations in the United States to develop integrated technology systems for the evaluation of social policies and programs serving vulnerable populations. The MacArthur Award is largely based on the ALP's innovations and accomplishments and includes grant funding for future SIB/RES projects requiring record linkage and data integration.

With the submission to the Board of the report, "Using the Adult Linkages Project for Determining Patterns and Costs of Services Use by General Relief Recipients," co-authored by Dr. Dennis P. Culhane and Dr. Stephen Metraux, the CEO and DPSS have now accomplished the four identified objectives for the ALP:

1. ***The development of a feasible method of data integration that enables cross-departmental linkage of administrative records by means that conform to confidentiality laws.***

   The ALP collected data on roughly 13,000 persons who entered GR during the first half of 2006. These recipients were divided into two cohorts, one consisting of those who had received GR previously and one consisting of those receiving GR for the first time. The DPSS administrative records for these recipients were matched against records of services they received between 2005 and 2007 from DCFS, CSS, DHS, DMH, Probation, DPH, and the Sheriff.

   The process of matching records across multiple County departments was accomplished by means that remained in conformity with confidentiality laws. SIB developed a data integration methodology based on de-identified and encrypted linkage keys, and the resulting data linkage system enabled records to be matched across departments without compromising protected information or violating confidentiality laws.

2. ***Storage of the integrated service data in an analytical data warehouse located at SIB.***

   RES' data linkage system made it possible for comprehensive data to be generated on the GR population's patterns of service utilization and service costs. The de-identified data is stored in an analytical data warehouse residing at SIB.

3. ***Delivery of a report to the Board of Supervisors providing analysis of the integrated data and information on the GR population's complex patterns of service utilization, as well as the costs involved in delivering these services.***

   The CEO contracted through a competitive procurement with Dr. Dennis P. Culhane, from the School of Social Policy and Practice at the University of Pennsylvania, and Dr. Stephen Metraux, from the Department of Health Policy and Public Health at the University of the Sciences in Philadelphia, to analyze the integrated ALP data and prepare a report on the complex patterns of service utilization within the County's GR population, as well as the cost of providing these services. Dr. Culhane and Dr. Metraux are recognized as two of the nation's foremost experts on homelessness and social welfare policy, and they have written widely on social welfare policy as a means of cost avoidance. Their report for the ALP, "Using the Adult Linkages Project for Determining Patterns and Costs of Services Use by General Relief Recipients," presents the results of the detailed statistical analyses they conducted on the integrated ALP data and uses the results of these analyses as the basis for a series of recommendations on policy steps that can be taken to provide services to the GR population more effectively and efficiently. An Executive Summary distilling the main findings from the Culhane and Metraux report is also being submitted to the Board. The report will be especially valuable to policymakers as the County moves forward with its plans to restructure the GR program.

4. ***Expansion of the ALP's data integration methodology to other study populations for the purpose of evidence-based policy formation and enhancement.***

   The CEO will continue to use the ALP data integration methodology for other analytical projects requiring inter-departmental linkage of administrative records. For example, SIB is finalizing an evaluation of the GR Housing Subsidy and Case Management Pilot Project, which will include a cost avoidance analysis requiring a data match across multiple departments. SIB is also currently conducting cost avoidance analyses of four other programs associated with the County's Homeless Prevention Initiative (HPI) and will eventually conduct similar analyses of a number of additional HPI programs and Project 50, as well as a study, funded by the Hilton Foundation, of outcomes for youth exiting the County's foster care and juvenile probation supervision systems. The ALP's data integration methodology has therefore opened up a new and more rigorous level of evidence-based policy analysis and accountability for the County of Los Angeles.

Fiscal Implications of the ALP's Findings

Based on the costs provided in the report by Dr. Culhane and Dr. Metraux, SIB and DPSS calculated that County departments other than DPSS spent $4.34 for GR participants in the two research cohorts while they were on GR for every $1.00 in GR grant payments. Virtually all of the expenditures in departments other than DPSS were net County cost.

SIB and DPSS have applied this ratio to estimate the costs for the GR population as a whole for FY 2008-09:

- Total GR grant costs: **$166,799,844**; and
- Total estimated costs for departments other than DPSS providing services to the GR population while receiving GR: **$723,824,523**.

Based on this methodology, the combined grant and service costs for the GR population in FY 2009-10 is projected to reach **$1 billion**.

If you have any questions, please contact me or your staff may contact Miguel A. Santana, Deputy Chief Executive Officer at (213) 974-4530, or via e-mail at msantana@ceo.lacounty.gov.

WTF:MS:KH
LB:MM:am

Attachments (2)

c: Executive Officer, Board of Supervisors
Acting County Counsel
Sheriff's Department
Acting Chief Information Officer
Director of Children and Family Services
Director of Community and Senior Services
Interim Director of Health Services
Director of Mental Health
Chief Probation Officer of Probation
Director of Public Health
Director of Public Social Services
Executive Director of Quality and Productivity Commission

USING ADULT LINKAGES PROJECT DATA FOR DETERMINING PATTERNS AND COSTS OF SERVICES USE BY GENERAL RELIEF RECIPIENTS IN LOS ANGELES COUNTY

Executive Summary

July 2009

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Submitted to:

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Chief Executive Office
Service Integration Branch
Research and Evaluation Services
Project Director:
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Quality and Productivity Commission, Grant 07.4

Introduction

This study examines services use and related costs for two cohorts of General Relief (GR) recipients in Los Angeles County. The study is made possible by the creation of the Adult Linkages Project (ALP), a data warehouse containing data on the GR recipients that spans eight Los Angeles County departments. This integration of data sources and County departments enables a unique window into the comprehensive use of County services by GR recipients, and allows for the exploration of hidden costs that GR recipients incur to Los Angeles County. The identification of such services use patterns forms the basis for service interventions that can provide GR recipients with more efficient, more effective, and more coordinated services.

The GR recipients for this analysis belong to one of two cohorts. The first cohort, referred to as the first-time user cohort, contains all persons who were certified to receive GR benefits for the first time in the first quarter of 2006. The second cohort, referred to as the long-term user cohort, is comprised of persons who had been certified for GR services prior to 2006, did not use any GR services in 2005, and were re-certified for GR in the first or second quarter of 2006. The data on receipt of GR benefits spans the time period January 2006 through October 2007. Data from other County services often spans longer time periods, meaning that data on services use is available prior to the date GR assistance was initiated and in most cases also after the last month of GR receipt in the time period.

The study is divided into five sections. The first section is the longest, and examines the services use by the GR cohorts across Department of Public Social Services and six other County departments. In the second section, these findings across individual departments are integrated to provide a more comprehensive view of the extent and costs of County services to these cohorts, and identify heavy services users among these cohorts. The third section looks at the extent to which certain recipient characteristics, including disability, homelessness, and employment, affect the propensity to use County services. The fourth section provides a geographic analysis of GR receipt. Finally, the fifth section discusses implications for policy and research based on these findings.

This Executive Summary summarizes the more extensive and detailed full report produced on services use across Los Angeles County departments by the two GR cohorts. More information on the results reported here, as well as other results not included in this report may be viewed in that full report.

Section 1 - Services Use by Department

This initial component provides information about services consumed by GR recipients within each of seven County departments that participated in the ALP. One additional department, the Department of Community and Senior Services, was not included in this study due to insufficient data. For the seven departments, services use is reported separately for each participating department, and primarily through descriptive statistics and frequencies. The primary objectives here are to ascertain:

1) The extent to which persons in each of the two GR recipient cohorts analyzed here used services in other departments;

2) The extent to which persons in the GR cohorts were “heavy” users of these services; and

3) The costs associated with the use of these County services and the costs per user.

1.1: Los Angeles County Department of Public Social Services (DPSS)

DPSS is the County department that administers GR, along with Food Stamps and a range of other forms of assistance. Thus all members of the two ALP cohorts have DPSS records for the cash aid they received. Along with data on services use, this section also provides a profile of the two cohorts of GR users based on DPSS data collected over the 22-month time period between January 2006 through October 2007 (i.e., the eligibility period). Profile information includes demographic, services use, employment, and some other characteristics (including homelessness), and provides a clearer picture of the two cohorts that are followed.

1.1.1: Demographics

Looking at demographics and other characteristics, important findings include:

- Demographically, the vast majority of persons are between ages 22 and 59, and the cohorts are both disproportionately male, and Black. The key differences between the cohorts are that the long-term user cohort is more male (72.5 percent to 62.9 percent), Black (57.5 percent to 40.7 percent), and older (mean age 40 to 37 years), compared to the first-time user cohort.

- In other characteristics that merit special attention, about 80 percent received Food Stamps concurrent to their GR receipt. Rates of disability are high for both cohorts and higher for the long-term user cohort (41.6 percent to 31.5 percent). Likewise, over half of both cohorts were homeless at some point during their GR receipt, with homelessness more prevalent in the long-term user cohort (67.4 percent to 54.9 percent). The first-time user cohort, on the other hand, had higher rates of persons in some stage of attempting to secure Supplemental Security Income (SSI) disability benefits (14.5 percent to 10.7 percent) and pregnancy (among women only, 14.1 percent to 10.0 percent).

1.1.2: GR Benefits Received (cash assistance)

Almost everyone in both cohorts received a GR grant as part of their GR benefits, meaning that they received cash assistance.

- The total amount of cash assistance received was $12.5 million for the first-time user cohort and $8.5 million for the long-term user cohort.

- The average monthly amount of this cash assistance, for both cohorts, was just over $200. The average amount of cash benefits received per case (for the

20 months covered in the data) was a little higher for the long-term stayers cohort, at $1,760, than for the first-time user cohort at $1,566.

- On average, members in first-time user cohort spent about 40 percent of the eligibility period on GR, and the long-term user cohort spent about 45 percent of the eligibility period on GR. This translates to an average of 8.3 months for the first-time user cohort and 9.1 months for the long-term user cohort.

- The measure designated for this study as a "heavy user" – use of GR for at least 16 months out of the total 22-month study period – applied to 15.2 percent of the first-time user cohort and 16.6 percent of the long-term user cohort. Over two-thirds of the heavy users in both cohorts were disabled.

1.1.3: Employment

DPSS data on employment primarily showed that 57 and 56 percent of the first-time user and long-term-user cohorts, respectively, were deemed "employable." This employability determination meant they were only eligible for nine months of GR benefits in a year and had to participate in DPSS' employment program. DPSS employment data were supplemented by data on earnings history from the California Employment Development Department, the state employment agency. State employment data, reported quarterly, showed that:

- Almost three quarters of both cohorts had wage earnings in the period from 1998 through the first quarter of 2008.

- The proportions of both cohorts with earnings histories got progressively smaller as this time window shrank.

- As this ten-year time span narrowed, in both cohorts the proportions with earnings histories got progressively smaller to where approximately 30 percent of both cohorts reported earnings within one year of receiving GR benefits.

- As many as one-third of the persons in these cohorts leave GR to employment. Looking at post-GR employment as a snapshot, however, leads these proportions to drop. Specifically, in the first quarter of 2008 (when GR benefits data were unavailable), 16 percent of the first-time user cohort and 14 percent of the long-term user cohort had employment income.

- The median employment income reported in the quarters was $2,605 for the first-time user cohort and $2,219 for the long-term user cohort.

- Additionally, about one-third of employment episodes (consecutive quarters where employment income was received) lasted for at least four quarters.

While these data are far from definitive, they do indicate that much of the employment is of a sporadic nature and, while it generates substantially more income than GR benefits, still is insufficient to lift persons over poverty income levels for sustained periods of time.

1.1.4: Homelessness

Homelessness is reported in conjunction with each month a recipient receives GR benefits. The precise nature of the homeless episode – whether the person lived in a shelter, outdoors, or in some other unstable living situation, is unknown, as is the amount of time in the month that the recipient was homeless. Nonetheless, it is possible to get some idea of homelessness, as it occurs among GR recipients, through this indicator.

Among the noteworthy findings:

- A majority of the GR recipients – 54.9 percent of the first-time users and 67.3 percent of the long-term user cohort – reported homelessness at some point over the course of their GR receipt.

- Among those persons reporting homelessness, the mean number of months in which homelessness was reported was between ten and 11, indicating that for persons on GR who reported homelessness, both homelessness and GR receipt were protracted.

- Among the first-time user cohort, 32.7 percent of those who reported homelessness (18 percent of the total cohort) met our criteria for "long-term" homelessness – where a person reports homelessness for at least 12 months and for all the months for which the person is on GR during the study period. For the long-term user cohort, the proportion that was long-term homeless was even higher, with 40.7 percent of those reporting homelessness (27.3 percent of the total cohort) meeting the chronic criteria.

In summary, the extent of homelessness among both of the cohorts is striking, though consistent with other reports looking at GR in Los Angeles. Also worth noting is that homelessness is decidedly more pervasive in the long-term user cohort than in the first-time user cohort.

1.1.5: Conclusion

The total amount of cash assistance provided is $12.5 million (first-time user cohort) and $8.5 million (long-term user cohort). A large proportion of both cohorts receive GR for extended periods of time, are homeless while receiving GR, and are considered disabled and/or unemployable. While most of them have some work history, less than half have any work history close to or overlapping with their period of GR receipt. These findings are consistent with findings from previous studies and suggest that many persons in both cohorts are experiencing persistent spells of extreme poverty.

1.2: The Los Angeles County Department of Health Services (DHS)

Serving 700,000 persons on a yearly basis, DHS manages the second largest public health services system in the United States. DHS operates four hospitals and also provides a wide range of health services at a number of health centers and clinics throughout

Los Angeles County. ALP data permit analyses of DHS services use among the two cohorts of GR recipients for the time period between January 1, 2005 and December 31, 2007. The services will be examined by type of service received – either inpatient, outpatient, or Emergency Department-based (ED).

Approximately half of the GR recipients (45 percent of the first-time user cohort and 52 percent of the long-term user cohort) used medical services provided by DHS in this time period. This includes approximately one-third of each cohort (32 percent and 37 percent, respectively) who used DHS services while they were receiving GR benefits.

1.2.1: Inpatient Hospitalizations

While inpatient stays were not the most common form of DHS services utilized by the study cohorts, this type of health care was the most expensive. Specific findings include:

- A slightly higher proportion of the long-term user cohort (17.2 percent) used inpatient services compared to the first-time user cohort (16.4 percent). Nine percent and ten percent of the respective cohorts had at least one inpatient stay during the time they were on GR.

- The proportions of the first-time user cohort and the long-term user cohort to start receiving GR within 30 days of an inpatient discharge were 4.7 percent and 3.2 percent, respectively.

- While on GR, the costs for inpatient use were $12.7 million for the first-time user cohort (average cost of $17,138 per user) and $8.2 million for the long-term user cohort (average cost of $16,535 per user).

- Over the course of the study period (2005-2007) almost half of the persons using inpatient services incurred total inpatient costs of under $5,000, and over a quarter incurred total inpatient costs of over $20,000, with approximately 11 percent accruing costs greater than $50,000.

1.2.2: Outpatient Services

Outpatient stays were the most common form of DHS services utilized by the study cohorts, with relatively low costs per user. Specific findings include:

- GR recipients make much more extensive use of outpatient services than inpatient services, with 36 percent of the first-time user cohort and 41 percent of the long-term user cohort having at least one outpatient visit during the study period, and 26 percent and 30 percent of these two cohorts, respectively, receiving outpatient services during the time of GR eligibility.

- About one-third of the outpatient users in both cohorts can be considered regular outpatient users – persons who have records of over six outpatient contacts during the study period.

- Cohort costs for outpatient services during the time of GR receipt were $6.1 million for the first-time user cohort (average cost of $2,913 per user) and $3.8 million for the long-term user cohort (average cost of $2,571 per user).

Outpatient services, when compared to inpatient services, are much less expensive, even among the heavier users.

1.2.3: ED Visits

ED visits are the third component of DHS services use examined here. ED visits that were recorded in DHS data as lasting more than one day were considered inpatient hospitalization and therefore do not factor in this analysis of ED visits. Principal findings include:

- Twenty-three percent of the first-time user cohort and 16 percent of the long-term user cohort had at least one ED visit during the study period, with 12 percent and ten percent of these two cohorts, respectively, making an ED visit during the time of GR eligibility.

- Over 70 percent of ED users in both cohorts had only one visit during the study period.

- The average cost per user while receiving GR is $1,417 and $1,509 for the first-time user cohort and the long-term user cohort, respectively, reflecting total respective costs of $1.4 million and $1.2 million for the two cohorts.

- Persons having five or more ED visits over the total study period accounted for a disproportionate share of the total cost of ED services. Among the first-time users, this group of heavy users made up 4.6 percent of the cohort and incurred 31.5 percent of the total ED costs. Among the long-term users, heavy users were 4.8 percent of the cohort and accounted for 35.4 percent of the total costs.

ED use is the service in which the large majority of GR users who use this service use it infrequently and relatively inexpensively, but there appears to be a small proportion of both frequent and expensive ED users among both GR cohorts. Given this, targeting this small group of heavy users has the potential to substantially reduce the cost of ED use among the cohorts.

1.2.4: Conclusion

Approximately half of both GR cohorts use some sort of DHS service. The total cost of DHS services, $20.2 million for the first-time user cohort and $13.1 million for the long-term user cohort, is considerably greater (specifically 1.6 times and 1.5 times greater, respectively) than the total cost of GR cash assistance provided to each of the cohorts. Among the services provided by DHS, inpatient services are by far the most expensive. On the other hand, outpatient services are the most widely used and the least expensive. The ED services is the least costly of the three services, but a small number of GR recipients who make frequent use of ED services account for a large

share of the total cost. Likewise, a small proportion of inpatient users also account for a highly disproportionate share of inpatient costs.

1.3: Los Angeles County Department of Mental Health (DMH)

DMH provides an array of mental health services in both a direct provider capacity and through a network of sub-contracting agencies and individuals. Serving approximately 250,000 persons on an annual basis, DMH is the largest mental health service system in the United States.

Overall, approximately 20 percent of GR recipients in both the first-time and long-term user cohorts made use of DMH services during the study period (2005-2007), with 14 percent of the first-time user cohort and 16 percent of the long-term user cohort receiving DMH services while they were receiving GR. This indicates that a significant proportion of both cohorts were affected by some form of mental illness for which they were receiving treatment.

Among the persons who used DMH services in both cohorts, virtually everyone used outpatient services, either exclusively or with daily treatment services. This preponderance of outpatient services, combined with lower rates of DMH services use, when compared to DHS, accounts for relatively low expenditures on DMH services for the two study cohorts. Specifically, total DMH costs during GR receipt were $2.8 million for the first-time user cohort and $1.6 million for the long-term user cohort. This is much lower than the aggregate costs associated with GR assistance or DPSS services. Given all this, identifying heavy users who might be targeted for interventions to make more efficient use of services would be of limited value here, except as a focus for SSI advocacy including the utilization of DMH treatment documents to support the disability claim in the SSI application.

1.4: The Los Angeles County Department of Public Health (DPH) – Alcohol and Drug Program Administration (ADPA)

DPH's ADPA administers a network of different drug treatment modalities that serve low-income and indigent persons through various referral sources. Most relevant for this study, ADPA collaborates with DPSS to provide treatment services to GR applicants/ recipients identified as having substance abuse problems through the General Relief Mandatory Substance Abuse Recovery Program (MSARP). MSARP's mission is to "[encourage] personal responsibility by providing services to indigent adults who want to help themselves to reach self-sufficiency".
(http://publichealth.lacounty.gov/adpa/program.htm)

In addition, as a result of California's Proposition 36 (the Substance Abuse and Crime Prevention Act of 2000), persons convicted of certain crimes and who have a history of substance abuse may be mandated to participate in ADPA's treatment services as a condition of probation or parole. Given that GR recipients often have involvement with the criminal justice system, GR recipients may be receiving treatment services through ADPA under the provisions of Proposition 36. GR recipients may also avail themselves of ADPA services under auspices not related to MSARP or Proposition 36, or, if they are participating in residential treatment, they may apply for GR benefits in order to have an income source while they are in treatment.

There are five treatment modalities that were tracked for GR participants in data that were collected as part of ALP. These included two types of residential programs – long-term residential services and short-term detoxification. In addition, there are three types of other services that are tracked: outpatient counseling, Day care Habilitative (DCH) services, and narcotic treatment program services. ADPA programs are, in many cases, intended to provide a less expensive and less disrupting alternatives to inpatient hospital and psychiatric services and incarceration as they assist persons in addressing their substance abuse problems. Thus, while there will be "heavy users" of these services, such heavy use is often desirable in that it is necessary and, even in the case of long-term residential services, a less costly alternative to other types of care.

Nineteen percent of each cohort received some type of ADPA services. Slightly over half of these persons receiving ADPA services did so concurrent with receiving GR during the study period. This indicates that almost one in five members of both GR cohorts had a substance abuse problem for which they were receiving some type of treatment.

Residential services was the most frequently used of the five ADPA services examined here and also incurred more costs for the GR users examined than all of the other four services combined. Key findings include:

- Among the first-time and long-term GR cohorts, the proportions in residential treatment were 10.8 percent and 12.3 percent, respectively.

- The tendency was to stay in residential treatment for an extended period, as mean stays lasted for over three months and approximately one-fifth of residential services users in both cohorts staying for over 180 days during the study period. These were considered heavy users.

- From the available data, the per diem cost of residential treatment appears to be under $30. However, due to the extended stays, the average cost per user was about $3,200 in both groups.

Detoxification was a relatively little-used service, with 2.8 percent of the first-time user cohort and 3.3 percent of the long-term user cohort using this service during the study period. Moreover, over two-thirds of the users in each cohort only experienced one detox episode during the study period. Looking at the cost data, the *per diem* cost for this service seems to be somewhere between $250 and $270, with the mean cost per person during the study period ranging from $3,500 to $4,000, depending on the cohort examined.

Of those in either cohort who used ADPA services, approximately half used outpatient counseling services at some point during the study period. The mean period per person over which these services were provided was approximately four months. Most noteworthy here is the low cost of providing these services – less than $1,000 mean cost per user – with less than four percent of each cohort accruing Outpatient Counseling (OC) costs over $3,000 during the course of the study period.

Day care habilitative (DCH) and narcotic treatment program (NTP) services both have low participation rates among GR recipients and for users of both services, especially DCH, are

relatively inexpensive. Seventy-six persons (one percent) among the first-time user cohort and 34 persons (0.7 percent) among the long-term user cohort used DCH services. There were even less users from the GR cohorts using NTP services – 16 for the first-time user cohort and 21 for the long-term user cohort. This is a miniscule percentage of GR users and is not large enough to provide meaningful usage and cost numbers.

ADPA programs are provided relatively cheaply when compared to inpatient hospital and psychiatric stays or incarceration. Total ADPA cost per cohort (during the time they are receiving GR) is $2 million for first-time user cohort and $1.2 million for the long-term users cohort. Put in the context of expenditures through DPSS or DHS, savings here would be minimal. While "heavy users" of certain ADPA services account for a disproportionate amount of the overall cost of providing these services, such heavy use is often desirable in that it is necessary and in some cases mandated.

1.5: Los Angeles County Department of Children and Family Services (DCFS)

This subsection examines the extent to which the younger GR recipients among the two cohorts had a prior history of out-of-home placement with DCFS. There is little research on outcomes for adults who were in the care of DCFS as children, and especially not on the scale of this study.

Data from DCFS was for out-of-home placement stays ending in the years 1997 through 2006. While the precise date of birth was unavailable in the data, this meant persons born between 1981 and 1987 would be reaching adulthood in the years covered by these data, and so this analysis is limited to these persons, who would be between ages 18 and 25 when they were certified for GR.

Results from the data match include:

- Among the long-term users, 15.6 percent of the younger cohort members (i.e., age 25 and under) had a record of DCFS out of home care, which was somewhat higher than the 10.2 percent rate of DCFS involvement for the younger members of the first-time user cohort.

- For each cohort, the DCFS subgroup had a higher proportion of females, and the DCFS subgroup in the long-term user cohort was substantially more female than that of the first-time user cohort.

- Both cohorts already are disproportionately Black. However DCFS subgroups have even greater proportions of Black persons than the corresponding non-DCFS subgroups.

- The length of DCFS out of home placements among both cohorts averaged roughly seven years, with about 30 percent of each cohort experiencing a DCFS placement lasting over ten years.

- For the first-time user cohort, the mean age of certification for GR was 19.7 years, and the time from exiting the DCFS system to initial GR certification was 31.7 months. For the long-term user cohort the exiting age was higher and

the gap period was longer, but this is an artifact of this cohort having already had a history of GR certification prior to the study period used for this analysis.

Although there is no group to which one can compare these cohorts of GR recipients, there does seem to be a high rate of persons with histories of DCFS involvement. Most persons with such records are aged 18-20 when they first receive GR, and compared to other GR users are more likely to be female and Black. Most persons have experienced long periods of DCFS care, and there is typically a multi-year gap between exiting from DCFS and receiving GR. Such results provide a thumbnail sketch of the intersection between child welfare involvement as a child and receipt of welfare benefits as an adult, and further research is called for to give more detail in many areas.

1.6: Los Angeles County Sheriff's Department (Sheriff)

Urban and indigent single adult populations, particularly where many are homeless and/or mentally ill, like those who comprise these GR cohorts, can be expected to have, as a group, considerable interaction with the criminal justice system. This section explores the extent to which the GR cohorts experienced stays in the county jail, which is administered by Sheriff.

This analysis is limited by the information available, which is only the dates of incarceration, the associated cost of each stay, and whether or not the jail stays involved health or mental health care services. This means that there is no information available on the offense for which the person is jailed, or the nature of the release – whether the jail stay ended with probation, parole or a stint in the state prison system, or no further connection to the criminal justice system.

Significant findings here include:

- Overall a substantially higher proportion from the long-term user cohort had a jail stay during the three-year study period, 56.0 percent to 40.5 percent. In looking at jail stays that started while a person was receiving GR, the disparity between cohorts remains, 30.8 percent to 18.7 percent.

- The mean length of jail stay for the long-term user cohort also was longer – 41.6 days to 36.0 days. This corresponds with the finding that a higher proportion of those who were jailed in this cohort, 29.9 percent, had jail stays longer than 90 days, as compared to 24.6 percent of persons who were jailed in the first-time user cohort.

- The mean number of jail stays per person jailed was similar among the first-time user cohort and the long-term stayer cohort, 2.5 and 2.7 respectively. Roughly 60 percent of both cohorts who were jailed went to jail on repeated occasions during the study period.

- Similar proportions of both cohorts received GR within 30 days of jail exit, 14.4 percent in the first-time user cohort and 12.8 percent in the long-term user cohort.

- Among those who were jailed, the long-term user cohort had slightly higher rates of persons who received health care (13.4 percent vs. 10.2 percent) and mental health care (11.9 vs. 10.2 percent) while in jail, compared to the first-time user cohort.

Costs to Sheriff for incarceration that started during the time period when the cohorts were certified GR were the most costly for any County department, including DPSS. For the first-time user cohort, the total cost was $22.5 million and, for the long-term user cohort, $27.8 million. The long-term user cohort incurred more costs here although they were a substantially smaller cohort.

Jail use is very common among both cohorts in this study, and accounts for the largest County expenditures for GR recipients. This is also a case where the long-term GR users have substantially higher levels of jail use, both in proportions of the cohort who are jailed and length of stay. In contrast to this high crossover between GR receipt and jail, much smaller proportions of persons start receiving GR immediately following jail release. This might be due to administrative barriers, and should be further investigated.

1.7: The Los Angeles County Probation Department (Probation)

Probation serves all the Municipal and Superior courts in Los Angeles County. Overall, 17.7 percent of the first-time user cohort and 23 percent of the long-term user cohort were on probation at some point in the time period between January 1, 2005 and December 31, 2007, with 13.3 percent of the firs-time user cohort and 16.2 percent of the long-term user cohort on probation at some point during their eligibility for GR. Slightly over half of those on probation in the first-time user cohort and slightly less than half of those on probation in the long-term user cohort had probation spells of one year or more, with probation episodes lasting an average of 311 days for the first-time user cohort and 259 days for the long-term user cohort. However, despite the length of the average probation spell, the mean cost per person on probation is low, at a little over $1,000 per person in both cohorts. On a cohort level, the total costs incurred during GR receipt are the lowest among the County departments studied here, at $0.6 million for the first-time user cohort and $0.5 million for the heavy user cohort.

The proportion of persons on probation gives a partial view of the extent to which GR recipients are under legal supervision during the study period. To that end, the findings presented here indicate that probation is a relatively common experience for members of both cohorts and that probation spells tend to be lengthy. Neither of these findings is surprising. It is also noteworthy, however, that this supervision is relatively inexpensive, especially when compared to incarceration.

Section 2 – Complex Patterns of Services Use

This chapter starts by providing a more integrated portrait of services use from the individual profiles of services from the last chapter. This means that the rates of participation and the associated costs from each County department, taken from the previous chapter, are summarized; the most frequently occurring combination of inter-departmental services use are identified; as are the extent that related services, such as inpatient use in multiple departments or jail combined with probation, occur together.

The rest of this section focuses on services use across County departments by heavy services users. Insights into how much of all services use is accounted for by those with a history of heavy services use represents an initial step into identifying likely intervention targets for initiatives designed to manage and reduce costs of GR users to other County departments.

2.1: Summary of Service Use and Costs to County Departments by GR Cohorts

Table ES-1 provides a summary of the overall rates of services use in the various departments covered in the previous chapter, as well as a broad indicator as to the extent of individuals in both cohorts using multiple County services systems during the course of the study period, which ranged from 2005 through 2007. This allows for comparing the rates of services use across different departments. Although there was substantial utilization of all six departments listed (child welfare services provided by DCFS are not included), utilization rates were by far the highest in two systems: the DHS public health care system and the jail system. In the first-time user cohort, upwards of 40 percent used each of these systems, and among the long-term user cohort, over 50 percent used each of these systems. Table ES-2 provides cost figures for the County services used by the two cohorts. First they report total costs, by department, for each cohort's services. These tables summarize data that were reported, by individual department, in the previous chapter.

2.2: Aggregated Use of County Departments

Cross-departmental services use, in the aggregate, by the cohort members was widespread. Over 70 percent of the first-time user cohort and over 80 percent of the long-term user cohort used at least one of the five County systems during the study period. Large proportions of both cohorts also used at least two systems during this time – almost 40 percent of the first-time user cohort and over 50 percent of the long-term user cohort. As the numbers of systems increases, the utilization numbers continue to decline but stay relatively high for use of three systems (20 percent and 26.3 percent) and four systems (7.9 percent and 10.6 percent), with relatively small proportions – 1.7 percent and 2.8 percent – using all five (non-DPSS) services.

As the two most frequently used departments (Table ES-1) are DHS and the Sheriff (jail), it is not surprising that this combination represents the most frequently used pattern of two or more departments. The proportions using this combination, 20.2 percent for the first-time user cohort and 30.5 percent for the long-term user cohort, exceed even the more natural pairing of Sheriff and Probation (15.6 percent and 20.4 percent). Probation, when added to the DHS-Sheriff combination, makes up the most frequently used three-department combination.

The table also shows other combinations of County departments that may be of interest. These include:

- Two-thirds of both cohorts who used DMH services also used DHS services.

- The majority (almost two-thirds) of ADPA drug treatment users also used DHS services (Table 2.1 also).

- Over one-quarter of both cohorts had some type of inpatient stay through DHS or ADPA. It is important to note here that DMH claims were merged with records of DHS inpatient claims to create one integrated record of inpatient claims under DHS.

- The majority of those who had an inpatient stay also had a jail stay. This indicates that a sizeable minority of persons have spent parts of the three-year study period in multiple institutions.

2.3: Costs – Heavy Users

The Ten percent of each cohort who accrued the heaviest County services costs prior to GR certification:

- Accounted for approximately three-quarters of the total pre-GR services costs – 77.5 percent for the first-time users cohort and 73.3 percent for the long-term users cohort.

- Accounted for approximately one-quarter of each cohort's total services costs – 24.7 percent and 26.1 percent during the time period they were certified during the time period in which they were receiving GR cash assistance.

2.4: Conclusion

The main findings of this chapter are that, in both cohorts of GR recipients studied here, there is extensive use of County health and criminal justice services, and the vast majority of this services use, whether measured in utilization rates or in costs incurred by the cohorts, occurs within the hospital DHS and jail Sheriff systems. Tandem use of these two services over the course of the study period is also relatively extensive. In addition, substantial minorities of both cohorts make use of inpatient services in at least one of three systems, and have records of both inpatient and jail stays over the study period. Combine this with the frequent occurrence of homelessness reported in the previous chapter, and there are indications of a sizable minority of GR recipients who make use of multiple institution-based residential settings with their attendant expenses.

The ten percent of the cohort who ran up the highest expenses in services use during the pre-GR period accounted for about 25 percent of total cohort costs while using GR. While this approach would need to be fine tuned, it does indicate that identifying a history of heavy services use prior to GR receipt can help identify persons who will continue to use large amounts of services, primarily in the public healthcare and jail systems, while on GR. Attention to this targeting process will continue in subsequent chapters.

Table ES-1: Summary of Individual County Department Service Use by GR Recipients in ALP

County Department	Percent Using Department Services			
	Before GR Receipt	During GR Receipt	After GR Receipt	Total
First-time GR Users (n=7,982)				
DHS	21.6	31.9	15.5	45.4
DPH	11.4	9.7	3.5	18.9
DMH	11.0	13.8	8.6	18.9
Sheriff	24.2	18.7	16.5	40.2
Probation	11.3	13.3	10.8	17.7
Long-term GR Users (n=4,857)				
DHS	24.3	37.1	14.9	52.0
DPH	9.5	11.4	5.4	19.2
DMH	12.5	15.8	7.8	21.0
Sheriff	35.3	30.8	18.6	55.2
Probation	15.0	16.2	11.5	23.0

Totals do not equal sum of previous three columns as it refers to services use over entire study period. One individual may be counted as having services use in two or three of the identified time periods, whereas the total column represents an unduplicated count of persons with services use over entire study period.

Table ES-2: Costs Incurred by Los Angeles County Departments for Services Provided to GR Recipients in ALP

County Department	Relationship to GR Use			
	Before	During	After	Total
First-time User Cohort (n=7,982)				
General Relief (DPSS)	n/a	$12,503,047	n/a	$12,503,047
Health Services (DHS)	$13,815,191	$20,160,708	$8,168,157	$42,949,176
Public Health (DPH)	$2,430,215	$2,054,093	$545,609	$5,029,917
Mental Health (DMH)	$2,109,950	$2,832,008	$1,391,636	$6,453,097
Sheriff's Department (Sheriff)	$20,934,589	$22,470,494	$18,878,472	$62,717,406
Probation Department (Probation)	$416,123	$606,952	$622,399	$1,669,916
Total Cost	$39,706,068	$60,627,302	$29,606,273	$131,322,559
Long-Term User Cohort (n=4,857)				
General Relief (DPSS)	n/a	$8,546,804	n/a	$8,546,804
Health Services (DHS)	$8,227,298	$13,147,094	$5,662,532	$27,687,133
Public Health (DPH)	$1,217,272	$1,220,700	$367,691	$2,805,663
Mental Health (DMH)	$884,569	$1,580,896	$777,285	$3,310,263
Sheriff's Department (Sheriff)	$25,007,152	$27,846,851	$14,701,421	$68,535,732
Probation Department (Probation)	$353,483	$479,077	$336,970	$1,193,181
Total Cost	$35,689,774	$51,821,422	$21,845,899	$112,078,776

Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services

Section 3 – Selected Factors and Services Use

The previous two sections report the extent of services and related costs used by the two cohorts of GR recipients for whom data is collected in ALP. This chapter takes those findings one step further. Here combining data from the various sources available in the ALP data warehouse, and applying multiple regression techniques to these data, permits a more detailed look into the relationships between certain individual characteristics, on one hand, and six outcomes related to receipt of GR and use of other services provided by various Los Angeles County departments.

There are six outcome measures examined in this chapter, covering:

- Months of GR use (ordinary least squares);
- Heavy (on GR a minimum of 18 out of the 22-month study period);
- Long-term homelessness (on GR for at least 12 months and homeless during that time period);
- Cost of Services Use (combined cost of the non-DPSS services used from the point of GR certification in early 2006 to the end of 2007);
- Heavy services user (top docile of persons with most costs accrued over time period from GR certification through the end of 2007);
- Use of County health and criminal justice services (over time period from GR certification through the end of 2007)

Descriptive results from these outcome measures and the key covariate measures are shown on Table ES-3. Along with providing results on the outcome measures, they also provide some additional descriptors of the two cohorts, such as persons who were recorded as being treated for mental health and substance abuse services that were gleaned from multiple datasets. Despite this, due to limitations in the data these numbers likely underreport the true extent of these conditions, and lack any more definitive data on what constitutes mental illness or substance abuse disorder.

3.1: Regression results

Key findings from regression results include:

- Three measures representing disability in some form (marked by DPSS as disabled, have an SSI application submitted, and treated for mental illness) all have a consistently significant impact on increasing the likelihood of using more services both within DPSS and across other County services.
- Persons in the cohorts with links to the work force (measured as having a history of earnings and assessed by DPSS to be employable) are more likely, on the whole, to use fewer resources from GR and from other County departments.

- There is some association between homelessness and greater services use, but this association is less consistent than that of the disability related covariates discussed earlier. Conversely, disability and mental illness are associated with an increase the likelihood of long-term homelessness, while the two employment covariates are associated with a decrease in this likelihood.

- There is an association between County services costs that persons in each cohort accrued prior to GR certification and the amount of County services costs used during and after GR receipt.

3.2: Conclusion

The two most unequivocal findings in this analysis are, first, that various measures of disability, including mental illness, are consistently and significantly associated with increased use of GR, with cost of other services, and with chronic homelessness. Second, measures of employability and earnings income are consistently and significantly associated with decreased values for these outcomes. Policy has tended to focus on interventions for employable persons as a means to cut demand for GR, these results suggest that interventions focusing on persons identified as disabled (particularly with psychiatric disabilities) would have greater potential to make substantial reductions in the demand for services use, both on GR and on other services.

Data uncertainties have been pointed out throughout this chapter, and limit the extent to which definite conclusions can be rendered based on this data. Keeping that in mind, these findings nonetheless present support for focusing on disability-related interventions to simultaneously improve quality of life for these recipients while reducing demands for services by GR recipients. Further studies on the relationship between disability and demand for services would be useful in not only validating these findings but also in identifying more precisely the dynamics of the relationship between these factors.

Table ES-3: Summary Measures of Select Factors of Interest, by Cohort

	First-time GR Users (n=7,982)	Long-term GR Users (n=4,857)
Outcomes		
Time on GR (mean)	Months 8.3	Months 9.1
On GR 18+ months in study period (percent)	11.5	9.8
Long-Term Homeless (percent)	9.1	13.9
Cost of Services Use (median)	$1,270	$2,336
Cost Incurred by Heavy Users (top 10 percent)	over $23,700	Over $33,300
Use of County Departments – Criminal Justice and Health Services (percent)	14.5	21.4
Status as Determined at GR Certification		
Homeless (percent)	52.2	62.7
Disabled (percent)	31.5	41.6
SSI history (percent)	2.9	7.8
Employable (percent)	57.1	56.2
Employment History (percent)	28.3	30.7
Information from Other County Depts.		
Mental Illness (percent)	16.0	15.1
Substance Abuse (percent)	17.1	15.8
Substance Abuse and Mental Illness (percent)	5.2	5.1
Cost of County Services (pre-GR)	(median) $0	(median) $515
Jailed Prior to GR Certification (percent)	27.6	38.8
On Probation (percent)	13.3	17.2

Rates of treated mental illness, substance abuse, and co-occurring substance abuse/mental illness disorders are under-reported due to data limitations.

Section 4 – A Geography of GR and Heavy County Services Use Based on Zip Code Data Available in the ALP Data Warehouse

Part of this study also included analyses of geographic distributions of GR recipients. Geographic data in the ALP database include one unique zip code and one unique census tract for most members of both the first-time and long-term user cohorts. Based on this data, maps are constructed using Geographic Information Systems software, to present the spatial distribution of all GR recipients and the sub-groups of heavy users of County services highlighted in Section 2.

The most significant finding of this section has been its illustration of how the spatial distribution of members of both the first-term and long-term user cohorts is limited to a relatively small number of zip codes. Specifically, more than half of the members of both groups reside in only ten zip codes. The sub-groups of heavy users in both cohorts appear to have a similarly concentrated spatial distribution, with nearly 60 percent of both sub-groups of heavy users in the long-term user cohort residing in only ten zip codes. These zip codes are likely similar to those identified as having the highest number of all GR recipients (i.e., not just those captured in the ALP cohorts) and this analysis supports the conclusion that those zip codes with the highest numbers of GR recipients also have the highest numbers of heavy County services users. However, many of the zip codes associated with concentrations of GR recipients that were found here contained GR district offices, and this could lead to a confounding factor – that many GR recipients who are associated with these zip codes may not actually have residences in these zip codes. If this is so, it could drastically alter the interpretation of these results. Consequently, these findings should be interpreted with caution.

Also of note are the findings related to DHS services use. For the first-time user cohort, ten zip codes accounted for nearly one quarter of both persons with a DHS inpatient stay and persons with a DHS ED visit. Likewise, nearly 30 percent of both DHS inpatient and ED users in the long-term user cohort appear to reside in only ten zip codes. While this distribution is more diffuse, there appear to be a relatively small number of heavy service using zip codes that are home to both substantial numbers or high concentrations of heavy users of County Services <u>and</u> large numbers of persons with DHS inpatient or ED visits. Four zip codes in particular, (90059, 90013, 90047 and 90011) are associated with large numbers of heavy service users and DHS inpatient or ED users from both the first-time and long-term user cohorts. While this provides a potential spatial link between GR users and extensive and expensive use of County services, the findings may also be an artifact of three of these four zip codes (all but 90011) containing GR district offices that recipients can use as mailing addresses. While further research is needed to ascertain the extent of this, such findings offer a promising vector for further research.

Further research should examine contextual factors related to these zip codes. For example, zip code 90013 represents the Skid Row area of Los Angeles, a district known for its high concentration of homeless persons and, with approximately 9,000 total residents, an area considerably smaller than other zip codes identified as containing many GR residents, such as the 90047 zip code in South Central Los Angeles with a total population of 47,000.

Additionally, the analyses here are limited to the little amount of spatial data available on the ALP cohorts and County services use. If more data were available that corresponded to

services use in other County systems, then more relational analyses of how geography is linked to complex patterns of services use would be possible. As it stands now, this basic analysis serves as a potential prototype for how future analyses might be constructed.

Section 5 – Implications for Policy and Research

The preceding analysis of services utilization patterns and costs of GR recipients in Los Angeles County has suggested that there are several significant and overlapping populations who show heavy patterns of services use. Moreover, given these patterns of heavy services use, policymakers and other stakeholders should consider alternative programs that are known to be associated with less costly and more effective patterns of care.

5.1: Subpopulations with High Use of Services

In table ES-4, several of the distinct subpopulations identified as heavy service users in this studied are shown, along with average costs per person accrued in the GR enrollment and post-GR observation periods. Five subpopulations have been identified here as having costs that are substantially higher than the average for the GR population as a whole, including people who with prior histories of heavy services use, people treated for mental illness, people assessed as disabled, people experiencing long-term homelessness, and people with jail stays prior to receipt of GR. The "homeless" overall did not have very different average costs than the GR population as a whole, accounting as they did for more than half of the GR population. Not surprisingly, people who were deemed employable or with a work history had lower than average costs.

Of course, none of these categories is mutually exclusive and there is likely considerable overlap, particularly among the highest cost groups. Nevertheless, given the variety of strategies and targeting mechanisms that may be used to identify people for alternative programs, it may be useful to consider these groups separately.

5.1.1: History of Heavy Services Use

Ten percent of the cohort who were the heaviest users of County services in the year prior to their receiving GR accounted for 25 percent of the County resources used by the total cohort while they were receiving GR. This represents 2.3 times the average cost of GR recipients to the County for these services. Efforts to reduce costs among heavy service users among GR recipients in Los Angeles County should explore a services coordination or case management program strategy. The strategy should identify a threshold of heavy services use, enroll eligible persons into the program, and manage their services from a specially designated intensive case management or services coordination unit.

5.1.2: Disability

Between 32 percent (first-time user cohort) and 42 percent (long-term user cohort) of the study population was determined to have disability as part of the DPSS certification process. Persons with a disability had a rate of services use almost double the average of the overall GR caseload. Given the high costs of persons with disabilities, as well as

the high rate of persons receiving GR who report a disability, it is strongly encouraged that the County devotes more resources toward its efforts to assist GR recipients in pursuit of SSI or SSDI eligibility. While specific recommendations on this is beyond the scope of this analysis, additional resources could address issues such as more quickly assisting applicants with the often Byzantine application process and better coordinating with County health care providers to provide medical documentation needed for applications. Investing resources to expedite and increase these disability certifications stands to pay off for the County in the form of decreased GR rolls and Medicaid reimbursement for County-provided health services.

5.1.3: Mental Illness

Approximately one out of every six GR enrollees had a treatment history for a mental illness in one or more County departments, and most of those involved diagnoses that could qualify as "severe mental disorders." GR recipients with a psychiatric treatment history were also among the most costly subgroups of the ALP cohorts. As with other persons with potential disabilities, the county should aggressively review the SSI status of GR recipients with any treatment history for a severe mental illness diagnosis or treatment history. Furthermore, in collaboration with DMH, DPSS may also seek to identify case management and treatment resources that could intervene in patterns of heavy or inappropriate services use, including frequent incarceration or inappropriate discharge from psychiatric treatment.

As with all of the case management interventions described above, the County has a reasonably good expectation that it can find cost avoidance associated with case management and treatment that may offset the costs of the intervention, and certainly can find such cost offsets, on average, for the persons with the most expensive service histories. Further modeling is necessary to identify the threshold where average cost offsets can be expected to produce sufficient levels of cost avoidance, relative to the service investment.

5.1.4: Long-term Homelessness

Consistent with the extant literature, people who experience long-term homelessness are a distinct subgroup among the overall population of homeless who receive GR. Whereas the homeless on average do not have higher services use or costs relative to the GR population as a whole, the long-term homeless have a much higher cost associated with their patterns of services use. To reduce long-term homelessness and to reduce the excess acute care services costs associated with it, the County is encouraged to expand its efforts to develop supportive housing programs for people experiencing long-term homelessness. Such programs should produce cost offsets comparable to the costs of the intervention for many of the people experiencing chronic homelessness, especially if they also fall into the heavy user or disabled groups described above.

5.1.5: Frequent Jail Users

People who are frequent jail users also emerged as among the more costly of the GR recipient pool. The problem of frequent and costly incarceration of people with behavioral health problems and people who are homeless has become an especially challenging problem for many county correctional agencies. Interventions which have been found to be effective include "jail diversion" programs, specialized "community courts" or "mental health courts," and various housing and case management programs. A growing scientific literature has established that these interventions are not only effective but cost effective, especially for the most costly of the persons who rotate in and out of correctional programs. While the literature in this area continues to grow, Los Angeles County could develop its own research demonstration programs to test diversion and special court programs, as well as alternatives to incarceration among people with behavioral health problems and/or who are homeless.

5.1.6: Employables

The data from this study also shows that people who are labeled as "employable" or who have a work history exit the GR program more quickly, even accounting for their reduced eligibility for assistance. DPSS already has services, such as the GROW program, for this segment of the GR population that connects employable people to the labor market and should continue these services. Additionally, the County could use federal Department of Labor funded programs (one-stops), and other work preparedness programs to supplement these efforts. However, given that employables are also less costly than the GR population on average, it may be difficult to demonstrate as much cost avoidance or cost-offsets for them, as compared to high cost users. Nonetheless, facilitating exits from GR to work may be associated with even greater long-term gains as people achieve self-sufficiency, pay taxes, and contribute productively to society.

5.1.7: Young Adults Exiting from Foster Care

A particularly vulnerable group is youth who have exited from foster care or other protective services in the recent past, and who are now recipients of GR. While GR recipients tend to be older, a population of relatively young adult recipients of GR was identified here, including young adults recently separating from dependent care. Such persons are particularly vulnerable and susceptible to poor outcomes as young adults, including behavioral health problems and homelessness, unless they are more explicitly and directly engaged in employment development activities. The County is encouraged to identify young adult exiters from the child welfare system and engage them in employment development activities that connect them to the labor market as soon as possible. Such engagement could have positive long-term consequences for such youth, and avoid long-term dependence on public assistance, homelessness and involvement with the justice system.

5.2: Improved Targeting and Case Identification

The success of ALP and the Los Angeles County Chief Executive Office's efforts in negotiating data sharing agreements among the various County departments could bode well for further data sharing, and for establishing data sharing protocols that might enable improved program targeting. Specifically, most of the recommendations offered above rely on targeting interventions to people with known high service costs, or very likely high service costs in the future, and such case identification and targeting will require more data sharing among agencies.

In general, two approaches may be considered for extending data sharing agreements to the point of client targeting and services engagement. One approach would involve establishing data sharing agreements that permit identification of high service users through data matches, much as was done to enable the analysis here. However, in this case, the legal agreements would make it possible to identify heavy users for the purpose of reaching out to them once they have been identified , likely heavy users could be targeted with offers or invitations to participate in special initiatives. These efforts to reach out to the heavy users can be placed directly in the files of targeted clients with the cooperation of treating physicians, case managers or other social services staff in regular contact with the clients.

Alternatively, a client enrollment form can be created intended to establish eligibility for special interventions at the time of contact at regular sources of services (mental health, hospitalization, incarceration, GR enrollment, etc.). The enrollment form can include a client consent to review administrative records in order to determine eligibility (i.e. patterns of heavy services use), including records from other agencies. An efficient compilation of records could be enabled by a data sharing infrastructure that is established in support of these initiatives.

5.3: Future Research

5.3.1: Additional Data Sources

Previous research on homeless populations has found that substantial amounts of treatment costs associated with these populations are for Medicaid or state-funded inpatient stays, and use of these records could uncover significantly more public costs associated with these populations. With this in mind, future studies focusing on services use and cost would benefit from health data from Medi-Cal and from the state psychiatric hospital system. Future research should include access to these data sources. Data from the State corrections system would likewise substantially extend the scope of a cost study such as this one.

5.3.2: Additional Data Elements

Several of the participating data sources could be improved by the provision of additional data elements or more complete data reporting. For example, additional diagnostics information, including more detailed diagnosis data from the health, mental health, and substance abuse service providers, and information on reasons for incarceration and probation from the criminal justice providers would provide greater detail and better inform the various service interventions described above. Future

research should attempt to access better and more complete information from the participating sources.

5.3.3: Test and Evaluate Interventions

Creating a local knowledge-base and a local intelligence such as ALP will be critical to the development of new programs and interventions based on evidence and to ongoing efforts to monitor the effectiveness of various programs. The County is encouraged to develop demonstration programs in jail diversion, supportive housing, case management, employment development, and SSI outreach, as suggested above, and to develop evaluation and research partnerships with local research organizations so as to begin to develop the knowledge base for establishing an on-going feedback loop regarding program performance and policy effectiveness.

Conclusion

This study has used data collected in the ALP data warehouse to assess services use and related costs among two cohorts of GR recipients. This is the first comprehensive study of this data warehouse that spans Los Angeles County departments. As such, it shows how GR recipients often use an array of County funded services that range beyond DPSS and whose costs have been largely hidden up until now. This awareness of the expenses that GR recipients incur, ranging far beyond the $221 per month cash allowance that they receive, provides an evidence-based platform for demonstrating how coordination of services between County agencies has the potential to both reduce County expenditures and improve the quality of life among Los Angeles' poorest residents.

Along with the improvements in services coordination that are outlined in this report, the continued development of this data warehouse is also strongly encouraged. This report in many ways serves as a prototype for what can be done with this data warehouse, and future studies based upon this data warehouse can continue to follow the line of inquiry started here, or can explore other topics limited only by the scope and quantity of the data collected.

Table ES-4: Cost of County Services by Selected Subgroups of GR Recipients in ALP

	Percent of Incidence Cohort	Mean GR Cash Assistance	Mean Use of Other County Services – while on GR	Mean Use of Other County Services – after GR through 2007
First-time GR Users (n=7,982)				
Heavy Users	10	$1,478	$14,900	$10,329
Mental Illness	16	$1,775	$14,341	$7,404
Disabled	32	$2,267	$12,184	$4,266
Long-term Homeless	9	$3,585	$12,843	$2,291
Jailed pre GR	24	$1,339	$9,215	$6,978
Homeless	52	$1,639	$6,990	$4,273
Total Population	100	$1,566	$6,076	$3,729
Employable	57	$1,337	$4,248	$3,487
Work History (one year prior)	28	$1,432	$4,543	$2,559
Long-term GR Users (n=4,857)				
Heavy Users	10	$1,566	$23,871	$14,399
Mental Illness	15	$1,893	$20,834	$9,817
Disabled	42	$2,250	$14,167	$5,577
Long-term Homeless	14	$3,469	$15,612	$941
Jailed pre GR	35	$1,621	$12,851	$7,759
Homeless	63	$1,842	$10,203	$4,572
Total Population	100	$1,760	$9,159	$4,519
Employable	56	$1,506	$6,594	$3,288
Work History (one year prior)	31	$1,625	$6,598	$2,793

USING ADULT LINKAGES PROJECT DATA FOR DETERMINING PATTERNS AND COSTS OF SERVICES USE BY GENERAL RELIEF RECIPIENTS IN LOS ANGELES COUNTY

Final Report

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Introduction

General Relief (GR) provides assistance to some of the most indigent persons in Los Angeles County (hereafter referred to as "County"). The problems confronting GR recipients are not limited to poverty, however. Recent studies have found high rates of GR recipients to have experienced hunger and homelessness; to be on probation and/or parole; and to have been in foster care as a minor. Additionally, as over 60 percent of GR recipients are categorized as "unemployable" due to physical and/or mental disabilities and other health-related reasons, it can be assumed that there is a considerable need for health services among this group. All this strongly suggests that there are complex services needs among many GR recipients that span multiple services systems.

Little is known, however, about how GR recipients interact with various services systems in response to these needs. This gap in knowledge has implications both for recipients, who may not be receiving needed resources, and for providers, who may be providing services in a piecemeal, expensive and inefficient fashion.

This report seeks to improve understanding of how GR recipients interact with an array of services provided by various County departments and, based on these findings, provide recommendations for more efficiently and effectively providing services to this population. Using data from the Adult Linkages Project (ALP), an initiative which collects and integrates records of services consumed by GR recipients across an array of County departments, this study consists of five components:

1. *Services Use by Department.* Examines services use by GR recipients within the County departments participating in ALP. This includes assessing the extent of services used by GR recipients; corresponding costs (when available) of these services; patterns of services use; and other issues particular to each department.

2. *Complex Patterns of Services Use*. Identifies the nature and extent of services use involving three or more County departments (including the Department of Public Social Services) by GR recipients. These analyses examine persons who use multiple County services; calculate the corresponding expenses related to this multiple services use; and identify those who use County services most frequently as well as the most frequently occurring common combinations of services (e.g., GR/jail/probation/ detoxification) involved in multiple services use.

3. *Select Factors and Services Use.* Determines the impact of select factors related to GR recipients and their services use. Specific characteristics are based on available ALP data and includes homelessness, long-term receipt of GR assistance, employability, and the presence of mental health conditions including substance abuse. Of particular interest is the extent to which these factors are associated with increased services use and corresponding costs.

4. *A* Geographic Information Systems (*GIS) analysis of GR and related services*. Explores geographic correlates to high services use based on service locations, recipient addresses, and other locational data available through ALP. Specifically, this analysis investigates whether there are certain geographical "hotspots" that are associated with high levels of multi-services use.

5. *Implications for Policy and Research*. Makes specific recommendations, based on these findings, for providing and coordinating services between County departments to more efficiently address the needs presented by the multi-services users.

Taken together, this report draws upon ALP's ability to provide data to construct an integrated portrait of how and how often GR recipients use County social, criminal justice and health services. These findings will address barriers to services, inefficiencies in providing services, and potential services linkages and other types of collaboration among County departments that facilitate providing effective services from both consumer and provider perspectives.

The ALP Data Warehouse

ALP is a warehouse of de-identified, linked records of services use and related information for two groups of GR recipients across eight County departments and spanning the years 2005-06. After data are matched by County staff, the resulting datasets were de-identified and delivered to the researchers. The researchers also received approval for this project with the Institutional Review Boards at the University of the Sciences in Philadelphia.

The County departments who contributed data to ALP were:

- Department of Public Social Services (DPSS)
- Department of Health Services (DHS)
- Department of Mental Health (DMH)
- Sheriff's Department (Sheriff)
- Probation Department (Probation)
- Department of Public Health – Alcohol and Drug Program Administration (ADPA)
- Department of Children and Family Services (DCFS)
- Department of Community and Senior Services (CSS)

Data from all of these departments except for the CSS is used in this study. Data from this latter department was not sufficient to be included here.

ALP is built around the records of two cohorts of GR recipients. The first cohort, referred to as the first-time user cohort, contains all persons who were certified to receive GR benefits for the first-time in the first quarter of 2006. The second cohort, referred to as the long-term user cohort, is comprised of persons who had been certified

for GR services prior to 2006, did not use any GR services in 2005, and were re-certified for GR in the first or second quarter of 2006. The data on receipt of GR benefits spans the time period January 2006 through October 2007. Data from other County services spans longer time periods, most often from 2005 through 2007. This means that data on services use is available prior to the date GR assistance was initiated and in most cases also after the last month of GR receipt in the time period.

The services analyzed in this study will be divided by their relationship to the timing of GR receipt. While the GR receipt will always have occurred during the time period of GR eligibility, other services may have occurred either before, during, or after the period of GR receipt. This parses the other County services consumed by the GR recipients relatively cleanly, but there are some issues that need to be disclosed in order to better understand this parsing:

- An institutional stay (hospital, treatment, or jail) is grouped into a time period depending on the individuals GR status on the date that the inpatient admission occurred.

- If an individual had more than one spell of GR during the period for which GR data are available (January 1, 2006 through October 31, 2007), then the "during" period spans the first day on GR until the last day of GR receipt.

- If an individual received GR in October 2007, then there is no way to determine whether or not s/he continued to receive GR benefits subsequent to this. Thus, the time grouping for any DHS services occurring subsequent to October 2007 cannot be determined, although they are included in the total summary of DHS services use over the full time period.

Comparing the three time periods (before, during, and after GR receipt) to each other will be of limited value, as the duration of each time period will differ for each individual based upon when each individual first received GR benefits and how long each individual continued to receive GR benefits. Thus, depending on when in the first quarter of 2006 the individual became certified, s/he would have a 12 to 15-month time period in which they could receive services "before" GR receipt. The time period in which an individual could incur a DHS service considered to occur "during" the GR receipt period will vary from between one month and 21 months, with the duration of the "after" period being inverse to the length of the "during" period with some individuals not having an "after" period.

Two particulars about specific datasets also bear mentioning. First, ADPA records only go to October 2007 (the same end point as that of GR data), the "after" category is more truncated than the DHS and DMH analyses, but it eliminates the sequencing uncertainty that sometimes occurred with the other data sources. Second, the process through which probation episodes are grouped into time periods is conducted in a somewhat different manner than the process outlined in the sections that examine other County department services use. The process was modified due to the fact that

probation episodes are relatively lengthy. Therefore, instead of using the start date of the probation episode and whether it occurred before, during or after the period of GR receipt, probation episodes are grouped according to whether any part of a probation episode occurred before, during, or after the period of GR receipt. If an individual experienced any days on probation prior to GR entry, the individual is considered to have had a probation episode during the "before" period. Likewise, if a person experienced any days on probation during the period of GR receipt or after exit from GR, s/he is considered to have had a probation episode in the "during" or "after" period. Therefore, although an individual may have only one probation episode, if it is particularly lengthy, s/he can be considered to have received probation services before, during and after GR receipt. As ALP data on GR use extend only until the end of October 2007, if an individual received GR in October 2007 then there is no way to determine whether or not s/he continued to receive GR benefits in subsequent months. Thus, the time grouping for any probation services occurring after October 2007 cannot be determined, although they are included in the total summary of probation services use over the full time period.

Conclusion

Each of the five subsequent chapters covers one of the five components of the report previously described. The layout of the chapters is based on a methodology and table shells previously laid out in preparation for this study. The first three chapters build upon each other, the fourth chapter provides a geographical analysis, and the final chapter uses the findings from the previous four chapters to provide specific recommendations for action.

Chapter One
Services Use by Department

This initial component provides information about services use by GR recipients within the DPSS and six County departments who provided service data to the ALP data warehouse. This chapter is divided into separate subsections for each of the participating departments. Each subsection consists of tables and accompanying text that examines:

- The extent to which persons in each of the two GR recipient cohorts analyzed here used services in other departments;

- The extent to which persons in the GR cohorts were "heavy" users of these services; and

- The costs that are associated with the use of these County services and the costs per user.

In sum, this first component will provide each County department with a snapshot of GR recipient service use on their respective departments. Patterns of department service utilization before, during and after GR enrollment will be displayed whenever possible. Detailed data tables, based on the methodology report previously submitted to County and included in an appendix to this report, will be created for each County department. Tables are numbered to correspond to how they were laid out in the study's methodology. In some cases, these tables are broken up in order to facilitate readability. In such cases, the first two numbers in the overall table number correspond to the original table number, the third number corresponds to a particular part, and, if present, the fourth number corresponds to the particular cohort covered.

1.1: DPSS

1.1.1: Introduction

DPSS administers GR, as well as a range of other income assistance and related resources, to eligible County residents. This section uses DPSS data to provide profiles of the two GR cohorts in this subsection in terms of demographic, services use, employment, and some other (including homelessness) characteristics. This provides an orientation to the two cohorts; cohorts that will be followed with respect to their use of other county services in the remainder of this chapter. In addition, results in this subsection describe the extent of heavy DPSS services use, and gives frequencies on the prevalence of various factors that will be examined in greater detail in subsequent chapters.

The DPSS data span the time period January 2006 through October 2007. This period, referred to hereafter as the eligibility period, will be truncated for persons

whose first receipt of GR during this period is later than January 2006, and when necessary this will be adjusted for. Also, 33,636 of the 144,433 record-months (23.3 percent) in the DPSS dataset have missing data for benefits received during the month in question. These months are eliminated from the analyses, and while no persons are lost from the study cohorts as a result of this, it may understate the extent of heavy usage among the cohorts.

1.1.2: Demographics and Other Cohort Characteristics (Tables 1.1, 1.2)

Table 1.1 provides information on the frequencies of basic demographic characteristics among GR recipients in each cohort. Looking at general findings among both cohorts:

- The vast majority of persons are between ages 22 and 59, and the cohorts are both disproportionately male, Black, and unattached to a spouse (at GR entry and exit).

- Upwards of 90 percent are listed as having English as their primary language, while small but notable subgroups in both cohorts (14.7 percent and 7.8 percent for first-time and long-term user cohorts, respectively) are foreign born.

There are substantial differences among a few of these demographic distributions between the cohorts. Specifically:

- Virtually the entire long-term user cohort (96.2 percent) is between ages of 22 and 59, while the first-time user cohort have higher percentages of younger and older persons. The difference in younger persons is largely due to the requirements of being included in the long-term GR user cohort, where persons had to have had a GR record several years prior to this study period.

- The long-term user cohort is even more male (72.5 percent to 62.9 percent), Black (57.5 percent to 40.7 percent), and English-speaking (95.5 percent to 91.7 percent) than the first-time user cohort.

Table 1.2 provides additional profile information about each cohort, focusing on characteristics that merit special attention. Looking at GR recipients in both cohorts:

- About 80 percent received food stamps concurrent to their GR receipt.

- Considerably higher proportions of the long-term user cohort, when compared to the first-time user cohort, are listed as disabled (41.6 percent to 31.5 percent) and homeless at some point during their GR receipt (67.4 percent to 54.9 percent).

- The first-time user cohort, on the other hand, had higher rates of persons in some stage of attempting to secure Supplemental Security Income (SSI) disability benefits (14.5 percent to 10.7 percent) and pregnancy (14.1 percent to ten percent; calculated only among female GR recipients).

- The percentage of persons deemed as employable is roughly similar for both cohorts.

- The proportions who were considered employable at the first point of GR receipt in the study period – a little over half of both cohorts – dropped substantially by the end of GR receipt in the study period – 42.3 percent and 38.4 percent for first-time and long-term user cohorts, respectively.

Finally, markers that measure special assistance, mental health, substance abuse, and domestic violence cannot be considered reliable measures and will not be considered any further here.

1.1.3: Employment (Table 1.3)

Data on income for GR recipients in both cohorts was available from two sources – data collected on wages from the California Employment Development Department, the state employment agency, and from County's Los Angeles Eligibility, Automated Determination, Evaluation and Reporting (LEADER) database, which maintains records on various aspects related to receipt of GR. Results are reported on Table 1.3.

- State employment data, reported quarterly, shows that almost three quarters of both cohorts had wage earnings in the period from 1998 through the first quarter of 2008. These proportions get progressively smaller as this time window shrinks. However, since the employment data are reported in quarters and the beginning and end of GR receipt can occur in any given month, precise timing of when employment periods start and end and how this juxtaposes with the start of GR is impossible with these data.

- The proportions of persons receiving employment income immediately before, during, or immediately after (i.e., GR receipt in the same quarter as employment income receipt) is a little over 40 percent for both cohorts. These proportions drop somewhat, and in the first quarter of 2008, when GR data are unavailable, 16 percent of the first-time user cohort and 14 percent of the long-term user cohort had employment income. These figures suggest that, roughly, as many as one-third of the persons in these cohorts leave GR to employment.

- The median employment income reported in the quarters was $2,605 for the first-time user cohort and $2,219 for the long-term user cohort.

- Additionally, about one third of employment episodes (consecutive quarters where employment income was received) lasted for at least four quarters.

While these data are far from definitive, they do indicate that much of the employment is of a sporadic nature and, while it generates substantially more income than GR benefits, still is insufficient to lift persons over poverty income levels for sustained periods of time.

There is also, on Table 1.3, a second source of data on income. This comes from LEADER, which is compiled by DPSS and reports income, both from wages and undetermined grants. LEADER data are collected from the beginning of 2005 through October 2007, with 92 percent of the records in this dataset occurring during GR receipt. Thus the results reported here primarily reflect information on income received during GR. Whether information about income comes from recipient report or other sources is unclear.

- The proportions of persons with LEADER income records are a little over 20 percent in both cohorts.

- About 11 percent of both cohorts have income from wages, and the proportions with income from grants are 15.0 percent and 12.2 percent for the first-time user cohort and the long-term user cohort, respectively. These proportions cannot be directly compared to findings from the State employment data, but the closest category from those results, the proportions with wages received immediately before, during, or immediately after GR receipt, is substantially higher than the proportions reported here.

- The mean monthly income amount, a little over $380 dollars for both cohorts, is substantially lower (when multiplied by three) than the quarterly income reports from the State data. Thus these data need to be interpreted with caution as both the numbers of persons receiving income and the income amounts received may be underreported.

1.1.4: Homelessness (Table 1.4)

Homelessness is reported in conjunction with each month a recipient receives GR benefits. The precise nature of the homeless episode – whether the person lived in a shelter, outdoors, or in some other unstable living situation, is unknown, as is the amount of time in the month that that the recipient was homeless. Nonetheless, it is possible to get some idea of homelessness, as it occurs among GR recipients, through this indicator.

Table 1.4 provides results from the DPSS data that focus on homelessness among GR recipients. Among the noteworthy findings:

- A majority of the GR recipients – 54.9 percent of the first-time users and 67.3 percent of the long-term cohort – reported homelessness at some point over the course of their GR receipt.

- Among those persons reporting homelessness, the mean number of months in which homelessness was reported was between ten and 11, indicating that for persons on GR who reported homelessness, both homelessness and GR receipt were protracted. To place this in context, as the homeless indicator in the data are tied to GR receipt, the maximum number of possible months a recipient could possibly be counted as being homeless varies depending on when s/he began receiving GR benefits. As a result, the maximum number of possible months for a GR recipient to be homeless is between 16 and 22 months.

- Among the first-time user cohort, 32.7 percent of those who reported homelessness (18 percent of the total cohort) met our criteria for "chronic" homelessness – where a person reports homelessness for at least 12 months and for all the months for which the person is on GR during the study period. For the long-term user cohort, the proportion that was chronically homeless was even higher, with 40.7 percent of those reporting homelessness (27.3 percent of the total cohort) meeting the chronic criteria.

- A substantial number of those reporting homelessness – 33.5 percent and 41.8 percent in the short-term user and long-term user cohorts, respectively, report two or more episodes (periods of consecutive months of homelessness) of homelessness while on GA during the study period. The mean number of homeless episodes for these respective cohorts was 1.5 and 1.4 stays.

In summary, the extent of homelessness among both of the cohorts is striking, though consistent with other reports looking at GR in Los Angeles. These findings also show that, among those receiving GR who are homeless, homelessness is of a long-term nature, either as a prolonged uninterrupted spell of homelessness or multiple shorter homeless episodes. Also worth noting is that homelessness is decidedly more pervasive in the long-term user cohort than in the first-time user cohort. All of this indicates that homelessness and GR receipt are closely linked, perhaps as manifestations of extreme poverty.

1.1.5: Benefits Received (Tables 1.5, 1.6)

The final two tables in this section focus on findings related to the GR cash benefits received. Table 1.5 shows that almost everyone in both cohorts received a GR grant as part of their GR benefits, meaning that they received cash assistance.

- The average amount of this cash assistance, for both cohorts, was just over $200, but includes monthly amounts up to $450. This reflects that, while the maximum monthly cash benefit for a single individual is $221 monthly, married couples receive maximum benefits of $375, while the maximum amount for more than two adults when they are on one case is $450.

- The average amount of cash benefits received per case over the 22 months that GR use was covered in the data was a little higher for the long-term stayers cohort, at $1,760, than for the first-time user cohort at $1,566.

The final table in this section, Table 1.6, provides more findings related to the dynamics of tenure of receiving GR. Key findings include:

- The long-term user cohort had a slightly higher amount of GR episodes (consecutive months of GR eligibility) than the first-time user cohort – 1.5 episodes to 1.4 episodes, with both cohorts having an average initial episode length in the time period studied of almost seven months.

- On average, members in first-time user cohort spent about 40 percent of the eligibility period on GR, and the long-term user cohort spent about 45 percent of the eligibility period on GR. This translates to an average of 8.3 months for the first-time user cohort and 9.1 months for the long-term user cohort.

- These indicators that the long-term user cohort had, on average, a longer tenure on GR is consistent with findings that this cohort also had a larger proportion of extended users, as measured in numerous ways. The extended GR users in both cohorts also had considerably higher rates of disability (compare to findings on table 2) than the overall GR cohorts.

- The measure designated for this study as a “heavy user” – use of GR for at least 16 months out of the total study period – applied to 15.2 percent of the first-time user cohort and 16.6 percent of the long-term user cohort. Over two-thirds of the heavy users in both cohorts were disabled, and the heavy users consumed 37.7 percent and 35.6 percent of the total cash assistance provided to the first-time user and long-term user cohorts, respectively.

1.1.6: Conclusion

The total amount of GR cash assistance provided is $12.5 million (first-time user cohort) and $8.5 million (long-term user cohort). A large proportion of both cohorts receive GR for extended periods of time, are homeless while receiving GR, and are considered disabled and/or unemployable. While most of them have some work history, less than half have any work history close to or overlapping with their period of GR receipt. These findings are consistent with findings from previous studies and suggest that many persons in both cohorts are experiencing persistent spells of extreme poverty.

1.2: DHS

1.2.1: Introduction (Figure 1.1)

Serving 700,000 persons on a yearly basis, DHS manages the second largest public health care system in the United States. DHS operates four hospitals and also provides a wide range of health services at a number of health centers and clinics throughout County.

This section will examine DHS services use among GR recipients in the time period between January 1, 2005 and December 31, 2007. As shown in Figure 1.1, approximately half of the GR recipients (both the first-time and long-term user cohorts) used medical services provided by DHS in this time period. This includes approximately one third of each cohort who used DHS services while they were receiving GR benefits. As such, more GR recipients tracked in this study used DHS services than the services of any other County department included in the ALP database.

The remainder of this section will examine and summarize the timing, dynamics, costs, and diagnoses associated with DHS services use by GR recipients. Inpatient hospitalizations, outpatient visits and Emergency Department (ED) visits will be analyzed separately with a specific focus on identifying subpopulations of "heavy users" who make extensive and costly use DHS services and calculating service costs associated with these "heavy users." Results will often be broken down into "before," "during," and "after" periods, and the means by which this is done is described in the methodology appendix in the back of this report.

1.2.2: Inpatient Hospitalizations (Tables 1.7.1, 1.7.2)

Sixteen percent of the GR recipients had inpatient stays during the study period, with nine percent of these persons experiencing an inpatient stay while they were on GR. Table 1.7.1 summarizes the inpatient stay dynamics and Table 1.7.2 contains findings related to the costs of this inpatient use.

Important findings related to the inpatient stay dynamics, from Table 1.7.1, include:

- A slightly higher proportion of the long-term cohort (17.2 percent), used inpatient services compared to the first-time user cohort (16.4 percent). Otherwise, the use of inpatient services is very similar among the two cohorts with a few exceptions which will be pointed out below.

- Both cohorts had a mean number of approximately two inpatient stays per inpatient user and the mean length of hospital stay was about five days for the first-time user cohort and seven days for the long-term users.

- A little over one-third of all hospitalized individuals experienced multiple hospitalizations over the study period.

- A small proportion of persons with inpatient stays in both cohorts experienced five or more stays. In both cohorts, this small group used highly disproportionate amounts of inpatient days in comparison to their representation among inpatient users. This is one way to identify heavy users of inpatient services, and such heavy users were more prevalent among the long-term cohort.

- The overall proportions of the first-time cohort and the long-term cohort to start receiving GR within 30 days of an inpatient discharge were 4.7 percent and 3.2 percent, respectively.

Highlights related to the cost of these inpatient stays, shown in more detail on table 1.7.2, include:

- On average, the cost per user for inpatient stays (before, during and after GR combined) was approximately $22,000.

- While on GR, the costs for inpatient use were $12.7 million for the first-time user cohort (average cost of $17,138 per user) and $8.2 million for the long-term user cohort (average cost of $16,535 per user).

- Almost half of the persons using inpatient services incurred total inpatient costs of under $5,000, and over a quarter incurred total inpatient costs of over $20,000, with approximately 11 percent accruing costs greater than $50,000.

- Identifying those persons with five or more inpatient stays during the study period appears to be a good initial means for determining heavy users, as relatively small proportion of inpatient users (5.2 percent of the first-time cohort and 7.0 percent of long-term cohort) account for disproportionate shares of the costs in inpatient stays (22.5 percent for first-time user cohort and 27.7 percent of long-term cohort).

1.2.3: Outpatient Services (Tables 1.7.3, 1.7.4)

GR recipients make much more extensive use of outpatient services than inpatient services, with 36.2 percent of the first-time cohort and 41.4 percent of the long-term cohort having at least one outpatient visit during the study period. The majority of each of these visits occurred during the time of GR eligibility.

Table 1.7.3 summarizes the outpatient visit dynamics and Table 1.7.4 contains findings related to the costs of this outpatient use.

In summary, the main points in the two tables are:

- Cohort costs for outpatient services during the time of GR receipt were $6.1 million for the first-time user cohort (average cost of $2,913 per user) and $3.8 million for the long-term user cohort (average cost of $2,571 per user).

- About one third of the outpatient users in both cohorts can be considered regular outpatient users – persons who have records of over six outpatient contacts during the study period.

- Looking at costs, this third of the users accounts for over three-quarters of the costs associated with outpatient services. However, even the costs associated with this heavy use is inexpensive compared to the use of inpatient services – as only 5.5 percent of the users in the first-time cohort and 3.5 percent of the users in the long-term cohort accrue costs over $15,000. This is considerably lower than the *mean cost* per person using inpatient services.

Providing another comparison, the mean cost per person for all outpatient services (before, during and after GR receipt) – $3,962 and $3,310, respectively – is considerably lower than the corresponding mean costs for inpatient services – $21,878 and $22,197, respectively.

Outpatient services, when compared to inpatient services, are much less expensive, even among the heavier users. Instead of focusing on ways to reduce outpatient services use, an appropriate goal would be to incorporate outpatient services provision in a strategy to reduce more costly inpatient and emergency department services use.

1.2.4: ED Visits (Tables 1.7.5, 1.7.6)

ED visits are the third component of DHS services use examined here. ED visits that were recorded in DHS data as lasting more than one day were considered inpatient hospitalization and therefore do not factor in this analysis of ED visits. Table 1.7.5 summarizes the ED visit dynamics and Table 1.7.6 contains findings related to the costs of this ED use. Principal findings include:

- The proportions of total GR recipients with ED visits are roughly the same as the proportions for inpatient use. However the proportion of persons with ED use among the first-time user cohort (22.9 percent) is substantially higher than that of the long-term cohort (16.3 percent).

- The mean number of ED visits per user is 2.2 for both cohorts. However, over 70 percent of ED users in both cohorts had only one visit. This suggests a highly skewed distribution of ED visits.

- The average cost per user (for all time periods) is roughly half that of outpatient services use at $1,680 and $1,713 for the first-time cohort and the long-term cohort, respectively. In contrast, about 7 percent of both cohorts incurred costs associated with ED visits in excess of $20,000. Additionally, persons having five or more ED visits accounted for a disproportionate share of the total cost of ED services. Among the first-time users, this group of heavy users made up 4.6 percent of the cohort and incurred 31.5 percent of the total ED costs. Among the long-term users, heavy users were 4.8 percent of the cohort and accounted for 35.4 percent of the total costs.

- The average cost per user while receiving GR is $1,417 and $1,509 for the first-time user cohort and the long-term user cohort, respectively, reflecting total respective costs of $1.4 million and $1.2 million for the two cohorts.

ED use is the service in which the large majority of GR users who use this service use it infrequently and relatively inexpensively, but there appears to be a small proportion of both frequent and expensive ED users among both GR cohorts. Given this, targeting this small group of heavy users has the potential to substantially reduce the cost of ED use among the cohorts.

1.2.5: Diagnoses (Tables 1.8.1, 1.8.2)

Table 1.8.1 shows the frequency of the most recurring diagnoses and groups of diagnoses that are associated with the persons using any DHS service. The diagnoses are unduplicated on the person level, meaning that the corresponding percentages refer to the proportion of the DHS-using group in each cohort was given the diagnosis in question. The specific findings include:

- Many of the most frequently occurring individual ICD-10 diagnoses are V-codes that do not involve a specific disorder (such as an examination).

- Among those that do indicate a specific disorder, hypertension (401) is the most frequent, with 9.7 percent and 10.9 percent of the DHS service users in the first-time cohort and heavy-user cohort, respectively, receiving this diagnosis.

- Other frequently occurring diagnoses include back disorders (724), cellulitis (682), dental and gum problems (521), and respiratory symptoms (786).

Looking at categories of related disorders is perhaps more instructive in getting an impression of the types of presenting problems that GR recipients have when

using DHS services. While these categories are broader, they are consistent with the diagnosis list. Specific results, also from Table 1.8.1, include:

- All but two categories include specific diagnoses that were among the most frequently occurring.

- The two exceptions are mental disorders (including substance abuse) – diagnosed in 17.5 percent and 13.8 percent of the users of DHS services among first-time cohort and heavy-user cohort, respectively, and injury and poisoning – experienced by 24.0 percent and 27.0 percent of the respective groups.

- Other diagnoses that are often of interest among indigent and homeless populations are also included in the table. Among the diagnoses involving mental disorders, including substance abuse and schizophrenia, the rates are low considering that this is a treated population, but it is also important to note that there are other county systems that provide behavioral health services and thus this should not be considered an overall treated rate for these disorders.

Tables 1.8.2 and 1.8.3 replicate the analysis of diagnoses for GR recipients with five or more inpatient stays and five or more emergency department visits respectively. Of specific interest in these tables is the relatively large proportion of each group having a diagnosis of either an episodic mood disorder or organic psychoses, which are generally considered to be diagnoses indicating a "major mental illness." Also of interest is the high proportion of these groups having been diagnosed with an infectious disease relative to the overall population of GR recipients.

1.2.6: Conclusion

Approximately half of both GR cohorts use some sort of DHS service. As indicated by Table 1.7.5, a small minority of those using DHS services experienced an inpatient stay, an ED visit and received outpatient care.

Among the services provided by DHS, inpatient services are by far the most expensive, with more than one in ten GR recipients having used inpatient services in excess of $50,000. On the other hand, outpatient services are the most widely used and the least expensive. Roughly one third of GR recipients experienced six or more outpatient stays, yet less than ten percent of both cohorts used outpatient services whose cost exceeded $10,000. The average cost per user of ED services is similar to that of outpatient services, but a small number of GR recipients who make frequent use of ED services account for a large share of the total cost.

A significant proportion of GR recipients use DHS services, and while it is relatively inexpensive to serve the majority of GR recipients, the cost of providing services to those making frequent use of ED and inpatient services is considerable. Identifying these heavy users of inpatient or ED services who could be targeted for interventions might be one method for producing greater efficiencies in service delivery and achieving cost reductions. The very small group, less than one percent (Table 1.7.5), of GR recipients who make frequent use of both inpatient and ED services is a potentially important population to target for interventions. Alternately, instead of targeting frequent users of services, persons who accumulate excessive inpatient or ED service costs could be identified and targeted for interventions. While there is likely to be overlap between the most frequent and most expensive users of inpatient and ED ervices, it is appropriate to target both groups in order to improve the efficiency of DHS service provision.

1.3: DMH

1.3.1: Introduction (Figure 1.2)

DMH provides an array of mental health services in both a direct provider capacity and through a network of sub-contracting agencies and individuals. Serving approximately 250,000 persons on an annual basis, DMH is the largest mental health service system in the United States.

This section will examine DMH services use among GR recipients in the time period between January 1, 2005 and December 31, 2007. Overall, approximately 20 percent of GR recipients in both the first-time and long-term user cohorts made use of DMH services during the study period. This indicates that a significant proportion of both cohorts are affected by some form of mental illness for which they are receiving treatment.

In accordance with the structure of the ALP data, this section will examine outpatient visits and daily treatment services separately. All of DMH's inpatient services are provided by DHS, and are considered DHS stays in this study. The analyses presented in this subsection will examine and summarize the timing, dynamics, costs, and diagnoses associated with these DMH services. Specific attention will be paid to identifying "heavy users" of DMH services, and the potential for targeting these users for intervention will be addressed. As with DHS data, the results are divided by time period and further details about this are provided in the methodology appendix.

1.3.2: Outpatient Services (Tables 1.9.1, 1.9.2)

Among the persons who used DMH services in both cohorts, Table 1.9.1 shows that virtually everyone used outpatient services, either exclusively or along daily treatment services. This extensive use of outpatient services is potentially due to

the fact that GR participants may be only offered outpatient services. Among the specific findings:

- Each user of outpatient services had, on average, 25.0 and 19.4 visits for the first-time user cohort and the long-term user cohort, respectively. This is one instance where services use differs among cohorts, with the long-term cohort having a slightly higher percentage of the cohort using outpatient services, but with a substantially less number of visits per person.

- This differential also translates to average cost per user, with the first-time cohort ringing up $3,779 as compared to $2,756 for the long-term cohort over the course of the full study period. These costs are roughly in the range of the cost per person for outpatient services in the DHS system, although the type of services provided in outpatient visits by each system (DHS and DMH) can be presumed to differ widely.

- It is relatively inexpensive to provide services to most DMH outpatient users. As Table 1.9.2 indicates, the vast majority of persons using DMH outpatient services (88 percent of the first-time user cohort and 93 percent of the long-term user cohort) used less than $5000 in outpatient services. There are very few individuals whose use of outpatient services imposes a significant cost burden.

1.3.3: Daily Treatment (Tables 1.9.3, 1.9.4)

A relatively small percentage of persons who use DMH services among both GR cohorts use daily treatment services – 4.3 percent among the first-time cohort and 3.6 percent among the long-term users (Table 1.9.3). Findings for daily treatment service use include:

- Compared to the cost of inpatient services use per person, the cost of this services use is also modest at $4,148 per user in the first-time cohort and $4,449 per user in the long-term cohort. These cost figures cover the entire study period, including times before, during and after the cohorts receive GR benefits.

- Few users exceed the relatively inexpensive average per user cost of daily treatment services. For the first-time user cohort, only 17 percent of daily treatment users consumed more than $5000 worth of services. Similarly, only 19 percent of the long-term user cohort used daily treatment services whose total cost exceeds $5000.

In light of this information, and given that a relatively small overall proportion of each cohort uses daily treatment services, identifying heavy users of this service would yield only marginal benefit in terms of reducing overall services use and associated costs.

1.3.4: Diagnoses (Table 1.10)

Table 1.10 lists the most frequent diagnoses groupings for GR recipients using DMH services. The diagnoses are unduplicated on the person level, meaning that the corresponding percentages refer to the proportion of the DMH-using group in each cohort was given the diagnosis in question. However, there are limited diagnoses that accompany each contact, so secondary diagnoses often are not included. This is likely to undercount the prevalence of the various diagnoses that are recorded. Among the results:

- The most frequently occurring diagnosis is episodic mood disorders, given to 51.4 percent of the first-time cohort and 43.9 percent of the long-term cohort who used DMH services. This group of diagnoses is generally considered to signify "major mental illness", and includes bipolar, manic depression, and major depression disorders.

- Two of the next three most commonly occurring groups of diagnoses, non-organic psychoses and schizophrenic disorders, are also usually considered to signify major mental illnesses.

- Also among the most frequently occurring diagnosis groups is adjustment reaction, which includes post-traumatic stress disorder.

- Substance abuse diagnoses are also prominent, but not overwhelmingly so, among persons receiving DMH services. Again, this is likely due to the low number of secondary diagnoses in the data. Substance abuse diagnoses were given to 13.0 percent of the first-time cohort and 16.2 percent of the long-term cohort (who received DMH services).

- 8.9 percent of the first-time user cohort and 9.5 percent of the long-term user cohort have a dual diagnosis of some form of mental illness and a substance abuse disorder. This relatively low prevalence of co-occurring substance abuse and mental illness underestimates the actual prevalence of co-occurring disorders among DMH service recipients.

1.3.5: Conclusion

Approximately one-fifth of both GR cohorts are receiving some type of mental health service through DMH. This provides a baseline for treated prevalence of mental illness among the GR cohorts, with the prevalence rates for the two cohorts likely to increase somewhat when services from other systems are added. This will be examined in subsequent analyses.

Looking at DMH as a system, the large majority of GR recipients tracked here who are using DMH services are exclusively using outpatient services. Total

DMH costs during GR receipt were $2.8 million for the first-time user cohort and $1.6 million for the long-term user cohort. This is much lower than the aggregate costs associated with GR assistance or DPS services. Given all this, identifying heavy users who might be targeted for interventions to make more efficient use of services would be of limited value here, except as a focus for SSI advocacy including the utilization of DMH treatment documents to support the disability claim in the SSI application.

1.4: ADPA

1.4.1: Introduction (Figure 1.3)

ADPA administers a network of different drug treatment modalities that provide services to low-income and indigent persons through various referral sources. Most relevant for this study, ADPA collaborates with the DPSS to provide treatment services to GR applicants/ recipients identified with having substance abuse problems through the General Relief Mandatory Substance Abuse Recovery Program (MSARP) in County. MSARP's mission is to "[encourage] personal responsibility by providing services to indigent adults who want to help themselves to reach self-sufficiency" (taken from http://publichealth.lacounty.gov/adpa/program.htm).

In addition, as a result of California's Proposition 36 (the Substance Abuse and Crime Prevention Act of 2000), persons convicted of certain crimes that have a history of substance abuse may be mandated to participate in ADPA's treatment services as a condition of probation or parole. Given that GR recipients often have involvement with the criminal justice system, GR recipients may be receiving treatment services through ADPA under the provisions of Proposition 36. GR recipients may also avail themselves of ADPA services under auspices not related to MSARP or Proposition 36, or, if they are participating in residential treatment, they may apply for GR benefits in order to have an income source while they are in treatment.

There are five treatment modalities that were tracked for GR participants in data that were collected as part of ALP. These included two types of residential programs – long-term residential services and short-term detoxification. In addition, there are three types of other services that are tracked: outpatient counseling, day care habilitative services, and narcotic treatment program services. ADPA programs are, in many cases, intended to provide less expensive and less disrupting alternatives to inpatient hospital and psychiatric services and incarceration as they assist persons in addressing their substance abuse problems. Thus, while there will be "heavy users" of these services, such heavy use is often desirable in that it is necessary and, even in the case of long-term residential services, a preferable alternative to more costly types of care.

Figure 1.3 shows that 19 percent of each cohort received some type of ADPA services. Slightly over half of these persons receiving ADPA services did so concurrently to receiving GR during the study period. This indicates that a substantial proportion of both GR cohorts have a substance abuse problem for which they are receiving some type of treatment. The remainder of this section provides additional detail on these service use patterns and related costs. While heavy services use will be assessed, unlike in other sections heavy use here will not generally be regarded as a potential intervention point. The only possible exception to this will be for short-term detoxification services.

Details on how the services were parsed into periods before, during and after receipt of GR, and other methodological considerations, are outlined in the methodology appendix.

1.4.2: Residential Services (Tables 1.11.1, 1.11.2.1, 1.11.2.2)

Residential services, include (long-term) residential services and (short-term) detoxification services. The long-term residential services was the most frequently used of the five ADPA services examined here and also incurred more costs for the GR users examined than all of the other four services combined.

Key findings about long-term residential services include:

- Among the first-time and long-term GR cohorts, the proportions in residential treatment were 10.8 percent and 12.3 percent, respectively.

- The tendency was to stay in residential treatment for an extended period, as mean stays lasted for over three months and approximately one-fifth of residential services users in both cohorts staying for over 180 days during the study period. These were considered heavy users.

- From the available data, the per diem cost of residential treatment appears to be under $30. However, due to the extended stays, the cost per user was about $3,200 in both groups over the course of the study period.

- Heavy users (staying 180+ days) comprised about one-fifth of the users but accounted for about one-half of the days used and costs accrued in both GR cohorts. In addition, 6.5 percent of the first-time cohort and 7.4 percent of the long-term cohort had residential services expenses exceeding $10,000.

Key findings about detoxification services include:

- Detoxification was a relatively little-used service, with 2.8 percent of the first-time cohort and 3.3 percent of the long-term cohort using this service during the study period.

- Over two-thirds of the detox users in each cohort only experienced one detox episode during the study period. This leaves, among the detox users in the first-time and long-term cohorts, 12.0 percent and 11.2 percent, respectively, who were considered "heavy users" by virtue of having experienced three or more detox stays. These heavy users, as expected, consumed a disproportionate amount of the total detox days used by this group, but the disproportion was not vast.

- The mean length of stay, depending on the cohort, was either ten or 13 days.

- Looking at the cost data, the *per diem* cost for this service seems to be somewhere between $250 and $270, with the mean cost per person during the study period ranging from $3,500 to $4,000 over the course of the study period, depending on the cohort examined.

- The heavy users (i.e., with 3 or more stays) consumed either 27.3 percent (12.0 percent of first-time cohort detox users) or 20.1 percent (11.2 percent of long-term cohort detox users) of the total costs accrued to these cohorts.

- Taken to an even further extreme, 6.2 percent of the users in the first-time cohort and 5.0 percent of the users in the long-term cohort rang up costs in excess of $10,000. However, this amounts to 14 persons in the former cohort and 8 persons in the latter cohort.

The data shows here that repeat detox services use can be costly, but only for a limited number of persons. For both cohorts, the proportions of detox users are low and among these subgroups of detox users the proportion of heavy users is again low.

1.4.3: Outpatient Services (*Tables 1.11.3, 1.11.4.1, 1.11.4.2)*

Outpatient Services include Outpatient Counseling (OC), Day Care Habilitative services (DCH) and Narcotic Treatment Program services (NTP). Results shown in the three corresponding tables include:

- Of those in either cohorts who used ADPA services, approximately half used outpatient counseling services at some point during the study period. The mean period per person over which these services were provided was approximately four months. Most noteworthy here is the low cost of providing these services – less than $1,000 mean cost per user – with less than four percent of each cohort accruing OC costs over $3,000 during the course of the study period.

- DCH and NTP are very different services, but they both have very low participation rates among GR recipients, and relatively low costs for those that do receive these services, so they are not considered any further here.

1.4.4: Conclusion

ADPA programs are largely intended to provide less expensive and less disrupting alternatives to inpatient hospital and psychiatric services and incarceration. Indeed, these programs are provided relatively cheaply. Total ADPA cost per cohort (during the time they are receiving GR) is $2 million for first-time user cohort and $1.2 million for the long-term users cohort. Put in the context of expenditures through DPSS or DHS, savings here would be minimal. While "heavy users" of certain ADPA services account for a disproportionate amount of the overall cost of providing these services, such heavy use is often desirable in that it is necessary and in some cases mandated.

1.5: DCFS

1.5.1: Introduction

This section examines the extent to which the younger GR recipients among the two cohorts had a prior history of out-of-home placement with DCFS. There is little research on outcomes for adults who were in the care of DCFS as children, and especially not on the scale of this study.

Data from DCFS was for out-of-home placement stays ending in the years 1997 through 2006. While the precise date of birth was unavailable in the data, this meant persons born between 1981 and 1987 would be reaching adulthood in the years covered by these data, and so this analysis is limited to these persons, who would be between ages 18 and 25 when they were certified for GR.

Limiting the data to ages 25 and under has the advantage of only looking at those persons where the link between these two service systems is most temporally proximate. The longer the gap between child welfare services and services received as an adult, the less salient any link between the two services would be.

This analysis is also simpler to report than others in that the DCFS involvement is all retrospective – it reports on childhood involvement with DCFS among a group of adults. Therefore no analysis of heavy users is provided, as there is no need to assess who would be at risk of using these services subsequent to the study period.

1.5.2: Demographic Characteristics of GR Recipients with a DCFS Record (Table 1.12)

Table 1.12 is structured so that the subgroup in each cohort with a DCFS record can be compared to each other or compared to those in the cohort without a DCFS record. The results in this table show:

- The long-term user, 15.6 percent of the Younger cohort members (i.e. age 25 and under) had a record of DCFS out of home care, which was somewhat higher than the 10.2 percent rate of DCFS involvement for the younger members of the first-time user cohort.

- For each cohort, the DCFS subgroup had a higher proportion of females, and the DCFS subgroup in the long-term user cohort was substantially more female than that of the first-time user cohort.

- The differences in age distribution between DCFS subgroups in each of the cohorts is striking, with the first-time users being disproportionately on the younger side of the age distribution and the heavy-user cohort being disproportionately on the older side of the age distribution. The DCFS subgroup among the first-time users is also younger than their first-time user counterparts. In the latter cohort this reflects a similar distribution among the non-DCFS subgroup, and for both of them their older ages (compared to the first-time user cohort) is an artifact of this cohort having already had a history of GR receipt prior to the time period recorded in this study.

- Both cohorts already are disproportionately Black. Howere, DCFS subgroups have even greater proportions of Black persons than the corresponding non-DCFS subgroups.

1.5.3: Use of DCFS Services (Table 1.13)

Table 1.13 explores DCFS service use among young adult GR recipients with a history of service receipt from the Department. Among the results:

- The length of DCFS out of home placements among both cohorts averaged roughly seven years, with about 30 percent of each cohort experiencing a DCFS placement lasting over ten years.

- For the first-time user cohort, the mean age of certification for GR was 19.7 years, and the time from exiting the DCFS system to initial GR certification was 31.7 months. The older age and longer gap period for the long-term user cohort is an artifact of this cohort having already had a history of GR certification prior to the study period used for this analysis.

- Finally, the frequency of the circumstances of exit from the DCFS system is shown. The primary types of exit are by court order and by emancipation (aging out).

1.5.4: Conclusion

Although there is no group to which one can compare these cohorts of GR recipients, there does seem to be a high rate of persons with histories of DCFS involvement. Most persons with such records are aged 18-20 when they first receive GR, and compared to other GR users are more likely to be female and Black. Most persons have experienced long periods of DCFS care, and there is typically a multi-year gap between exiting from DCFS and receiving GR. Such results provide a thumbnail sketch of the intersection between child welfare involvement as a child and receipt of welfare benefits as an adult, and further research is called for to give more detail in many areas.

1.6: SHERIFF

1.6.1: Introduction

Urban and indigent single adult populations, particularly where many are homeless and/or mentally ill, like those who comprise these GR cohorts, can be expected to have, as a group, considerable interaction with the criminal justice system. This section explores the extent to which the GR cohorts experienced stays in the County jail, which is administered by Sheriff.

This analysis is limited by the information available: the dates of incarceration, the associated cost of each stay, and whether or not the jail stay involved health or mental health care services. This means that there is no information available on the offense for which the person is jailed, or the nature of the release – whether the jail stay ended with probation, parole or a stint in the state prison system. Also, the jail stays are parsed into three groups by virtue of whether or not they initiated before, during or after each individuals time of GR receipt. The methodological issues related to this are reviewed in the methodological appendix to this report.

1.6.2: Jail Use

Table 1.14 contains all the jail use and cost data reported for this study. Substantial findings include:

- Overall a substantially higher proportion from the long-term user cohort had jail a jail stay during the three-year study period, 56.0 percent to 40.5 percent. If looking at jail stays that started while a person was receiving GR, the same disparity between cohorts remains, 30.8 percent to 18.7 percent.

- The mean length of jail stays for the long-term user cohort also was longer – 41.6 days to 36.0 days. This corresponds with the finding that a higher proportion of those who were jailed in this cohort, 29.9 percent, had jail stays

longer than 90 days, as compared to 24.6 percent of persons who were jailed in the first-time user cohort.

- The mean number of jail stays per person jailed was similar among the first-time user cohort and the long-term stayer cohort, 2.5 and 2.7 respectively. Roughly 60 percent of both cohorts who were jailed went to jail on repeated occasions during the study period.

- Similar proportions of both cohorts received GR within 30 days of jail exit, 14.4 percent in the first-time user cohort and 12.8 percent in the long-term user cohort.

- Among those who were jailed, the long-term user cohort had slightly higher rates of persons who received health care (13.4 percent vs. 10.2 percent) and mental health care (11.9 vs. 10.2 percent) while in jail, compared to the first time user cohort.

1.6.3: Heavy Users

Persons who had either four or more jail stays or who accrued over 90 days of jail during the three-year study period designated as heavy jail users. Either way that "heavy user" was defined, these users consumed about twice the proportion of jail resources, calculated either by cost or by days consumed, than their proportion representation among those in their cohort who were jailed.

1.6.4: Conclusion

Costs to Sheriff for incarceration that started during the time period when the cohorts were certified GR were the most costly for any County department, including DPSS. For the first-time user cohort, the total cost was $22.5 million and, for the long-term user cohort, $27.8 million. The long-term user cohort incurred more costs here although they were a substantially smaller cohort.

Jail use is very common among both cohorts in this study, with between 20 percent and 30 percent of the persons jailed considered heavy users, depending on the measure of heavy use and the cohort. This is also a case where the long-term GR users have substantially higher levels of jail use, both in proportions of the cohort who are jailed and length of stay. In contrast to this high crossover between GR receipt and jail, much smaller proportions of persons start receiving GR immediately following jail release. This might be due to administrative barriers, and should be further investigated.

This study cannot take into account that an unknown but presumably substantial number of persons who are jailed will be transferred to prison for more incarceration upon the completion of their jail terms.

1.7: Probation

1.7.1: Introduction

This section will examine GR recipient use of services provided by Probation, which serves all the Municipal and Superior courts in County. There is likely to be significant overlap between GR recipients under the supervision of Probation and those having experienced an episode in a jail operated by Sheriff. While the extent and nature of such a pattern will be explored in a subsequent analysis, the sole focus here is on probation episodes of GR recipients independent from their involvement with Sheriff.

Overall, 17.7 percent of the first-time user cohort and 23.0 percent of the long-term user cohort were on probation at some point in the time period between January 1, 2005 and December 31, 2007. The timing, frequency, length and number of probation episodes will be examined in this section as will the costs associated with providing Probation services to GR recipients. In addition, this section will explore the distribution of probation episodes according by the supervising offices. Probation supervision, like most of the previous services analyzed in this section, is separated into three time periods based on its relationship to the time period of GR receipt. Due to the dynamics of probation supervision, this is calculated differently than the other services, and the differences are outlined in the methodological appendix.

1.7.2: Use of Probation Services (Tables 1.15.1, 1.15.2)

Table 1.15.1 shows findings related to probation supervision experienced by both GR cohorts. Specifically:

- The main finding of this table is that substantial proportions – 17.7 percent of the first-time cohort and 23.0 percent of the long-term cohort, were under probation supervision during the study period.

- Slightly over half of those on probation in the first-time cohort and slightly less than half of those on probation in the long-term cohort had probation spells of one year or more, with probation episodes lasting an average of 311 days for the first-time cohort and 259 days for the long-term cohort.

- In contrast, given the length of the average probation spell, the mean cost per person on probation is low, at a little over $1,000 per person in both cohorts.

Table 1.12.2 shows the distribution of probation episodes by both cohorts over the different County probation offices. Of interest is that the Riverview, Crenshaw and East San Fernando Valley offices appear to be responsible for about one third of all probation episodes among GR recipients.

1.7.3: Conclusion

The proportion of persons on probation gives a partial view of the extent to which GR recipients are under legal supervision during the study period. To that end, the findings presented here indicate that probation is a relatively common experience for members of both cohorts and that probation spells tend to be lengthy. Neither of these findings are surprising. It is also noteworthy, however, that this supervision is relatively inexpensive, especially when compared to incarceration. On a cohort level, the total costs incurred during GR receipt are the lowest among the County departments studied here, at $0.6 million for the first-time user cohort and $0.5 million for the heavy user cohort.

In light of this, no examination of heavy use is undertaken as identifying and targeting “heavy users” for intervention is unlikely to yield and meaningful efficiency gains or cost reductions.

Chapter One
Tables and Figures

Table 1.1: Select Characteristics of GR Recipients in ALP, by Cohort

	First-time GR Users	Long-term GR Users
N	7,982	4,857
Age (percent in each category)		
18-21	6.4	0.1
22-59	87.7	96.2
60-65	5.8	3.7
65+	2.1	1.4
Other/unknown	0.3	0.1
Sex		
Male	62.9	72.5
Female	37.2	27.5
Ethnicity		
Black (Non-Hispanic)	40.7	57.5
White (Non-Hispanic)	23.2	14.2
Hispanic	29.7	24.8
Asian	2.9	1.0
Other	3.5	2.4
Language		
English	91.7	96.5
Spanish	5.8	2.8
Other	2.5	0.7
Foreign Born	14.7	7.8
Marital Status (at GR entry)		
Single-Never Married	79.5	81.8
Married	2.8	1.0
Divorced/Separated	14.1	15.2
Widowed	1.6	0.9
Unknown/Other	2.8	1.1
Marital Status (at GR exit)		
Single-Never Married	79.6	82.4
Married	2.8	0.9
Divorced/Separated	13.6	14.4
Widowed	1.5	0.8
Unknown/Other	2.4	1.4

Note: Except for values reported for N, all values in table are percent.

Table 1.2: Special Indicator Status of GR Recipients in ALP, by Cohort

	First-time GR Users	Long-term GR Users
N	7,982	4,857
Veteran	25.2	26.2
Disabled	31.5	41.6
Employable		
At the beginning of GR receipt	57.1	56.2
At the end of GR receipt	42.3	38.4
Ever homeless	54.9	67.4
Needs Special Assistance	1.3	1.1
Mental Health Declared	0.9	0.4
Substance Abuse Declared	0.5	0.3
Domestic Violence Declared	0.8	0.3
Pregnant	14.1	10.0
SSI Advocacy Use:		
Applied for SSI	9.1	5.7
SSI Denied	3.3	2.4
SSI Approved	1.6	1.7
SSI Pending	0.5	0.9
Food Stamp Use While on GR	83.8	80.3

Except for values reported for N, all values in table are percent.
The categories “Needs Special Assistance”, “Mental Health Declared”, “Substance Abuse Declared”, and “Domestic Violence Declared” should be considered substantial under-assessments and inaccurate reflections of the true proportions of the phenomena that are purportedly measured.

Table 1.3: Employment History and Income of GR Recipients in ALP, by Cohort

	First-time GR Users	Long-term GR Users
Total Number of Persons in Cohort	7,982	4,857
Employment History (State Department of Employment)		
Percent Employed:[1]		
Ever (1998 to first quarter, 2008)	73.3	74.7
Within 3 years prior to GR commencing	41.1	46.0
Within 1 year prior to GR commencing	28.3	30.7
Immediately before, during or immediately after GR spell	43.6	46.1
After exiting GR	34.3	25.0
At the end of the study period (first quarter, 2008)	15.5	13.8
Mean number of Quarters with earnings[2]	6.8	6.9
Median earnings amount per quarter[2]	$2,605	$2,219
Employment episode[3]		
Total number of episodes	10,055	6,366
Mean length (in quarters)	3.7	3.5
Lasting at least 2 quarters (percent)	68.7	66.1
Lasting 4+ quarters (long-term; in percent)	36.6	33.3
Self Declared Income (LEADER database):[4]		
Percent of Total with Reported income	23.9	21.6
Percent of Total by Income Type:		
Wages, Salaries and Commissions	11.3	11.7
Other grants undergrads based on need	15.0	12.2
Median income per month[5]	$384	$382
Average # months with declared income[5]	2.0	2.1
Percent with income for more than 12 months[5]	0.4	0.4

[1]Due to employment being reported by quarter, precise timing of employment could not be ascertained. "Prior to GR commencing" and "after exiting" categories are thus exclusive of the category where employment history is "immediately before, during or immediately after GR spell". The "within one year" category is a subset of the "within 3 years" category.
[2]Quarters limited to those for which earning were reported starting in 2003 and ending with the first quarter of 2008.
[3]Episode is defined as consecutive quarters in which income was earned.
[4]LEADER data covers the time period from January 2005 through October 2007.
[5]Results are only for persons with a record of receiving income based on LEADER data.

Table 1.4: GR Recipients in ALP and Homelessness, by Cohort

	First-time GR Users	Long-term GR Users
Total Number of Persons in Cohort	7,982	4,857
Ever homeless (percent)	54.9	67.3
Chronically Homeless[1,2]	32.7	40.7
Mean number of months homeless while on GR	10.3	11.3
Homeless Episodes (discrete periods of consecutive months homeless)		
Mean Number	1.5	1.4
Mean Length of Episode (months)	7.2	7.3
percent GR recipients with 2 or more episodes[2]	33.5	41.8
Percent Homeless for first year or more while on GR[2]	36.2	44.9
Percent Homeless for third months or less while on GR[2]	9.4	7.2
Percent Homeless when Entering GR during first Quarter of 2006 and remaining homeless for remainder of study period[2]	5.8	4.5
Percent Entering GR during second Quarter of 2006 and remaining homeless for remainder of study period[2]	N/A	3.8

[1]Defined as Persons with at least 365 days homeless and homeless entire time receiving GR.
[2]As proportion of cohort ever homeless during period of GR receipt.

Table 1.5: GR Recipients in ALP: Summary of GR Cash Benefits, by Cohort

	First-time GR Users	Long-term GR Users
GR Grant:		
Percent Receiving GR Grant	93.6	96.5
Mean Monthly Amount of GR Grant	$206	$209
Total cost per recipient of GR Grant (Average)	$1,566	$1,760
Total Cost of GR grants	$12,503,047	$8,546,804

Table 1.6: GR Utilization During Study Period[1] of GR Recipients in ALP, by Cohort

	First-time GR Users	Long-term GR Users
GR episodes[2]		
Mean number of GR episodes	1.4	1.5
Percent with/ 2 GR episodes	23.5	32.3
Percent with/ more than 2 episodes	7.0	10.2
Mean duration of first GR episode (days)	200	204
Time receiving GR during study period		
Mean percent of study period on GR	39.8	46.5
Mean number of months	8.3	9.1
Mean days	253.5	276.7
Percent receiving GR for 3 months or less	23.4	16.9
Extended users (in study period) and disability		
Percent with/ 12 or more months on GR	25.3	31.0
percent disabled among persons with/ 12+ months on GR	57.9	63.4
Percent with/ 16 or more months on GR	15.2	16.6
Percent disabled among persons with/ 16+ months on GR	67.8	73.5
Percent entering GR in first quarter and on GR for Remainder of study period	5.9	6.5
Percent entering GR in first quarter and on GR for Remainder of study period who are disabled	75.8	83.6
Percent entering GR in second quarter and on GR for Remainder of study period	NA	8.4
Percent GR resources consumed by "heavy" GR Users[3]	37.7	35.6
Percent on GR at End of Study Period	18.7	28.6

[1]Study period is between the first quarter of 2006 through October 2007 (22 months).
[2]N episode is a discrete period of GR receipt preceded and followed by at least one month of non-receipt of GR benefits.
[3]Heavy Users" of GR benefits defined as those receiving GR benefits for at least 16 months during the two year study period.

Table 1.7.1: DHS Service Use by GR Recipients in ALP, by Cohort – Inpatient Services Use

	First-time GR Users (n=7,982)				Long-term GR Users (n=4,857)			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After[1]	Total[2]	Before	During	After[1]	Total[2]
Number of Recipients with/ an Inpatient Stay	542	739	310	1,311	331	496	171	834
Percent of Total with an Inpatient stay[2]	6.8	9.3	3.9	16.4	6.8	10.2	3.5	17.2
Total Number of Inpatient stays[3]	764	1,207	477	2,475	490	855	254	1,652
Mean Stays Per User	1.4	1.6	1.5	1.9	1.5	1.7	1.5	2.0
Multiple Episodes (percent of inpatient users):				[4]				[4]
Percent with 2 Inpatient stays	17.9	20.8	14.5	21.3	16.3	17.1	8.2	18.1
Percent with 3-4 Inpatient stays	6.1	9.2	6.5	12.9	7.9	9.9	7.0	11.6
Percent with 5+ Inpatient stays	1.5	3.5	2.6	5.2	2.4	4.4	4.1	7.0
Total Inpatient Days Used[3]:	5,901	6,910	3,066	16,087	3,496	4,693	2,247	10,646
Mean Length of Inpatient Stay (in days)[3]:	7.7	5.7	6.4	6.5	7.1	5.5	8.8	6.4
Percent of Inpatient Days Consumed by Users with 5+ Inpatient Stays	7.4	12.3	12.3	21.1	8.2	21.2	8.5	27.1
Percent GR Certified <30 days after inpatient stay				4.7[5]				3.2[5]

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[3]Including inpatient stay admitted through ED.
[4]Total reflects persons incurring multiple visits across before, during, and after periods.
[5]Reflects proportion of total services users.

Table 1.7.2: Cost of DHS Services Incurred by GR Recipients in ALP, by Cohort – Inpatient Services Cost

	Relationship to GR Use			
	Before	During	After[1]	Total[2]
	First-time GR Users (n=7,982)			
Number of Recipients with an Inpatient Stay	542	739	310	1,311
Total Cost	$10,043,902	$12,665,186	$5,188,832	$28,438,792
Total Cost per user(Mean)	$18,531	$17,138	$16,738	$21,692
Cost Groupings:				
% <$5,001	40.4	47.8	45.2	40.8
% $5,001-$10,000	13.5	13.1	13.9	13.0
% $10,001-$15,000	11.6	11.4	11.6	11.1
% $15,001-$20,000	7.9	6.0	5.8	6.3
% $20,001-$30,000	9.0	7.6	9.7	9.7
% $30,001-$40,000	6.3	5.1	3.2	5.5
% $40,001-$50,000	2.0	2.0	2.6	2.8
% $50,001+	9.2	7.0	8.1	10.8
Percent of Cost Consumed by Users with 5+ Inpatient Stays	10.7	16.0	15.7	22.5
	Long-term GR Users (n=4,857)			
Number of Recipients with an Inpatient Stay	331	496	171	834
Total Cost	$5,896,876	$8,201,444	$4,282,170	$18,792,459
Total Cost per user(Mean)	$17,815	$16,535	$25,042	$22,533
Cost Groupings:				
% <$5,001	46.8	50.6	45.0	45.8
% $5,001-$10,000	10.3	12.7	13.5	12.1
% $10,001-$15,000	10.6	10.1	12.3	10.4
% $15,001-$20,000	7.3	3.6	4.1	5.2
% $20,001-$30,000	9.4	6.9	6.4	6.6
% $30,001-$40,000	4.8	5.0	4.1	5.4
% $40,001-$50,000	3.0	2.0	3.5	2.5
% $50,001+	7.9	9.1	11.1	12.0
Percent of Cost Consumed by Users with 5+ Inpatient Stays	10.2	36.5	7.9	27.7

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous 3 columns due to uncertainty in timing of some services occurring after the observation period for GR services.

Table 1.7.3: DHS Service Utilization by GR Recipients in ALP, by Cohort – Outpatient Services Use

	First-time GR Users (n=7,982)				Long-term GR Users (n=4,857)			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After[1]	Total[2]	Before	During	After[1]	Total[2]
Number of Recipients with an Outpatient Visit	1,194	2,101	943	2,888	833	1,467	540	2,012
Percent of Total with an Outpatient visit	15.0	26.3	11.8	36.2	17.2	30.2	11.1	41.4
Total Number of Outpatient visit	4,961	11,232	4,170	20,775	2,937	6,931	1,897	12,139
Mean visits Per User	4.2	5.3	4.4	7.2	3.5	4.7	3.5	6.0
Multiple Episodes (percent of total service users):				[3]				[3]
Percent with/ 2 Outpatient visits	18.0	17.4	17.1	16.5	18.6	17.7	19.3	15.9
Percent with/ 3-5 Outpatient visits	20.4	22.0	21.7	20.8	23.9	25.3	25.0	25.4
Percent with/ 6+ Outpatient visits	22.2	28.3	22.1	34.3	15.8	26.2	17.0	31.5

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[3]Total reflects persons incurring multiple visits across before, during, and after periods.

Table 1.7.4: Cost of DHS Services Incurred by GR Recipients in ALP, by Cohort – Outpatient Services Cost

	Relationship to GR Use			
	Before	During	After[1]	Total[2]
	First-time GR Users (n=7,982)			
Number of Recipients with an Outpatient visit	1,194	2,101	943	2,888
Total Cost	$2,687,616	$6,120,086	$2,406,126	$11,441,965
Total Cost per user(Mean)	$2,251	$2,913	$2,552	$3,962
Cost Groupings:				
% <$1,001	50.8 %	42.4 %	47.4 %	37.7 %
% $1,001-$5,000	37.6 %	41.4 %	39.9 %	41.0 %
% $5,001-$10,000	7.7 %	9.7 %	7.8 %	11.6 %
% $10,001-$15,000	2.3 %	3.5 %	2.7 %	4.2 %
% $15,001+	1.6 %	3.0 %	2.2 %	5.5 %
Percent of Cost Consumed by Users with 6+ Outpatient visits	65.9 %	74.0 %	67.6 %	81.8 %
	Long-term GR Users (n=4,857)			
Number of Recipients with an Outpatient visit	833	1,467	540	2,012
Total Cost	$1,643,996	$3,771,462	$1,052,331	$6,659,564
Total Cost per user(Mean)	$1,974	$2,571	$1,949	$3,310
Cost Groupings:				
% <$1,001	54.4 %	40.6 %	49.6 %	36.8 %
% $1,001-$5,000	36.7 %	46.9 %	42.2 %	45.9 %
% $5,001-$10,000	5.9 %	8.1 %	5.6 %	9.7 %
% $10,001-$15,000	1.7 %	2.5 %	1.5 %	4.1 %
% $15,001+	1.3 %	1.9 %	1.1 %	3.5 %
Percent of Cost Consumed by Users with 6+ Outpatient visits	57.1 %	67.9 %	54.6 %	76.1 %

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.

Table 1.7.5: DHS Service Utilization by GR Recipients in ALP, by Cohort – ED Use

	First-time GR Users (n=7,982)				Long-term GR Users (n=4,857)			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After[1]	Total[2]	Before	During	After[1]	Total[2]
Number of Recipients with an ED Visit	849	971	453	1,826	540	778	273	1,305
Percent of Total with an ED Visit	10.6	12.2	5.7	22.9	6.8	9.7	3.4	16.3
Total Number of ED Visits[3]	1,386	1,787	740	3,960	914	1,529	432	2,936
Mean Visits Per User	1.6	1.8	1.6	2.2	1.7	2.0	1.6	2.2
Multiple Visits (percent of total service users):				[4]				[4]
Percent with/ 2 ED visits	10.6 %	7.5 %	6.5 %	10.6 %	9.0 %	8.7 %	6.8 %	10.7 %
Percent with/ 3-4 ED visits	4.5 %	5.0 %	2.6 %	7.7 %	4.7 %	5.3 %	3.5 %	7.7 %
Percent with/ 5+ ED visits	1.9 %	2.1 %	1.5 %	4.6 %	1.9 %	2.6 %	1.2 %	4.8 %
Number of Recipients with ED Visit, Inpatient and Outpatient Stays (i.e., all three)	215	314	111	678	115	243	52	459
Percent of Total with All 3	2.7 %	3.9 %	1.4 %	8.5 %	1.4 %	3.0 %	0.7 %	5.8 %
Number of Recipients with 5+ Inpatient Stays and 5+ ED Visits	6	13	7	37	4	14	3	34
Percent of Total DHS Service Users with/5+ Inpatient Stays and 5+ ED Visits	0.0 %	0.1 %	0.1 %	1.0 %	0.0 %	0.1 %	0.0 %	1.3 %

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous 3 columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[3]Excluding inpatient stay admitted through ED.
[4]Total reflects persons incurring multiple visits across before, during, and after periods.

Table 1.7.6: Cost of DHS Services Incurred by GR Recipients in ALP, by Cohort – ED Cost

	Relationship to GR Use			
	Before	During	After[1]	Total[2]
	First-time GR Users (n=7,982)			
Number of Recipients with an ED Visit	849	971	453	1,826
Total Cost	$1,083,673	$1,375,436	$573,199	$3,068,419
Total Cost per user(Mean)	$1,276	$1,417	$1,265	$1,680
Cost Groupings:				
% <$5,001	50.3 %	55.3 %	70.9 %	46.8 %
% $5,001-$10,000	36.2 %	27.4 %	18.5 %	30.6 %
% $10,001-$15,000	6.8 %	9.1 %	5.5 %	10.2 %
% $15,001-$20,000	3.5 %	3.8 %	1.8 %	5.4 %
% $20,001+	3.2 %	4.4 %	3.3 %	7.0 %
Percent of Cost Consumed by Users with 5+ ED Visits	15.4 %	20.9 %	19.2 %	31.5 %
	Long-term GR Users (n=4,857)			
Number of Recipients with an ED Visit	540	778	273	1,305
Total Cost	$686,426	$1,174,188	$328,031	$2,235,110
Total Cost per user(Mean)	$1,271	$1,509	$1,202	$1,713
Cost Groupings:				
% <$5,001	58.5 %	58.5 %	69.6 %	51.6 %
% $5,001-$10,000	28.1 %	24.9 %	18.3 %	26.4 %
% $10,001-$15,000	6.9 %	8.0 %	7.3 %	10.3 %
% $15,001-$20,000	3.5 %	0.4 %	2.2 %	5.0 %
% $20,001+	3.0 %	4.8 %	2.6 %	6.8 %
Percent of Cost Consumed by Users with 5+ ED Visits	18.2 %	27.4 %	14.3 %	35.4 %

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.

Table 1.8.1: Most Frequent Diagnoses and Other Diagnoses of Interest Among GR Recipients in ALP Using DHS Services

	First-time GR Users	Long-term GR Users
Ten Most Frequently Occurring Diagnoses:		
V72 (Special Investigations and Examinations)	17.0 %	15.2 %
V67 (Follow up Examination)	13.5 %	13.1 %
V68 (Encounters for Administrative Purposes)	10.4 %	10.6 %
401 (Essential Hypertension)	9.7 %	10.9 %
724 (Other and Unspecified Disorders of the Back)	7.9 %	9.4 %
V70 (General Medical Examination)	8.9 %	7.4 %
682 (Other Cellulitis and Abscess)	7.3 %	9.3 %
521(Diseases of Hard Tissues of the Teeth)	7.4 %	9.1 %
719 (Other and unspecified disorders of joint)	7.1 %	8.2 %
786 (Symptoms involving respiratory system and other chest systems)	6.9 %	6.9 %
Ten Most Frequently Occurring Diagnosis Categories:		
800-999 (Injury and Poisoning)	24.0 %	27.0 %
V70-V82 (Persons with/out Reported Diagnosis Encountered during Examination)	25.9 %	23.4 %
780-799 (Symptoms, Signs and Ill Defined Conditions)	25.0 %	23.8 %
V60-V69 (Persons encountering health services in other circumstances)	23.4 %	23.8 %
520-579 (Diseases of the Digestive System)	22.5 %	24.6 %
710-739 (Diseases of the Musculoskeletal system and connective tissue)	22.3 %	24.2 %
680-709 (Diseases of the Skin and Subcutaneous Tissue)	15.3 %	17.5 %
290-319 (Mental Disorders)	17.5 %	13.8 %
460-519 (Diseases of the Respiratory System)	16.0 %	16.0 %
390-459 (Diseases of the Circulatory System)	14.7 %	15.1 %
Other Diagnoses of Interest:		
Tuberculosis	0.2 %	0.2 %
Hepatitis	1.5 %	1.8 %
HIV	1.0 %	1.4 %
Any Infectious or Parasitic Disease	10.4 %	8.8 %
Schizophrenia	1.5 %	1.3 %
Drug/Alcohol Related	3.0 %	2.7 %
Diabetes	7.4 %	6.1 %

Table 1.8.2: Most Frequent Diagnoses and other Diagnoses of Interest Among GR Recipients in ALP Having Five or More Inpatient Stays During Study Period

	First-time GR Users	Long-term GR Users
Ten Most Frequently Occurring Diagnoses:		
V67 (Follow up Examination)	46.2 %	24.1 %
V68 (Encounters for Administrative Purposes))	27.7 %	31.5 %
786 (Symptoms involving respiratory system and other chest systems)	29.2 %	27.8 %
V72 (Special Investigations and Examinations)		
401(Essential Hypertension)	37.0 %	16.7 %
298 (Other nonorganic psychoses)	26.2 %	26.0 %
296 (Episodic Mood Disorders)	26.2 %	24.1 %
682 (Other Cellulitis and Abscess)	20.0 %	31.5 %
729 (Other Disorders of Soft Tissue)	26.2 %	22.2 %
789 (Other symptoms involving abdomen and pelvis)	24.6 %	24.1 %
719 (Other and unspecified disorders of joint)	20.0 %	26.0 %
Ten Most Frequently Occurring Diagnosis Categories:		
V60-V69	72.3 %	59.3 %
780-799 (Symptoms, Signs and Ill Defined Conditions)	67.7 %	63.0 %
710-739 (Diseases of the Musculoskeletal system and connective tissue)	53.8 %	48.1 %
800-999 (Injury and Poisoning)	55.4 %	44.4 %
290-319 (Mental Disorders)	49.2 %	50.0 %
V70-V82 (Persons with/out Reported Diagnosis Encountered during Examination)	50.8 %	42.6 %
520-579 (Diseases of the Digestive System)	35.4 %	53.7 %
390-459 (Diseases of the Circulatory System)	40.0 %	40.1 %
460-519 (Diseases of the Respiratory System)	32.3 %	40.7 %
680-709 (Diseases of the Skin and Subcutaneous Tissue)	29.2 %	44.4 %
Other Diagnoses of Interest:		
Tuberculosis	1.5 %	3.7 %
Hepatitis	4.6 %	3.7 %
HIV	3.1 %	3.7 %
Any Infectious or Parasitic Disease	24.7 %	35.2 %
Schizophrenia	9.2 %	9.3 %
Drug/Alcohol Related	21.5 %	24.1 %
Diabetes	13.8 %	18.5 %

Table 1.8.3: Most Frequent Diagnoses and Other Diagnoses of Interest Among GR Recipients in ALP Having Five or More Emergency Department Visits During Study Period

	First-time GR Users	Long-term GR Users
Ten Most Frequently Occurring Diagnoses:		
V68 (Encounters for Administrative Purposes)	31.9 %	32.5 %
V72 (Special Investigations and Examinations	29.5 %	21.7 %
V67 (Follow up Examination)	30.1 %	19.2 %
786 (Symptoms involving respiratory system and other chest systems)	21.7 %	28.3 %
296 (Episodic Mood Disorders)	25.9 %	19.2 %
401(Essential Hypertension)	19.3 %	24.2 %
724 (Other and unspecified disorders of the back)	24.7 %	16.7 %
298 (Other nonorganic psychoses)	21.7 %	18.3 %
682 (Other Cellulitis and Abscess)	20.5 %	19.2 %
729 (Other disorders of soft tissues)	19.3 %	20.8 %
Ten Most Frequently Occurring Diagnosis Categories:		
780-799 (Symptoms, Signs and Ill Defined Conditions)	58.4 %	61.2 %
V60-V69	56.0 %	51.7 %
800-999 (Injury and Poisoning)	49.4 %	55.0 %
710-739 (Diseases of the Musculoskeletal system and connective tissue	52.4 %	50.0 %
290-319 (Mental Disorders)	47.0 %	45.0 %
V70-V82 (Persons with/out Reported Diagnosis Encountered during Examination)	47.0 %	38.3 %
520-579 (Diseases of the Digestive System)	38.0 %	44.2 %
460-519 (Diseases of the Respiratory System)	34.9 %	37.5 %
390-459 (Diseases of the Circulatory System)	31.3 %	40.8 %
680-709 (Diseases of the Skin and Subcutaneous Tissue)	31.9 %	31.7 %
Other Diagnoses of Interest:		
Tuberculosis	0.0 %	2.5 %
Hepatitis	4.2 %	3.3 %
HIV	1.2 %	1.7 %
Any Infectious or Parasitic Disease	20.5 %	25.8 %
Schizophrenia	9.0 %	10.0 %
Drug/Alcohol Related	14.5 %	16.7 %
Diabetes	18.1 %	14.2 %

Table 1.9.1: DMH Service Utilization by GR Recipients in ALP, by Cohort – Outpatient Services Use

	First-time GR Users (n=7,982)				Long-term GR Users (n=4,857)			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After[1]	Total[2]	Before	During	After[1]	Total[2]
Number of Recipients with an Outpatient Stay	850	1,075	676	1,481	590	746	379	1,008
Percent of Total with an Outpatient stay	10.6	13.5	8.5	18.6	12.1	15.4	7.8	20.8
Total Number of Outpatient stays	10,352	16,773	9,208	37,028	5,036	8,912	5,248	19,586
Mean Stays Per User	12.2	15.6	13.6	25.0	8.5	11.9	13.8	19.4

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.

Sub-table 1.9.2: Cost of DMH Services Incurred by GR Recipients in ALP, by Cohort – Outpatient Services Cost

	Relationship to GR Use			
	Before	**During**	**After[1]**	**Total[2]**
	First-time GR Users (n=7,982)			
Number of Recipients with an Outpatient Stay	850	1,075	676	1,481
Total Cost	$1,342,461	$2,279,882	$1,300,447	$5,026,159
Total Cost per user(Mean)	$1,579	$2,121	$1,924	$3,779
Cost Groupings:				[3]
% <$1,001	59.8 %	46.6 %	59.0 %	37.5 %
% $1,001-$5,000	33.8 %	43.6 %	31.7 %	43.5 %
% $5,001-$10,000	4.1 %	6.8 %	6.1 %	12.2 %
% $10,001-$15,000	1.6 %	1.4 %	2.2 %	2.8 %
% $15,001+	.7 %	1.6 %	1.0 %	4.0 %
	Long-term GR Users (n=4,857)			
Number of Recipients with an Outpatient Stay	590	746	379	1,008
Total Cost	$583,258	$1,225,678	$662,385	$2,531,641
Total Cost per user(Mean)	$989	$1,643	$1,748	$2,756
Cost Groupings:				[3]
% <$1,001	75.4 %	54.2 %	62.3 %	46.2 %
% $1,001-$5,000	20.8 %	38.9 %	29.8 %	41.7 %
% $5,001-$10,000	2.9 %	5.5 %	4.2 %	7.2 %
% $10,001-$15,000	0.7 %	0.7 %	1.6 %	2.4 %
% $15,001+	0.1 %	0.8 %	2.1 %	2.5 %

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[3]Total reflects persons incurring multiple visits across before, during, and after periods.

Table 1.9.3: DMH Service Utilization by GR Recipients in ALP, by Cohort – Daily Treatment Use

	First-time GR Users (n=7,982)				Long-term GR Users (n=4,857)			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After[1]	Total[2]	Before	During	After[1]	Total[2]
Number of Recipients with Daily Treatment	178	182	48	344	72	108	28	175
Percent of Total with an Daily Treatment	2.2	2.3	0.6	4.3	1.5	2.2	0.6	3.6
Total Number of Daily Treatment Spells	1,853	479	116	2,457	348	321	94	770
Mean Spells Per User	10.4	2.6	2.4	7.1	4.8	3.0	3.4	4.4
Number of Recipients with DT Spell, Inpatient and Outpatient Stays (i.e., all 3)	36	47	10	103	20	29	9	64
Percent of Total with All 3	0.5	0.6	0.1	1.3	0.4	0.6	0.2	1.3

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.

Sub-table 1.9.4: Cost of DMH Services Incurred by GR Recipients in ALP, by Cohort – Daily Treatment Cost

	Relationship to GR Use			
	Before	During	After[1]	Total[2]
	First-time GR Users (n=7,982)			
Number of Recipients with an Daily Treatment Session	178	182	48	344
Total Cost	$767,489	$552,126	$91,189	$1,426,938
Total Cost per user(Mean)	$4,312	$3,034	$1,900	$4,148
Cost Groupings:				[3]
% <$1,001	24.7 %	30.8 %	41.7 %	25.9 %
% $1,001-$5,000	45.5 %	48.4 %	50.0 %	46.8 %
% $5,001-$10,000	19.1 %	15.4 %	8.3 %	17.4 %
% $10,001-$15,000	6.7 %	4.4 %	0.0 %	6.4 %
% $15,001+	3.9 %	1.1 %	0.0 %	3.5 %
	Long-term GR Users (n=4,857)			
Number of Recipients with an Daily Treatment Session	72	108	28	175
Total Cost	$301,311	$355,218	$114,900	$778,622
Total Cost per user(Mean)	$4,185	$3,289	$4,104	$4,449
Cost Groupings:				[3]
% <$1,001	20.8 %	31.5 %	25.0 %	25.1 %
% $1,001-$5,000	51.4 %	46.3 %	50.0 %	46.3 %
% $5,001-$10,000	18.1 %	17.6 %	17.9 %	18.9 %
% $10,001-$15,000	8.3 %	1.9 %	3.6 %	5.1 %
% $15,001+	1.4 %	2.8 %	3.6 %	4.6 %

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[3]Total reflects persons incurring multiple visits across before, during, and after periods.

Table 1.10: Diagnoses Among GR Recipients in ALP Using DMH Services

	First-time GR Users	Long-term GR Users
Diagnosis:		
296 (Episodic Mood Disorders)	51.4 %	43.9 %
298 (Other nonorganic psychoses)	21.7 %	20.5 %
311 (Depressive Disorder)	17.8 %	13.0 %
295 (Schizophrenic disorders)	12.2 %	12.4 %
304 (Drug dependence)	8.2 %	11.4 %
309 (Adjustment reaction)	8.3 %	5.2 %
292 (Drug induced mental disorders)	5.0 %	6.2 %
300 (Anxiety, dissociative and somatoform disorders)	5.0 %	3.7 %
305 (Nondependent abuse of drugs)	3.9 %	4.3 %
Any Substance Abuse Diagnosis (Dx codes 303, 304, or 305)	13.0 %	16.2 %
Having Only Substance Abuse Diagnosis	4.1 %	6.7 %
Having Both Substance Abuse and Mental Illness Diagnosis	8.9 %	9.5 %

Table 1.11.1: ADPA Service Use by GR recipients in ALP, by Cohort – Residential Services

	First-time GR Users (n=7,982)				Long-term GR Users (n=4,857)			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After[1]	Total[2]	Before	During	After[1]	Total[2]
Residential Services (RS)								
Number of Recipients with an RS stay	634	386	97	980	283	247	61	525
Percent of Total with an Inpatient stay	7.9	4.8	1.2	12.3	5.8	5.1	1.3	10.8
Mean Length of Stay (days)	109	108	58	104	116	83	69	97
Percent "Heavy Users" (with/ 180+ day RS stay)	19.6	18.4	4.1	20.2	18.0	13.4	11.5	17.3
Percent of RS Days Consumed by Heavy Users	49.0	52.7	15.4	49.7	52.4	40.9	41.2	48.9
Detoxification Services								
Number of Recipients with a Detox stay	113	100	41	225	67	82	36	161
Percent of Total with an Detox stay	1.4	1.3	0.5	2.8	1.4	1.7	0.7	3.3
Mean Length of Stay (days)	10	10	10	10	20	10	9	13
Percent Users with 2 Detox Stays	15.0	17.0	17.1	18.2	9.0	18.3	19.4	17.4
Percent "Heavy Users" (3+ detox stays)	6.2	9.0	2.4	12.0	6.0	7.3	0.0	11.2
Percent of Detox Days Consumed by Heavy Users	13.7	19.8	7.6	27.3	8.3	14.5	0.0	20.1

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.

Table 1.11.2.1: Cost of ADPA Service Use by GR Recipients in ALP, by Cohort – Inpatient Services Cost for First-time GR Users (n=7,982)

	Relationship to GR Use			
	Before	**During**	**After**[1]	**Total**[2]
Residential Services (RS)				
Number of Recipients	634	386	97	980
Total Cost	$1,667,421	$1,323,000	$227,724	$3,218,145
Mean Cost per Service Episode	$2,352	$2,960	$2,109	$2,546
Mean Cost per User	$2,630	$3,427	$2,348	$3,284
Cost Groupings				[3]
Percent with/ cost <$1,000	27.1 %	29.3 %	40.2 %	23.8 %
Percent with/ cost $1,000-$5,000	63.2 %	51.6 %	50.5 %	59.1 %
Percent with/ cost $5,000-$10,000	5.8 %	9.8 %	6.2 %	10.6 %
Percent with/ cost $10,000+	3.8 %	9.3 %	3.1 %	6.5 %
Percent Total Cost from "Heavy Users"	50.3 %	50.6 %	14.9 %	49.1 %
Detoxification Services				
Number of Recipients	113	100	41	225
Total Cost	$419,698	$320,549	$154,933	$895,180
Mean Cost per Service Episode	$2,894	$2,357	$3,099	$2,704
Mean Cost per User	$3,714	$3,205	$3,779	$3,979
Cost Groupings				[3]
Percent with/ cost <$1,000	9.7 %	20.0 %	17.1 %	12.9 %
Percent with/ cost $1,000-$5,000	68.1 %	59.0 %	65.9 %	62.7 %
Percent with/ cost $5,000-$10,000	17.7 %	20.0 %	9.8 %	18.2 %
Percent with/ cost $10,000+	4.4 %	1.0 %	7.3 %	6.2 %
Percent Total Cost from "Heavy Users"	12.3 %	18.7 %	8.3 %	26.2 %

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[3]Total reflects persons incurring multiple visits across before, during, and after periods.

Table 1.11.2.2: Cost of ADPA Service Use by GR Recipients in ALP, by Cohort – Inpatient Services Costs for Long-term GR Users (n=4,857)

	Relationship to GR Use			
	Before	**During**	**After[1]**	**Total[2]**
Residential Services (RS)				
Number of Recipients	283	247	61	525
Total Cost	$787,692	$735,510	$174,039	$1,697,241
Mean Cost per Service Episode	$2,517	$2,627	$2,598	$2,572
Mean Cost per User	$2,783	$2,978	$2,853	$3,233
Cost Groupings				[3]
Percent with/ cost <$1,000	27.6 %	32.4 %	36.1 %	27.4 %
Percent with/ cost $1,000-$5,000	62.5 %	50.2 %	45.9 %	55.0 %
Percent with/ cost $5,000-$10,000	3.9 %	12.1 %	11.5 %	10.1 %
Percent with/ cost $10,000+	6.0 %	5.3 %	6.6 %	7.4 %
Percent Total Cost from "Heavy Users"	53.8 %	38.9 %	40.6 %	47.5 %
Detoxification Services				
Number of Recipients	67	82	36	161
Total Cost	$236,350	$215,838	$106,852	$559,040
Mean Cost per Service Episode	$2,882	$1,944	$2,485	$2,369
Mean Cost per User	$3,528	$2,632	$2,968	$3,472
Cost Groupings				[3]
Percent with/ cost <$1,000	16.4 %	35.4 %	13.9 %	24.8 %
Percent with/ cost $1,000-$5,000	64.2 %	47.6 %	72.2 %	52.8 %
Percent with/ cost $5,000-$10,000	14.9 %	15.9 %	13.9 %	17.4 %
Percent with/ cost $10,000+	4.5 %	1.2 %	0.0 %	5.0 %
Percent Total Cost from "Heavy Users"	18.0 %	12.5 %	0.0 %	26.7 %

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[3]Total reflects persons incurring multiple visits across before, during, and after periods.

Table 1.11.3: ADPA Service Use by GR Recipients in ALP, by Cohort – Outpatient Services

	First-time GR Users (n=7,982)				Long-term GR Users (n=4,857)			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After[1]	Total[2]	Before	During	After[1]	Total[2]
Outpatient Counseling Services (OC)								
Number receiving OC services	334	402	167	750	185	303	82	494
Percent of Total receiving OC services	4.2	5.0	2.1	9.4	3.8	6.2	1.7	10.2
Mean Length of Period receiving OC services (days)	144	149	119	142	170	125	106	137
Day Care Habilitative Services (DCH)								
Number receiving DCH services	44	27	11	76	17	14	4	34
Percent of Total receiving DCH services	0.6	0.3	0.1	1.0	0.4	0.3	0.1	0.7
Mean Length of Period receiving DCH Services (days)	179	158	83	160	139	94	162	124
Narcotic Treatment Program Services (NTP)								
Number receiving NTP services	3	8	6	16	6	7	10	21
Percent of Total receiving NTP services	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4
Mean Length of Period receiving NTP Services (days)	439	313	139	253	118	169	118	133
Percent Receiving 2 or More Services (outpatient or residential)	2.5	1.7	0.4	5.9	1.8	2.0	0.6	5.3

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.

Table 1.11.4.1: Cost of ADPA Services Incurred by GR Recipients in ALP, by Cohort – Outpatient Services Cost for First-time GR Users (n=7,982)

	Relationship to GR Use			
	Before	During	After[1]	Total[2]
Outpatient Counseling Services (OC)				
Number of Recipients	334	402	167	750
Total Cost	$245,966	$324,366	$128,678	$699,010
Mean Cost per Service Period	$606	$726	$699	$674
Mean Cost per User	$736	$807	$771	$932
Cost Groupings				[3]
Percent with/ cost <$500	62.9	49.5	43.7	45.6
Percent with/ cost $500-$1,000	13.8	18.2	21.0	16.8
Percent with/ cost $1,000-$3,000	17.4	31.8	35.3	34.0
Percent with/ cost $3,000+	6.0	0.5	0.0	3.6
Day Care Habilitative Services (DCH)				
Number of Recipients	44	27	11	76
Total Cost	$83,960	$54,920	$14,306	$153,186
Mean Cost per Service Period	$1,786	$1,961	$1,301	$1,781
Mean Cost per User	$1,908	$2,034	$1,301	$2,016
Cost Groupings				[3]
Percent with/ cost <$500	34.1 %	33.3 %	36.4 %	34.2 %
Percent with/ cost $500-$1,000	18.2 %	18.5 %	27.3 %	19.7 %
Percent with/ cost $1,000-$3,000	22.7 %	25.9 %	27.3 %	19.7 %
Percent with/ cost $3,000+	25.0 %	22.2 %	9.1 %	26.3 %
Narcotic Treatment Program Services (NTP)				
Number of Recipients	3	8	6	16
Total Cost	$13,170	$31,258	$19,968	$64,396
Mean Cost per Service Period	$4,390	$3,907	$2,219	$3,220
Mean Cost per User	$4,390	$3,907	$3,328	$4,025
Cost Groupings				(3)
Percent with/ cost <$500	33.3 %	12.5 %	0.0 %	12.5 %
Percent with/ cost $500-$1,000	0.0 %	0.0 %	16.7 %	6.3 %
Percent with/ cost $1,000-$3,000	0.0 %	12.5 %	16.7 %	6.3 %
Percent with/ cost $3,000+	66.7 %	75.0 %	66.7 %	75.0 %

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[3]Total reflects persons incurring multiple visits across before, during, and after periods.

Table 1.11.4.2: Cost of ADPA Services Incurred by GR Recipients in ALP, by Cohort – Outpatient Services Cost for Long-term GR Users (n=4,857)

	Relationship to GR Use			
	Before	During	After[1]	Total[2]
Outpatient Counseling Services (OC)				
Number of Recipients	185	303	82	494
Total Cost	$157,340	$232,352	$57,632	$447,324
Mean Cost per Service Period	$709	$655	$620	$668
Mean Cost per User	$850	$767	$703	$906
Cost Groupings				(3)
Percent with/ cost <$500	58.4	49.5	54.9	46.6
Percent with/ cost $500-$1,000	11.9	19.5	14.6	17.0
Percent with/ cost $1,000-$3,000	23.8	30.7	30.5	33.6
Percent with/ cost $3,000+	5.9	0.3	0.0	2.8
Day Care Habilitative Services (DCH)				
Number of Recipients	17	14	4	34
Total Cost	$26,440	$19,080	$10,368	$55,888
Mean Cost per Service Period	$1,392	$1,272	$2,592	$1,471
Mean Cost per User	$1,555	$1,363	$2,592	$1,644
Cost Groupings				[3]
Percent with/ cost <$500	29.4	21.4	0.0	23.5
Percent with/ cost $500-$1,000	23.5	21.4	25.0	23.5
Percent with/ cost $1,000-$3,000	29.4	50.0	50.0	38.2
Percent with/ cost $3,000+	17.6	7.1	25.0	14.7
Narcotic Treatment Program Services (NTP)				
Number of Recipients	6	7	10	21
Total Cost	$9,450	$17,920	$18,800	$46,170
Mean Cost per Service Period	$1,181	$2,240	$1,880	$1,776
Mean Cost per User	$1,575	$2,560	$1,880	$2,199
Cost Groupings				[3]
Percent with/ cost <$500	16.7	28.6	30.0	23.8
Percent with/ cost $500-$1,000	16.7	14.3	0.0	4.8
Percent with/ cost $1,000-$3,000	33.3	28.6	60.0	42.9
Percent with/ cost $3,000+	33.3	28.6	10.0	28.6

[1]For the after cell, the percentage is based only on the recipients who left GR on or before September 30, 2007.
[2]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[3]Total reflects persons incurring multiple visits across before, during, and after periods.

Table 1.12: Demographic Characteristics of Young Adult GR Recipients in ALP Who Have a Record of Out-of-Home Placements Through the DCFS, by Cohort

	Young adult (age 25 and younger) GR recipients			
	First-time GR Users		Long-term GR Users	
	with/ DCFS History	No DCFS History	with/ DCFS History	No DCFS History
N	202	1,775	89	482
Overall percent	10.2	89.8	15.6	84.4
Sex				
Male	43.1	56.0	52.8	63.7
Year of Birth (Age)				
1987 (18/19)	34.2	22.4	0	0
1986 (19/20)	25.3	17.7	1.1	3.1
1985 (20/21)	12.4	13.8	14.6	10.6
1984 (21/22)	10.9	12.9	16.9	18.7
1983 (22/23)	4.9	11.3	24.7	22.2
1982 (23/24)	5.9	11.0	23.6	25.1
1981 (24/25)	6.4	11.0	19.1	20.3
Ethnicity				
Black	67.3	46.7	74.2	63.7
White	5.5	15.9	5.6	8.1
Non-White Hispanic	25.7	32.5	18.0	24.7
Asian	1.5	1.7	0	0.8
Other	0.0	3.3	2.3	2.7

Table 1.13: DCFS Use Among GR Recipients in ALP with a DCFS History, by Cohort

	First-time GR Users	Long-term GR Users
N[1]	202	89
Mean Length in DCFS Care (month)	88.2	81.8
Percent with/ 10+ years in DCFS Care	31.7	29.2
Mean Length from DCFS exit to GR certification (month) [2]	32.5	63.3
Mean Age at GR Certification (year) [3]	19.7	22.1
Type of Exit: [4]		
Court Ordered Termination	45.1	50.6
Emancipation (Age Out)	22.3	20.2
Incarcerated (either 601/602 or not)	12.3	3.4
Family Stabilized or Reunified	6.0	6.8
Kin GAP -	6.4	3.4
Adoption	2.0	2.3
Runaway	1.0	2.3
Other	4.9	11.0

[1]Details of DCFS stay for each individual is based on data from the last DCFS record. 14 (4.8 percent) persons had two DCFS records.
[2]Twenty eight persons (13.9 percent) in the first-time cohort were certified GR prior to or in the same month as their exit from DCFS. When this occurred, the length from DCFS exit to GR certification was coded to zero.
[3]Only birth year was available for this analysis, so age is approximate.
[4]"Other" category incorporates categories with less than 1.5 percent response rate (Exceeded Time Limit, Guardianship/Child Placed, Adjudicated 601/602 [non-incarcerated], Refused Services, Services by Other Agency) or "unknown".

Table 1.14: Jail Use and Costs by GR Recipients in ALP, by Cohort

	First-time GR Users (n=7,982)				Long-term GR Users (n=4,857)			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After	Total	Before	During	After	Total
Number with/ Jail Stay	1966	1496	1315	3233	1761	1498	902	2719
Percent with Jail Stay	24.6	18.7	16.5	40.5	36.3	30.8	18.6	56.0
Total jail days consumed								
Mean length of jail stay (days)	38.6	34.1	35.1	36.0	46.7	38.2	38.8	41.6
Percent with/ jail stay of 90+ days[1]	17.2	20.3	17.9	24.6	21.6	23.4	21.1	29.9
Mean jail stays per user	1.7	1.7	1.7	2.5	1.7	1.8	1.6	2.7
Multiple jail stays:								
Percent with/ 2 jail stays	22.1	18.8	20.5	21.6	23.5	21.8	21.4	23.7
Percent with/ 3 jail stays	9.2	8.9	9.3	14.6	9.8	12.0	8.3	15.3
Percent with/ 4+ jail stays	6.6	9.0	7.1	22.1	7.4	9.0	5.1	24.8
Percent GR certified in 30 days of release				14.4				12.8
Percent of stays with:								
medical care	11.1	9.9	9.5	10.2	14.5	12.4	12.6	13.4
Mental Health Care	9.7	11.7	9.2	10.2	11.2	12.5	12.2	11.9
Total Jail days used by:								
Persons with/ 3+ Jail Stays	19.3	32.6	29.2	54.9	18.9	34.6	20.1	56.2
Persons with/ stay of 90+ days	64.8	58.2	53.0	59.3	66.4	59.0	55.6	61.4
Total Cost of all jail stays	$20,934,589	$22,470,494	$18,878,472	$62,717,406	$25,007,152	$27,846,851	$14,701,421	$68,535,732
Percent Total Cost by:								
Users with/ 3+ Jail Stays	21.7	33.2	27.4	55.7	17.8	35.2	19.7	56.3
Users with/ stay 90+ days	54.5	57.1	53.7	54.8	59.8	57.6	59.3	58.2

[1]Taken from total proportion of total persons in each column with jail stays.

Table 1.15.1: Probation Use and Costs by GR Recipients in ALP, by Cohort

	First-time GR Users (n=7,982)				Long-term GR Users (n=4,857)			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After	Total	Before	During	After	Total
Number on Probation	901	1,061	866	1,412	728	789	558	1,117
Percent with Probation Episode	11.3 %	13.3 %	10.8 %	17.7 %	15.0 %	16.2 %	11.5 %	23.0 %
Percent with/ 2+ Episodes	18.1 %	13.9 %	23.4 %	39.4 %	21.8 %	16.9 %	15.9 %	40.1 %
Percent on Probation at End of Study Period	n/a	n/a	n/a	41.1	n/a	n/a	n/a	40.0
Percent with/ Prob. Episode lasting 365+ days	n/a	n/a	n/a	55.2	n/a	n/a	n/a	47.4
Total Probation Days Used	181,034	241,222	243,509	674,999	154,753	189,397	131,171	484,256
Mean Prob. Period (days)[1]	n/a	n/a	n/a	311	n/a	n/a	n/a	259
Total Cost of Probation Days	$416,123	$606,952	$622,399	$1,669,916	$353,483	$479,077	$336,970	$1,193,181
Mean Total Cost Per User:	$462	$572	$719	$1,183	$486	$607	$604	$1,068

[1]Only includes full (i.e., completed probationary periods) and not those that started prior to 2005 or were ongoing at the end of 2007.

Table 1.15.2: Probation Supervision Offices by GR Recipients in ALP, by Cohort

	First-time GR Users (n=7,982)		Long-term GR Users (n=4,857)
	Total		Total
Total Probation Episodes	2,160		1,744
Percent of Probation Episodes by Office:			
Alhambra	0.9		1.0
Centinela	5.2		6.5
Central Adult Invest	7.5		7.2
Crenshaw	9.2		14.6
East Los Angeles	3.1		4.4
East San Fernando Valley	9.8		4.5
ESFV Antelope VLY	5.9		5.3
ESFV Valencia	0.9		0.2
Firestone	4.1		4.5
Foothill	5.6		5.7
Harbor	1.5		2.3
Long Beach	6.7		6.4
Pomona Valley	3.6		4.1
Rio Hondo	6.6		5.1
Riverview	15.8		13.4
San Gabriel Valley	3.7		3.4
Santa Monica	4.8		4.8
San Gabriel Valley	5.1		6.7

Figure 1.1- Use of Health Care funded by DHS by Two Recipient Cohorts of County GR (2005-2007)

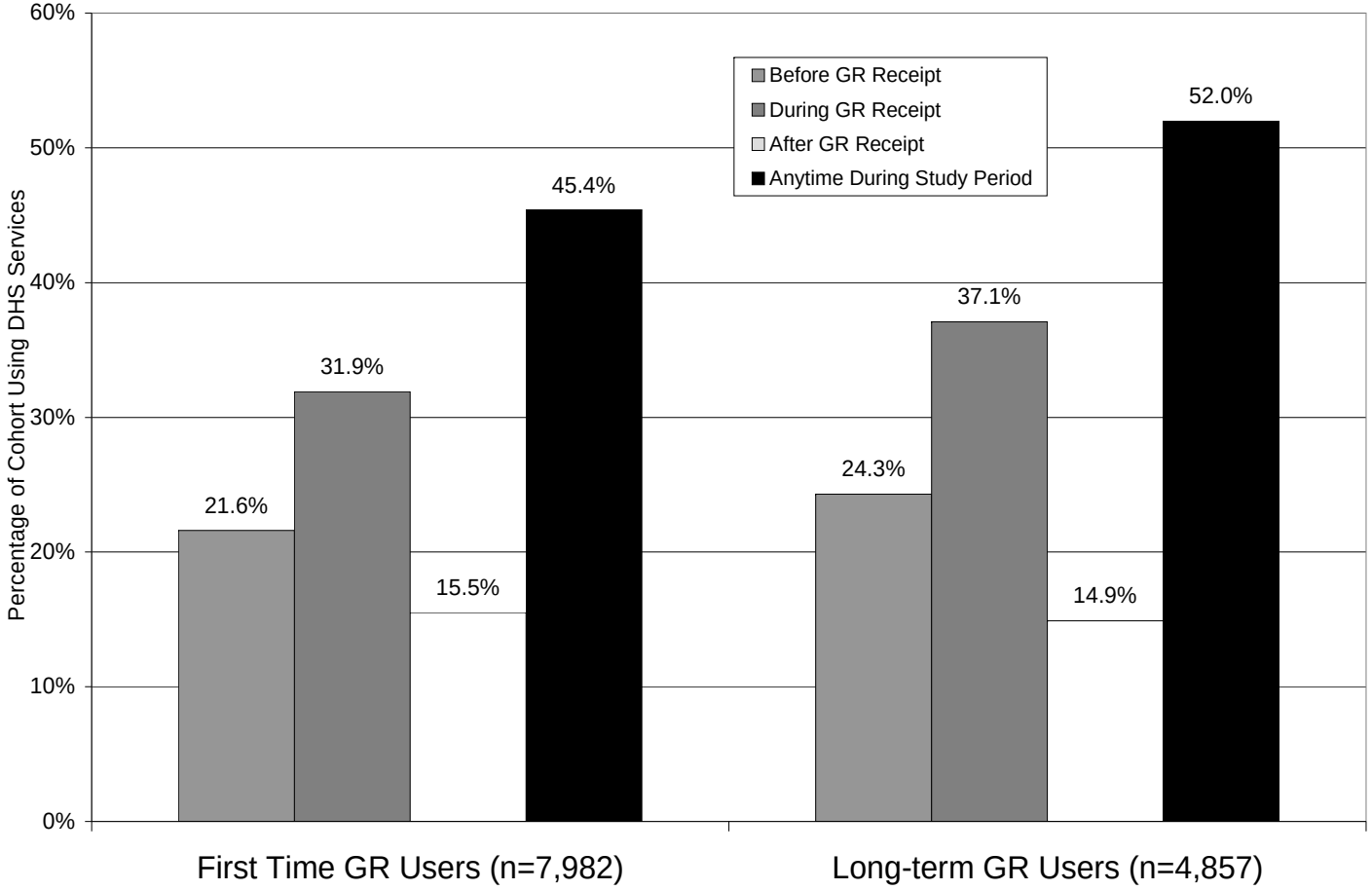


Figure 1.2 - Use of Mental Health Care funded by DMH by Two Recipient Cohorts of County GR - (2005-2007)

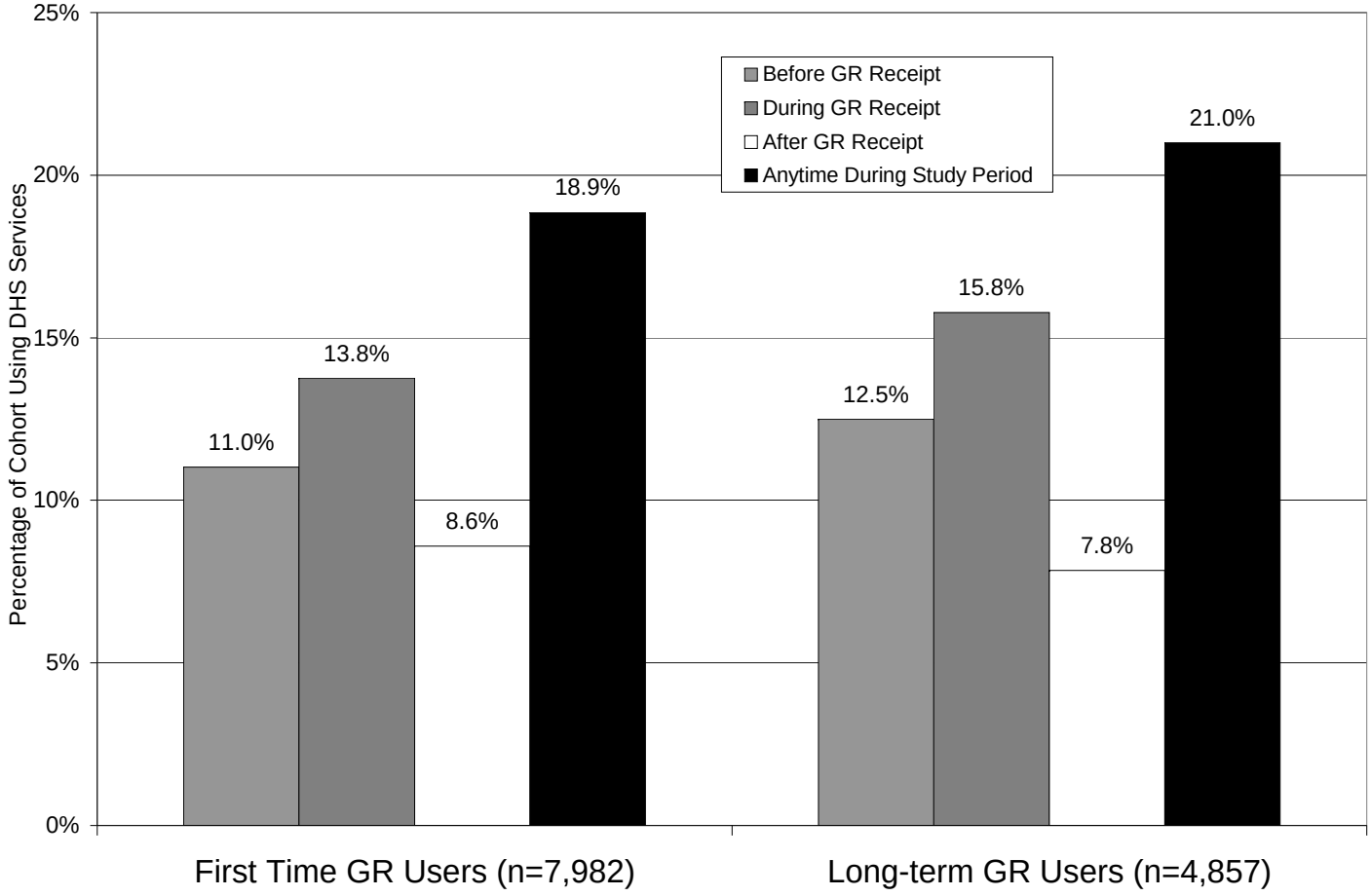
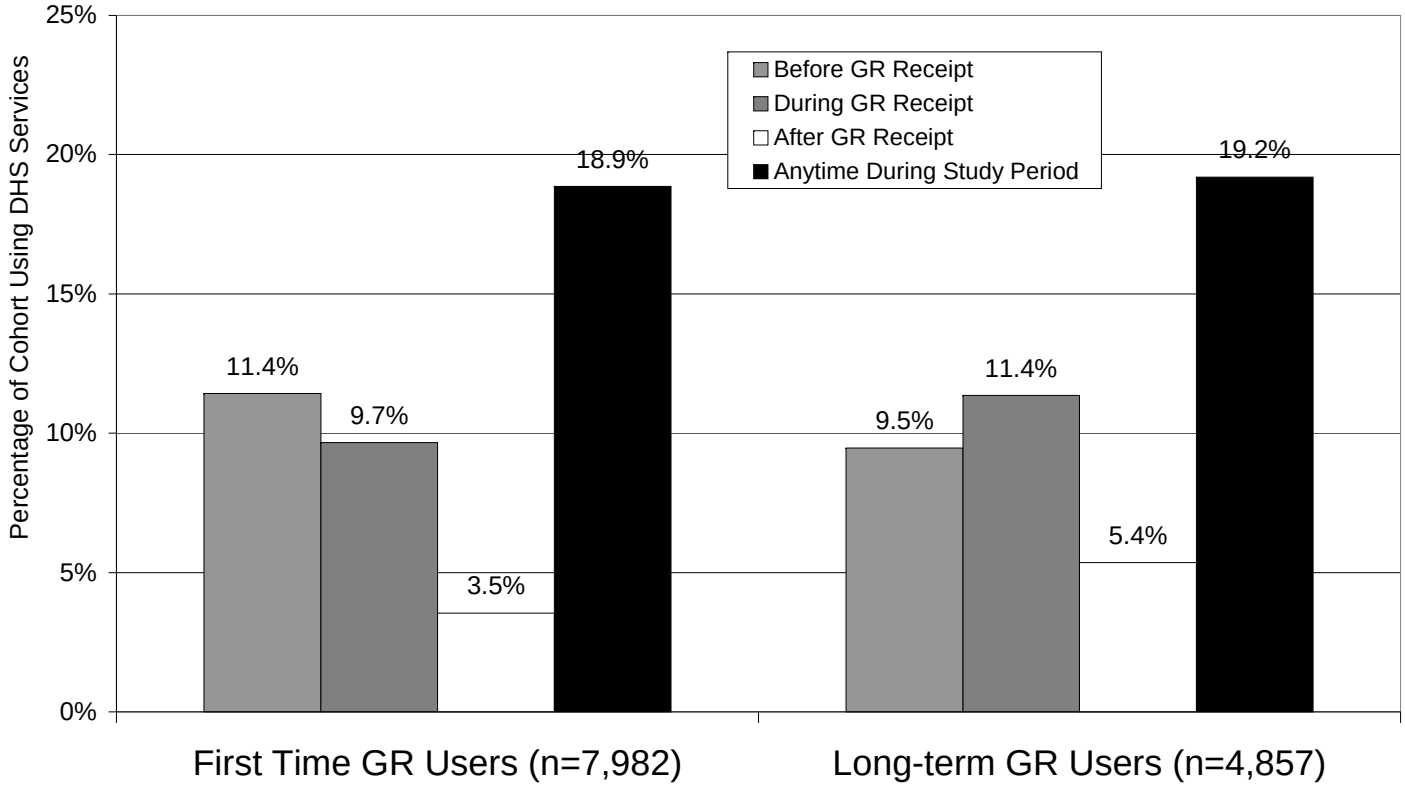


Figure 1.3 - Use of Substance Abuse Services funded by ADPA by Two Recipient Cohorts of County GR - 2005-2007



Chapter Two
Complex Patterns of Services Use

In the previous chapter, the analyses of services use by the GR cohorts were presented in the context of individual County departments. This chapter starts by providing a more integrated portrait of services use from the individual profiles of services from the last chapter. This means that the rates of participation and the associated costs from each County department, taken from the previous chapter, are summarized; the most frequently occurring combination of inter-departmental services use are identified; as are the extent that related services, such as inpatient use in multiple departments or jail combined with probation, occur together. The rest of this section focuses on services use across County departments by heavy services users. Insights into how much of all services use is accounted for by those with a history of heavy services use represents an initial step into identifying likely intervention targets for initiatives designed to manage and reduce costs of GR users to other County departments.

2.1: Summary of Services Use in County Provider Systems (Table 2.1)

Table 2.1 provides a summary of the overall rates of services use in the various departments covered in the previous chapter, as well as a broad indicator as to the extent of individuals in both cohorts using multiple County services systems during the course of the study period, which spanned 2005 through 2008. The top part of the table allows for comparing the rates of services use across different departments. There was substantial utilization of all five departments listed (child welfare services provided by DCFS are not considered in this chapter as its data only covered some of the two GR cohorts, and further DCFS use will not be an issue for this cohort). However, utilization rates were by far the highest in two systems, the DHS public hospital system and Sheriff jails. In the first-time user cohort, upwards of 40 percent used each of these systems, and among the long-term user cohort, over 50 percent used each of these systems.

Systems use, in the aggregate, was widespread. Over 70 percent of the first-time user cohort and over 80 percent of the long-term user cohort used at least one of the five County systems during the study period. Large proportions of both cohorts also used at least two systems during this time – almost 40 percent of the first-time user cohort and over 50 percent of the long-term user cohort. As the number of systems increases, the utilization numbers continue to decline but stay relatively high for use of three systems (20.0 percent and 26.3 percent) and four systems (7.9 percent and 10.6 percent), with relatively small proportions – 1.7 percent and 2.8 percent – using all five services.

There are two other findings in this table that are important to mention. First, the long-term user cohort had higher utilization rates across all systems (except for ADPA drug treatment) and for the utilization of multiple systems. Second, the utilization rates are generally highest during the time of GR receipt (as compared to immediately before or after the GR receipt period), although it is difficult to compare rates across these time

periods due to the variable lengths of time that participants are in each of the three time periods.

2.2: Patterns of Multiple Service Utilization (Table 2.2)

Table 2.2 reports on the most common configurations of different departments used by GR recipients, and the proportion of each cohort fitting these multi-service use profiles. As the two most frequently used departments (see Table 2.1) are DHS and Sheriff, it is not surprising that this combination represents the most frequently used pattern of two or more departments. The proportions using this combination, 20.2 percent for the first-time user cohort and 30.5 percent for the long-term user cohort, exceed even the more natural pairing of Sheriff and Probation (15.6 percent and 20.4 percent). Probation, when added to the DHS-Sheriff combination, makes up the most frequently used three-department combination.

The table also shows other combinations of County departments that may be of interest. These include:

- Two-thirds of both cohorts who used DMH services also used DHS services.

- The majority (almost two-thirds) of ADPA drug treatment users also used DHS services (see Table 2.1 also).

- Over one-quarter of both cohorts had some type of inpatient stay through DHS or ADPA. It is important to note here, that DMH claims were merged with records of DHS inpatient claims to create one integrated record of inpatient claims.

- The majority of those who had an inpatient stay also had a jail stay. This indicates that a sizeable minority of persons have spent parts of the three-year study period in multiple institutions.

As with Table 2.1, the long-term user cohort had higher utilization rates across department combinations, and the utilization rates are generally highest during the time of GR receipt (as compared to immediately before or after the GR receipt period), although, again, it is difficult to compare rates across these time periods due to the variable lengths of time that participants are in each of the three time periods.

2.3: Department Costs and Heavy Users (Tables 2.3.1, 2.3.2)

Table 2.3 is shown in two parts – Table 2.3.1 and Table 2.3.2 – reporting results for the first-time user and the long-term user cohorts, respectively. Both tables are structured identically. First they report total costs, by department, for each cohort's services. This summarizes data that was reported, by individual department, in the previous chapter. Next the costs for services consumed by each of two heavy user groups are also reported. The first heavy user group represents those in each cohort that were in the

top decile (i.e., 10 percent) in costs related to services used during the pre-GR certification period. In other words, these persons were the most expensive in combined use of services over the pre-enrollment period (which was 12-18 months long). The second cohort is more select, and was comprised of heavy users in the pre-release period, as identified in each individual department analysis in the previous chapter. Heavy users were selected by virtue of their services use in the pre-period to assess whether or not this time period, immediately prior to GR certification, is useful in predicting whether or not persons are likely to be heavy services users during their GR receipt period as well.

For both sub-tables – 2.3.1 and 2.3.2 – the two systems with the highest proportions of participation (see Table 2.1) are also those with, by far, the largest expenditures. Beyond DHS and Sheriff, the other three departments lag behind by a considerable margin. Interestingly, the long-term user cohort, with over 3,000 less persons, was more costly in their use of jail services than the first-time user cohort.

Looking at the first heavy user subgroup, when you calculate the costs accrued by the heavy user subgroup as a percentage of the total cohort cost in the pre period (percentages are not reported on the table), in both cohorts this subgroup accounted for approximately three-quarters of the total costs – 77.5 percent for the first-time users cohort and 73.3 percent for the long-term users cohort. Looking ahead to the proportions of service costs they accounted for when they were receiving GR benefits, these proportions went down considerably but were still disproportionate, to where the subgroups accounted for approximately one-quarter of each cohort's total services costs – 24.7 percent and 26.1 percent.

For the second heavy user cohort, the costs by this subgroup are calculated as a ratio of proportion of total cost to proportion of total persons (ratios are not reported on the table). Thus, for the first-time user cohort, in the pre-GR period the 480 users represent six percent of the total cohort, and the $11.5 million they consumed in services represents 28.6 percent of the total cohort costs for the pre-period. This means that this subgroup used 4.7 times the amount of services compared to their representation in the cohort. This is far smaller than the comparable 7.7 ratio of the first heavy user cohort (77.5 percent reported earlier divided by their ten percent cohort representation). The corresponding ratio for the heavy user subgroup in the long-term user cohort is 3.3. Looking at these proportions for the second heavy user subgroups in the time period when they were receiving GR, these proportions declined to 2.2 and 1.7 in the first-time and long-term user cohorts respectively.

Thus the first means of measuring heavy users, taking the ten percent of persons in each cohort who accrued the most services costs, is the better predictor here of which subgroup will use more costs when they receive GR. It is also the simpler means of identifying heavy users. Here, in both cohorts, targeting the top ten percent of those in each cohort with histories of the most expensive service use will account for 25 percent of the subsequent costs accrued by the entire cohort.

2.4: Patterns of Multiple Service Utilization Among the Two Heavy User Subgroups (Tables 2.4.1, 2.4.2)

Table 2.4 replicates Table 2.2 with a specific focus on the patterns of service use among the two heavy user subgroups described in more detail in the narrative accompanying Table 2.3. As with Table 2.3, it is split into two tables – 2.4.1 and 2.4.2 – each one corresponding to one of the cohorts. Only the main findings will be summarized here. Specifically:

- For both cohorts, the proportions of heavy users in virtually all multiple-department categories is considerably higher than the proportions for the overall cohort.

- Proportions in the multiple-department categories do not vary substantially, for the most part, when comparing heavy user groups for each cohort to each other. Representation thus appears roughly similar among subgroups, in contrast to the difference in proportional costs, as assessed in Table 2.3.

2.5: Distribution of Total Costs Among Subgroups for Both Cohorts (Table 2.5)

Table 2.5 again looks at service use by the two heavy user subgroups described in Table 2.3 (one subgroup for each cohort), this time looking at how the costs each subgroup accrued is distributed among departments. Each column will add up to 100 percent for each heavy user group. As is the pattern with overall services use by cohorts among departments, the large majority of costs are consumed through Sheriff and DHS. There is some variation between subgroups in each cohort and among the same subgroups across cohorts, but no clear patterns or trends could be detected.

2.6: Conclusion

The main findings of this chapter are that, in both cohorts of GR recipients studied here, there is extensive use of County health and criminal justice services, and the vast majority of this services use, whether measured in utilization rates or in costs incurred by the cohorts, occurs within the hospital (DHS) and jail (Sheriff) systems. Tandem use of these two services over the course of the study period is also relatively extensive. In addition, substantial minorities of both cohorts make use of inpatient services in at least one of three systems, and have records of both inpatient and jail stays over the study period. Combine this with the frequent occurrence of homelessness reported in the previous chapter, and there are indications of a sizable minority of GR recipients who make use of multiple institution-based residential settings with their attendant expenses.

Along with insights into patterns of services use across multiple County departments, this chapter also examined two groups of persons identified as heavy users by virtue of their services use in the period prior to receiving GR. The most promising results were shown by the first heavy users subgroup, where the ten percent of the cohort who ran up the highest expenses in services use during the pre-GR period accounted for about

25 percent of total cohort costs while using GR. While this approach would need to be fine tuned, it does indicate that identifying a history of heavy services use prior to GR receipt can help identify persons who will continue to use large amounts of services, primarily in the public health care and jail systems, while on GR. Attention to this targeting process will continue in subsequent chapters.

Chapter Two
Tables

Table 2.1: Summary of Multiple County Department Service Use by GR Recipients in ALP

	First-time GR Users (n=7,982)				Long-term GR Users (n=4,857)			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After	Total[1]	Before	During	After	Total[1]
Percent of Cohort Using of Specific County Department Services								
DHS	21.6	31.9	15.5	45.4	24.3	37.1	14.9	52.0
ADPA	11.4	9.7	3.5	18.9	9.5	11.4	5.4	19.2
DMH	11.0	13.8	8.6	18.9	12.5	15.8	7.8	21.0
Sheriff	24.2	18.7	16.5	40.2	35.3	30.8	18.6	55.2
Probation	11.3	13.3	10.8	17.7	15.0	16.2	11.5	23.0
Percent of Cohort Using County Departments (non-DPSS)								
Any one department	47.1	53.5	36.6	71.6	54.5	62.3	36.0	80.3
Any 2 departments	20.7	22.5	13.0	39.7	27.0	30.2	14.4	50.4
Any 3 departments	8.8	8.4	4.3	20.0	11.6	13.4	4.6	26.3
Any 4 departments	2.6	2.6	1.0	7.9	3.1	4.4	1.0	10.6
All 5 departments	0.4	0.4	0.1	1.7	0.5	0.1	0.1	2.8

[1]Totals does not equal sum of previous three columns as it refers to services use over entire study period. One individual may be counted as having services use in two or three of the identified time periods, whereas the total column represents an unduplicated count of persons with services use over entire study period.

Table 2.2: Frequency of Select Patterns of Multiple Service Use by GR Recipients in ALP

	First-time GR Users (n=7,982)				Long-term GR Users (n=4,857)			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After	Total[1]	Before	During	After	Total[1]
Percent of Cohort with Most Frequently Used Patterns (non-DPSS):								
2 Departments (DHS and Sheriff)	6.4	7.7	4.0	20.2	10.4	13.7	4.7	30.5
3 Departments (DHS, Sheriff and Probation)	2.4	2.6	1.3	8.3	3.9	4.4	1.4	11.7
Percent of Cohort with Combinations of Inter-departmental Use								
Sheriff and Probation	8.8	6.0	5.6	15.6	11.8	9.2	5.7	20.4
DHS and DMH	5.3	7.6	3.0	12.6	5.2	9.7	2.7	14.6
DHS and ADPA	3.6	4.6	1.3	11.1	3.6	6.6	1.2	12.9
DMH and ADPA	2.5	2.4	0.7	5.5	2.1	3.4	0.7	6.7
All 3 health systems[2]	1.3	1.4	0.3	4.0	1.1	2.6	0.4	5.3
Inpatient stay in any system[3]	14.5	13.9	5.3	27.0	12.7	15.0	5.1	26.8
Inpatient stays in multiple systems[4]	1.0	1.1	0.2	3.1	0.8	1.5	0.2	3.1
Any inpatient stay and a jail stay[3]	6.2	4.8	1.9	14.5	6.9	7.2	2.3	18.2
DHS emergency dept., DHS or DMH inpatient stay, ADPA detox and Jail ([all 4])	0.0	0.1	0.0	0.4	0.1	0.2	0.0	0.6
Episode in all five County departments	0.4	0.4	0.1	1.7	0.5	1.0	0.1	2.8

[1]Totals does not equal sum of previous three columns as it refers to services use over entire study period. One individual may be counted as having services use in two or three of the identified time periods, whereas the total column represents an unduplicated count of persons with services use over entire study period.
[2]DHS, DMH and ADPA.
[3]An inpatient stay could be in DHS, or ADPA Detox and Residential Services.
[4]A stay in two or more inpatient settings (see note number 2).

Table 2.3.1: Costs Incurred by Los Angeles County Departments for Services Provided to GR Recipients in ALP, by the First-time User Cohort (n=7,982)

	Relationship to GR Use			
	Before	**During**	**After**	**Total**[1]
Total Cohort				
General Relief (DPSS)	n/a	$12,503,047	n/a	$12,503,047
Health Services (DHS)	$13,815,191	$20,160,708	$8,168,157	$42,949,176
Public Health (ADPA)	$2,430,215	$2,054,093	$545,609	$5,029,917
Mental Health (DMH)	$2,109,950	$2,832,008	$1,391,636	$6,453,097
Sheriff's Department	$20,934,589	$22,470,494	$18,878,472	$62,717,406
Probation Department	$416,123	$606,952	$622,399	$1,669,916
Total Cost	**$39,706,068**	**$60,627,302**	**$29,606,273**	**$131,322,559**
Heavy User #1 (n=798)[2]				
Health Services (DHS)	$11,261,413	$5,385,265	$2,343,959	$19,141,092
Public Health (ADPA)	$964,555	$382,293	$132,546	$1,479,394
Mental Health (DMH)	$1,454,418	$865,654	$456,676	$2,804,686
Sheriff's Department	$16,979,931	$5,102,800	$5,165,175	$27,373,915
Probation Department	$131,094	$173,760	$163,904	$473,427
Total Cost	**$30,791,411**	**$11,909,772**	**$8,262,260**	**$51,272,514**
Heavy User #2 (n=480)[3]				
Health Services (DHS)	$3,718,633	$1,941,827	$909,939	$6,661,035
Public Health (ADPA)	$1,161,395	$353,427	$124,070	$1,638,892
Mental Health (DMH)	$449,226	$369,994	$140,014	$968,406
Sheriff's Department	$5,912,765	$3,469,946	$2,750,963	$12,229,887
Probation Department	$109,270	$140,914	$135,023	$389,000
Total Cost	**$11,351,289**	**$6,276,108**	**$4,060,009**	**$21,887,220**

[1]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[2]The first heavy user group is comprised of the subgroup of persons in the top decile of total costs accrued across departments in the period prior to GR certification in 2006.
[3]The second heavy user group is comprised of the subgroup of persons identified as a heavy user of one or more services in the period prior to GR certification in 2006 in the chapter one analyses.

Table 2.3.2: Costs Incurred by Los Angeles County Departments for Services Provided to GR Recipients in ALP, by the Long-Term User Cohort (n=4,857)

	Relationship to GR Use			
	Before	**During**	**After**	**Total**[1]
Total Cohort				
General Relief (DPSS)	n/a	$8,546,804	n/a	$8,546,804
Health Services (DHS)	$8,227,298	$13,147,094	$5,662,532	$27,687,133
Public Health (ADPA)	$1,217,272	$1,220,700	$367,691	$2,805,663
Mental Health (DMH)	$884,569	$1,580,896	$777,285	$3,310,263
Sheriff's Department	$25,007,152	$27,846,851	$14,701,421	$68,535,732
Probation Department	$353,483	$479,077	$336,970	$1,193,181
Total Cost	**$35,689,774**	**$51,821,422**	**$21,845,899**	**$112,078,776**
Heavy User #1 (n=485)[2]				
Health Services (DHS)	$6,167,564	$3,550,238	$1,725,573	$11,730,162
Public Health (ADPA)	$305,083	$156,172	$58,843	$520,098
Mental Health (DMH)	$520,704	$439,502	$359,799	$1,333,211
Sheriff's Department	$19,079,297	$7,363,881	$4,723,208	$31,384,486
Probation Department	$79,537	$90,038	$63,261	$236,931
Total Cost	**$26,152,185**	**$11,599,831**	**$6,930,684**	**$45,204,888**
Heavy User #2 (n=382)[3]				
Health Services (DHS)	$2,586,853	$1,486,560	$1,022,762	$5,187,113
Public Health (ADPA)	$630,675	$183,040	$51,336	$865,051
Mental Health (DMH)	$293,119	$192,775	$146,482	$639,557
Sheriff's Department	$5,738,953	$3,900,336	$2,661,638	$12,372,710
Probation Department	$79,685	$107,488	$68,134	$259,326
Total Cost	**$9,329,285**	**$5,870,199**	**$3,950,352**	**$19,323,757**

[1]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[2]The first heavy user group is comprised of the subgroup of persons in the top decile of total costs accrued across departments in the period prior to GR certification in 2006.
[3]The second heavy user group is comprised of the subgroup of persons identified as a heavy user of one or more services in the period prior to GR certification in 2006 in the chapter one analyses.

Table 2.4.1: Frequency of Select Patterns of Multiple Service Use by Heaviest Users Among GR Recipients in ALP – Two Heavy User Subgroups in First-time Users Cohort (n=7,982)

	Heavy User Subgroup #1 (n=798)[1]				Heavy User Subgroup #2 (n=480)[2]			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After	Total[3]	Before	During	After	Total[3]
Percent of Cohort with Most Frequently Used Patterns (non-DPSS):								
2 Departments (DHS and Sheriff)	28.9	14.7	8.8	49.4	29.6	14.6	11.3	52.9
3 Departments (DHS, Sheriff and Probation)	13.8	7.1	3.5	28.7	16.5	9.4	4.6	36.0
Percent of Cohort with Combinations of Inter-departmental Use								
Sheriff and Probation	35.7	14.9	14.3	44.0	47.3	22.1	19.0	56.9
DHS and DMH	24.8	17.2	8.5	34.5	18.5	16.0	7.3	29.6
DHS and ADPA	14.0	7.6	2.9	27.4	18.1	10.6	4.6	41.7
DMH and ADPA	11.1	6.4	1.8	17.2	13.8	5.6	2.3	21.9
All 3 health systems[2]	7.5	3.6	0.8	14.4	7.7	4.0	0.6	17.9
Inpatient stay in any system[3]	58.4	27.7	11.7	67.9	61.5	27.1	12.9	74.2
Inpatient stays in multiple systems[4]	6.3	2.0	0.1	11.3	5.6	2.5	0.2	12.3
Any inpatient stay and a jail stay[3]	31.3	11.4	4.9	44.7	40.2	12.5	7.3	56.0
DHS emergency dept., DHS or DMH inpatient stay, ADPA detox and Jail ([all 4])	0.4	0.0	0.0	1.1	0.4	0.2	0.0	0.8
Episode in all 5 County departments	3.3	1.1	0.3	8.4	3.8	2.1	0.2	10.8

[1]The first heavy user group is comprised of the subgroup of persons in the top decile of total costs accrued across departments in the period prior to GR certification in 2006.
[2]The second heavy user group is comprised of the subgroup of persons identified as a heavy user of one or more services in the period prior to GR certification in 2006 in the chapter one analyses.
[3]Totals does not equal sum of previous three columns as it refers to services use over entire study period. One individual may be counted as having services use in two or three of the identified time periods, whereas the total column represents an unduplicated count of persons with services use over entire study period.
[4]DHS, DMH and ADPA.

Table 2.4.2: Frequency of Select Patterns of Multiple Service Use by Heaviest Users Among GR Recipients in ALP – Two Heavy User Subgroups in Long-Term Users Cohort (n=4,857)

	Heavy User Subgroup #1 (n=485)[1]				Heavy User Subgroup #2 (n=382)[2]			
	Relationship to GR Use				Relationship to GR Use			
	Before	During	After	Total[1]	Before	During	After	Total[3]
Percent of Cohort with Most Frequently Used Patterns (non-DPSS):								
2 Departments (DHS and Sheriff)	36.7	23.5	10.9	60.0	34.3	25.4	9.9	59.7
3 Departments (Sheriff, DMH and DHS)	19.2	14.6	6.4	33.8	16.0	12.6	3.9	28.3
Percent of Cohort with Combinations of Inter-departmental Use								
Sheriff and Probation	36.3	17.7	10.7	45.4	45.5	27.4	18.2	56.5
DHS and DMH	22.7	19.2	9.7	36.7	17.8	19.6	7.1	31.4
DHS and ADPA	9.9	8.9	2.9	24.3	16.2	14.7	3.2	36.9
DMH and ADPA	7.4	7.2	2.3	17.3	9.9	10.5	2.1	22.5
All 3 health systems[2]	4.5	5.4	1.9	15.1	5.5	8.1	1.6	18.3
Inpatient stay in any system[3]	42.7	24.7	12.0	55.3	46.3	23.0	10.5	47.3
Inpatient stays in multiple systems[4]	4.9	3.7	1.0	10.7	5.0	2.9	0.3	10.7
Any inpatient stay and a jail stay[3]	29.1	15.5	6.8	45.8	35.6	15.4	6.3	51.8
DHS emergency dept., DHS or DMH inpatient stay, ADPA detox and Jail ([all 4])	0.8	0.4	0.4	2.9	0.7	0.3	0.3	2.1
Episode in all 5 County departments	2.1	2.7	0.2	10.1	3.4	3.4	0.5	12.6

[1]The first heavy user group is comprised of the subgroup of persons in the top decile of total costs accrued across departments in the period prior to GR certification in 2006.
[2]The second heavy user group is comprised of the subgroup of persons identified as a heavy user of one or more services in the period prior to GR certification in 2006 in the chapter one analyses.
[3]Totals does not equal sum of previous three columns as it refers to services use over entire study period. One individual may be counted as having services use in two or three of the identified time periods, whereas the total column represents an unduplicated count of persons with services use over entire study period.
[4]DHS, DMH and ADPA.

Table 2.5: Distribution of the Total Cost of Providing Services to Heavy Users, by Cohort Type and Two Heavy User Subgroups

	Relationship to GR Use			
	Before	**During**	**After**	**Total**[1]
		First-time GR Users (n=7,982)		
Heavy User #1 (n=798)[2]				
Health Services (DHS)	36.6 %	45.2 %	28.4 %	37.3 %
Public Health (ADPA)	3.1 %	3.2 %	1.6 %	2.9 %
Mental Health (DMH)	4.7 %	7.3 %	5.5 %	5.5 %
Sheriff's Department	55.1 %	42.8 %	62.5 %	53.4 %
Probation Department	0.4 %	1.5 %	2.0 %	0.9 %
Total Cost	100.0 %	100.0 %	100.0 %	100.0 %
Heavy User #2 (n=480)[3]				
Health Services (DHS)	32.8 %	30.9 %	22.4 %	30.4 %
Public Health (ADPA)	10.2 %	5.6 %	3.1 %	7.5 %
Mental Health (DMH)	4.0 %	5.9 %	3.4 %	4.4 %
Sheriff's Department	52.1 %	55.3 %	67.8 %	55.9 %
Probation Department	1.0 %	2.2 %	3.3 %	1.8 %
Total Cost	100.0%	100.0%	100.0 %	100.0%
		Long-term GR Users (n=4,857)		
Heavy User #1 (n=485)[2]				
Health Services (DHS)	23.6 %	30.6 %	24.9 %	25.9 %
Public Health (ADPA)	1.2 %	1.3 %	0.8 %	1.2 %
Mental Health (DMH)	2.0 %	3.8 %	5.2 %	2.9 %
Sheriff's Department	73.0 %	63.5 %	68.1 %	69.4 %
Probation Department	0.3 %	0.8 %	0.9 %	0.5 %
Total Cost	100.0%	100.0%	100.0 %	100.0%
Heavy User #2 (n=382)[3]				
Health Services (DHS)	27.7 %	25.3 %	25.9 %	26.8 %
Public Health (ADPA)	6.8 %	3.1 %	1.3 %	4.5 %
Mental Health (DMH)	3.1 %	3.3 %	3.7 %	3.3 %
Sheriff's Department	61.5 %	66.4 %	67.4 %	64.0 %
Probation Department	0.9 %	1.8 %	1.7 %	1.3 %
Total Cost	100.0%	100.0%	100.0 %	100.0%

[1]Totals exceed the sum of previous three columns due to uncertainty in timing of some services occurring after the observation period for GR services.
[2]The first heavy user group is comprised of the subgroup of persons in the top decile of total costs accrued across departments in the period prior to GR certification in 2006.
[3]The second heavy user group is comprised of the subgroup of persons identified as a heavy user of one or more services in the period prior to GR certification in 2006 in the chapter one analyses.

Chapter Three
Select Factors and Services Use

The previous two sections report the extent of services and related costs used by the two cohorts of GR recipients for whom data is collected in ALP. This chapter takes those findings one step further. Here combining data from the various sources available in the ALP data warehouse, and applying multiple regression techniques to these data, permits a more detailed look into the relationships between certain individual characteristics, on one hand, and six outcomes related to receipt of GR and use of other services provided by various County departments.

Results from this chapter come from combining the datasets in ALP to produce a single comprehensive dataset for each individual in the two cohorts of GR recipients for whom data is available in ALP. To restate this, in both cohorts, individual records comprise of data fields gleaned both from the DPSS and from the five other departments for whom data is available.[1] What results are two datasets, one for each cohort, which will both be subjected to identical, parallel analyses. These analyses consist of two basic multivariate regression techniques – ordinary least squares (OLS) regression is used when the outcome of interest is a continuous measure; and logistic regression is used when the outcome of interest is a dichotomous measure. Multivariate regression models examine relationships between a group of covariates and an outcome measure, and are able to estimate the association between each covariate and the outcome measure while taking into account (i.e., controlling for) the impacts for all the other covariates included in the model. There are six outcome measures examined in this chapter, covering:

- Months of GR use (ordinary least squares);
- Heavy (on GR a minimum of 18 out of the 22-month study period);
- Long-term homelessness (on GR for at least 12 months and homeless during that time period);
- Cost of Services Use (combined cost of the non-DPSS services used from the point of GR certification in early 2006 to the end of 2007);
- Heavy services user (top decile of persons with most costs accrued over time period from GR certification through the end of 2007);
- Use of County health and criminal justice services (over time period from GR certification through the end of 2007)

The remainder of this chapter describes the results reported in this chapter's two tables. The first table reports frequencies, by cohort, for the outcome variables and the covariates of interest. Along with reporting these frequencies from this table the various outcomes and covariates will be described in greater detail. The results of the regression models are then summarized on Table 3.2. Table 3.2 summarizes the degree of significance and, when significant, the direction of the association with each

[1] Department of Child and Family Services data is not included in this chapter because data is only available for persons in the dataset who are age 25 and under.

of the six outcome measures. For those who are interested in more specific details about each model, the output generated by the SAS statistical software for each of the twelve models (six outcome measures for each of the two cohorts) is included in an appendix to this report.

The summary of the outcomes from these twelve models are displayed on one table to facilitate examining patterns of relationships that particular coefficients might show across outcome measures. This will then serve as a basis for identifying specific features related to GR recipients that render them more likely to make greater (or fewer) demands on the County services examined in this study.

3.1: Descriptive Measures and Descriptions of Outcome and Covariate Measures (Table 3.1)

3.1.1: Outcome Measures

The six specific outcome measures that are examined in this chapter are reported first in Table 3.1. Each of these outcomes are measures that occur either over the course of GR receipt or, when other County services are measured, over the course of the study period beginning at the point of GR receipt. Thus the "during" and "after" periods examined in previous chapters are combined for the outcomes measures. This is primarily done to equalize the span of time during which each GR recipient has the opportunity to accumulate services use.

Months on GR reflects the total number of months that each individual received DPSS assistance through GR during the time period between the beginning of 2006 and the end of October 2007. This measure, reported as a mean number of months on Table 3.1, is identical to that reported on Table 1.6 in Chapter One. For the first-time user cohort, individuals received, on average, GR benefits for 8.3 months in the 22-month period. The long-term user cohort, during this time period, received GR benefits for an average of 9.1 months.

"Heavy" Use of GR Services is constructed as an indicator of whether or not someone received assistance through GR for 18 or more months in the 22-month period for which the use of GR is followed in the ALP data. This measure is a "dummy" or dichotomous outcome, as someone is, under this criterion, either a heavy user or not. This outcome measure also corresponds to results found in Table 1.6 in Chapter One. For the first-time user cohort and the long-term user cohort, the proportion of heavy users is 11.5 percent and 9.8 percent, respectively, or approximately one-tenth of each cohort.

"Chronic" Homelessness while Receiving GR is another dummy outcome measuring whether or not someone had both a minimum of 12 months on GR and was reported as homeless for the entire time he or she was receiving GR (during the 22-month study period). Homeless status was reported in DPSS data

in conjunction with monthly receipt of GR; how homelessness was determined or how much of the month the recipient was homeless in order to receive such an indicator is unclear. In this measure, first reported in Table 1.4 in Chapter One, 9.1 percent and 13.1 percent of the first-time user cohort and the long-term user cohort, respectively, were considered to be chronically homeless.

Cost of Services Use reflects the combined cost of the non-DPSS services used from the time she or he was certified for GR in early 2006 to the end of the study period in late 2007. These services were provided by up to five County departments – Sheriff, Probation, DHS, DMH, and ADPA. Inpatient stays reported in both the Health Services and Mental Health databases are unduplicated. The natural logarithm of the total cost is used as the outcome measure. This is a standard way to correct for the disproportionate influence that those with higher expenses would have if the actual costs were used as the outcome variable, and thus represents a more conservative measure. For the (unlogged) costs, the medians for each cohort are $1,270 and $2,336 for the first-time user and long-term user cohorts, respectively. In other information about this variable (not reported on the table), 64.1 percent and 73.0 percent of the respective cohorts had a record of using some sort of non-DPSS service either during or after GR certification; and the median costs per individual for only those who used some service were $4,427 and $5,496 for the respective cohorts.

Heavy Services User is a dummy outcome measuring whether or not someone was in the top decile for total service costs accrued (see previous outcome measure). The top decile was one of the measures used to assess "heavy" services users (albeit "before" GR receipt) in Chapter Two, here being in the top decile reflects heavy use of services during and after GR receipt. For the two cohorts, to be in the top ten percent of users necessitated accruing, for the first-time user cohort, over $23,700 in services costs by other (non-DPSS) assistance. The corresponding number for the long-term user cohort was $33,300.

Use of both Criminal Justice and Health (including behavioral health) Services means that, for this dummy variable, getting a positive value requires a person to have had a record in the criminal justice system (Probation and/or Sheriff) and in the health/behavioral health system (DHS, DMH or ADPA) at some point in the study period during or after receiving GR assistance. This measure of heavy services use is independent of cost, and is consistent with the multiple services use measures examined in the second chapter. The prevalence of this multi-system use for first-time user cohort and the long-term stayer cohorts was 14.5 percent and 21.4 percent, respectively.

3.1.2: Covariates

Along with the outcome measures, all of which (except for chronic homelessness) represents some measure of heavy services use, Table 3.1 also includes a set of covariate measures that may potentially impact these outcome measures. Each of these covariates are measured before or right at the start of receiving GR benefits, and thus chronologically precede the outcomes measures just described.

Homeless is a dummy covariate that indicates whether or not a person was reported as being homeless during the first month of receiving GR during the study period. This covariate comes from DPSS data and other outcomes related to homelessness are that reported on Table 1.4 in Chapter One. In Table 3.1, 52.2 percent of the first-time user cohort and 62.7 percent of the long-term user cohort were reported to be homeless in their first month of GR receipt in the study period.

Disabled is a dummy covariate indicating whether or not a person was reported as being disabled and unable to work during the first month of receiving GR during the study period. This covariate comes from DPSS data. Disability designation, and assessment of whether or not an individual is employable, helps determine whether or not an individual must enroll in job assistance programming while receiving GR and whether or not an individual can receive GR benefits for a full 12 months out of a year. The corresponding frequencies, 31.5 percent and 41.6 percent for first-time user and long-term user cohorts, respectively, are first reported on Table 1.2 in Chapter One.

SSI History is a dummy covariate indicating whether or not DPSS has noted that an individual has applied for SSI benefits, which is a federal disability benefit. This measure of whether or not there is an SSI application pending was taken at the first month of GR receipt during the study period, in contrast to corresponding information reported on Table 1.2 in Chapter One which looks at SSI application anytime during receipt of GR. In Table 3.1, 2.9 percent and 7.8 percent of first-time user and long-term user cohorts, respectively, are indicated as having pending SSI applications.

Employable is a dummy covariate indicating whether or not an individual is considered employable upon first receipt of GR benefits during the study period. This is often, but not always, the converse to whether or not someone is assessed to be disabled during the course of applying for GR benefits. As with disability designation, employability designation helps determine whether or not an individual must enroll in job assistance programming while receiving GR and whether or not an individual is limited to receiving GR benefits for nine months over a 12 month period. This measure corresponds to results reported on Table 1.2 in Chapter One, which shows that 57.1 percent and 56.2 percent of the

first-time user and long-term user cohorts, respectively, were considered by DPSS to be employable.

Employment History is a dummy covariate indicating whether or not an individual had a record of receiving income from employment in the year prior to first receiving GR benefits during the study period. This covariate is based on State employment data. When there is uncertainty as to whether the employment earnings occurred within one year of receiving GR, no income is listed as being received. This ambiguity occurs because employment data is reported in quarters and DPSS data is reported in years. More results taken from this employment data are reported on Table 1.3 in Chapter One. On Table 3.1, 28.3 percent and 30.7 percent of the first-time user and long-term user cohorts, respectively, had records of employment income that unambiguously was received in the one-year period prior to GR receipt.

Mental Illness is a dummy covariate indicating a diagnosis of a mental disorder given in conjunction with treatment received either by DHS, DMH, or Sheriff prior to receiving GR during the study period. For DHS and DMH, mental illness corresponds to being given any of a series of ICD-9 diagnoses indicating a behavioral health disorder other than substance use or dependency.[2] As discussed in the first chapter, the information available in the ALP database is limited to one diagnosis per service contact, which underreports the presence of all diagnoses, including mental illness, as persons often have multiple diagnoses per service contact. In addition to data from DHS and DMH, a person is considered to have had a diagnosis of mental illness if it is indicated that the person received mental health services while in jail (i.e., under the custody of the Sheriff). Using only services received prior to GR receipt will miss persons with a mental illness who do not receive treatment until after receiving GR, but this is necessary to avoid confounding this covariate with the outcome measures, which cover the time period during or after GR receipt. Taken together, this mental illness indicator is both vague, as it covers a range of diagnosed mental disorders, and incomplete, as untreated mental disorders (as well as mental disorders not reported in conjunction with services received) will likely lead to a higher actual prevalence of mental illness in the GR cohorts. With these limitations in mind, 16.0 percent of persons in the first-time user cohort and 15.1 percent of persons in the long-term user cohort received services in conjunction with some mental illness diagnosis.

Substance Abuse is a dummy covariate, indicating whether or not an individual received treatment in conjunction with a substance abuse disorder, that was developed in a manner similar to the mental illness indicator. The covariate signifies a diagnosis of substance abuse from DMH or DHS,[3] or a record of receiving any services from ADPA. No data from Sheriff is used in constructing this indicator. The same limitations that were explained in the mental illness

[2] Specific diagnoses correspond to ICD-9 codes of 290, 293-302, and 306-311.
[3] Specific diagnoses correspond to ICD-9 codes of 291-292 or 303-305.

indicator also apply to this substance abuse indicator, and it is important to understand that, first, the indicator is somewhat vague beyond having a substance abuse problem identified in conjunction with treatment; and, second, that this indicator under-represents the extent of substance abuse and dependency among the two cohorts. With these considerations, the rates of identified substance abuse problems are 17.1 percent and 15.8 percent for the first-time user cohort and the long-term user cohort, respectively.

Co-occurring Mental Illness and Substance Abuse is a dummy covariate for when an individual has positive values for both the mental illness and substance abuse indicators just described. Given the limited available diagnosis data, and that mental illness and substance abuse may go untreated, this indicator almost certainly substantially underreports the actual prevalence of the co-occurrence of these types of diagnoses. With this taken into consideration, these co-occurring conditions are present in 5.2 percent and 5.1 percent for the first-time user cohort and the long-term user cohort, respectively.

Costs of County Services Prior to Receiving GR is a covariate for the total dollar amount of costs corresponding to all County services recorded in ALP that occurred prior to receipt of GR during the study period. This represents an aggregation of the non-DPSS costs that are reported in detail in both Chapters One and Two. For the analyses in this chapter, the natural logarithm of the pre-GR costs is used for the analyses to adjust for the disproportionate influence that the higher expenses would have if the actual costs were used. This is the same adjustment that is done to the other cost measure listed earlier among the outcome measures. For the first-time user cohort, the median cost is $0, as only 47.0 percent of the cohort had a record of any services use, while the median cost for the long-term user cohort is $515, as 55.1 percent of this cohort had some type of services cost prior to GR that was captured in ALP. For those with a pre-GR record of service use, the median amounts are $3,069 and $3,934 for the respective cohorts (not shown on table).

Jail Prior to GR Certification is a dummy covariate indicating whether an individual has a record of incarceration by Sheriff where he or she was released less than one year prior to first receipt of GR during the study period. The intersection of Sheriff services and GR is reported in greater detail in Chapter One. For the first-time user and long-term user cohorts, 27.6 percent and 38.8 percent had a jail release within a year of GR receipt in the study period.

Probation Prior to GR Certification is a dummy covariate indicating whether an individual has a record of being on probation with Probation at any time in the one year time span prior to first receipt of GR during the study period. This probation supervision may continue on into the time when an individual is certified for GR. The intersection of Probation services and GR is reported in greater detail in Chapter One. The result here is 13.3 percent and 17.2 percent

of the first-time user and long-term user cohorts, respectively, had a record of probation supervision prior to GR certification.

3.1.3: Regression Results (Table 3.2)

Table 3.2 displays the data elements, both outcome measures (i.e., dependent variables) and covariate measures reported in Table 3.1 in a series of regression models. In addition to the covariates just reported, there are a set of covariates not mentioned in conjunction with Table 3.1 that are included in the model as control variables. These results are not reported as part of Table 3.2, although they are included in the models used to derive the results shown on Table 3.2. This is because these covariates – which include age, gender, race/ethnicity, primary language, food stamp receipt, marital status, and pregnancy – may have impacts on the outcome measures examined but in and of themselves are of secondary interest in this analysis. Those looking for specifics on these control variables can refer to the full model results in the appendix, where coefficient values and significance levels are reported for all elements in the models. One outcome measure, *months on GR during the study period*, is also included as a covariate in the three models where different measures of services use are the dependent variables.

Before summarizing the regression results the limitations of the data also bear restating. Deficiencies in the data primarily involve issues concerning data coverage – elements such as *mental illness* and *substance abuse* almost certainly miss substantial numbers of persons who have such conditions; data accuracy – costs of services or length of time homeless may not be accurately collected; and precision – covariates and outcome measures in these models are often broad measures of the phenomena of interest. With these qualifications in mind, however, Table 3.2 is able to give some insights about associations between various characteristics and outcome variables that can help assess related policies and offer directions for more effectively managing heavy demand upon County services by GR recipients.

What follows are general observations made based on the findings from Table 3.2. Unless otherwise noted, the observations made apply to the findings for both the first-time and long-term user cohorts.

1) <u>Three measures representing disability in some form all have a consistently significant impact on increasing the likelihood of using more services both within DPSS and across other County services.</u> Specifically, the covariates for D*isabled*, *SSI Application,* and *Mental Illness* all are associated with increases in the number of months on GR and in the costs of other County services, and with the likelihoods of being a “heavy” user of GR and of other County Services. This is a strong and consistent indicator that the greatest opportunities for addressing issues related to heavy services use

involves addressing issues related generally to disability and, more specifically, to persons identified with a mental illness prior to receiving GR.

2) Two measures related to employment – a DPSS assessment of being *employable* and having an *employment history* in the year prior to receiving GR – are both consistently associated with reduced length of stay on GR and costs incurred from other County systems, as well as reduced likelihoods of being a heavy user of either GR or other County services. Part of this is due to statute, persons who are deemed employable are only eligible for nine months of GR assistance in a year, but the magnitude of the relationship suggests that there is an impact of employability on GR that goes beyond this restriction. In addition, the associations between the two employment covariates and the outcomes related to costs in other County service systems (which are not affected by this restriction) are consistently significant and negative. Put simply, persons with links to the work force who receive GR are more likely, on the whole, to use less resources from GR and from other County departments.

3) Substance abuse has an inconsistent relationship with the dependent variables. By itself it has non-significant associations with the two measures of GR receipt and positive associations with *Costs of County Services* and *Users of Criminal Justice and Health Services.* These positive, significant associations, however, are modified by a counteracting negative association with *Co-occuring MI and SA*, suggesting that the impact of mental illness and substance abuse, when combined, is not additive. There is a lack of consistency with these results that mitigates any ability to draw conclusions about the impact of substance abuse on these outcomes.

4) When homelessness is included in the models as a covariate (i.e., homeless at the start of GR receipt), there is some association with greater services use, but this association is far less consistent than that of the disability related covariates discussed earlier. The other measure of homelessness in the table is in the model where *Chronic Homelessness* is the dependent variable. Here *Disability* and *Mental Illness* are associated with an increased the likelihood of chronic homelessness, while the two employment covariates are associated with a decreased likelihood. In one model *Substance Abuse* decreases this likelihood, which is a counterintuitive finding.

5) The two covariates related to the criminal justice system – histories of being jailed and being on probation prior to GR receipt – both have significant and positive associations with measures for the use of County services, and have weakly significant, negative association with measures for length of time on GR. These findings may be in part explained by a greater likelihood that people with such criminal justice histories face for reincarceration, which would lead to terminating GR benefits and increased costs associated with incarceration.

6) The *costs of County services (pre-GR)* has significant positive associations with use of County services measures subsequent to GR receipt. This is consistent with the conclusions of Chapter Two and, to an extent, is to be expected; history of services use is one of the best predictors of subsequent services use. From a practical context, determining that a GR recipient has a history of County services use in the systems included here can be a means to identify persons at risk of accruing high costs in of these services during and after GR receipt.

3.1.4: Conclusion

The two most unequivocal findings from the analyses in this chapter are, first, that various measures of disability, including mental illness, are consistently and significantly associated with increased use of GR, with cost of other services, and with chronic homelessness. Second, measures of employability and earnings income are consistently and significantly associated with decreased values for these outcomes. Policy has tended to focus on interventions for employable persons as a means to cut demand for GR, these results suggest that interventions focusing on persons identified as disabled (particularly with psychiatric disabilities) would have greater potential to make substantial reductions in the demand for services use, both on GR and on other services.

Other covariates of interest, particularly substance abuse and homelessness, are not sufficiently consistent in their associations with the dependent variables to form the basis for any conclusions. It is also unclear whether these outcomes are due to actual relationships or to problems with collecting accurate data on these indicators.

Data uncertainties have been pointed out throughout this chapter, and limit the extent to which definite conclusions can be rendered based on this data. However, such findings present some support for focusing on disability-related interventions to simultaneously improve quality of life for these recipients while reducing demands on and costs of services use by GR recipients. Further studies on the relationship between disability and demand for services would be useful in not only validating these findings but also in identifying more precisely the dynamics of the relationship between these factors.

Chapter Three
Tables

Table 3.1: Summary Measures of Select Factors of Interest, by Cohort

	First-time GR Users (n=7,982)	Long-term GR Users (n=4,857)
Outcomes		
Time on GR (mean)	8.3 months	9.1 months
On GR 18+ months in study period (%)	11.5	9.8
Long-term Homeless (%)	9.1	13.9
Cost of Services Use (median)	$1,270	$2,336
Cost Incurred by Heavy Users (top ten %)	over $23,700	Over $33,300
Use of County Departments – Criminal Justice and Health Services (%)	14.5	21.4
Status as Determined at GR Certification		
Homeless (%)	52.2	62.7
Disabled (%)	31.5	41.6
SSI history (%)	2.9	7.8
Employable (%)	57.1	56.2
Employment History (%)	28.3	30.7
Information from Other County Departments		
Mental Illness (%)	16.0	15.1
Substance Abuse (%)	17.1	15.8
Substance Abuse and Mental Illness (%)	5.2	5.1
Cost of County Services (pre-GR)	$0 (median)	$515 (median)
Jailed Prior to GR Certification (%)	27.6	38.8
On Probation (%)	13.3	17.2

Table 3.2: Significance Levels and Directions of Association from Multivariate Regression Models Estimating Associations Between Various Covariates and Six Outcome Measures Related to GR Services, Homelessness, and the Use of Other County services

	First-time GR Users (n=7,982)					
	Months of GR Receipt in Study Period	**Long-term GR Receipt**	**"Chronic" Homeless-ness**	**Costs of County Services (logged)**	**"Heavy" Users of County Services**	**Users of Criminal Justice and Health Services**
Homeless	pos ***	n.s.		n.s.	pos *	n.s.
Disabled	pos ***	pos ***	pos ***	pos ***	pos ***	n.s.
SSI Application Pending	pos ***	pos **	n.s.	pos **	pos ***	n.s.
Employable	neg ***	neg ***	neg ***	neg **	neg **	n.s.
Employment History	neg ***	neg **	neg **	n.s.	neg ***	n.s.
Mental Illness (MI)	pos ***	pos *	pos **	pos ***	pos ***	pos ***
Substance Abuse (SA)	n.s.	n.s.	neg ***	pos ***	n.s.	pos ***
Co-occurring MI and SA	neg *	n.s.	n.s.	neg ***	pos *	neg ***
Cost of County Services (pre-GR) (logged)	n.s.	n.s.	neg *	pos ***	pos ***	pos ***
Months on GR during Study Period				pos ***	n.s.	pos *
Jailed Prior to GR Cert.	n.s.	n.s.	pos ***	pos ***	pos ***	pos ***
On Probation	n.s.	n.s.	n.s.	pos ***	n.s.	pos ***
	Long-term GR Users (n=4,857)					
Homeless	pos **	n.s.		pos *	pos *	n.s.
Disabled	pos ***	pos ***	pos ***	pos ***	pos ***	n.s.
SSI Application Pending	pos *	pos *	n.s.	pos **	pos ***	n.s.
Employable	neg ***	neg ***	neg ***	neg ***	neg ***	neg **
Employment History	neg **	n.s.	n.s.	neg **	n.s.	n.s.
Mental Illness (MI)	pos *	pos *	n.s.	pos ***	pos ***	pos ***
Substance Abuse (SA)	n.s.	n.s.	n.s.	pos ***	n.s.	pos ***
Co-occurring MI and SA	n.s.	n.s.	n.s.	neg **	n.s.	neg **
Cost of County Services (pre-GR) (logged)	n.s.	n.s.	n.s.	pos ***	pos ***	pos ***
Months on GR during Study Period				pos ***	neg *	pos **
Jailed Prior to GR Cert.	neg *	n.s.	n.s.	pos ***	n.s.	pos ***
On Probation	n.s.	neg *	neg *	pos ***	n.s.	pos ***

* - p < .05; ** - p < .01; *** - p < .001

Full model results are available in appendix.

Models summarized in this table include control variables, whose results are not listed in this table, for age, race/ethnicity, gender, primary language, food stamp receipt, marital status, pregnancy status, and veteran status. Check the model outputs in the appendix for results on these variables.

Chapter Four
A Geography of GR and Heavy County Services Use Based on Zip Code Data Available in the ALP Data Warehouse

This section presents analyses on the geographic distributions of GR recipients. Geographic data in the ALP database include one unique zip code and one unique census tract for most members of both the first-time and long-term user cohorts. Zip codes were chosen as the unit of analysis for this section in place of census tracts as they are likely to be the more familiar geographic unit and as DHS data included a client zip code for most DHS service episodes. It must be noted that many GR recipients who are homeless may use a GR district office as their mailing address. Consequently, the data used in this analysis may result in the over-representation of GR recipients in zip codes that are home to a GR district office. Based on the available data, however, the extent to which zip code information in the ALP data reflects the usage of a district office address as opposed to the actual zip code of residence for GR recipients is unclear. Nonetheless, the analysis presented here should be interpreted with the assumption that zip codes with a GR district office (90013, 91204, 93535, 90023, 90007, 91104, 91768, 90064, 90059, 91352, 91731, 90221, 90047, 90057) account for an inflated share of GR recipients. This qualification (that results may be biased due to the presence of GR district offices in the zip code) will be pointed out throughout this chapter when appropriate.

Making use of Geographic Information Systems (GIS) software, a series of maps and tables will present the spatial distribution of all GR recipients and the sub-groups of heavy users of County services highlighted in Component two. Those in the Heavy User number one category are persons among the top ten percent of those with the most total costs accrued across County departments in the period prior to GR certification in 2006. The Heavy User number two sub-group is comprised of persons identified as a heavy user of one or more services in the period prior to GR certification in 2006. A second set of maps and tables will use Location Quotients (LQ) to analyze the relative concentration of the sub-groups of heavy users of County services. A third set of maps and tables will plot the geographic distribution of GR recipients with DHS inpatient stays and emergency department visits. A final set of maps will use information from the first three sets to highlight heavy service using zip codes that could be targeted for interventions. Maps will also display the proximity of DPSS GR offices to geographic areas of interest, including those zip codes with large numbers of GR recipients, high concentrations of heavy users, and high numbers of persons with DHS inpatient or emergency department visits. Given that geographic information for members of both cohorts did not change over time, it was not possible to conduct separate analyses for before, during, or after the period of GR receipt.

4.1: Distribution of GR recipients and Heavy Users of County Services (Tables 4.1, 4.2; Maps 1, 2)

Valid zip code information was available for 7,450 or 93percent of persons in the first-time user cohort and 4,532 or 93percent of persons in the long-term user Cohort. Map 1 and Map 2 show the geographic distribution by zip code of all GR recipients for whom zip code information was available in both the first-time and long-term user cohorts respectively. As the maps display, most zip codes in County have either zero or very few members of either the first-time or long-term user cohorts. Both maps indicate that the geographic distribution of GR recipients is quite similar between the two cohorts. Large numbers of GR users in both cohorts appear to be clustered in Compton as well as in South and Southeast Los Angeles, in and around zip codes 90044 and 90047 (zip contains district office). Also, Map 1 and Map 2 indicate that GR recipients are concentrated near DPSS General Relief Offices. However, this clustering is potentially explained by large numbers of homeless GR participants using GR district offices as their primary address.

Tables 4.1 and 4.2 provide further information about the geographic distribution of GR recipients in both cohorts and the two sub-groups of heavy users of County services first presented in the "Complex Patterns of Services Use" section. Those in the Heavy User number one category are persons among the top ten percent of those with the most total costs accrued across County departments in the period prior to GR certification in 2006. Valid zip code information was available for 757 or 96 percent of first-time user cohort members in the Heavy User number one category and 470 or 98 percent of long-term user cohort members in the Heavy User number one category. The Heavy User number two sub-group is comprised of persons identified as a heavy user of one or more services in the period prior to GR certification in 2006. Valid zip code information was available for 464 or 97 percent of first-time user cohort members in the Heavy User number two category and 363 or 95 percent of long-term user cohort members in the Heavy User number two category. While not displayed in map form, Tables 4.1 and 4.2 suggest that the geographic distribution of the heavy user sub-groups is quite similar to the overall distribution of GR users.

Looking at the distribution of the first-time user Cohort members as well as at the distribution of both heavy user sub-groups, Tables 4.1 and 4.2 indicate that ten zip codes account for more than 50 percent of the members of each cohort, although all of these zip codes are home to a GR district office. In both cohorts the same three zip codes – 90221, 90047 and 90007 (all zip codes with GR district offices) – contain the largest numbers of GR recipients, and collectively contain over one-quarter of the overall group and both heavy user subgroups.

Findings here suggest that the zip codes with the largest numbers of GR recipients also have the largest numbers of heavy users, and that the largest numbers of recipients are located in a few zip code areas. However, these findings also suggest that zip codes with GR offices are more likely to account for large shares of GR recipients due to the practice of recipients using district offices as their mailing address.

4.2: Geographic Concentration of Heavy Users of County Services (Tables 4.3, 4.4; Maps 3-6)

The Location Quotient (LQ) was used to determine relative the relative concentration of heavy users of County Services by zip code, as opposed to the greatest number of users as was just presented. The LQ is a commonly used measure for quantifying how concentrated a particular group is in a particular compared to some larger region. More specifically, here the LQ is ratio that compares the concentration of heavy service users who receive GR in a particular zip code to the overall concentration of heavy users in County. An LQ equal to one indicates that a zip code has a share of heavy users in accordance with its share of overall GR users. An LQ greater than one indicates that a zip code has a relatively higher concentration of heavy users, and an LQ less than one indicates that a zip code has a lower concentration of heavy users. In order to avoid spurious results, location quotients were not calculated for zip codes with fewer than 25 overall members of either cohort.

These relative concentrations derived from the LQ calculations are subsequently mapped – for each heavy user group in both cohorts. Maps 3, 4, 5 and 6 as well as Tables 4.3 and 4.4 provide information about the relative concentration of heavy users of County Services in both the first-time and long-term user cohorts.

Map 3 and Map 5 display the LQ for both heavy user sub groups in the first-time user cohort. As the maps illustrate, there are relatively few zip codes in County that have high concentrations of heavy users of County Services. However, there does appear to be a cluster of zip codes in the South and Southeast Los Angeles area that have relatively high concentrations of both sub-groups of heavy users. Table 4.3 provides further information, including overall number of heavy users and overall number of GR users, for all zip codes that have a relatively high concentration (LQ>1) of heavy users in the first-time user cohort. Of particular interest are the zip codes among this group that have 10 or more heavy users in either the Heavy User number one or Heavy User number tow category. There are 11 zip codes (93535, 91731, 91204, 90059, 90813, 91342, 91768, 91104, 90221, 90057 and 90047) that fit these criteria and therefore have both a high concentration and a high number of heavy users of County Services. Nine of these eleven zip codes (all but 90813 and 91342) contain GR district offices.

Map 4 and Map 6 illustrate the LQ for heavy user subgroups in the long-term user cohort. Again, there are relatively few zip codes in County that have a high concentration of heavy users of County Services. However, like the first-time user cohort, there appears to be a cluster of high concentration zip codes in the South Los Angeles and Compton areas. Table 4.4 provides further information for all zip codes that have a relatively high concentration (LQ>1) of heavy users. There are 11 zip codes, (91731, 93535, 90064, 91731, 90221, 90047, 90023, 90221, 91104, 90059, 90057), all which are home to a GR office, that have ten or more heavy users in either the Heavy User number one or Heavy User number two category and high

concentration of heavy users of County Services. All of these zip codes contain GR district offices.

Even after dropping all zip codes with less than 25 GR recipients, the zip codes with the highest LQs tended to be those with low numbers of GR recipients. Taken together, and the collections of zip codes here cover slightly more heavy users among the GR recipients in the first-time user cohort and substantially less heavy users in the long-term user cohort while covering a larger number of zip codes than the ten covered in Tables 4.1 and 4.2 (and the corresponding maps).

4.3: Distribution of GR Recipients with DHS Inpatient Stays and Emergency Department Visits (Tables 4.5, 4.6; Maps 7 - 10)

The remainder of these spatial analyses superimposes DHS records, which also have zip code information, with the DPSS data which has just been reported. The ALP database includes a patient zip code for each DHS service episode. This information was used to map the geographic distribution of members of both the first-time and long-term user cohorts that had at least one DHS inpatient stay or DHS emergency department visit over the entire study period from January 2005-December 2007. Valid zip code information was available for 1,194 or 93 percent of members of the first-time user cohort with an inpatient stay and for 770 or 93 percent of members of the long-term user cohort with an inpatient stay. Similarly, the DHS data contained valid zip code data for 1,689 or 92 percent of first-time user cohort members with an ED visit and 1,217 or 93 percent of long-term user cohort members with an ED visit.

Map7 and Map 8 as well as Table 4.5 provide further details about the distribution of GR recipients in both cohorts having a DHS inpatient stay over the entire study period. The geographic distribution of inpatient users is quite similar between the first-time and long-term user Cohorts.

As Map 7 indicates, for the first-time user cohort, there appears to be a cluster of zip codes in the South Los Angles area where a large number of persons with DHS inpatient stays appear to reside. More specifically, five neighboring zip codes (90047, 90044, 90003, 90037 and 90011) all have large numbers of DHS inpatient users, and as Table 4.5 indicates, these five zip codes combined are home to more than 11 percent of all persons in the first-time user cohort with a DHS inpatient stay. Noteworthy also among these five zip codes is that only 90047 contains a GR district office. Map 8 displays the distribution of long-term user cohort members with a DHS inpatient stay. Again, there is a cluster of neighboring zip codes in the South Los Angeles area that have a large number of persons with an inpatient stay. For the long-term user cohort there are six neighboring zip codes in this area (90047, 90044, 90003, 90037, 90011 and 90007) that, as Table 4.5 shows, account for more than 14 percent of all inpatient users in the long-term cohort. Again here, only two zip codes (90047 and 90007) contain GR district offices.

For both cohorts, the geographic distribution of persons with a DHS ED visit is quite similar to the distribution of persons with an inpatient stay. Map 9 shows that as was the case for inpatient stays in the first-time user cohort, the same five neighboring zip codes (90047, 90044, 90003, 90037 and 90011; 90047 is only zip with GR district office) have high numbers of persons with ED visits. Table 4.6 shows that these five zip codes are home to about 13 percent of first-time user cohort members with an ED visit. Map 10 shows that for the long-term user cohort, the distribution of persons with ED visits is similar to the distribution of those with inpatient stays. Six zip codes in the South Los Angeles area (90011, 90037, 90044, 90003, 90002, and 90059; only 90059 has a GR district office) all have high numbers of persons with ED visits and Table 4.6 demonstrates that when combined, these zip codes are home to about 18 percent of all persons in the long-term user cohort who had an ED visit over the study period. Also of note from Table 4.6 is that more than 11percent of all long-term users with an ED visit appear to reside in two zip codes, 90044 and 90013 (with GR district office).

Also notable is that the ten zip codes with the largest number of GR recipients are almost always not the same zip codes as those that contain the largest number of GR recipients with either DHS inpatient or ED records. Furthermore, while the top ten zip codes for overall GR recipients cover half of the total number of GR recipients (Tables 4.1 and 4.2), the top ten zip codes of GR recipients using these DHS services cover between 24 percent and 32 percent of all GR recipients using these DHS services. This all suggests that DHS inpatient and ED use among GR recipients provides a more accurate representation of the geographic distribution of GR recipients, due to the problems posed by GR recipients using GR offices as their address.

4.4: Heavy Service Using Zip Codes (Table 4.7; Map 11)

Previous chapters of this analysis have documented the significant amount of County services used by the sub-groups of persons with the heaviest service use and the substantial cost associated with the provision of these services. Previous chapters have also shown that the cost of DHS inpatient and ED services is significant. This section will identify zip codes that can be classified as heavy service using zip codes due to the presence of substantial numbers or high concentrations of heavy users of County Services and large numbers of persons with DHS inpatient or ED visits.

Information from the previous sets of maps was used to create categories of heavy service using zip codes for both the first-time and long-term user Cohorts. A zip code was considered to be a heavy service using zip code if it fell into either one of the following two categories:

- **Category one:** the zip code is among the 10 zip codes with the most persons in the Heavy User number one or Heavy User number 2 categories ***and*** the zip code is among the ten zip codes with the most persons having a DHS inpatient stay or DHS ED visit.

- **Category two:** the zip is among the ten zip codes with the most persons having a DHS inpatient stay or DHS ED visit ***and*** the zip code has a relatively high concentration (LQ>1) of persons in either the Heavy User number one or Heavy User number two categories.

Map 11 and Table 4.7 provide further information about zip codes that fell into either category of heavy service using zip codes. Map 11 illustrates zip codes that were identified as heavy service using zip codes through either Category one or Category two for members of the first-time user cohort, long-term user cohort or both cohorts. Four zip codes (90059, 90013, 90047 and 90011), shown in dark blue in Map 11, were heavy service using zip codes for both the first-time and long-term user cohorts. Only zip code 90011 does not have a GR office. Table 4.7 displays all heavy service using zip codes for both cohorts and details whether they fell into Category one or Category two.

As Map 11 and Table 4.7 show, there are a relatively few number of zip codes in the County that meet the established criteria for heavy service using zip codes. As noted above, however, many persons making extensive and expensive use of County services appear to reside in these zip codes, and therefore, these zip codes could be targeted for interventions that might aim to reduce repeat DHS inpatient stays.

4.5: Conclusion

In sum The most significant finding of this section has been its illustration of how the spatial distribution of members of both the first-term and long-term user cohorts is limited to a relatively small number of zip codes. Specifically, more than half of the members of both groups reside in only ten zip codes. The sub-groups of heavy users in both cohorts appear to have a similarly concentrated spatial distribution, with nearly 60 percent of both sub-groups of heavy users in the long-term user cohort residing in only ten zip codes. These zip codes are likely similar to those identified as having the highest number of all GR recipients (i.e., not just those captured in the ALP cohorts) and this analysis supports the conclusion that those zip codes with the highest numbers of GR recipients also have the highest numbers of heavy County services users. However, it is unclear the extent to which these findings may be the result of GR recipients using GR offices as their official address. (We know that homeless GR participants utilize the DPSS district office address as their address, so the preceding sentence seems too weak. Additionally, it would easy to determine how many of the top ten zip codes house a DPSS office. That should be referenced, and, if most/all of the ten zips codes house a DPSS office, that would be conclusive evidence that the use of the DPSS district office address is key. Unless participants who use the DPSS office address can be excluded from this analysis, the significance of this analysis is likely quite limited, and needs to be coupled with a much stronger caveat than in the preceding and following sentences.) Consequently, these findings should be interpreted with caution.

A limitation of the data used in this analysis is that it was impossible to determine which GR recipients used GR offices as their primary address. Many of the zip codes associated with concentrations of GR recipients that were found here contained GR district offices, and this could lead to a confounding factor – that many GR recipients who are associated with these zip codes may not actually have residences in these zip codes. If this is so, it could drastically alter the interpretation of these results. Consequently, these findings should be interpreted with caution.

Also of note are the findings related to DHS services use documented in Tables 4.5 and 4.6. For the first-time user cohort, ten zip codes accounted for nearly one quarter of both persons with a DHS inpatient stay and persons with a DHS ED visit. Likewise, nearly 30 percent of both DHS inpatient and ED users in the long-term user cohort appear to reside in only ten zip codes. While this distribution is more diffuse, there appear to be a relatively small number of heavy service using zip codes that are home to both substantial numbers or high concentrations of heavy users of County Services and large numbers of persons with DHS inpatient or ED visits. Four zip codes in particular, (90059, 90013, 90047 and 90011) are home to large numbers of heavy service users and DHS inpatient or ED users from both the first-time and long-term user cohorts. Persons who make the most extensive and expensive use of County Services are likely to be associated with these areas. And while this provides a potential spatial link between GR users and extensive and expensive use of County services, the finding may also be an artifact of three of these four zip codes (all but 90011) containing GR district offices that recipients can use as mailing addresses. While further research is needed to ascertain the extent of this, such findings offer a promising vector for future research.

Further research should also examine contextual factors related to these zip codes. For example, zip code 90013 represents the Skid Row area of Los Angeles, a district known for its high concentration of homeless persons and, with approximately 9,000 total residents, an area considerably smaller than other zip codes identified as containing many GR residents, such as the 90047 zip code in South Central Los Angeles with 47,000 persons.

Additionally, the analyses here are limited to the little amount of spatial data available on the ALP cohorts and County services use. If more data were available that corresponded to services use in other County systems, then more relational analyses of how geography is linked to complex patterns of services use would be possible. As it stands now, this basic analysis serves as a potential prototype for how future analyses along these lines might look like.

Chapter Four
Tables and Maps

Table 4.1 Ten Zip Codes with the Highest Numbers of GR Recipients in the First-time User Cohort of the ALP Database: Overall GR Recipients and Two Heavy User Subgroups

All First-time Users (n=7,470)			Heavy User #1 (n=757)			Heavy User #2 (n=464)		
Zip Code	**GR Recipients**	**percent of First-time Users**	**Zip Code**	**GR Recipients**	**percent of Heavy User #1**	**Zip Code**	**GR Recipients**	**percent of Heavy User #2**
91342	176	2.4%	91731*	23	3.0%	91731*	10	2.2%
90023*	180	2.4%	91342	24	3.2%	90057*	11	2.4%
91731*	199	2.7%	90064*	27	3.6%	91104*	12	2.6%
90059*	231	3.1%	91104*	27	3.6%	90059*	13	2.8%
90064*	284	3.8%	90059*	28	3.7%	90064*	14	3.0%
93535*	370	5.0%	90013*	34	4.5%	90013*	22	4.7%
90013*	384	5.1%	93535*	40	5.3%	93535*	30	6.5%
90007*	506	6.8%	90007*	50	6.6%	90007*	31	6.7%
90047*	637	8.5%	90047*	60	7.9%	90047*	43	9.3%
90221*	877	11.7%	90221*	83	11.0%	90221*	55	11.9%
Total	**3844**	**51.5%**		**396**	**52.3%**		**241**	**51.9%**

* - zip code contains a GR district office

Table 4.2 Geographic Distribution of Long-term User Cohort and Heavy User Subgroups Among Long-term User Cohort, by Ten Zip Codes with the Most Users

All Long-term Users (n=4,532)			Heavy User #1 (n=470)			Heavy User #2 (n=363)		
Zip Code	**GR Recipients**	**percent of Long-term Users**	**Zip Code**	**GR Recipients**	**percent of Heavy User #1**	**Zip Code**	**GR Recipients**	**percent of Heavy User #2**
90057*	111	2.4%	90057*	13	2.8%	90057*	8	2.2%
90059*	131	2.9%	90059*	15	3.2%	90059*	8	2.2%
91731*	151	3.3%	91731*	16	3.4%	90023*	9	2.5%
90023*	167	3.7%	90023*	18	3.8%	90064*	15	4.1%
93535*	182	4.0%	93535*	19	4.0%	91731*	15	4.1%
90064*	228	5.0%	90064*	24	5.1%	93535*	20	5.5%
90013*	338	7.5%	90013*	27	5.7%	90013*	23	6.3%
90007*	366	8.1%	90007*	34	7.2%	90007*	27	7.4%
90047*	369	8.1%	90047*	38	8.1%	90047*	43	11.8%
90221*	512	11.3%	90221*	56	11.9%	90221*	44	12.1%
Total	**2555**	**56.4%**		**260**	**55.3%**		**212**	**58.4%**

* - zip code contains a GR district office

Table 4.3 Zip Codes With a High Concentration (LQ>1) of Heavy Users in the First-time User Cohort of GR Recipients

Heavy User #1				Heavy User #2			
Zip Code	Number of Heavy Users	Number of Users in Cohort Overall	LQ	Zip Code	Number of Heavy Users	Number of Users in Cohort Overall	LQ
90016	4	39	1.01	90221*	55	877	1.01
90019	3	29	1.02	91204*	9	143	1.01
93535*	40	370	1.07	90037	6	95	1.02
90222	3	27	1.10	91352*	2	31	1.04
91731*	23	199	1.14	90008	2	30	1.07
90062	5	43	1.15	90018	3	45	1.07
91204*	17	143	1.17	90057*	11	165	1.07
90063	3	25	1.18	90047*	43	637	1.09
90059*	28	231	1.20	90002	4	59	1.09
90022	5	39	1.27	90019	2	29	1.11
90813	11	84	1.29	90220	3	42	1.15
90008	4	30	1.32	90802	4	54	1.19
90043	7	52	1.33	90003	5	67	1.20
91342	24	176	1.35	90301	3	38	1.27
90061	4	29	1.36	90731	3	37	1.31
91768*	16	113	1.40	93535*	30	370	1.31
90011	8	55	1.44	91104*	12	146	1.32
93536	4	27	1.46	90011	5	55	1.46
91767	5	33	1.50	90043	5	52	1.55
91732	5	30	1.64	90016	4	39	1.65
90301	7	38	1.82	90250	6	47	2.06
91104*	27	146	1.82	90810	4	26	2.48
90810	5	26	1.90	91732	5	30	2.68
91103	5	26	1.90	93536	5	27	2.98
Total	263			Total	231		

* - zip code contains a GR district office

Table 4.4 Zip Codes With a High Concentration (LQ>1) of Heavy Users in the ALP Long-term User Cohort of GR Recipients

Heavy User #1				Heavy User #2			
Zip Code	Number of Heavy Users	Number of Users in Cohort Overall	LQ	Zip Code	Number of Heavy Users	Number of Users in Cohort Overall	LQ
93535*	19	182	1.01	90022	2	25	1.00
90064*	24	228	1.02	90221*	44	512	1.07
91731*	16	151	1.02	91731*	15	151	1.24
90016	3	28	1.03	90044	6	60	1.25
90805	3	28	1.03	90011	4	39	1.28
90023*	18	167	1.04	93535*	20	182	1.37
90221*	56	512	1.05	90061	3	26	1.44
91103	3	27	1.07	90047*	43	369	1.45
91104*	12	106	1.09	93534	7	52	1.68
90059*	15	131	1.10	90804	4	28	1.78
90813	3	26	1.11	90805	4	28	1.78
90057*	13	111	1.13	93550	5	32	1.95
90022	3	25	1.16	**Total**	157		
93550	4	32	1.21				
90804	4	28	1.38				
90061	4	26	1.48				
90018	5	32	1.51				
Total	205						

* - zip code contains a GR district office

Table 4.5 Geographic Distribution of GR Recipients with DHS Inpatient Stay: Ten Zip Codes with the Most Inpatient Users in Each ALP Cohort

DHS Inpatient Users in First-time Cohort (n=1,194)			DHS Inpatient Users In Long-term Cohort (n=770)		
Zip Code	**Number of Inpatient Users**	**Percent of Inpatient Users**	**Zip Code**	**Number of Inpatient Users**	**Percent of Inpatient Users**
90059*	20	1.7%	90047*	14	1.8%
90220	20	1.7%	90007*	15	1.9%
90250	20	1.7%	90011	16	2.1%
90011	22	1.8%	90037	16	2.1%
90003	25	2.1%	90003	18	2.3%
91342	25	2.1%	90059*	19	2.5%
90047*	27	2.3%	90033	20	2.6%
90037	29	2.4%	90221*	20	2.6%
90044	37	3.1%	90044	31	4.0%
90013*	62	5.2%	90013*	55	7.1%
Total	**287**	**24.0%**	**Total**	**224**	**29.1%**

* - zip code contains a GR district office

Table 4.6 Geographic Distribution of GR Recipients with DHS ED Visit: Ten Zip Codes with the Most ED Users in Each ALP Cohort

DHS ED Users in First-time Cohort (n=1,689)			DHS ED Users In Long-term Cohort (n=1,215)		
Zip Code	**Number of ED Users**	**Percent of ED Users**	**Zip Code**	**Number of ED Users**	**Percent of ED Users**
90805	28	1.7%	90220	24	2.0%
90033	29	1.7%	90221*	27	2.2%
90037	29	1.7%	90002	29	2.4%
90011	31	1.8%	90011	30	2.5%
91342	41	2.4%	90037	30	2.5%
90047*	42	2.5%	90003	32	2.6%
90059*	43	2.5%	90059*	39	3.2%
90003	52	3.1%	90033	40	3.3%
90044	64	3.8%	90044	57	4.7%
90013*	69	4.1%	90013*	73	6.0%
Total	**428**	**25.3%**	**Total**	**381**	**31.3%**

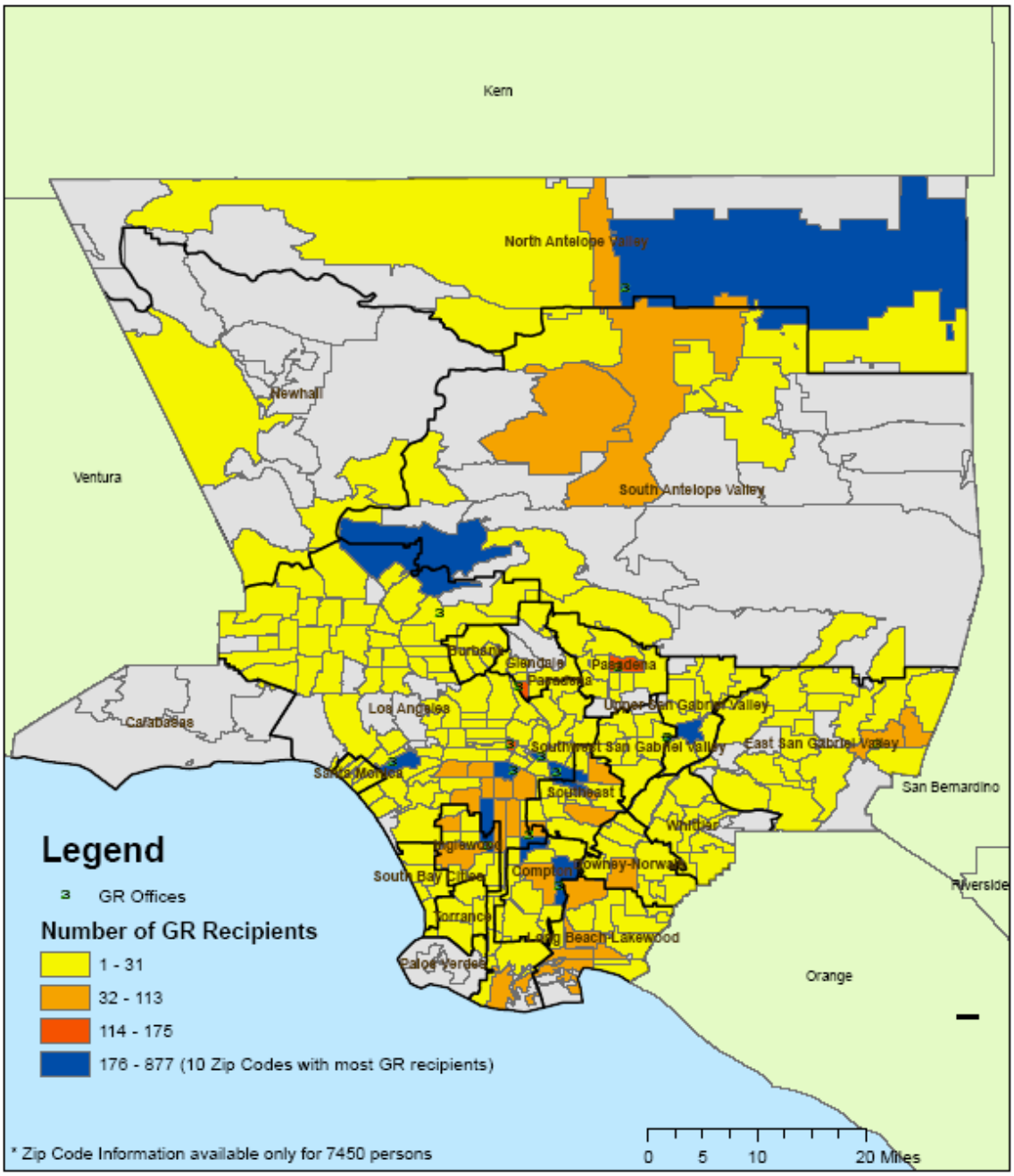
* - zip code contains a GR district office

Table 4.7 Heavy Service Using Zip Codes by ALP Cohort

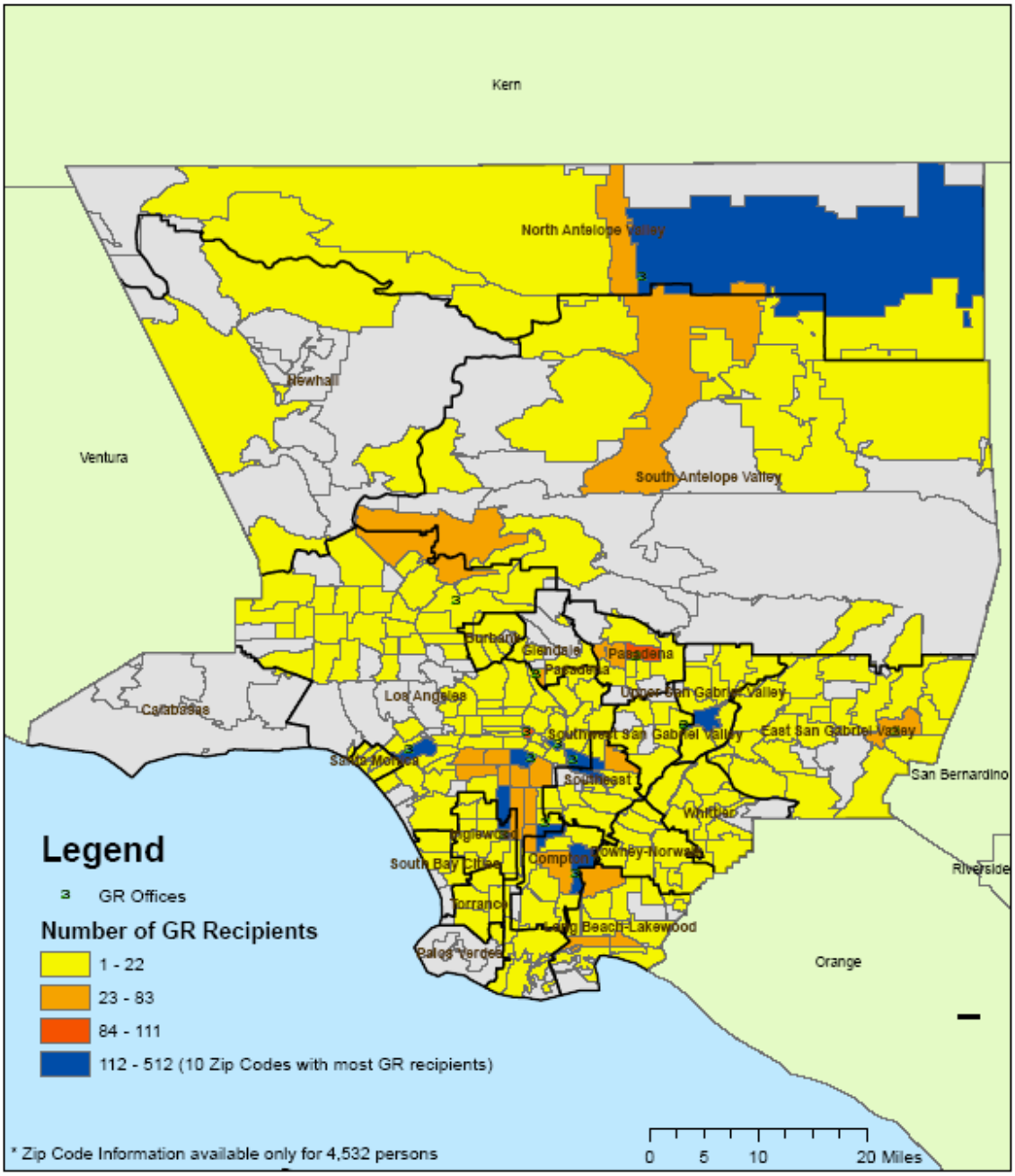
First-time User Cohort		Long-term User Cohort	
Heavy Service Using Zip Code Category #1	**Heavy Service Using Zip Code User Category #2**	**Heavy Service Using Zip Code Category #1**	**Heavy Service Using Zip Code Category #2**
91342	90059*	90059*	90047*
90059*	90220	90013*	90011
90013*	90250	90007*	90059*
90047*	90011	90047*	90221*
	90003	90221*	90044
	91342		
	90047*		
	90037		

* - zip code contains a GR district office

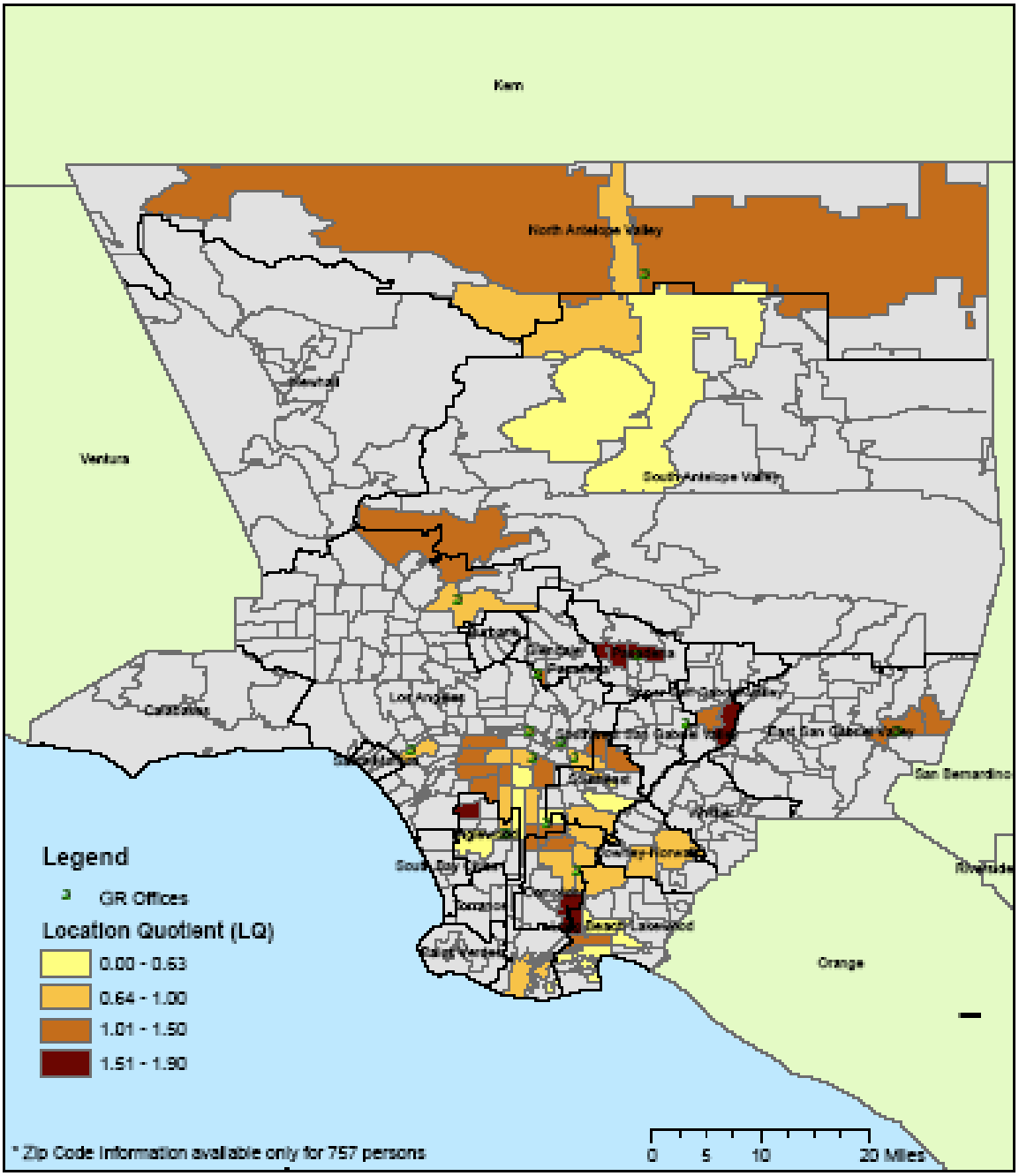
Map 1-Distribution of GR Users by Zip Code
First-Time User Cohort (n=7,982)*



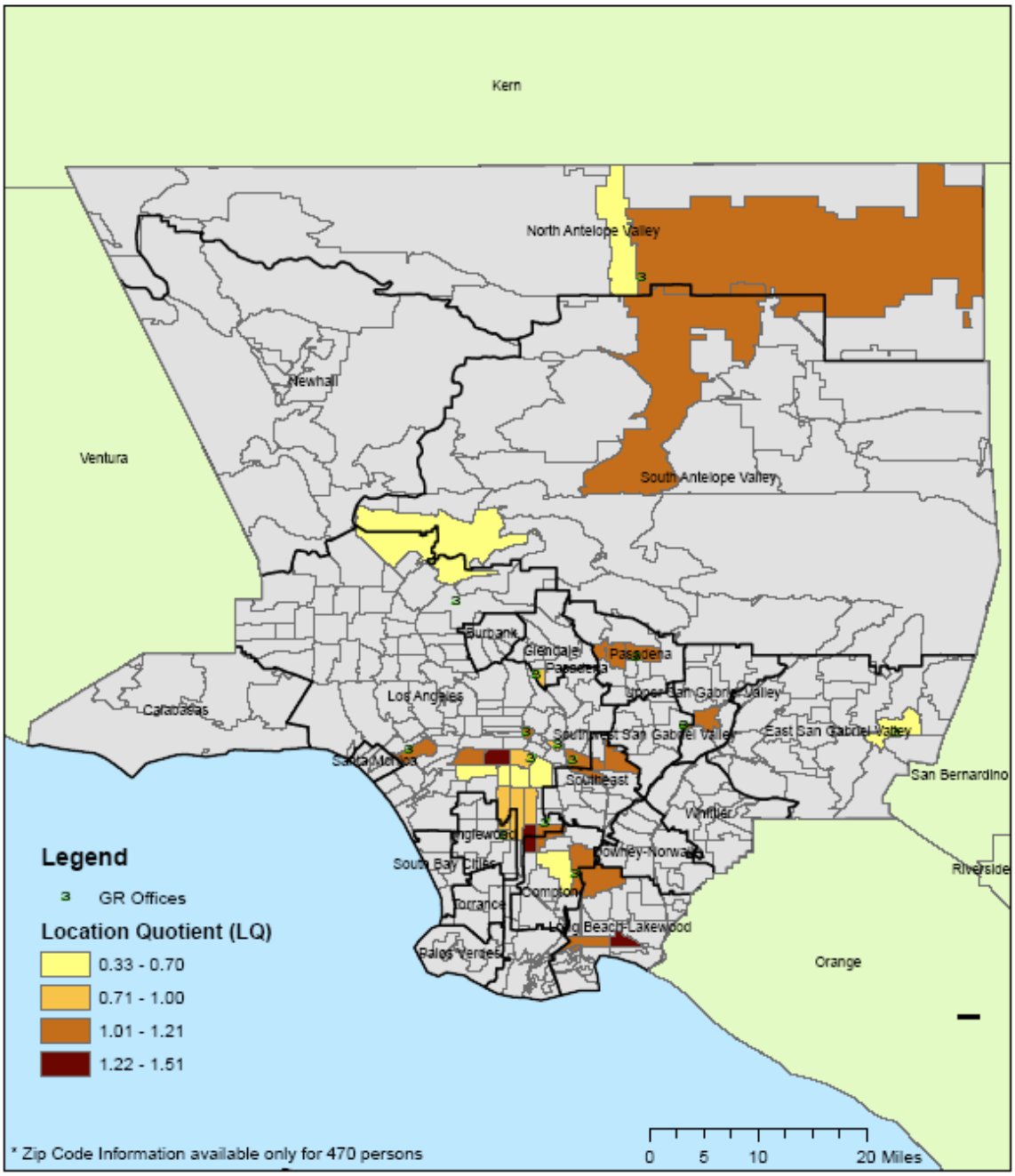
Map 2-Distribution of GR Users by Zip Code
Long-Term User Cohort (n=4,857)*



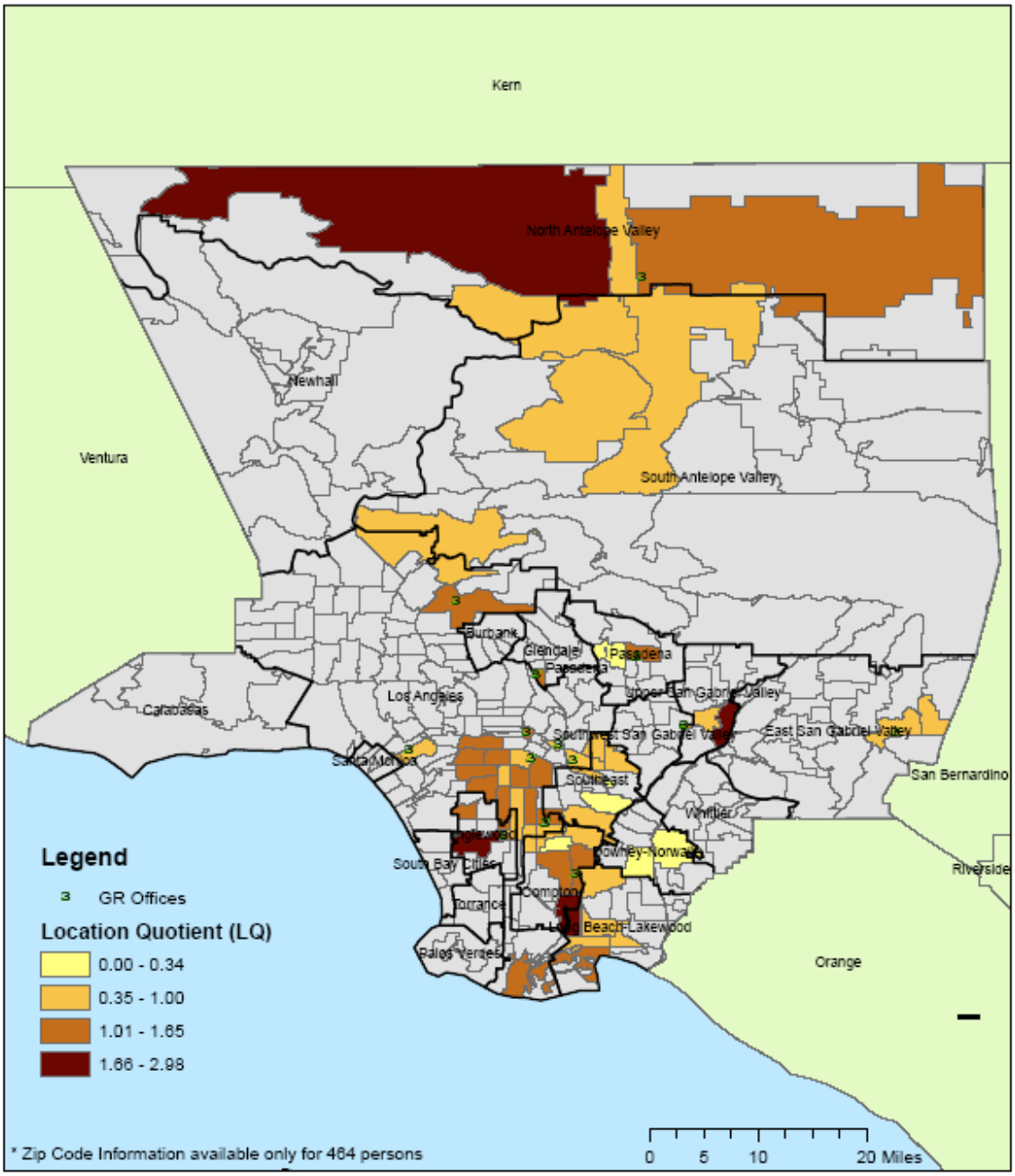
Map 3-Concentration of GR Users In Heavy User #1 Category, by Zip Code
First-Time User Cohort, (n=798)*



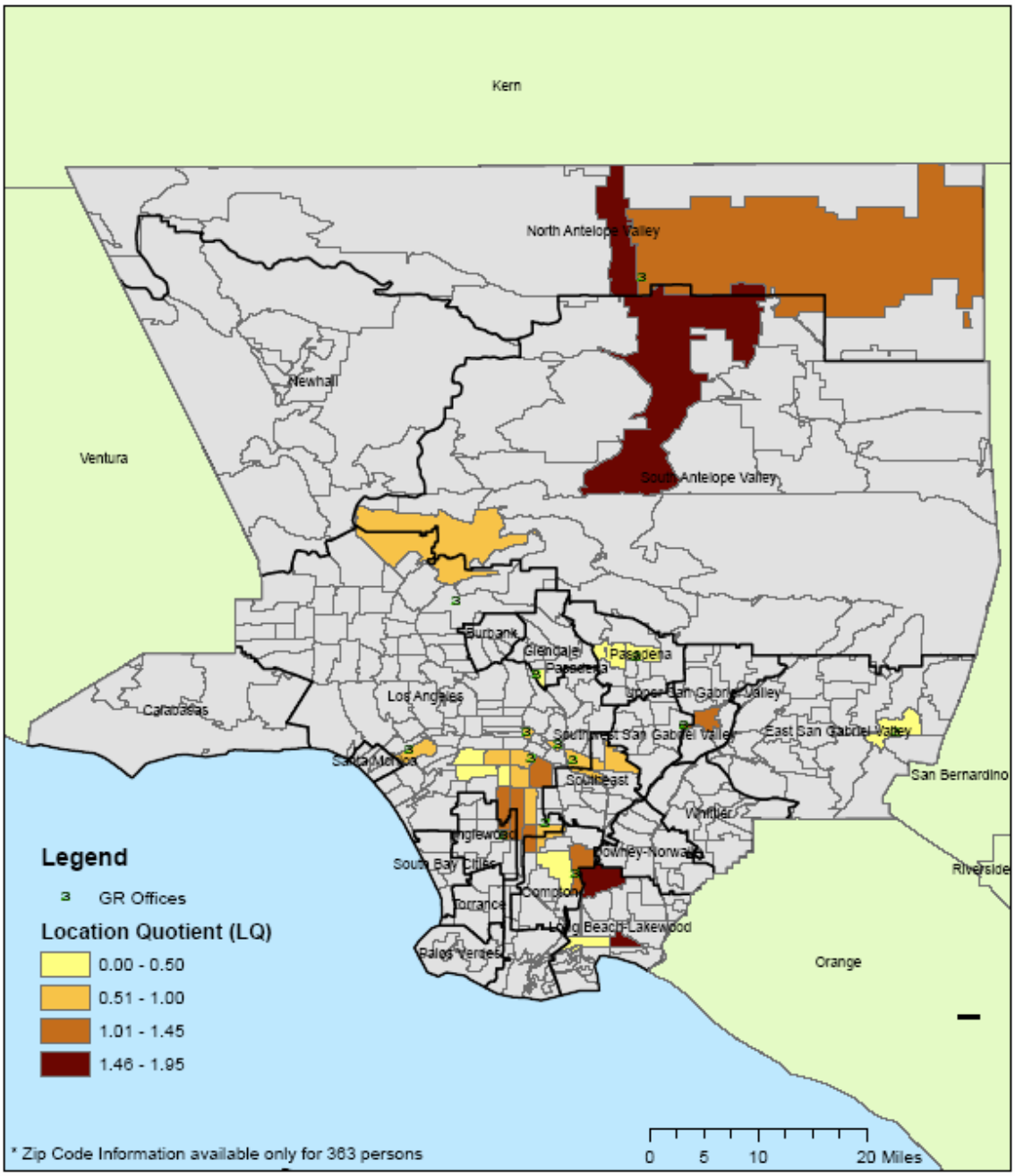
Map 4-Concentration of GR Users In Heavy User #1 Category, by Zip Code Long-Term User Cohort, (n=485)*



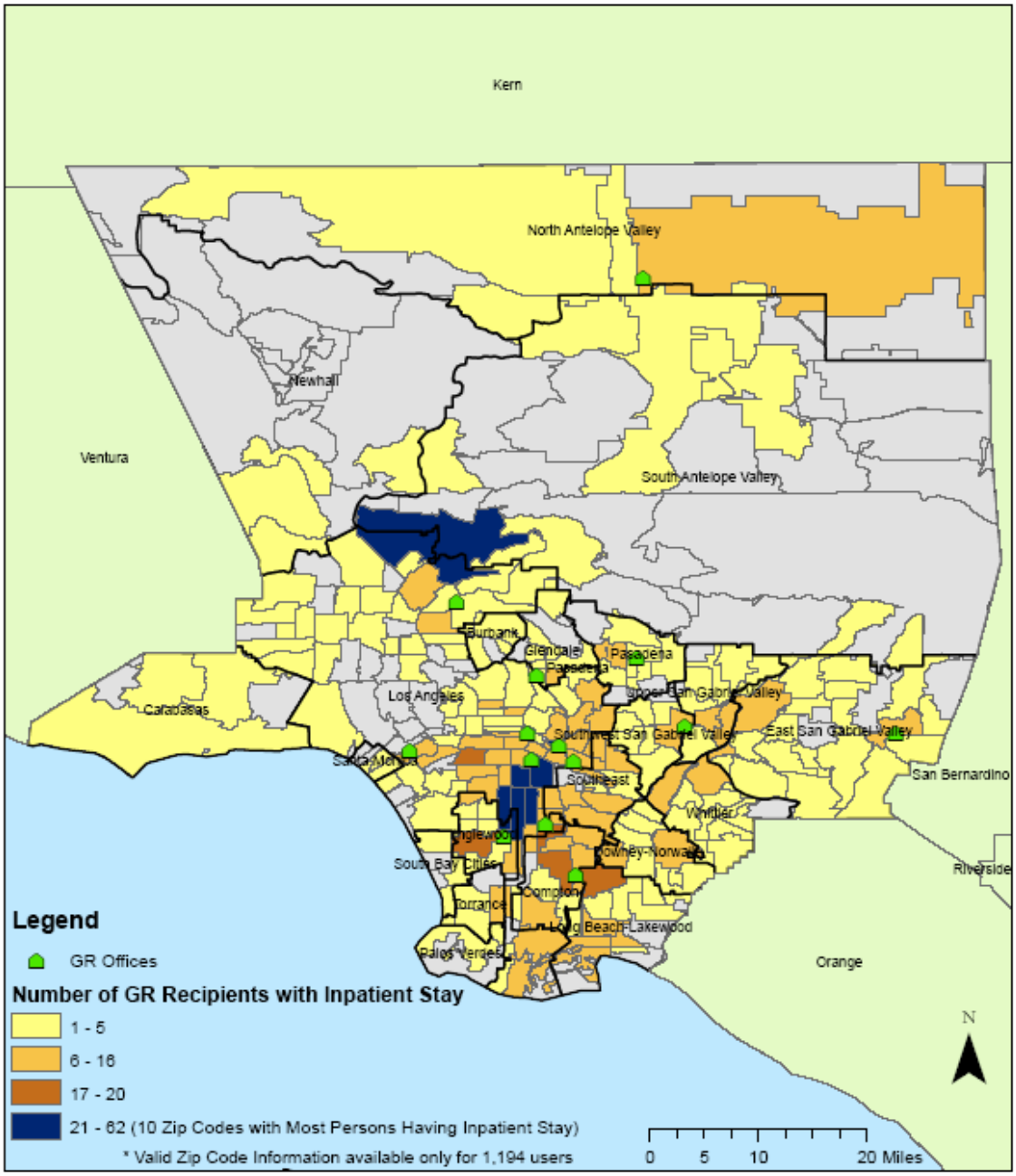
Map 5-Concentration of GR Users In Heavy User #2 Category, by Zip Code First-Time User Cohort, (n=480)*



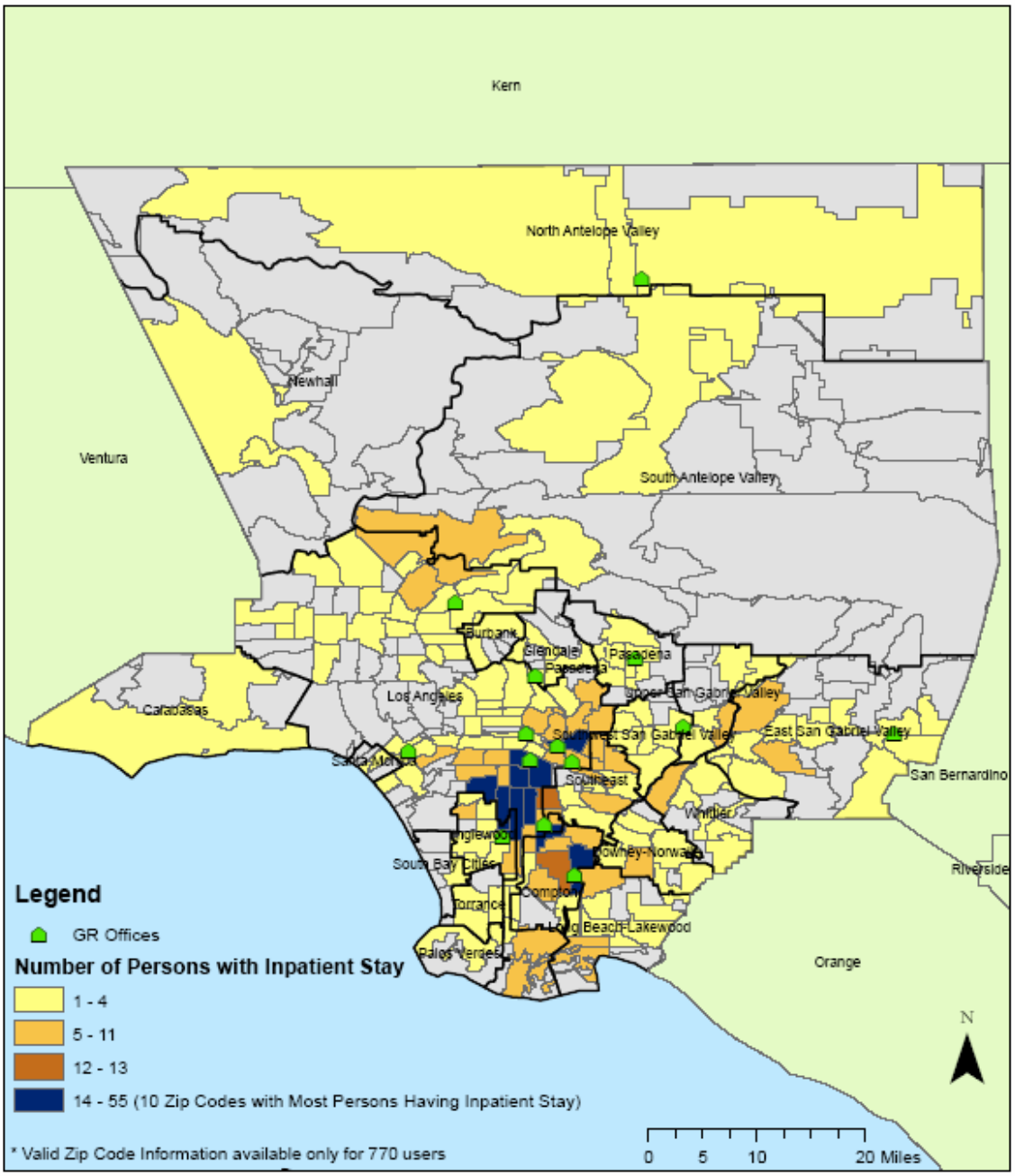
Map 6-Concentration of GR Users In Heavy User #2 Category, by Zip Code Long-Term User Cohort, (n=382)*



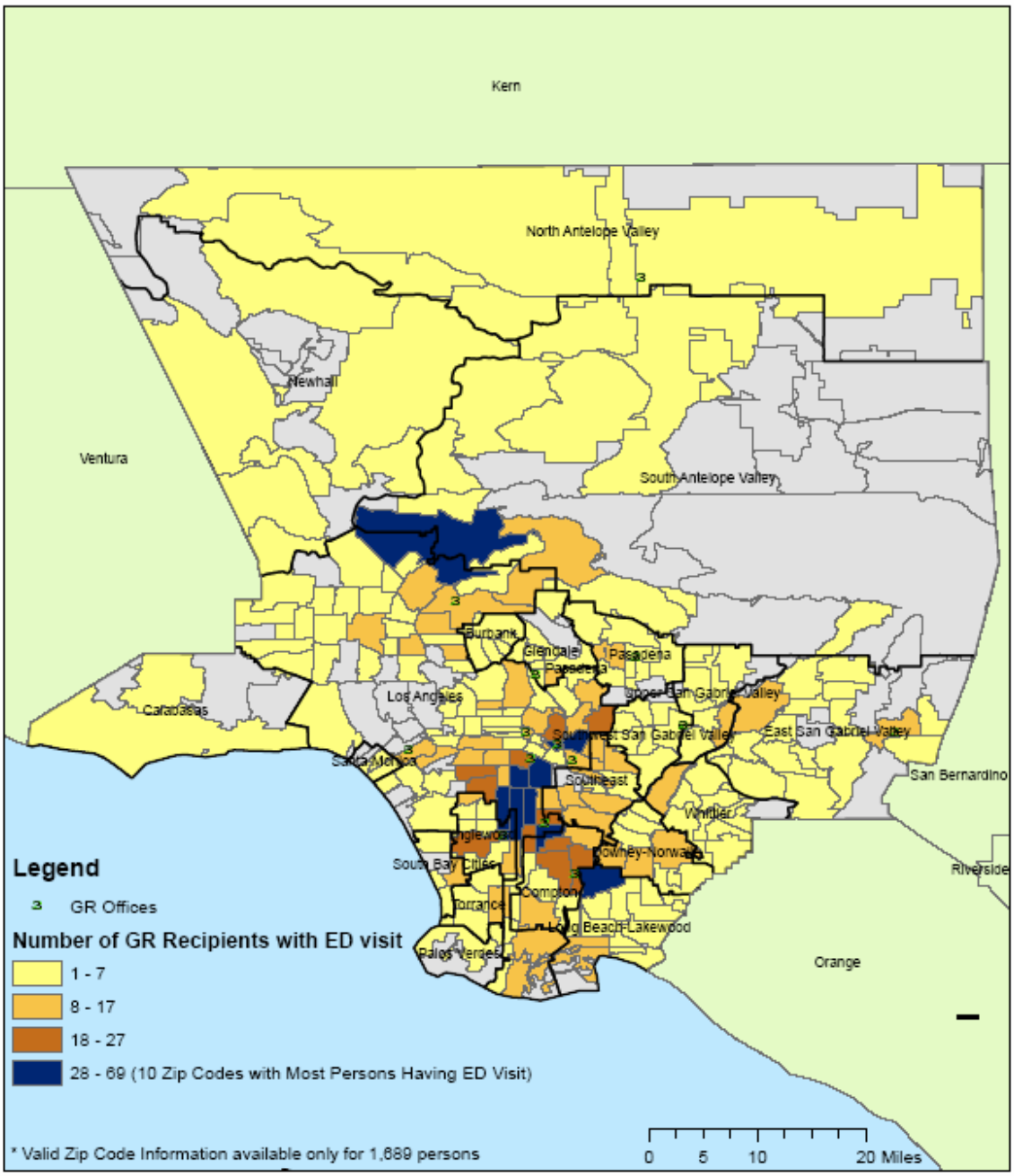
Map 7-Distribution of First-Time GR Users with DHS Inpatient Stay (n=1,288)* by Zip Code



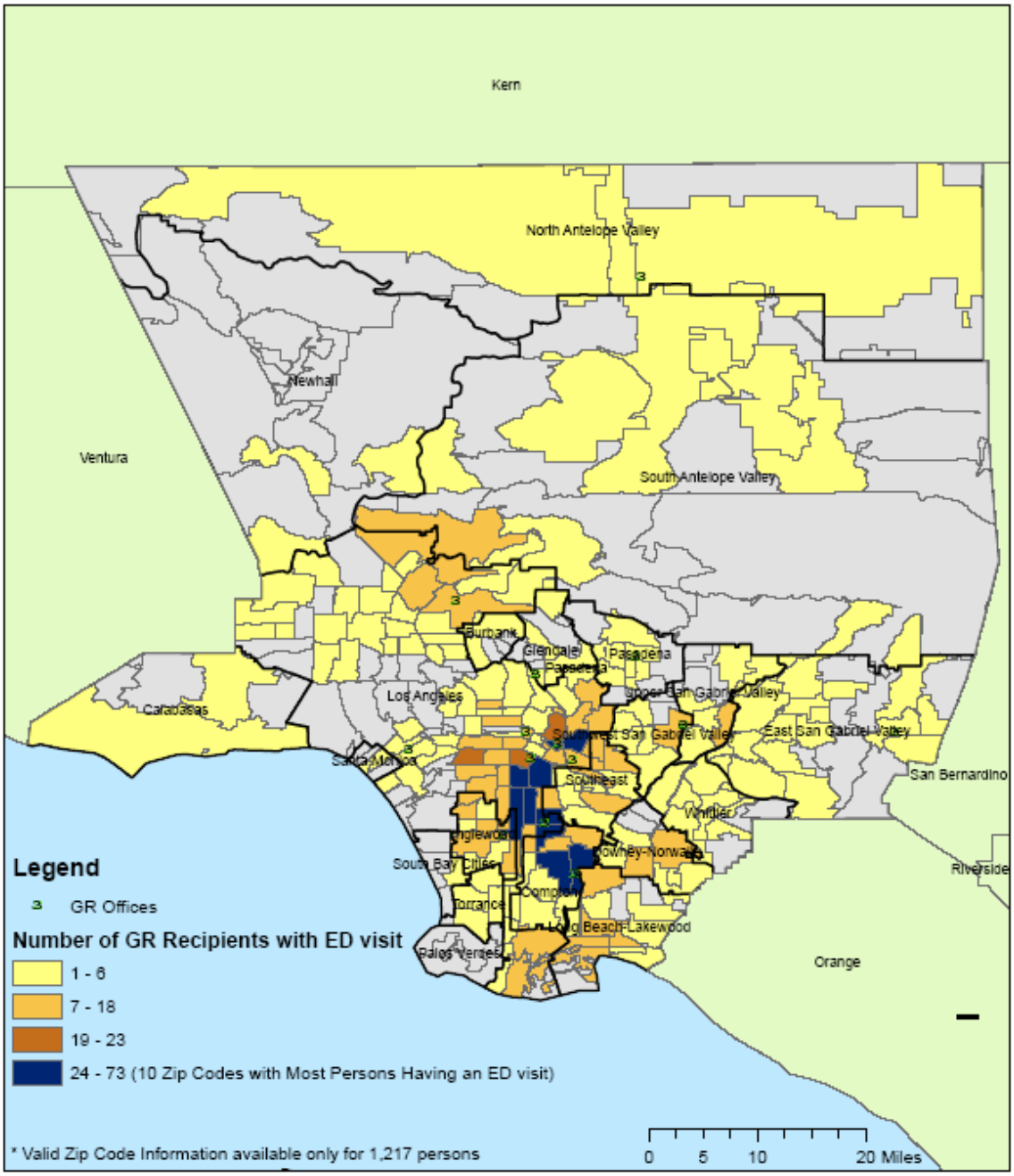
Map 8-Distribution of Long-Term GR Users with DHS Inpatient Stay (n=827)* by Zip Code



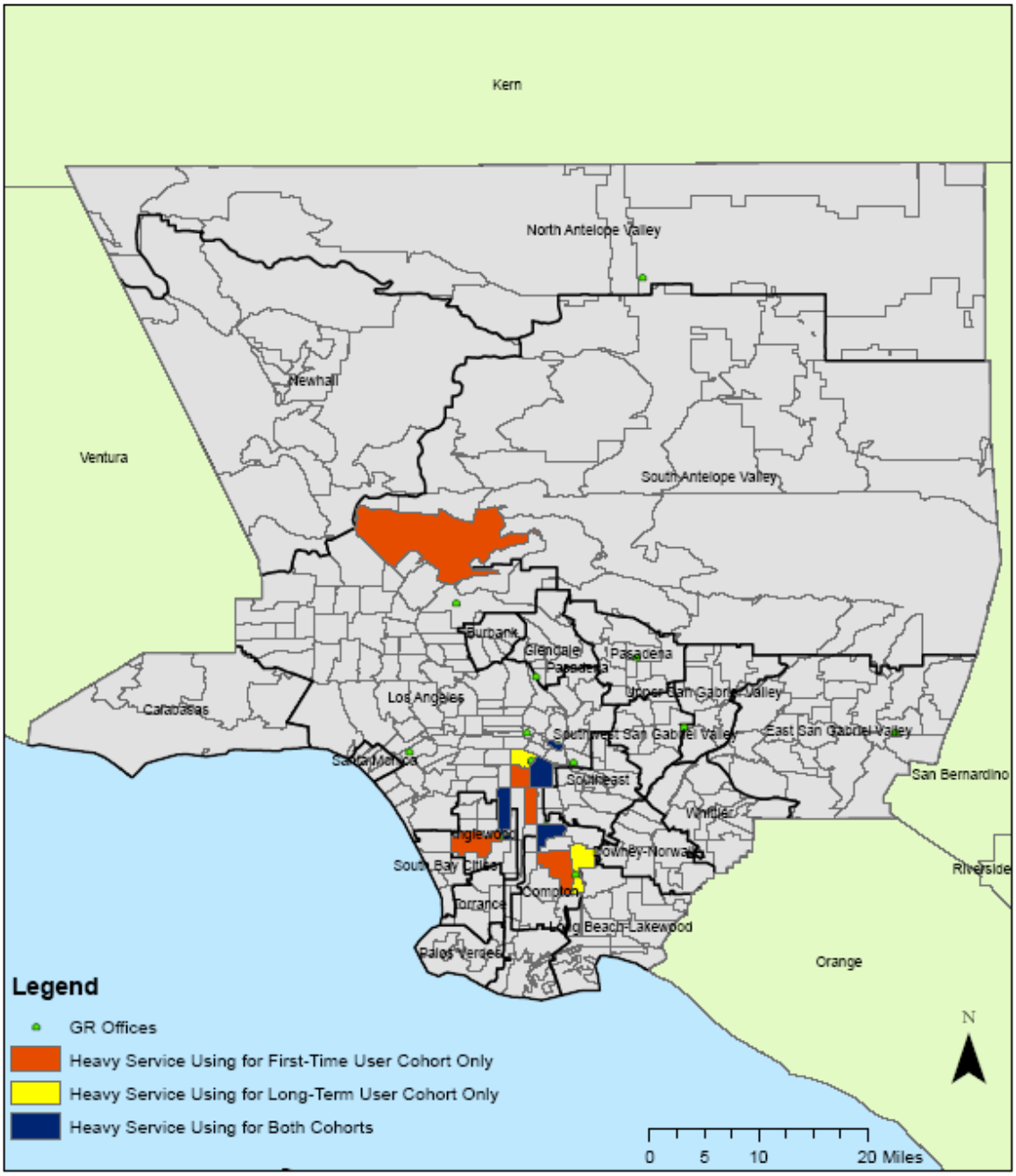
Map 9-Distribution of First-Time GR Users with DHS ED visit (n=1,826)* by Zip Code



Map 10-Distribution of Long-Term GR Users with DHS ED visit (n=1,305)* by Zip Code



Map 11-Heavy Service Using Zip Codes



Chapter Five
Implications for Policy and Research

This study has focused on services utilization patterns and collateral costs incurred by GR recipients in County. It has documented that GR recipients commonly use services provided by six other County health, social, and criminal justice services departments; that there are subgroups in each cohort who make disproportionate use of these services; and that there are identifiable characteristics that are associated with heavy patterns of services use. Given these patterns of services use across this wide swath of County departments, policymakers and other stakeholders should consider alternative programs that are known to be associated with less costly and more effective patterns of care. In this chapter, we conclude the study by considering the major population subgroups with heavy patterns of services use, and then suggesting opportunities for policy changes or interventions that could substantially mitigate against excessive costs. We also outline some of the issues for which more research is needed, as well as potential interventions in County that could form the basis for further resource commitments.

5.1: Subpopulations that Use High Levels of County Services (Table 5.1)

In Table 5.1, several of the distinct subpopulations identified as heavy service users in this studied are identified, along with their average services costs – across GR and other County services – in both the GR enrollment and post-GR observation periods. Five subpopulations have been identified here as having costs that are substantially higher than the average for the GR population as a whole. They are:

- People who are heavy County services users (prior to GR certification);
- People treated for mental illness (prior to GR certification);
- People assessed as disabled (upon GR certification)
- People experiencing long-term homelessness (during the GR receipt period); and
- People with jail stays (prior to GR certification).

The “homeless” overall do not have very different average costs than the GR population as a whole, accounting as they do for more than half of the GR population. And, not surprisingly, people who are employable or who have a work history have lower than average costs, a finding which is consistent with previous results showing that such persons are more likely to leave GR quickly, and to have fewer behavioral health and disability characteristics.

Of course, none of these categories is mutually exclusive and there is likely considerable overlap, particularly among the highest cost groups. Nevertheless, given the variety of strategies and targeting mechanisms that may be used to identify people for alternative programs, it is useful to consider these groups separately by virtue of these characteristics.

5.1.1: Heavy Services Use

<u>Recommendation No. One</u>: Efforts to reduce costs by heavy service users among GR recipients in County should explore a services coordination or case management program strategy. The strategy should identify a threshold of heavy services users, enroll eligible persons into the program, and manage their services from a specially designated intensive case management or services coordination unit.

As is common in public systems, a relatively small percentage of GR recipients accounts for most of the costs associated with services use. This phenomenon has been demonstrated in numerous settings, and across multiple sectors, both private and public. In human services, the heavy user, or "frequent flyer" phenomenon has been found in mental health, homelessness and criminal justice services, in particular. In this study, we found that the ten percent the cohort who were the heaviest users of County services in the year prior to their receiving GR accounted for approximately 25 percent of the County resources used by the total cohort while they were receiving GR (i.e., subsequent to their being identified as heavy users). This represents over 2.3 times the average cost of GR recipients to the County for these services.

Identifying the subgroup of persons who, prior to being certified for GR cash assistance, have incurred substantial County expenses is a simple and effective strategy for identifying GR recipients who are at risk for continued heavy services use. Setting up such an intervention can be modeled on other interventions that target such heavy users by deploying some type of case management initiative to more closely coordinate the care and service needs of such populations. Such case management efforts, be it through casework teams or through low client-caseworker ratios, generally are more intensive that traditional case management programs. Case management services coordination usually seeks to reduce inappropriate levels of care (facilitating the use of less acute forms of services, where possible), and over-utilization of services. For example, such caseworker involvement would aid in identifying discharge locations for clients at an inpatient setting, something which is often not done and, when it is not, can lead to homelessness, extended receipt of GR benefits, and continuing health problems and associated costs.

5.1.2: Disability

<u>Recommendation No Two</u>: Given the high costs of persons with disabilities, as well as the high rate of persons receiving GR who report a disability, it is strongly encouraged that the County devotes more resources toward its efforts to assist GR recipients in pursuit of SSI or SSDI eligibility.

Nearly one-third of the study population is determined, through the eligibility process for receiving GR benefits, to have a disability that impedes their ability to

obtain and maintain employment. Persons identified with a disability had a mean cost of services use that was more than 50 percent higher than the average GR caseload. Although the disability criteria applied here are not the same as may be applied by the federal SSI or SSDI disability programs, such high rates of disability suggest that substantial cost-shifting from County assistance to federal and state sources could be achieved by devoting more resources towards the County's current effort to assist GR recipients in their pursuit of SSI or SSDI eligibility. Not only would this lead to substantially higher disability benefits for the recipient, but health care services would then be reimbursed through Medicare or Medicaid and thus could substantially reduce County costs for health care.

In addition, assuming that many of the disabled are also persons with patterns of heavy services use, persons identified as disabled may also be eligible for case management services under the heavy services use criteria discussed in the previous subsection.

5.1.3: Mental Illness

***Recommendation No. Three*: As with other persons with potential disabilities, the county should aggressively review the SSI status of GR recipients with any treatment history for mental illness diagnoses. In collaboration with the DMH, DPSS may also seek to identify appropriate case management resources and ongoing outpatient treatment services that could supplant heavy or inappropriate services use, including frequent incarceration or inappropriate discharge from psychiatric treatment.**

Approximately one out of every six GR enrollees had a treatment history for some mental illness prior to being certified for GR, with a substantial proportion of these having a diagnoses that would qualify as a "severe mental disorder." GR recipients with a psychiatric treatment history were also among the most costly subpopulation in the cohorts, with average cross-system costs almost twice the GR population average.

Persons with a treatment history for mental illness may be awaiting SSI disability determination. If a positive SSI determination is found, it could lead to retroactive repayment to the county for GR expenses from the time of application for SSI.

As with the case management interventions described above, the County has a reasonably good expectation that it can find cost avoidance associated with case management that may offset the costs of the intervention, and certainly can find such cost offsets, on average, for the persons with the most expensive service histories. Further modeling is necessary to identify the threshold where average cost offsets can be expected to produce sufficient levels of cost avoidance, relative to the service investment.

5.1.4: Long-term Homelessness

<u>Recommendation No. Four</u>: To reduce long-term homelessness and to reduce the excess acute care services costs associated with it, the County is encouraged to expand its efforts to develop supportive housing programs for people experiencing long-term homelessness. Such programs should produce cost offsets comparable to the costs of the intervention for many of the people experiencing chronic homelessness, and especially the highest quartile of service users.

Consistent with the extant literature, people who experience long-term homelessness are a distinct subgroup among the overall population of homeless who receive GR. Whereas the homeless on average do not have higher services use or costs relative to the GR population as a whole, the long-term homeless have a 50 percent higher cost associated with their patterns of services use.

A substantial literature has emerged showing that the excess acute care services costs associated with long-term homelessness can be reduced by at least one-third, particularly among higher cost service users. Interventions that have been found to be effective and cost-effective include permanent housing subsidies with some support services. Support services have been found to increase housing success, but a variety of models have been proven to work. In addition to ongoing services, "critical time intervention" case management programs, which are intensive for the first nine months, and decline in intensity thereafter, have also been found to be effective, and less costly.

5.1.5: Persons with Histories of Jail Incarceration

<u>Recommendation No. Five</u>: County could develop its own research demonstration programs to test diversion and special court programs, as well as alternatives to incarceration among people with behavioral health problems and/or who are homeless. County should also explore ways by which to facilitate eligible persons released from jail to receive GR benefits as part of assisting the reentry process into the community.

People with histories of incarceration through Sheriff also emerged as among the more costly of the GR recipient pool. Jail is the most expensive service used by the GR cohorts studied here, and those with histories of jail use are more likely to become reincarcerated. Many in this subpopulation also incur substantial costs in the DHS system. More generally, there typically are higher rates of mental illness and homelessness among impoverished jail populations.

Given this, increased resources for housing, case management and ongoing mental health services, which have been discussed previously, could also contribute to decreased rates of incarceration among GR recipients. More specific criminal justice interventions which have been found to be effective

include “jail diversion” programs, specialized “community courts” or “mental health courts,” and various housing and case management programs. A growing scientific literature has established that these interventions are not only effective but cost effective, especially for the most costly of the persons who rotate in and out of correctional programs.

According to findings from this study, 13 percent - 14 percent of the cohorts receive GR benefits within 30 days of release from jail. This reflects one-third to one-half of the persons released from jail in the one-year pre-certification period covered in this study. This proportion can be increased with a outreach effort targeted at persons getting released from jail, and expedited receipt of jail benefits may aid in the often difficult community reentry process.

5.2: Other Sub-populations in the GR Cohorts

Along with these target populations discussed in the previous subsection, there are two other sub-populations of note addressed in this study.

5.2.1: Young Adults Aging Out of the Child Welfare System

***Recommendation No. Six*: The County is encouraged to continue working with young adults who age out from out-of-home placements in the child welfare system (DCFS) and to engage them in employment development activities that connect them to the labor market as soon as possible. Such engagement could have positive long-term consequences for such youth, and avoid long-term dependence on public assistance, homelessness and involvement with the criminal justice system.**

Youth who have exited from foster care or other protective services in the recent past as they have passed on to adulthood are a particularly vulnerable group. In contrast to the older age of most GR recipients, a population of relatively young adult recipients of GR were identified in this study, including young adults recently aging out from out of home placements. Such persons are particularly vulnerable and susceptible to poor young adult outcomes, including behavioral health problems and homelessness, unless they are more explicitly and directly engaged in employment development activities. Among this subgroup, DPSS and DCFS in tandem could collaborate to provide income assistance and more long-term services to facilitate this often difficult transition to independence.

5.2.2: Persons Assessed as Employable

County has focused on tightening access to GR assistance for persons assessed to be employable, and as part of this process DPSS has provided job assistance through such programs as GROW. The findings here back up this approach, as persons with work histories use less of both GR resources (even accounting for their reduced eligibility for assistance) and other County resources when

compared to the overall GR cohorts that are studied here. However, while it is sound policy to facilitate connections between employable persons on GR and the labor market, persons in the employable subpopulation are less costly than the GR population on average. Thus it is more difficult to achieve cost avoidance or cost-offsets for them, as compared to high cost users.

Insofar as potential cost offsets are a major focus of this study, there are no means to quantify the cost benefits of this to County using these data. However, the support employable persons can receive through DPSS may be associated with even greater long-term gains as people achieve self-sufficiency, pay taxes, and contribute productively to society.

5.3: Improved Targeting and Case Identification

***Recommendation No. Seven*: Build upon ALP to develop further data sharing arrangements between agencies for use in helping to identify GR recipients with high service needs.**

Most of the recommendations offered above rely on targeting interventions to people with characteristics that put them at risk for high service needs. Such case identification and targeting will require more data sharing among agencies. The success of ALP and the Los Angeles County Chief Executive Office's efforts in negotiating data sharing agreements among the various County departments could bode well for further data sharing, and for establishing data sharing protocols that might enable improved program targeting.

In general, two approaches may be considered for extending data sharing agreements to the point of client targeting and services engagement. One approach would involve establishing data sharing agreements that permit identification of high service users through data matches, much as was done to enable the analysis here. However, in this case, the legal agreements would make it possible to identify heavy users for the purpose of reaching out to them once they have been identified , likely heavy users could be targeted with offers or invitations to participate in special initiatives. These efforts to reach out to the heavy users can be placed directly in the files of targeted clients with the cooperation of treating physicians, case managers or other social services staff in regular contact with the clients.

Alternatively, a client enrollment form can be created in order to establish eligibility for special interventions at the time of contact at regular sources of services (mental health, hospitalization, incarceration, GR enrollment, etc.). The enrollment form can include a client consent to review administrative records in order to determine eligibility (i.e. patterns of heavy services use), including records from other agencies. An efficient compilation of records could be enabled by a data sharing infrastructure that is established in support of these initiatives, including a variety of technology solutions.

5.4: Future Research

***Recommendation No. Eight*: Increase data sources contributing to ALP.**

Previous research on homeless populations has found that substantial amounts of treatment costs associated with these populations are for Medicaid or state-funded inpatient stays, and use of these records could uncover significantly more public costs associated with these populations. With this in mind, future studies focusing on services use and cost would benefit from health data from Medi-Cal and from the state psychiatric hospital system. Future research should include access to these data sources. Data from the State corrections system would likewise substantially extend the scope of a cost study such as this one.

***Recommendation No. Nine*: Add more data elements from the existing data sources that report to ALP**

Several of the participating data sources could be improved by the provision of additional data elements or more complete data reporting. For example, additional diagnostics information, including more detailed diagnosis data from the health, mental health, and substance abuse service providers, and information on reasons for incarceration and probation from the criminal justice providers would provide greater detail and better inform the various service interventions described above. Future research should attempt to access better and more complete information from the participating sources.

***Recommendation No. Ten*: Use ALP data to continue testing and evaluating interventions.**

While many of the interventions suggested above have an evidence-base to them, generating local political will to invest in and expand such interventions requires that the evidence of these interventions' success and cost effectiveness is continuously documented. Given competing priorities, and the tendency of policymakers to want to avoid creating new programs, creating a local knowledge-base and a local intelligence about the effectiveness of various programs will be critical to their being "taken to scale." In particular, the benefit-cost analyses suggested here will be crucial to developing a momentum around successful programs. Moreover, establishing measures of success can also assist agencies in creating performance criteria by which to monitor programs.

Creating a local knowledge-base and a local intelligence such as ALP will be critical to the development of new programs and interventions based on evidence and to ongoing efforts to monitor the effectiveness of various programs. The County is encouraged to develop demonstration programs in jail diversion, supportive housing, case management, employment development, and SSI outreach, as suggested above, and to develop evaluation and research partnerships with local research organizations so as to

begin to develop the knowledge base for establishing an on-going feedback loop regarding program performance and policy effectiveness.

5.5: Conclusion

This study has used data collected in the ALP data warehouse to assess services use and related costs among two cohorts of GR recipients. This is the first comprehensive study of this data warehouse that spans County departments. As such, it shows how GR recipients often use an array of County funded services that range beyond DPSS and whose costs have been largely hidden up until now. This awareness of the expenses that GR recipients incur, ranging far beyond the $221 per month cash allowance that they receive, provides an evidence-based platform for demonstrating how coordination of services between County agencies has the potential to both reduce County expenditures and improve the quality of life among County's poorest residents.

Along with the improvements in services coordination that are outlined in this report, the continued development of this data warehouse is also strongly encouraged. This report in many ways serves as a prototype for what can be done with this data warehouse, and future studies based upon this data warehouse can continue to follow the line of inquiry started here, or can explore other topics limited only by the scope and quantity of the data collected.

Chapter Five
Table

Table ES-4: Cost of County Services by Selected Subgroups of GR Recipients in ALP

	Percent of Incidence Cohort	Mean GR Cash Assistance	Mean Use of Other County Services – while on GR	Mean Use of Other County Services – after GR through 2007
First-time GR Users (n=7,982)				
Heavy Users	10	$1,478	$14,900	$10,329
Mental Illness	16	$1,775	$14,341	$7,404
Disabled	32	$2,267	$12,184	$4,266
Long-term Homeless	9	$3,585	$12,843	$2,291
Jailed pre GR	24	$1,339	$9,215	$6,978
Homeless	52	$1,639	$6,990	$4,273
Total Population	100	$1,566	$6,076	$3,729
Employable	57	$1,337	$4,248	$3,487
Work History (one year prior)	28	$1,432	$4,543	$2,559
Long-term GR Users (n=4,857)				
Heavy Users	10	$1,566	$23,871	$14,399
Mental Illness	15	$1,893	$20,834	$9,817
Disabled	42	$2,250	$14,167	$5,577
Long-term Homeless	14	$3,469	$15,612	$941
Jailed pre GR	35	$1,621	$12,851	$7,759
Homeless	63	$1,842	$10,203	$4,572
Total Population	100	$1,760	$9,159	$4,519
Employable	56	$1,506	$6,594	$3,288
Work History (one year prior)	31	$1,625	$6,598	$2,793

Appendix One
Full SAS Output of Model Results

Months of GR Receipt in Study Period – Cohort One, (First-time GR Users)

The REG Procedure
Dependent Variable: mos

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	20	57299	2864.94371	110.57	<.0001
Error	7961	206275	25.91071		
Corrected Total	7981	263574			

Root MSE	5.09026	R-Square	0.2174
Dependent Mean	8.34841	Adj R-Sq	0.2154
Coeff Var	60.97278		

Parameter Estimates

Variable	DF	Estimate	Parameter Error	Standard t Value	Pr > |t|
Intercept	1	3.33778	0.38954	8.57	<.0001
homeless	1	0.67491	0.13585	4.97	<.0001
dis	1	3.24761	0.13692	23.72	<.0001
ssiapp	1	1.68146	0.35110	4.79	<.0001
employable1	1	-1.12730	0.13299	-8.48	<.0001
work	1	-0.58988	0.12851	-4.59	<.0001
mi	1	0.88052	0.20073	4.39	<.0001
sa	1	-0.11843	0.20191	-0.59	0.5575
dual	1	-0.76055	0.35648	-2.13	0.0329
logprecost	1	-0.00240	0.01919	-0.12	0.9006
jail	1	0.06148	0.17052	0.36	0.7185
prob	1	0.03625	0.19901	0.18	0.8555
foodst	1	0.08990	0.13154	0.68	0.4944
male	1	-0.62978	0.12575	-5.01	<.0001
age	1	0.15019	0.01772	8.48	<.0001
agesq	1	-0.00083744	0.00021451	-3.90	<.0001
black	1	0.84511	0.14497	5.83	<.0001
hisp	1	0.44933	0.16213	2.77	0.0056
spanish	1	0.18737	0.28085	0.67	0.5047
otherlang	1	2.44522	0.39131	6.25	<.0001
preg	1	-2.26672	0.32042	-7.07	<.0001

Long-term GR Receipt – Cohort One, (First-time GR Users)

The LOGISTIC Procedure

Model Information

Response Profile

Ordered Value	grcr	Total Frequency
1	1	915
2	0	7067

Probability modeled is grcr=1.
Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	5686.673	4660.572
SC	5693.658	4807.256
-2 Log L	5684.673	4618.572

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	1066.1007	20	<.0001
Score	1116.9898	20	<.0001
Wald	829.6955	20	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-4.7136	0.3125	227.5076	<.0001
homeless	1	0.1773	0.0919	3.7266	0.0536
dis	1	1.4693	0.0864	288.8753	<.0001
ssiapp	1	0.4332	0.1584	7.4828	0.0062
employable1	1	-0.4186	0.0878	22.7239	<.0001
work	1	-0.2448	0.0914	7.1651	0.0074
mi	1	0.2654	0.1163	5.2106	0.0224
sa	1	-0.0268	0.1516	0.0312	0.8597
dual	1	-0.0364	0.2368	0.0236	0.8779
logprecost	1	-0.0113	0.0116	0.9478	0.3303
jail	1	-0.1734	0.1189	2.1292	0.1445
prob	1	-0.0806	0.1509	0.2853	0.5933
foodst	1	0.0215	0.0879	0.0599	0.8066

male	1	-0.1182	0.0812	2.1214	0.1453
age	1	0.0647	0.0130	24.8771	<.0001
agesq	1	-0.00029	0.000145	4.1414	0.0418
black	1	0.0908	0.0971	0.8737	0.3499
hisp	1	0.1264	0.1149	1.2098	0.2714
spanish	1	0.1790	0.1590	1.2678	0.2602
otherlang	1	0.9183	0.1852	24.5765	<.0001
preg	1	-1.2885	0.4657	7.6569	0.0057

Odds Ratio Estimates

Effect	Point Estimate	95 percent Wald Confidence Limits	
homeless	1.194	0.997	1.430
dis	4.346	3.669	5.149
ssiapp	1.542	1.131	2.104
employable1	0.658	0.554	0.782
work	0.783	0.654	0.937
mi	1.304	1.038	1.638
sa	0.974	0.723	1.310
dual	0.964	0.606	1.534
logprecost	0.989	0.967	1.012
jail	0.841	0.666	1.061
prob	0.923	0.686	1.240
foodst	1.022	0.860	1.214
male	0.888	0.758	1.042
age	1.067	1.040	1.094
agesq	1.000	0.999	1.000
black	1.095	0.905	1.325
hisp	1.135	0.906	1.421
spanish	1.196	0.876	1.633
otherlang	2.505	1.742	3.602
preg	0.276	0.111	0.687

Association of Predicted Probabilities and Observed Responses

Percent Concordant	81.4	Somers' D	0.631
Percent Discordant	18.2	Gamma	0.634
Percent Tied	0.4	Tau-a	0.128
Pairs	6466305	c	0.816

“Chronic” Homelessness – Cohort One, (First-time GR Users)

The LOGISTIC Procedure

Model Information

Response Profile

Ordered Value	homelesscr	Total Frequency
1	1	726
2	0	7256

Probability modeled is homelesscr=1.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	4866.885	4407.045
SC	4873.870	4546.744
-2 Log L	4864.885	4367.045

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	497.8399	19	<.0001
Score	501.2047	19	<.0001
Wald	438.3970	19	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-5.2118	0.4262	149.5230	<.0001
dis	1	1.0513	0.0898	137.0718	<.0001
ssiapp	1	-0.1017	0.1955	0.2705	0.6030
employable1	1	-0.3147	0.0914	11.8537	0.0006
work	1	-0.2869	0.0964	8.8572	0.0029
mi	1	0.3384	0.1184	8.1688	0.0043
sa	1	-0.5831	0.1682	12.0184	0.0005
dual	1	0.0214	0.2576	0.0069	0.9337
logprecost	1	-0.0270	0.0128	4.4437	0.0350
jail	1	0.5524	0.1140	23.4645	<.0001
prob	1	-0.1985	0.1436	1.9100	0.1670
foodst	1	0.1813	0.0859	4.4610	0.0347

male	1	0.1874	0.0907	4.2724	0.0387
age	1	0.1096	0.0214	26.2513	<.0001
agesq	1	-0.00110	0.000264	17.5246	<.0001
black	1	0.2498	0.0969	6.6500	0.0099
hisp	1	-0.0867	0.1205	0.5170	0.4721
spanish	1	-0.7113	0.2354	9.1339	0.0025
otherlang	1	-2.0052	0.5165	15.0702	0.0001
preg	1	-0.6346	0.3574	3.1523	0.0758

Odds Ratio Estimates

Effect	Point Estimate	95 percent Wald Confidence Limits	
dis	2.861	2.400	3.412
ssiapp	0.903	0.616	1.325
employable1	0.730	0.610	0.873
work	0.751	0.621	0.907
mi	1.403	1.112	1.769
sa	0.558	0.401	0.776
dual	1.022	0.617	1.693
logprecost	0.973	0.949	0.998
jail	1.737	1.389	2.172
prob	0.820	0.619	1.087
foodst	1.199	1.013	1.419
male	1.206	1.010	1.441
age	1.116	1.070	1.164
agesq	0.999	0.998	0.999
black	1.284	1.062	1.552
hisp	0.917	0.724	1.161
spanish	0.491	0.310	0.779
otherlang	0.135	0.049	0.371
preg	0.530	0.263	1.068

Association of Predicted Probabilities and Observed Responses

Percent Concordant	74.3	Somers' D	0.493
Percent Discordant	25.0	Gamma	0.497
Percent Tied	0.7	Tau-a	0.082
Pairs	5267856	c	0.747

Costs of County Services (logged) – Cohort One, (First-time GR Users)

The REG Procedure
Dependent Variable: logcost

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	21	43753	2083.47528	166.78	<.0001
Error	7960	99438	12.49215		
Corrected Total	7981	143190			

Root MSE	3.53442	R-Square	0.3056
Dependent Mean	5.41485	Adj R-Sq	0.3037
Coeff Var	65.27284		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.78495	0.27172	2.89	0.0039
homeless	1	0.01249	0.09447	0.13	0.8948
dis	1	0.86567	0.09837	8.80	<.0001
ssiapp	1	0.71243	0.24414	2.92	0.0035
employable1	1	-0.28579	0.09276	-3.08	0.0021
work	1	-0.01758	0.08935	-0.20	0.8440
mi	1	2.19128	0.13954	15.70	<.0001
sa	1	1.24846	0.14020	8.90	<.0001
dual	1	-1.31050	0.24759	-5.29	<.0001
logprecost	1	0.21249	0.01333	15.94	<.0001
mos	1	0.09650	0.00778	12.40	<.0001
jail	1	1.02512	0.11840	8.66	<.0001
prob	1	1.14670	0.13818	8.30	<.0001
foodst	1	0.16672	0.09134	1.83	0.0680
male	1	0.58064	0.08745	6.64	<.0001
age	1	0.07348	0.01236	5.95	<.0001
agesq	1	-0.00093520	0.00014909	-6.27	<.0001
black	1	0.50379	0.10087	4.99	<.0001
hisp	1	0.32236	0.11263	2.86	0.0042
spanish	1	-0.33163	0.19502	-1.70	0.0891
otherlang	1	-1.34222	0.27237	-4.93	<.0001
preg	1	-0.54324	0.22318	-2.43	0.0150

“Heavy” Users of County Services – Cohort One, (First-time GR Users)

The LOGISTIC Procedure

Model Information

Response Profile

Ordered Value	heavy	Total Frequency
1	1	799
2	0	7183

Probability modeled is heavy=1.
Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	5195.139	4560.355
SC	5202.124	4714.023
-2 Log L	5193.139	4516.355

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	676.7848	21	<.0001
Score	717.5011	21	<.0001
Wald	590.4355	21	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-4.9094	0.3824	164.8194	<.0001
homeless	1	0.2032	0.0917	4.9107	0.0267
dis	1	0.7344	0.0905	65.8546	<.0001
ssiapp	1	0.5832	0.1732	11.3451	0.0008
employable1	1	-0.2601	0.0890	8.5376	0.0035
work	1	-0.3819	0.0958	15.8758	<.0001
mi	1	0.5699	0.1133	25.2914	<.0001
sa	1	-0.0639	0.1363	0.2199	0.6391
dual	1	0.4346	0.1961	4.9111	0.0267
logprecost	1	0.0746	0.0126	35.1558	<.0001
mos	1	0.0112	0.00725	2.3703	0.1237
jail	1	0.4477	0.1043	18.4335	<.0001
prob	1	0.1332	0.1138	1.3706	0.2417

foodst	1	0.0606	0.0929	0.4253	0.5143
male	1	0.6732	0.0965	48.6546	<.0001
age	1	0.0478	0.0193	6.1353	0.0133
agesq	1	-0.00050	0.000244	4.2790	0.0386
black	1	0.5085	0.0994	26.1896	<.0001
hisp	1	0.00899	0.1178	0.0058	0.9392
spanish	1	0.0550	0.2135	0.0663	0.7967
otherlang	1	-0.3049	0.3496	0.7607	0.3831
preg	1	0.0442	0.2832	0.0244	0.8759

Odds Ratio Estimates

Effect	Point Estimate	95 percent Wald Confidence Limits	
homeless	1.225	1.024	1.467
dis	2.084	1.746	2.489
ssiapp	1.792	1.276	2.516
employable1	0.771	0.647	0.918
work	0.683	0.566	0.824
mi	1.768	1.416	2.208
sa	0.938	0.718	1.225
dual	1.544	1.052	2.268
logprecost	1.077	1.051	1.104
mos	1.011	0.997	1.026
jail	1.565	1.276	1.920
prob	1.143	0.914	1.428
foodst	1.062	0.886	1.275
male	1.960	1.623	2.369
age	1.049	1.010	1.089
agesq	0.999	0.999	1.000
black	1.663	1.369	2.020
hisp	1.009	0.801	1.271
spanish	1.057	0.695	1.605
otherlang	0.737	0.372	1.463
preg	1.045	0.600	1.821

Association of Predicted Probabilities and Observed Responses

Percent Concordant	76.6	Somers' D	0.539
Percent Discordant	22.8	Gamma	0.542
Percent Tied	0.6	Tau-a	0.097
Pairs	5739217	c	0.769

Users of Criminal Justice and Health Services – Cohort One, (First-time GR Users)

The LOGISTIC Procedure

Model Information

Response Profile

Ordered Value	two	Total Frequency
1	1	1160
2	0	6822

Probability modeled is two=1.
Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	6619.348	2433.257
SC	6626.333	2586.926
-2 Log L	6617.348	2389.257

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	4228.0906	21	<.0001
Score	4100.3993	21	<.0001
Wald	1118.5566	21	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-7.9247	0.5544	204.3015	<.0001
homeless	1	-0.1194	0.1223	0.9534	0.3289
dis	1	0.2015	0.1288	2.4478	0.1177
ssiapp	1	0.0860	0.3049	0.0795	0.7779
employable1	1	-0.1332	0.1196	1.2395	0.2656
work	1	0.0578	0.1184	0.2384	0.6253
mi	1	1.6723	0.1516	121.6810	<.0001
sa	1	2.8574	0.1478	373.5708	<.0001
dual	1	-1.5725	0.2421	42.1758	<.0001
logprecost	1	0.4068	0.0313	169.3300	<.0001
mos	1	0.0231	0.0107	4.6534	0.0310

jail	1	3.5298	0.1507	548.8817	<.0001
prob	1	0.7400	0.1171	39.9440	<.0001
foodst	1	0.0536	0.1230	0.1901	0.6629
male	1	-0.1467	0.1287	1.3002	0.2542
age	1	-0.0220	0.0255	0.7430	0.3887
agesq	1	0.000248	0.000335	0.5455	0.4602
black	1	0.0637	0.1358	0.2204	0.6387
hisp	1	-0.1119	0.1409	0.6310	0.4270
spanish	1	0.1366	0.3914	0.1218	0.7271
otherlang	1	0.0629	0.7217	0.0076	0.9305
preg	1	-0.3649	0.3332	1.1990	0.2735

Odds Ratio Estimates

Effect	Point Estimate	95 percent Wald Confidence Limits	
homeless	0.887	0.698	1.128
dis	1.223	0.950	1.574
ssiapp	1.090	0.600	1.981
employable1	0.875	0.692	1.107
work	1.060	0.840	1.336
mi	5.324	3.956	7.166
sa	17.416	13.035	23.270
dual	0.208	0.129	0.334
logprecost	1.502	1.413	1.597
mos	1.023	1.002	1.045
jail	34.117	25.394	45.837
prob	2.096	1.666	2.637
foodst	1.055	0.829	1.343
male	0.864	0.671	1.111
age	0.978	0.931	1.028
agesq	1.000	1.000	1.001
black	1.066	0.817	1.391
hisp	0.894	0.678	1.178
spanish	1.146	0.532	2.469
otherlang	1.065	0.259	4.382
preg	0.694	0.361	1.334

Association of Predicted Probabilities and Observed Responses

Percent Concordant	97.1	Somers' D	0.942
Percent Discordant	2.9	Gamma	0.943
Percent Tied	0.1	Tau-a	0.234
Pairs	7913520	c	0.971

Months of GR Receipt in Study Period – Cohort Two, (Long-term User)

The REG Procedure
Dependent Variable: mos

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	20	27445	1372.25623	56.12	<.0001
Error	4836	118243	24.45052		
Corrected Total	4856	145688			

Root MSE	4.94475	R-Square	0.1884
Dependent Mean	9.09203	Adj R-Sq	0.1850
Coeff Var	54.38550		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	4.07875	0.64085	6.36	<.0001
homeless	1	0.46647	0.17332	2.69	0.0071
dis	1	2.83528	0.15698	18.06	<.0001
ssiapp	1	0.61901	0.27640	2.24	0.0252
employable1	1	-1.49193	0.15948	-9.35	<.0001
work	1	-0.41044	0.15743	-2.61	0.0092
mi	1	0.59384	0.25652	2.32	0.0207
sa	1	0.16468	0.25411	0.65	0.5170
dual	1	-0.46128	0.45481	-1.01	0.3105
logprecost	1	0.01097	0.02481	0.44	0.6583
jail	1	-0.41081	0.20392	-2.01	0.0440
prob	1	-0.41990	0.21453	-1.96	0.0504
foodst	1	0.38629	0.16971	2.28	0.0229
male	1	-0.69612	0.16729	-4.16	<.0001
age	1	0.15758	0.02852	5.52	<.0001
agesq	1	-0.00112	0.00033390	-3.36	0.0008
black	1	0.73141	0.19699	3.71	0.0002
hisp	1	0.77737	0.22820	3.41	0.0007
spanish	1	0.11197	0.46342	0.24	0.8091
otherlang	1	1.23848	0.87044	1.42	0.1549
preg	1	-2.81352	0.53528	-5.26	<.0001

Long-term GR Receipt – Cohort Two, (Long-term User)

The LOGISTIC Procedure

Model Information

Response Profile

Ordered Value	grcr	Total Frequency
1	1	477
2	0	4380

Probability modeled is grcr=1.
Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	3121.450	2757.925
SC	3127.938	2894.177
-2 Log L	3119.450	2715.925

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	403.5249	20	<.0001
Score	399.8338	20	<.0001
Wald	327.0250	20	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-4.5162	0.6358	50.4515	<.0001
homeless	1	0.1342	0.1201	1.2483	0.2639
dis	1	1.3640	0.1211	126.8214	<.0001
ssiapp	1	0.3315	0.1464	5.1299	0.0235
employable1	1	-0.4708	0.1145	16.9020	<.0001
work	1	-0.0640	0.1179	0.2943	0.5875
mi	1	0.3198	0.1607	3.9602	0.0466
sa	1	0.0209	0.1882	0.0123	0.9118
dual	1	-0.2046	0.3080	0.4414	0.5064
logprecost	1	0.00193	0.0164	0.0138	0.9064
jail	1	-0.2492	0.1430	3.0363	0.0814
prob	1	-0.3864	0.1733	4.9718	0.0258
foodst	1	0.3019	0.1220	6.1194	0.0134

male	1	-0.2760	0.1113	6.1516	0.0131
age	1	0.0565	0.0288	3.8570	0.0495
agesq	1	-0.00040	0.000326	1.5150	0.2184
black	1	0.0653	0.1414	0.2133	0.6442
hisp	1	0.3326	0.1625	4.1886	0.0407
spanish	1	0.1763	0.2744	0.4128	0.5205
otherlang	1	0.4357	0.4759	0.8383	0.3599
preg	1	-2.1904	1.0191	4.6192	0.0316

Odds Ratio Estimates

Effect	Point Estimate	95 percent Wald Confidence Limits	
homeless	1.144	0.904	1.447
dis	3.912	3.085	4.960
ssiapp	1.393	1.046	1.856
employable1	0.625	0.499	0.782
work	0.938	0.744	1.182
mi	1.377	1.005	1.887
sa	1.021	0.706	1.477
dual	0.815	0.446	1.490
logprecost	1.002	0.970	1.035
jail	0.779	0.589	1.032
prob	0.680	0.484	0.954
foodst	1.352	1.065	1.718
male	0.759	0.610	0.944
age	1.058	1.000	1.120
agesq	1.000	0.999	1.000
black	1.067	0.809	1.408
hisp	1.395	1.014	1.918
spanish	1.193	0.697	2.043
otherlang	1.546	0.608	3.929
preg	0.112	0.015	0.825

Association of Predicted Probabilities and Observed Responses

Percent Concordant	76.7	Somers' D	0.540
Percent Discordant	22.7	Gamma	0.543
Percent Tied	0.6	Tau-a	0.096
Pairs	2089260	c	0.770

“Chronic” Homelessness – Cohort Two, (Long-term User)

The LOGISTIC Procedure

Model Information

Response Profile

Ordered Value	homelesscr	Total Frequency
1	1	673
2	0	4184

Probability modeled is homelesscr=1.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	3910.390	3667.451
SC	3916.878	3797.214
-2 Log L	3908.390	3627.451

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	280.9395	19	<.0001
Score	268.1104	19	<.0001
Wald	244.3512	19	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-4.5668	0.6053	56.9200	<.0001
dis	1	0.9659	0.0945	104.5593	<.0001
ssiapp	1	0.0600	0.1416	0.1795	0.6718
employable1	1	-0.3159	0.0942	11.2354	0.0008
work	1	-0.0631	0.0983	0.4121	0.5209
mi	1	0.2704	0.1407	3.6930	0.0546
sa	1	-0.0923	0.1576	0.3432	0.5580
dual	1	-0.0822	0.2635	0.0973	0.7551
logprecost	1	-0.0183	0.0145	1.5979	0.2062
jail	1	0.0865	0.1207	0.5143	0.4733
prob	1	-0.2813	0.1365	4.2488	0.0393
foodst	1	0.1255	0.0877	2.0466	0.1525
male	1	0.0650	0.1004	0.4196	0.5171

age	1	0.0979	0.0290	11.3608	0.0008
agesq	1	-0.00100	0.000345	8.3201	0.0039
black	1	0.2147	0.1195	3.2286	0.0724
hisp	1	0.1764	0.1405	1.5747	0.2095
spanish	1	-1.9044	0.5223	13.2948	0.0003
otherlang	1	-1.0737	0.7464	2.0691	0.1503
preg	1	-0.7794	0.4798	2.6391	0.1043

Odds Ratio Estimates

Effect	Point Estimate	95 percent Wald Confidence Limits	
dis	2.627	2.183	3.161
ssiapp	1.062	0.805	1.401
employable1	0.729	0.606	0.877
work	0.939	0.774	1.138
mi	1.310	0.995	1.726
sa	0.912	0.670	1.242
dual	0.921	0.550	1.544
logprecost	0.982	0.954	1.010
jail	1.090	0.861	1.381
prob	0.755	0.578	0.986
foodst	1.134	0.955	1.346
male	1.067	0.877	1.299
age	1.103	1.042	1.167
agesq	0.999	0.998	1.000
black	1.240	0.981	1.567
hisp	1.193	0.906	1.571
spanish	0.149	0.054	0.414
otherlang	0.342	0.079	1.476
preg	0.459	0.179	1.175

Association of Predicted Probabilities and Observed Responses

Percent Concordant	69.5	Somers' D	0.396
Percent Discordant	29.9	Gamma	0.399
Percent Tied	0.7	Tau-a	0.095
Pairs	2815832	c	0.698

Costs of County Services (logged) – Cohort Two, (Long-term User)

The REG Procedure
Dependent Variable: logcost

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	21	19607	933.64731	74.35	<.0001
Error	4835	60713	12.55693		
Corrected Total	4856	80319			

Root MSE	3.54358	R-Square	0.2441
Dependent Mean	6.29746	Adj R-Sq	0.2408
Coeff Var	56.26991		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	1.20525	0.46117	2.61	0.0090
homeless	1	0.31682	0.12430	2.55	0.0108
dis	1	0.81739	0.11623	7.03	<.0001
ssiapp	1	0.59238	0.19818	2.99	0.0028
employable1	1	-0.62625	0.11532	-5.43	<.0001
work	1	-0.31337	0.11290	-2.78	0.0055
mi	1	1.32040	0.18393	7.18	<.0001
sa	1	1.13162	0.18211	6.21	<.0001
dual	1	-0.86274	0.32597	-2.65	0.0082
logprecost	1	0.19644	0.01778	11.05	<.0001
mos	1	0.05343	0.01031	5.18	<.0001
jail	1	0.67510	0.14620	4.62	<.0001
prob	1	0.75710	0.15380	4.92	<.0001
foodst	1	-0.13537	0.12168	-1.11	0.2660
male	1	0.64941	0.12010	5.41	<.0001
age	1	0.12298	0.02051	6.00	<.0001
agesq	1	-0.00157	0.00023956	-6.54	<.0001
black	1	0.51058	0.14137	3.61	0.0003
hisp	1	0.34016	0.16373	2.08	0.0378
spanish	1	-0.86243	0.33210	-2.60	0.0094
otherlang	1	-1.30284	0.62392	-2.09	0.0368
preg	1	-0.73078	0.38469	-1.90	0.0575

“Heavy” Users of County Services – Cohort Two, (Long-term User)

The LOGISTIC Procedure

Model Information

Response Profile

Ordered Value	heavy	Total Frequency
1	1	486
2	0	4371

Probability modeled is heavy=1.
Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	3161.174	2767.926
SC	3167.662	2904.178
-2 Log L	3159.174	2725.926

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	433.2480	20	<.0001
Score	458.0322	20	<.0001
Wald	371.3887	20	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-5.3379	0.7366	52.5182	<.0001
homeless	1	0.3598	0.1215	8.7668	0.0031
dis	1	0.6404	0.1139	31.6191	<.0001
ssiapp	1	0.5710	0.1537	13.8073	0.0002
employable1	1	-0.4524	0.1130	16.0397	<.0001
work	1	-0.2343	0.1222	3.6804	0.0551
mi	1	0.9954	0.1441	47.6955	<.0001
sa	1	-0.00453	0.1784	0.0006	0.9797
dual	1	0.1623	0.2571	0.3986	0.5278
logprecost	1	0.0656	0.0177	13.7056	0.0002
mos	1	-0.0252	0.00992	6.4796	0.0109
jail	1	0.2483	0.1376	3.2561	0.0712
prob	1	-0.0545	0.1344	0.1646	0.6850

foodst	1	-0.0588	0.1232	0.2281	0.6329
male	1	1.0357	0.1470	49.6701	<.0001
age	1	0.0650	0.0358	3.2873	0.0698
agesq	1	-0.00075	0.000436	2.9923	0.0837
black	1	0.4999	0.1443	12.0009	0.0005
hisp	1	0.0771	0.1746	0.1948	0.6589
spanish	1	-0.3628	0.4837	0.5625	0.4533
preg	1	-0.1607	0.5486	0.0858	0.7696

Odds Ratio Estimates

Effect	Point Estimate	95 percent Wald Confidence Limits	
homeless	1.433	1.129	1.818
dis	1.897	1.518	2.372
ssiapp	1.770	1.310	2.392
employable1	0.636	0.510	0.794
work	0.791	0.623	1.005
mi	2.706	2.040	3.589
sa	0.995	0.702	1.412
dual	1.176	0.711	1.947
logprecost	1.068	1.031	1.105
mos	0.975	0.956	0.994
jail	1.282	0.979	1.679
prob	0.947	0.728	1.232
foodst	0.943	0.741	1.200
male	2.817	2.112	3.757
age	1.067	0.995	1.145
agesq	0.999	0.998	1.000
black	1.649	1.242	2.187
hisp	1.080	0.767	1.521
spanish	0.696	0.270	1.796
preg	0.852	0.291	2.496

Association of Predicted Probabilities and Observed Responses

Percent Concordant	76.1	Somers' D	0.528
Percent Discordant	23.3	Gamma	0.531
Percent Tied	0.6	Tau-a	0.095
Pairs	2124306	c	0.764

Users of Criminal Justice and Health Services – Cohort Two, (Long-term User)

The LOGISTIC Procedure

Model Information

Response Profile

Ordered Value	two	Total Frequency
1	1	1038
2	0	3819

Probability modeled is two=1.
Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	5041.950	2224.827
SC	5048.438	2367.566
-2 Log L	5039.950	2180.827

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	2859.1236	21	<.0001
Score	2441.9591	21	<.0001
Wald	809.0903	21	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-7.4794	0.7921	89.1633	<.0001
homeless	1	-0.1612	0.1305	1.5254	0.2168
dis	1	-0.1033	0.1199	0.7425	0.3889
ssiapp	1	0.2375	0.2040	1.3558	0.2443
employable1	1	-0.3525	0.1190	8.7760	0.0031
work	1	0.0266	0.1237	0.0463	0.8297
mi	1	1.2966	0.1531	71.7175	<.0001
sa	1	2.1871	0.1578	192.2025	<.0001
dual	1	-0.8097	0.2840	8.1287	0.0044
logprecost	1	0.3883	0.0320	147.1167	<.0001
mos	1	0.0328	0.0110	8.8301	0.0030
jail	1	2.7021	0.1615	280.0441	<.0001
prob	1	0.9583	0.1199	63.9219	<.0001

foodst	1	-0.0180	0.1283	0.0198	0.8881
male	1	0.1506	0.1390	1.1746	0.2784
age	1	0.0167	0.0383	0.1909	0.6621
agesq	1	-0.00010	0.000481	0.0473	0.8277
black	1	-0.0742	0.1470	0.2549	0.6136
hisp	1	-0.3189	0.1705	3.4957	0.0615
spanish	1	-0.6295	0.6229	1.0213	0.3122
otherlang	1	0.6421	0.8792	0.5333	0.4652
preg	1	0.3575	0.4128	0.7500	0.3865

Odds Ratio Estimates

Effect	Point Estimate	95 percent Wald Confidence Limits	
homeless	0.851	0.659	1.099
dis	0.902	0.713	1.141
ssiapp	1.268	0.850	1.891
employable1	0.703	0.557	0.888
work	1.027	0.806	1.309
mi	3.657	2.709	4.937
sa	8.909	6.540	12.137
dual	0.445	0.255	0.776
logprecost	1.475	1.385	1.570
mos	1.033	1.011	1.056
jail	14.911	10.866	20.462
prob	2.607	2.061	3.298
foodst	0.982	0.764	1.263
male	1.163	0.885	1.527
age	1.017	0.943	1.096
agesq	1.000	0.999	1.001
black	0.928	0.696	1.239
hisp	0.727	0.520	1.016
spanish	0.533	0.157	1.807
otherlang	1.900	0.339	10.647
preg	1.430	0.637	3.211

Association of Predicted Probabilities and Observed Responses

Percent Concordant	95.2	Somers' D	0.904
Percent Discordant	4.8	Gamma	0.905
Percent Tied	0.0	Tau-a	0.304
Pairs	3964122	c	0.952