

Frequent Users of Health Services Initiative:

Final Evaluation Report

Prepared for:

The California Endowment and the California HealthCare Foundation

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I. EXECUTIVE SUMMARY

BACKGROUND

The Frequent Users of Health Services Initiative was a five-year, \$10 million project jointly funded by The California Endowment and the California HealthCare Foundation. The goal of the Initiative was to promote the development and implementation of innovative, integrated approaches to addressing the comprehensive health and social service needs of the frequent users of emergency departments. Initiative funding supported a program office for six years, and funded six one year planning grants, six implementation grants, technical assistance to the planning and implementation grantees, and an external process and outcome evaluation of both the planning and implementation grants.

Frequent users are a small group of individuals with complex, unmet needs not effectively addressed in the high-cost acute care settings of emergency departments. These individuals face barriers in accessing housing and medical, mental health, and substance abuse treatment, all of which can contribute to frequent emergency department visits.

Funded Programs. The Initiative was designed to develop and test new models to better serve this population, replacing a costly and avoidable health care utilization pattern with ongoing, coordinated, and multi-disciplinary care provided in more appropriate settings. At the heart of the Initiative were the demonstration projects that tested new models of care for frequent users throughout California. Through a competitive RFP process, the Initiative funded six one-year planning grants and six three-year implementation grants – one awarded in 2003 and renewed for an additional year in 2006, and five awarded in a second round of funding in 2004. **Table 1** shows the counties awarded planning and/or implementation grants.

Table 1: Counties Awarded Grants

County	2003 Planning Grant	2004-2007 Implementation Pilot Grant
Alameda**	X	X
Los Angeles		X
Orange	X	
Sacramento	X	X
Santa Clara**	X	X
Santa Cruz*		X
Sonoma	X	
Tulare	X	X

* Santa Cruz was awarded an implementation grant in 2003 that was renewed for an additional year in 2006

** Alameda and Santa Clara were awarded implementation grants in 2004 that were renewed for an additional year in 2007

The six programs funded through the Frequent Users Initiative developed specific models and interventions to address the range of presenting conditions of the frequent users in their hospitals and communities. A range of models were tested through this Initiative, from various types of intensive case management to less intensive peer and paraprofessional driven interventions, to learn what strategies could be effective in reducing the avoidable use of and

reliance on emergency departments, as well as to create a more effective system of care for the frequent user population.

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The **evaluation approach** involved three phases: 1) an assessment of the six grants funded during the planning phase; 2) a process evaluation that documented start-up and implementation experiences of the six implementation grants; and 3) an outcome evaluation that tracked interim and longer term outcomes achieved by the six implementation grants. The goal of the outcome evaluation was to examine the impact of the Frequent User Programs in three primary areas: 1) individual-level outcomes; 2) impact on emergency department and inpatient hospital utilization and costs; and 3) impact on organizational and community systems of care. The purpose of this final report is to present a summation of Initiative-level findings on the outcomes, accomplishments and learnings of the Initiative over the three-year grant period.

FINDINGS

The evidence presented in this report demonstrates the achievements of the six programs funded through the Initiative. Overall, the programs yielded statistically significant reductions in Emergency Department utilization (30%) and charges (17%) in the first year of enrollment. Based on analyses of a subset of individuals for whom two years of data were available, ED utilization and charges decreased by an even great magnitude in the second year after enrollment. Emergency department visits decreased by 35 percent in the first year of the program, and by year two, utilization decreased by over 60 percent from the pre-enrollment period.

Inpatient utilization and charge data are more challenging to interpret in the first year of the program, with some sites showing decreases and others increases. Inpatient utilization and charge data are greatly influenced by “outliers” (i.e., individuals that accrue extremely high charges due to catastrophic illnesses or escalating chronic disease). In the first year post-enrollment, 15 percent of the clients account for nearly 85 percent of the total inpatient charges. An analysis of clients with two years of data shows modest reductions in inpatient admissions and charges (17% and 14% respectively) and slight increases in cumulative inpatient days (+3%) in the first year of enrollment in the project. However, by the second year post-enrollment, there are significant decreases in inpatient admissions (-64%), cumulative days (-62%) and charges (-69%) for all sites. It is hypothesized that year one post-enrollment increases are due in part to clients accessing appropriate primary care treatment through which medical treatment needs, such as surgery, are identified and scheduled. Once the clients’ health conditions are stabilized through these interventions, the need for hospitalizations is reduced. In addition, during the first year of enrollment, many clients are getting connected to insurance, housing

and income, which assist in the overall stabilization of the individual and may diminish hospitalizations in the subsequent year.

Connection to stabilizing services such as housing, health insurance and income benefits has been an important intermediate outcome of the intervention models, and most of the programs have been successful in connecting clients to needed resources. Nearly half (45%) of the frequent user clients enrolled in the programs were homeless at enrollment. Among these, more than a third were connected to permanent housing through HUD vouchers and more than half (54%) were placed in shelters, board and care homes, or other similar placements. Over 60 percent (63%) of program enrollees had no insurance or were underinsured at enrollment. Among the clients without adequate insurance at enrollment, nearly two-thirds (64%) were connected to coverage through the county indigent program and MediCal applications were filed for 25 percent. Of the MediCal applications submitted, 68 percent were approved.

Given the prevalence of homelessness in the frequent user population and evidence that housing is a critical factor in addressing the health concerns for this population, connecting clients to housing became a major focus of many of the frequent user programs and understanding the impact of this connection for homeless clients on ED and inpatient outcome became a sub-group of interest in the evaluation. In comparing the utilization of clients homeless at enrollment and connected to permanent housing vs. homeless clients *not* connected during the intervention period, analyses demonstrate that connection to housing and creating stability for the individuals are factors in reducing rates of and charges for both ED and inpatient utilization. Overall, clients connected to permanent housing showed greater reductions in both ED use and charges compared to those who remained homeless or in less stable housing arrangements (a 34% reduction compared to a 12% reduction in ED visits, a 32% reduction compared to a 2% reduction in ED charges).

In terms of inpatient outcomes among homeless clients, both groups fared similarly in terms of reductions in the number of inpatient admissions (27% connected vs. 23% not connected). However, the group connected to housing showed significantly greater reductions in the number of inpatient days (a 27% *decrease* for those connected vs. a 26% *increase* for those not connected) and inpatient charges (a 27% *decrease* for those connected vs. a 49% *increase* for those not connected). The difference between connected and not-connected homeless clients for inpatient days and charges is likely related to the discharge planning issues hospitals face with homeless patients.

From the inception of the Frequent Users Initiative, both foundations put forward an interest in demonstrating impact on more than just individual patterns of ED and inpatient utilization. A central goal was to invest in and stimulate the development of a comprehensive, coordinated system of care to address the needs of the frequent users in each of the six funded communities. There was an expectation that the grantees' funded interventions would address not only individual level behaviors, but also the fragmentation and service delivery silos that exist within the county systems of care. Reducing avoidable ED use and assessing the financial impact of the intervention on the hospital system is only a fraction of the Frequent User Initiative story. Through partnerships and collaborations formed among the range of agencies that touch upon the lives of the frequent user population, all of the grantees identified and

addressed barriers to coordinating care, improving access to needed services, and enhancing the quality of care delivered for this vulnerable population.

Some programs were more successful in achieving their systems change goals than others, and four of the six sites were well on their way to fully sustaining their programs within their hospitals and counties at the end of the funding period. Grantees focused their systems change efforts in the following areas: elevated the awareness and understanding of the needs of frequent users across the county, established new collaborations that increased capacity for housing the homeless, improved access to mental health and substance abuse treatment, improved communication and care coordination across hospital and primary care providers, streamlined processes for securing SSI benefits, food stamps, and MediCal coverage, and developed a sense of “collective accountability” within the community for the population, which has led to cross-system approaches to addressing a variety of issues beyond “frequent ED use” such as discharge planning, respite care, pain management and overall improvements in case management.

There is evidence of the success of the Frequent Users Initiative, both in terms of the impact on individuals and the impact to the communities involved. In addition to the successes achieved and documented on the individual and organizational level, the grantees’ experiences and “lessons learned” through the course of implementation provide knowledge about the ongoing challenges to serving this population, developing successful partnerships and demonstrating the value and impact of a frequent user program. Achieving success with the clients served by this program requires significant financial investment, intensive health and behavioral health interventions, small caseload sizes, resources and capacity in the community, partnership across systems of care and an understanding that the issues faced by this client population did not emerge over a short period of time, therefore the treatment solutions will require long-term vision and commitment.

II. INTRODUCTION

This Evaluation report is the final in a series of evaluation reports written as part of a three-year evaluation of the Frequent Users of Health Services Initiative (FUHSI). These reports covered findings from the planning phase of the initiative, program start-up and implementation, and early and interim program outcomes. The purpose of this final report is to present a summation of Initiative-level findings on the outcomes, accomplishments and lessons of the Initiative over the three-year grant period.

III. BACKGROUND

The Frequent Users of Health Services Initiative was a five-year, \$10 million project jointly funded by The California Endowment and the California HealthCare Foundation. The goal of the Initiative was to promote the development and implementation of innovative, integrated approaches to addressing the comprehensive health and social service needs of the frequent users of emergency departments. Initiative funding supported a program office for six years, and funded six one year planning grants, six implementation grants, technical assistance to the planning and implementation grantees, and an external process and outcome evaluation of both the planning and implementation grants.

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Funded Programs. The Initiative was designed to develop and test new models to better serve this population, replacing a costly and avoidable health care utilization pattern with ongoing, coordinated, and multi-disciplinary care provided in more appropriate settings. At the heart of the Initiative were the demonstration projects that tested new models of care for frequent users throughout California. Through a competitive RFP process, the Initiative funded six one-year planning grants and six three-year implementation grants – one awarded in 2003 and renewed for an additional year in 2006, and five awarded in a second round of funding in 2004. **Table 1** shows the counties awarded planning and/or implementation grants.

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Technical Assistance Provided through the Program Office. The Initiative was managed for a period of six years by a Program Office located at the Corporation of Supportive Housing in Oakland, CA. To support the development and implementation of the programs, the Program Office sponsored on-going technical assistance over the course of the planning and implementation phases of the Initiative. Technical assistance included:

1) Annual Convenings: The Program Office convened the grantees annually throughout the planning and implementation phases of the Initiative to provide grantees an opportunity for peer-to-peer information exchange around promising operational practices (e.g., outreach and engagement strategies, case management, caseload management (step down care models), collaboration with partners, etc.), as well to learn from national experts and other frequent user related programs about specific issues or practices that could enhance their programs.

2) Technical Assistance In-Person Meetings and Teleconferences (Planning Year 2003): During the planning year, the Program Office sponsored two in-person workshops that covered a range of topics: the potential impact of HIPAA and confidentiality issues on frequent user programs; achieving cultural competency in programs; and collaboration and systems change, and managing change. In addition, several teleconference sessions were held to expose planning grantees to best practice models (e.g., Boston Healthcare for the Homeless Program, San Francisco General program). The speakers presented their respective frequent user models and discussed the challenges experienced and how they were resolved in the areas of financing, staffing, facility licensing, outcomes measurement, stakeholder engagement, and sustainability.

3) Technical Assistance In-Person Meetings and Teleconferences (Implementation Years 2004-2007): During the implementation phase of the initiative, the Program Office sponsored a variety of in-person workshops for program directors and staff (averaging four per year) on a range of topics, including: harm reduction, outreach and engagement strategies, motivational interviewing, reimbursement strategies to maximize MediCal, caseload management, working in hospital settings, assisting the homeless in applying for SSI/SSDI benefits, evidence-based therapies, systems integration and sustainability, building program support (i.e., talking with the media, boards of Supervisors, and community stakeholders), and systems change. During this time, the program office also supported “field trips” for grantees to visit the more established programs in Santa Cruz and Santa Clara for peer-to-peer learning and exchange. The Program Office also sponsored monthly case conference calls with a clinical psychologist to assist program

case managers and staff on a range of issues that were presented by clients enrolling in the programs.

External Evaluation. The Initiative funded a four year external evaluation to assess the progress and accomplishments of programs funded during the planning and implementation phase. The evaluation approach involved three phases: 1) an assessment of the six grants funded during the planning phase; 2) a process evaluation that documented start-up and implementation experiences of the six implementation grants; and 3) an outcome evaluation that tracked interim and longer term outcomes achieved by the six implementation grants.

During the **planning phase**, a process evaluation was conducted to assess grantee progress on four domains: 1) Congruity of grantee project proposals and intervention plans with Initiative-level goals; 2) Grantee readiness to implement planned projects; 3) Strength and breadth of grantee interagency coalitions; and 4) Grantee capacity to participate in the external outcome evaluation. The results of the planning phase process evaluation were documented in a report at the end of the planning year.

After assessing the feasibility (e.g., available resources, likely burden on grantees, data availability, and relevance to Initiative goals) of different design strategies, the external evaluators in collaboration with the Initiative Oversight Group (comprised of Program Officers from both foundations, and the Program Office Director and Deputy Director) designed a pre-post evaluation approach that focused on system- and organizational-level changes, and aggregated individual-level outcomes. The evaluation design also included the on-going monitoring of some implementation process components (e.g., partnership formation and role development; unanticipated consequences; implementation facilitators and barriers; and other factors affecting program implementation) with the goal of documenting promising practices. The logic model guiding the evaluation is included in **Appendix A**.

Research Questions. The following research questions served as the framework for data collection:

1. How effective were the projects (individually and collectively) in recruiting and retaining the target population?
2. How and to what extent did the programs increase or decrease utilization of emergency departments, hospital inpatient services, behavioral health clinics, and other community-based services?
3. To what extent were the programs effective in developing a coordinated, continuous system of care for the target population? What models were effective and what system changes contributed to the effective management of care for the enrolled population?
4. To what extent and how did the programs address systemic changes in the structure of health and related services? Were the programs able to manage the care of enrollees across hospital and community-based systems of care? What factors lead to improved collaboration among stakeholders delivering care?

5. To what extent did the programs address systemic changes in financing of health and health related services?
6. To what extent was the Initiative able to achieve change in state and local policy that improves resources available to the frequent user population?

Over the course of the three year process and outcome evaluation of the implementation phase of the Initiative, evaluation findings were presented in semi-annual progress reports that addressed grantees' progress and accomplishments related to enrollment and retention, service delivery, collaborations and partnerships, organizational and systems changes.

Goal of this Report. The following report presents findings from the outcome evaluation. The goal of the outcome evaluation was to examine the impact of the Frequent User Programs in three primary areas: 1) individual-level outcomes; 2) impact on emergency department and inpatient hospital utilization and costs; and 3) impact on organizational and community systems of care (i.e., systems change).

IV. DATA SOURCES AND METHODS

This evaluation employed multiple data collection strategies, including qualitative and quantitative data sources. Qualitative information presented in Sections V, XI, and X was based on data collected through site visits, interviews, and analyses of grantee progress reports and analyzed using qualitative analysis techniques where data were coded, compared, and triangulated to develop and analyze major theme categories and sub-categories. Over the course of program implementation and documented in past process evaluation reports, we tracked information on barriers and facilitators related to outreach, enrollment, and engagement; service delivery; partnership development; and systems change. Our findings and assessments reported throughout the course of this evaluation, as well as grantee and collaborative partner experiences, served as the basis for the data presented in these qualitative sections.

The following six data sources were used for this report:

Qualitative Sources:

- **Document Review.** Documents reviewed included (as made available by grantees) project and advisory group meeting minutes, grantee progress reports highlighting key project milestones, accomplishments, barriers and lessons learned.
- **Site Visits and Interviews.** The evaluation team interviewed multiple stakeholders (collaborative partners) and conducted multiple site visits with the 6 grantees over the course of the Initiative to gather information on program accomplishments and challenges, strengths of partnerships and collaborations, evidence of systems and policy change, aspects of the program that are most successful and essential for sustainability and overall lessons learned through implementation.

Quantitative Sources

- **Grantee Outreach and Enrollment Data.** Grantees provided summary data on outreach statistics including the total number of clients referred to the program, referral source, and enrollment conversion rates.
- **Data Submission of Uniform Data Set (UDS).** Using a standardized data template supplied by the evaluators, sites reported client demographics and other characteristics at enrollment, case management services, and enrollment and disenrollment information.
- **Stability Measure Checklist.** Intervention staff conducted *chart reviews* of all clients enrolled and served by the program and completed a “checklist” documenting outcomes related to indicators of stability such as connection to housing, health care coverage, income benefits, primary care home, mental health and substance abuse treatment service, and other indicators of clients’ connections to needed services.
- **Cost and Utilization Data.** *To allow for at least one year of program participation (exposure to the intervention) to assess the intervention’s impact on hospital ED and inpatient utilization,* programs submitted pre and post-program enrollment data on emergency department and inpatient hospital utilization and costs for *all clients enrolled before September 30, 2006.*

Data Limitations.

The hospital data presented in this report includes all individuals enrolled by December 31, 2006 to account for data reporting lags (3 months for most hospitals) and to allow for a full year of post enrollment data to be analyzed. Although specific instructions detailing the variables, time period, and format were provided to the hospitals, data submitted varied and included inconsistencies that needed to be addressed in order to create a standard for comparison across the six counties. Issues and limitations encountered with the data include:

1. In some of the hospital data submissions, there was no evidence of utilization for some clients in the year prior to enrollment. Also, for many of these cases, there was no utilization in the year post enrollment. We learned through interviews with the programs/hospitals where this anomaly occurred that there are potential explanations including differences between hospital registration and hospital financial department documentation of “ED visits.” The financial department may not track every visit a patient makes if charges do not accrue or if the patient leaves without being seen or “against medical advice.” Frequent user programs may receive “hot lists” based on who registers at the ED, but some of these visits may not be logged by the hospital financial department creating discrepancies in data analysis and questions about costs.

This issue raises an analytic concern about the validity of the data. Analyses of the change from the pre to post period could be affected if cases in the pre-period had zero utilization, but then had utilization in the post-period. Also, for the hospital files where this problem occurred, zero utilization in the post period raise questions of the extent to which these data are valid. *To address these potential concerns, cases with zero utilization in the pre-period were eliminated; however, to maximize the N, we set a minimum threshold of 3 visits (ED or Inpatient), which is lower than the number of visits required for program eligibility applied by any of the programs.* This strategy allows for the possibility that “missing visits” are valid and attributable to the discrepancy between registration and financial records.

2. Another anomaly observed in the data concerned differences in utilization for the same individuals cases, for the same time period, across submission periods. We learned from the programs affected that this anomaly was due to archiving practices by the hospitals and claims data lags. To address this issue, we worked with each program on a case by case basis to extract the most consistent and reliable data possible for these individuals.
3. A lack of data from other hospitals in Sacramento and Los Angeles makes it difficult to determine with certainty that reductions in ED and inpatient utilization reflect a true change in the utilization pattern of clients. In these programs, it is impossible to know whether or not clients were using services at other hospitals in the counties. The utilization patterns reflect changes in utilization only for the partnering hospitals.
4. While the data in this report show reductions from baseline utilization in all sites, there could be alternative explanations for the reductions. Because this evaluation was a “pre/post” design, none of the sites had a randomized control group, so all of the “change scores” from baseline to the study period could be affected by the common statistical phenomenon of “regression to the mean,” a statistical phenomenon that can often look like program impact. Since these clients were referred to the FUHSI programs for being at the extreme high end of those who use ED and inpatient services, one would expect that at a later measurement they could show lower ED and inpatient use. Because regression to the mean effects look similar to “program improvement” effects, we would expect use to be somewhat lower at follow up intervals just on statistical grounds alone. Additionally, it is not appropriate to interpret reductions as *causally* related to the program without considering other contextual factors that may also be contributing to a reduction in utilization. This is one of the limitations inherent in a “pre-post” design, but resources were not sufficient to adopt an experimental or quasi-experimental design with a control group. However, through the numerous sub-analyses presented in this report, we do develop internal comparison groups of enrolled participants (e.g., homeless clients who did or did not get housed, clients who were more or less engaged in the program) and compare their utilization changes from baseline to the study period as a strategy to minimize any threats to the validity of the analyses and deliver findings with confidence.

If regression to the mean, and not program impact, explains reductions in ED and inpatient utilization, then we would expect individuals with the most pre-enrollment utilization and higher associated costs to have the greatest reductions in the post-enrollment period. Therefore, if the reduction in utilization (effect size) is comparable across the board, it is fairly strong evidence that the program, and not regression effects are at work. To examine this relationship, we analyzed the pre-and post-enrollment distributions (by quantile) to determine whether those with the most pre-enrollment utilization had the highest reductions in the post-enrollment period. We found that ED and inpatient utilization means go down *consistently* for each quantile. The percentage change from pre-to-post is not significantly different across the distribution; there is no trend towards greater decreases from pre to post in the highest utilization categories. This indicates that regression to the mean is not a concern. Additional analyses on ED and inpatient costs also illustrate significant post-enrollment decreases regardless of the level of pre-enrollment costs, which is a pattern *not* indicative of regression to the mean.

In addition to the statistical analyses that counter the assertion that regression to the mean is a primary explanation for the evaluation findings, the acuity of the enrolled population and the complexity of their presenting conditions also support program effects over simple regression to the mean. Given the level of impairment of the frequent user population (chronic medical conditions, mental illness, addiction, homelessness, etc.) we would anticipate that many individuals' health conditions would require ongoing medical treatment, and improvement in health outcomes were unlikely due to stage of illness. We know based on the presenting conditions at enrollment that the frequent users enrolled in the programs are very complex and many are very ill. The majority are not utilizing ED services because of episodic or catastrophic medical events, but rather chronic, often deteriorating end-stage conditions. Therefore, reductions in service utilization for this population are less likely to be explained simply by the effect of regression to the mean.

5. Financial return on investment for counties is an important question related to the Initiative goals, however sufficient data to conduct this type of analysis across the six counties were not available. The evaluation was designed to examine "cost offsets" between hospitals and community providers, which requires data from multiple sources in each county that were not uniformly available in most counties. In order for all of these different organizations to provide sufficient cost and utilization data, a level of partnership, collaboration, commitment, and investment is required. However, in most of the sites, the data sharing MOUs established between the grantees and other providers were not sufficient, in the long run, to actualize this level of data sharing.

V. DESCRIPTION OF INTERVENTIONS

To address the multiple risk factor profile (i.e. homelessness, poverty, mental illness, substance abuse and chronic medical conditions) of frequent users, all of the grantees' intervention sought to redirect care from the emergency room to lower cost community-based settings by: 1) assisting frequent users in navigating and accessing available and more appropriate types and levels of services (e.g., primary care, county/community mental health, and substance abuse treatment), 2) decreasing psychosocial problems such as homelessness and substance abuse that may contribute to excess hospital utilization, and 3) improving coordination of acute, primary and preventive care among service providers and settings.

Each of the models implemented involved connecting frequent users to a combination of clinical (e.g., primary care, mental health, drug and alcohol treatment services) and non-clinical care (e.g., housing, transportation, legal advocacy etc.) The FUHSI interventions were designed to be client-centered and responsive to the immediate and long-term needs of the clients and address both their medical and social problems comprehensively and holistically.

The six FUHSI programs provided a range of direct and supportive services over the course of the three year funding period, including:

- Individualized assessment and care planning
- Assistance in securing health care and income benefits (e.g., MediCal, county indigent coverage, SSI/SSDI, food stamps)
- Linkage to primary care, mental health and substance abuse treatment services

- Making and accompanying clients to appointments
- Crisis management and resolution
- Coordinating and enhancing the communication among hospital ED staff (e.g., ED providers, discharge planners) and primary care and social service providers in the community
- Educating and supporting clients to build coping, self-care and illness management skills
- Assistance with housing, including subsidies/vouchers
- Transportation
- Advocacy to social and health care service providers on behalf of clients

Although the interventions developed by the six grantees included similar programmatic features and components, there were significant differences in terms of the following: 1) enrollment criteria, 2) staff composition and professional backgrounds, 3) outreach strategies, 4) service delivery, and 5) service duration. As addressed in other sections of this report, the programs also varied with regard to the specific needs and characteristics of the target population, the role and level of collaboration of program partners, and contextual factors within the county. **Table 2** presents a comparison of the six intervention models.

Table 2: Comparison of Grantee Intervention Models

Program Components	Los Angeles	Santa Clara	Alameda	Sacramento	Tulare	Santa Cruz*
Enrollment and Discharge	5+ visits/12 mos. and 2+ of following: Mental illness substance use with or without co-occurring physical illness Homelessness Uninsured or underinsured Incomes < 200% of Federal poverty level	8+ visits/12 mos. 18+ years County resident Uninsured or MediCal	10 visits in 12 mos. or 4+ visits/yr. for 2 consecutive yrs.	4+ visits/12 mos., aged 18-64 with history of: Mental illness or drug/alcohol abuse, or no primary care provider, under or uninsured	8+ visits/12 mos. or 5+ visits/6 mos. Age 18 and over	5+ visits/12 months, with at least one visit in last 6 months, Documented primary or secondary diagnoses of psychosocial disorders, mental illness or substance abuse disorders. Uninsured for at least one visit
Enrollment Criteria	Frequent users identified by ED electronic flagging system and referred by ED medical personnel Case managers print electronic report and attempt outreach to flagged patients Intake takes place in the ED (during peak hours and on weekends)	Enrollment in the ER - Flagging ED system (during triage) Case managers have office space at each hospital	Development of hot lists Referral from all hospital personnel to the primary case manager. Case mgr. in ED looking at database to ID frequent users in the ED	Development of hot lists/Flagging ED system *during triage	Flagging ED system in each participating hospital during triage. If criteria met, referred to Project Case Manager CM meets with person in ER at time of referral or at later date CMs have office space at clinics and collaborating partner sites	Retrieve lists from EDs with list of frequent users meeting criteria.
Identification and Enrollment						

Program Components	Los Angeles	Santa Clara	Alameda	Sacramento	Tulare	Santa Cruz*
Enrollment and Discharge						
Time-limited services	<p>No</p> <p>Discharge of frequent users is dependent on achievement of patient goals documented in his/her individualized case management plan</p> <p>Adapted Level System, developed by Santa Clara, to step down care</p>	<p>No</p> <p>Discharge of frequent users is dependent on client's needs using a step down approach:</p> <p>Level 1 - very frequent contact;</p> <p>Level 2 - less freq. contact; but still initiated by program;</p> <p>Level 3 - stable with less freq. contact initiated by client;</p> <p>Level 4 - discharge</p>	<p>No</p> <p>Discharge of frequent users is dependent on individual clients' needs.</p> <p>Anticipated reduced need within 1-2 years</p> <p>Adapted Level System, developed by Santa Clara, to step down care</p>	<p>Yes</p> <p>Step down takes place 60 days following engagement and enrollment.</p>	<p>No</p> <p>Initially intensive and gradual step down after first year of enrollment</p> <p>Adapted Level System, developed by Santa Clara, to step down care</p>	<p>No</p> <p>Dependent on individual client's needs. Target for step down is over 18 months</p> <p>Adapted Level System, developed by Santa Clara, to step down care</p>

Program Components	Los Angeles	Santa Clara	Alameda	Sacramento	Tulare	Santa Cruz
Team Size and Structure						
Staffing (FTEs)	Masters Level Case Manager Supervisor 1.0; Case Mgr 2.0; Project Evaluator .25; Data Entry .30 1 Hospital	Program Mgr 1.0; Case Mgrs. 4.0; MSW intern 1.0; Psychiatrist 0.125 Med Director .125 (positions funded by Initiative and Health Trust) 5 Hospitals	Clinical social worker 1.0; case manager 1.0; Benefits advocate (attorney) .15; mid-level nurse practitioner 1.0; consulting physician; psychiatrist .05; Program manager 2 Hospitals	ER case manager 1.0; Patient Nav 1.5 (BA) - with experience in related field; Peer Counselor 2.25 1 Hospital	Program Coor. 1.0; Case manager 4.0; 1 case manager is provided as in-kind by participating hospital PC overseeing all the case managers 3 Hospitals	Project Director/Team leader Supervising case manager: .80 Case manager: 1.0 FTE Public health case manager: .80 FTE 3 part-time MSW interns Admin. 2 Hospitals
Benefits advocate on team	Yes (Subcontract)	No	Yes	No	No	Yes
Peer/consumer involvement	No	Yes Formed client advisory group to provide input on needs and barriers; 1 rep on Advisory Group	No	Yes Peer counselor as part of the project staff	No	No
Caseload	13/1 Active caseload 30-40 clients. Each case manager handling a mix of clients (intensive and less intensive)	Total clients 200 over 3 years Client/staff ratio 25/1	60-80 patients/team Client/Case manager 20/1	15/1 patient navigator 10/1 peer counselor	50:1 (annually)	29:1
Interdisciplinary team approach	No	Yes	Yes	No	No	Yes - services provided by team (e.g., care coordination, transportation, benefits advocate, housing, etc.

Variations in Intervention Approach. Five of the six FUHSI program models applied a longer-term case management approach, while one (Sacramento) implemented a brief intervention model using a patient navigator/peer counselor approach. Although most of the grantees used a similar intervention approach, several factors lead to distinct variations across the sites that affected implementation (as documented in earlier evaluation reports) and overall program success. **Table 3** summarizes the factors that differentiate the program models and their approach to working with frequent user population.

Table 3: Variations in Intervention Approaches

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare
Lead Agency/Program Location						
Hospital-based			X	X		X
Community-based	X	X			X	
Case Management Focus						
Linkage/Brokering/Advocacy	X	X	X	X	X	X
Direct Service Delivery	X	X		X	X	
Professional Background of Project Team						
Project team comprised mostly of paraprofessionals (e.g., community outreach workers, peer navigators)			X			X
Project team comprised mostly of professional staff (e.g., licensed social worker, nurse practitioner, psychiatrist)	X	X		X	X	
Benefits Advocacy						
Separate legal services agency providing benefits advocacy services/specific benefit advocate on project team	X	X			X	
Case managers/team members do most benefit advocacy themselves			X	X	X	X
Approach to addressing client medical/clinical issues						
Case managers refer clients to county/community clinics (primary and specialty care)	X	X	X	X	X	X
Case managers assign clients to primary care physician/medical home				X		
Clinical team member (e.g., nurse practitioner, public health nurse) provides medical care (e.g., medication management, primary care, etc.) to clients as needed	X				X	

Average Length of Time in Program

Programs varied considerably in terms of average length of time clients were served by programs. **Table 4** shows the average length of time clients were served by each program. Client exposure to the program ranged from four months in Los Angeles to sixteen months in Santa Cruz.

Table 4: Average Length of Time in Program

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare	Total
	N=121	N=198	N=477	N=105	N=136	N=143	N=1180
Avg. Mo. In Program	10	4	5	11	16	10	

Strengths and Model Components of the Frequent User Programs

The contextual environment, resource capacity, and readiness for program implementation varied in the six programs involved in the Initiative. Despite these differences, each program demonstrated strengths and components of their models and collaboratives that contributed to project successes. Over the course of program implementation and documented in past process evaluation reports, we tracked information on barriers and facilitators related to outreach, enrollment, and engagement, service delivery, partnership development, and systems change. In looking across the Initiative’s six programs, we identified the model components and “promising practices” exhibited throughout the course of implementation. Data for these analyses were collected through site visits, interviews, reviews of grantee reports, and summaries of stakeholder meetings. Data were analyzed using qualitative analysis techniques involving data coding, comparison, and triangulation to develop and track indicators.

Outreach, Referral Processes and Client Engagement

- Electronic “flagging” systems provide an automated mechanism for hospital staff to identify patients who meet program eligibility for timely referral. Automated processes reduce reliance on busy ED staff for patient identification and referrals.
- Co-location at the hospital ED, in addition to an electronic flagging system, provides referrals in “real-time.” Client enrollment is more challenging once the patient leaves the ED.
- Access to permanent housing vouchers assists outreach by developing trust and offering individuals needed resources.
- Housing vouchers combined with on-going case management minimizes loss to follow up with homeless clients and improves client engagement.
- Program penetration at multiple hospitals across the county minimizes frequent users who may slip through the cracks. Clients who visit multiple hospitals throughout the region can be identified as “frequent users” when they may not be identified when only looking at utilization at one facility.
- Penetration across hospitals provides opportunities to identify frequent users when they re-emerge in the ED or attempt to access a different hospital system when drug-seeking.
- Program outreach and rapport building requires extensive effort, time and diversity of staff. Bilingual case managers have provided literature, resources and materials in Spanish, and frequently attended clinic appointments with clients to offer cultural and linguistic assistance if needed. Efforts to improve cultural competence and respond to client needs facilitate trust between client and program staff and enhance engagement in the program.

- Recruitment and engagement is enhanced with “small incentives” such as grocery vouchers, phone cards to maintain appointments and communicate with staff, bus passes, food boxes and program “wallet cards” so clients can easily contact program staff.
- Peer counselors can greatly enhance program outreach through their knowledge of community resources and street “credibility.” Peers understand the population and often know how to locate clients who have lost contact with the program.
- Transportation assistance is critical to client participation and engagement. Supplying bus tokens, taxi vouchers and providing home visits has increased client attendance at medical appointments and has improved overall program engagement.

Team Composition and Service Delivery

- A multidisciplinary team comprised of LICSWs and medical providers (nurse practitioner, psychiatry) allows the program to bill for the provision of direct physical and mental health services.
- Benefits advocacy assists clients with access to insurance coverage and income, which provides stability to the frequent user client population.
- Teams that are culturally and linguistically competent and provide written materials in multiple languages and interpretation assistance at medical appointments when necessary.
- Integrating peers with the hospital personnel bridges the hospital system with the community-based organization which creates a positive working collaboration. Peers also increase health literacy and model appropriate behaviors and interactions between frequent user clients and medical providers during primary care visits.
- Routine case conferences with a multidisciplinary provider group from primary care, psychiatry, mental health, alcohol/drug services, homeless services and the FUHSI program provide opportunities to address the clinical and social service needs, housing, substance abuse treatment and psychiatric issues of the frequent user population.
- Programs that have access to a psychiatrist through in-kind services or team composition can provide streamlined mental health services, offer medication management and provide assessments for SSI applications.
- Co-location with the Health Care for the Homeless programs offers invaluable housing resources to a client population with a high proportion of homelessness or unstable housing.
- As part of the intensive case management approach, staff actively educate and coach clients in navigating the health care system, including the consequences of missing appointments or abusive behavior (e.g., providers can drop them), which leads to stabilizing their medical home.
- Balancing caseload acuity is important to achieve enrollment targets, manage service delivery and provide “stepped care.” Clients with high needs impact service delivery and outreach capacity of staff, therefore programs that triage their referrals and move clients through a tiered service system increase efficiencies in overall program management.

- Projects with lower operating costs (paraprofessional model) have the flexibility to create a sizeable discretionary fund to pay for needed client services (medication, transportation, mental health and substance abuse treatment services).

Partnership Development and Collaboration

- Program penetration across the county is instrumental to both identifying frequent users of the ED and tracking program effectiveness. Programs that do not have relationships with multiple hospital systems across the county have difficulty proving that the client did not visit the ED in another hospital in the community.
- Strong support from the hospital administration, which includes a shared vision and dedication to holistic care of the patient, as well as a public health philosophy of care, creates a sense of community responsibility and investment in the frequent user population.
- Strong program buy-in and support from a hospital organization that spans multiple institutions such as a Hospital Council, serves to develop a collective solution for the frequent user population that can override competition among for-profit, non-profit and religious hospital systems.
- Presence of a strong and committed physician “champion” within the hospital or a program “champion” within the county facilitates program buy-in during the course of implementation and can promote sustainability strategies and ongoing support. Specifically, a program champion from county administration can leverage county resources, influence public policy and promote a strategic vision for addressing the frequent user issue at the county level.
- ED director and front-line ED staff buy-in enhances program referral and contextual understanding of the role frequent user programs can play in improving patient connections to community services and directing patients to more appropriate care settings.
- Relationships with MediCal managed care organizations can increase referral and enrollment, create opportunities for streamlining access to primary care resources for clients, as well as play a significant role in the sustainability of the program.
- In addition to the hospital, strong partnerships with primary care clinics, county mental health, housing services, substance abuse treatment, legal services/benefits advocacy, are critical to securing access to needed services for this complex population.
- Partnerships and collaboration with the criminal justice, mental health and primary care systems of care allow programs to assess cost and utilization impacts across other county systems involved with the frequent user population.

Systems Change Focus and Orientation

- To increase effectiveness, collaborative steering committees should move beyond reporting on program operations to addressing policy and systems issues across the county that extend beyond the frequent user issue within the hospital ED.
- A persistent drug-seeking population exists among the frequent users of the ED, and this sub-population is the most unresponsive to program intervention. To adequately address the issue of avoidable ED use, programs need to create protocols for pain management,

communication and data sharing across providers, and implement pain contracts to reduce drug-seeking behaviors.

- Changing existing systems and practices requires the ability to examine existing practices and share data and information in a way that identifies opportunities for change.

Data Collection and Evaluation

- To establish the business case for investment in frequent user program interventions and garner support and buy-in across stakeholder groups, programs need to compile sufficient evidence of impact across multiple systems. A consistent, systematic data collection strategy with the hospital and other partner organizations allows the program to track data over time that may be used to leverage additional funding and establish the business case for intensive case management for this hard to serve population.
- Important data elements for programs to track include: baseline and follow-up assessments, case management services (scope, quantity and intensity), number of ED visits, inpatient days, mental health, substance abuse treatment, ambulance use, jail bookings, total charges and direct costs.
- Development of a county-wide database linking hospital, primary care clinic and mental health service, and drug and alcohol treatment utilization would enhance data sharing capabilities and care coordination across medical and social service systems.
- Collecting and sharing data across systems not only serves to enhance care coordination and illustrate the business case for a cross-system collaboration, it also sheds light on potential inefficiencies in care, where services or case management may be duplicative, or where clients simply fall through the cracks.

Table 5 summarizes the range of successful program components present in each of the six program models implemented through the Initiative. It is important to note that there is no program that incorporates all of the successful components; rather, each program has unique strengths and areas in which the models improved over the course of the Initiative.

Table 5: Program Strengths and Model Components of the FUHSI Model

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare
Outreach and Client Engagement Strategies						
Electronic “flagging system” in ED for automated referral process		X	X	X		X
Program staff are co-located within the emergency department for “real time” access		X	X			X
Program has access to vouchers for permanent housing through partnerships with housing agency	X			X	X	
Program staff also provide ongoing case management for housed clients to minimize loss to follow up	X			X	X	
FUHSI program has penetration/presence at multiple hospitals across the county	X			X	X	X

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare
Program staff is diverse and bilingual to meet the cultural/linguistic needs of the population		X			X	X
Program uses “small incentives” to enhance recruitment (phone cards, grocery vouchers, bus tokens, etc.)	X	X	X	X	X	X
Program involves peers on the team to enhance rapport building in the recruitment process			X			
Transportation assistance is provided (bus passes, taxi vouchers, home visits)	X	X	X	X	X	X
Program staff accompany/attend client appointments	X		X	X	X	
Team Composition and Service Delivery						
Multidisciplinary provider team can directly bill for direct physical and mental health services	X			X	X	
Program staff or partner provides benefits advocacy for clients	X	X		X		
Team is culturally competent and can provide materials in other languages and interpretation assistance		X				X
Peers are part of the team and are integrated into hospital collaboration			X			
Case conferences with a multidisciplinary provider group are held regularly to discuss clinical issues	X			X	X	X
Program team has direct access to a psychiatrist for medication management, disability assessments and consultation	X			X		
Co-location with Health Care for the Homeless program	X			X	X	
Case management includes strong education component for clients to learn how to navigate the health system	X	X	X	X	X	X
Program uses a “Tiered” system to balance caseload acuity and transition clients to less intensive services	X	X		X	X	X
Programs with a paraprofessional model have financial flexibility to fund needed services						X
Partnerships and Collaborations						
Programs have collaborated with multiple hospitals across the county and can track clients’ utilization throughout the community	X			X	X	X
Program has strong support from hospital administration including a shared vision and value of the program	X		X	X		X
Hospital partners communicate and collaborate on other issues beyond frequent ED use/support case management function of FUHSI program (pay/patient)	X			X	X	X
Program has a strong physician champion or program champion in the community	X			X	X	
ED director and frontline staff in the ED have program buy-in			X	X		
Program has partnership with MediCal managed care					X	X
Program has strong partnerships with MH, housing, primary care, SA, and legal services to enhance client access to needed services	X			X	X	
Relationships with criminal justice, MH or primary care include data sharing to assess utilization impacts	X			X	X	
Systems Change Focus						
Program Collaborative has moved beyond operations to broader policy/systems issues	X			X	X	
Collaborative partners take collective responsibility in resolving frequent user issue	X			X	X	

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare
Pain management and pain contracts for the drug-seeking population are addressed across medical providers in the community	X			X	X	X
Partners share data and examine data in a way that identifies opportunities for policy/systems change	X			X	X	X
Data Collection and Evaluation						
Programs are compiling evidence/data across service systems to establish the business case for the frequent user intervention model	X			X	X	
Programs have a process in place to systematically track data elements across multiple systems (hospital charge/costs, primary care, MH, SA, EMS, jail bookings)				X		
Countywide database links hospital, primary care and MH service utilization						X

VI. ENROLLED POPULATION: DESCRIPTION

Enrollment, Disenrollment, Client Demographics

Over the course of the Initiative, programs enrolled and provided services to a total of 1180 clients. **Table 6** presents final enrollment numbers for each program through September 30, 2007, as well as data on disenrollments through this period. The number of disenrolled clients varies greatly across the six programs due to differences in how the programs define disenrollment. For example, in *Sacramento*, clients are documented as disenrolled only when they are deceased, compared to Los Angeles where disenrolled clients are those no longer actively engaging with case managers or have transitioned successfully to appropriate services in the community.

The **primary reasons for disenrollment** across the programs included program completion/graduation (29%), loss to follow-up (19%), failure of client to participate (16%), and death (15%). Regression analyses showed that factors associated with death included: a chronic health condition at enrollment, substance abuse problems, mental illness, low physical health composite scores on the SF-12 at enrollment, and 3 or more conditions at enrollment. The causes of death varied and included: end stage liver disease/cirrhosis, end stage renal disease and kidney failure related to diabetes, cardiac arrest, congestive heart failure, cancer, AIDS, drug overdose, murder, complications due to alcoholism or drug/alcohol abuse, septic syndrome, and head trauma. Among clients disenrolled because the program lost contact, homelessness, substance abuse relapse, and not having MediCal coverage were associated factors.

Table 6: Enrollment and Disenrollment, All Grantees, September 2007

Baseline Demographic Status of Clients Enrolled through September 2007							
	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare	Total
Number of Clients Enrolled as of (September 07)	121	198	477	105	136	143	1180
Total Clients Disenrolled as of (September 07)*	39	192	20	68	30	18	367
Reason for Disenrollment	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)
Client's request	1 (3%)	10 (5%)	0 (0%)	6 (9%)	0 (0%)	1 (6%)	18 (5%)
Unable to locate	9 (23%)	40 (21%)	0 (0%)	10 (15%)	5 (17%)	5 (27%)	69 (19%)
Client moved out of service area	4 (10%)	3 (2%)	0 (0%)	4 (6%)	3 (10%)	1 (6%)	15 (4%)
Failure to participate	13 (33%)	33 (17%)	0 (0%)	9 (13%)	1 (3%)	2 (11%)	58 (16%)
Client no longer eligible**	3 (8%)	6 (2%)	0 (0%)	5 (7%)	5 (17%)	0 (0%)	19 (5%)
Death	7 (18%)	3 (1%)	20 (100%)	12 (18%)	6 (20%)	8 (44%)	56 (15%)
Client graduated	0 (0%)	93 (48%)***	0 (0%)	7 (10%)	7 (23%)	0 (0%)	107 (29%)
Client incarcerated	1 (3%)	2 (<1%)	0 (0%)	7 (10%)	0 (0%)	1 (6%)	11 (3%)
Client unsafe for staff	0 (0%)	1 (<1%)	0 (0%)	3 (4%)	0 (0%)	0 (0%)	4 (<1%)
Other	1 (3%)	1 (<1%)	0 (0%)	5 (8%)	3 (10%)	0 (0%)	10 (3%)

* The number of disenrolled clients varies greatly across the six programs due to differences in how the programs define disenrollment.

** Reasons for losing eligibility in the Frequent User Programs include: transitioning to private insurance or Medicare, or the client becomes conserved for mental health reasons and transitions to a different intensive case management program.

*** The LA frequent user program did not continue after the end of the funding period; therefore, clients remaining in the program when it terminated were disenrolled and coded in the database as "graduated."

Demographics of the Enrolled Population

Table 7 presents data on client demographic characteristics at enrollment, including race, age, gender, marital status, and health status (as measured by the SF-12). Across the programs, the dominant profile of enrollees included being male, non-white, aged 40 – 59, and never married/separated or divorced. Programs with notable exceptions to this general profile are Alameda where 77 percent of their enrolled population was African American and Tulare where nearly 80 percent of their enrollees were women. Not surprisingly, overall health status of the population across programs was significantly lower than the average population for both physical and mental health as measured by the SF-12. The average physical health and mental health score on the SF-12 is 50, whereas in the frequent user population the scores are 38.5 and 43.5 respectively, which indicates they are significantly less healthy than the general population.

Table 7: Demographic Profile of Clients Enrolled Across Programs

Baseline Demographic Status of Clients Enrolled through September 2007							
	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare*	Total
Total Enrolled Clients	121	198	477	105	136	143	1180
Race**							
Caucasian	10 (8%)	55 (28%)	175 (37%)	39 (37%)	86 (63%)	66 (46%)	431 (37%)
African American	93 (77%)	27 (15%)	202 (42%)	14 (13%)	4 (3%)	9 (6%)	349 (30%)
Hispanic/Latino	5 (4%)	106 (53%)	69 (24%)	42 (40%)	32 (24%)	39 (27%)	293 (25%)
Asian American/Pacific Islander	3 (3%)	0 (0%)	1 (<1%)	0 (0%)	0 (0%)	1 (1%)	5 (<1%)
Native American	1 (1%)	7 (3%)	13 (3%)	3 (3%)	4 (3%)	1 (1%)	29 (2%)
Other/not available	9 (7%)	3 (1%)	17 (4%)	8 (7%)	10 (7%)	27 (19%)	74 (6%)
Age							
18- 39	33 (27%)	59 (30%)	136 (28%)	28 (27%)	37 (27%)	53 (37%)	346 (29%)
40 - 59	74 (61%)	117 (59%)	320 (67%)	66 (63%)	91 (67%)	59 (41%)	727 (62%)
60+	5 (4%)	22 (11%)	20 (4%)	11 (10%)	8 (6%)	11 (8%)	76 (6%)
Not available	9 (8%)	0 (0%)	1 (1%)	0 (0%)	1 (<1%)	20 (14%)	30 (3%)
Gender							
Male	69 (57%)	113 (57%)	284 (60%)	63 (60%)	82 (60%)	40 (28%)	623 (53%)
Female	48 (40%)	85 (43%)	191 (40%)	42 (40%)	54 (40%)	85 (59%)	533 (45%)
Transgender	0 (0%)	0 (0%)	1 (<1%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)
Not available	4 (3%)	0 (0%)	1 (<1%)	0 (0%)	0 (0%)	18 (13%)	18 (2%)
Marital Status							
Single, never married	83 (68%)	83 (42%)	246 (52%)	30 (28%)	30 (22%)	38 (27%)	510 (43%)
Living with partner	1 (1%)	6 (3%)	21 (4%)	5 (5%)	1 (1%)	4 (3%)	38 (3%)
Married	6 (5%)	41 (21%)	40 (8%)	14 (13%)	12 (9%)	35 (25%)	148 (13%)
Separated/divorced	19 (16%)	56 (28%)	133 (28%)	48 (46%)	21 (15%)	36 (25%)	313 (27%)
Widowed	1 (1%)	7 (4%)	21 (4%)	5 (5%)	5 (4%)	8 (5%)	47 (4%)
Information not available	11 (9%)	5 (2%)	16 (4%)	3 (3%)	67 (49%)	22 (15%)	124 (10%)
Health Status SF-12***							
Physical Composite	39.6	37.9	38.4	36.3	39.2	39.6	38.5
Mental Composite	38.4	42.7	42.4	41.7	46.7	43.7	43.5

* In the first year of implementation, Tulare outreach specialists did not record complete baseline information, which accounts for the high percentage of “other” or “not available” in some demographic categories. Accuracy of data documentation improved in subsequent enrollment years.

** Clients were allowed to select more than one racial category; therefore, percentages may exceed 100%.

*** Health status was measured at enrollment using the Short Form Health Survey (SF-12). This instrument creates a summary score on a scale of 0 to 100, where a higher score indicates better physical or mental health. The national norm for the general population is 50 for both the physical component summary and the mental component summary.

Presenting Conditions at Enrollment

Case managers from each of the six programs completed checklists through chart reviews for all clients no longer receiving active case management services (N=1081). The chart reviews served to document the range of conditions (both physical and psychosocial) present in clients at the time of program enrollment and addressed during the course of program involvement. As shown in **Table**

8, the six sites have varying combinations of clients with mental illness, substance abuse (and types of substance abuse), chronic medical conditions, and homelessness. The majority (65%) of the frequent user population across the sites had chronic diseases, the most common of which included diabetes, cardiovascular disease, chronic pain, cirrhosis and other liver disease, asthma and other respiratory conditions, seizures, Hepatitis C, and HIV. Over half (53%) of the clients had substance abuse issues, including alcohol and drugs. Among those with drug addiction, drugs of choice included (in order of prevalence): methamphetamines, crack/cocaine, heroin, and prescription drugs. A third (32%) of the clients had mental illness (Axis I and II) and nearly half (45%) were homeless at enrollment. The percentage of clients with mental illness is reported to be significantly lower in Sacramento than the other five programs. Excluding Sacramento from the analysis, the average percentage of mental illness across the other five programs is fifty percent.

Table 8: Presenting Conditions and Issues at Enrollment*

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare	Total
	N=91	N=158	N=453	N=105	N=139	N=135	N=1081*
Avg. Mo. In Program	10	4	5	11	16	10	
Presenting Conditions at Enrollment							
Mental Illness	48%	41%	8%**	63%	63%	39%	32%
Substance Abuse	79%	36%	48%	62%	75%	41%	53%
Chronic Diseases	69%	78%	49%	96%	53%	86%	65%
Homelessness	60%	39%	46%	45%	55%	27%	45%

* Stability data from chart reviews of clients were available on 1081 clients out of the total enrolled population of 1180.

** The low percentage of mental illness in Sacramento, compared to the other programs, may be an under-report that resulted from the absence of mental health clinical training and experience among the team members, the majority of whom were peer counselors with expertise in substance abuse identification and treatment.

Table 9 presents information regarding the overlap of the conditions frequent user clients present at program enrollment (data were not available from Santa Clara). Of those clients with only one presenting condition, almost sixty percent had an unmanaged chronic illness, twenty percent were homeless, fifteen percent had substance addiction, and four percent had mental illness. Across the sites, more than a third (36%) of enrollees had 3 or more conditions (i.e., some combination of mental illness, substance addiction, homelessness, and unmanaged chronic medical conditions) when entering the program. In Alameda and Santa Cruz, more than half of the clients had three or more presenting conditions, which adds to the complexity of treating these clients and maintaining a manageable caseload mix.

Table 9: Percent of Clients by Number of Presenting Conditions by County (excluding Santa Clara)

# Conditions	Alameda	Los Angeles	Sacramento	Santa Cruz	Tulare	Total
One Condition	13%	50%	32%	15%	46%	32%
2 conditions	34%	27%	34%	34%	29%	32%
3 conditions	34%	19%	31%	28%	19%	26%
4 or 5 conditions	18%	3%	2%	22%	6%	10%

VII. PROGRAM ACCOMPLISHMENTS: CONNECTING CLIENTS TO NEEDED SERVICES

The following section presents findings on program accomplishments regarding client outcomes related to stability, which is defined as connecting clients to services such as housing, health insurance, income benefits, and primary care, all of which are essential for creating a stable environment for individuals to then be able to address and follow through with needed medical treatment. The client data presented are descriptive and reflect *intermediate outcomes* for clients (N=1081) and were obtained through chart reviews by case managers and team members.

Summary Findings on Connections to Housing, Insurance, and Income Benefits

Table 10 presents a summary of the stability indicator outcomes for clients homeless or uninsured/underinsured at enrollment. Nearly half (45%) of the frequent user clients enrolled in the programs were homeless at enrollment. Among these, 12 percent were connected to permanent housing through HUD vouchers and more than half (54%) were placed in shelters, board and care homes, or other similar placements. Over 60 percent (63%) of program enrollees had no insurance or were underinsured at enrollment. Among the clients without adequate insurance at enrollment, nearly two-thirds (64%) were connected to coverage through the county indigent program and MediCal applications were filed for 25 percent. Of the MediCal applications submitted, 68 percent were approved. Based on these outcomes, the programs were very successful connecting enrollees to needed resources.

Table 10: Summary of Client Connections to Housing, Insurance, and Income Benefits: All Counties

	N (Percentage)
Homeless at Enrollment	486 (45%)
Homeless connected to shelter, board and care, etc.	271 (54%)
Homeless connected to permanent HUD housing via vouchers*	60 (12%)*
Clients Uninsured or Underinsured at Enrollment	676 (63%)
MediCal Applications Submitted	160 (24%)
MediCal Applications Submitted (160) and Approved	108 (68%)
Clients connected to county indigent health insurance program	430 (64%)

* Only Alameda, Santa Clara, and Santa Cruz were able to offer clients permanent housing with vouchers through their housing partners.

Connection to Housing for Clients Entering Programs as Homeless

Connecting homeless clients to stable housing is a primary goal for case managers and program staff. As **Table 11** shows, the percentage of clients homeless at enrollment varies from 27 percent in Tulare to 60 percent in Alameda. Based on community capacity, program model and resources, grantee success in connecting homeless clients to stable housing varies considerably. Santa Clara and Alameda, who work directly with housing programs in their collaboratives, had the highest percentage (47% and 40% respectively) of clients connected to permanent housing through the provision of housing vouchers. In contrast, Sacramento and Tulare have relatively high percentages of clients connected to temporary shelter, board and care placements or skilled nursing facilities due to a lack of supported housing units or other types of permanent housing in their communities. Most grantees who connected homeless clients to temporary housing did so through homeless shelter and SRO placements. Los Angeles reported that despite having very few options for temporary shelter, they were able to connect homeless clients to temporary housing through acquisition of motel vouchers and subsidies. Through their collaborations with the Salvation Army and the Cancer Society, Sacramento also offered motel vouchers and temporary shelter placements.

It is important to note clients refused temporary placement in shelters for a variety of reasons, including: preference to live on the streets, reluctance to share a room with other people, unwillingness to meet sober requirements for housing, and a dislike of shelter location offered.

Table 11: Outcomes of Clients Homeless at Enrollment

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare	Total
	N=91	N=158	N=453	N=105	N=139	N=135	N=1081
Homeless at Enrollment	55 (60%)	62 (39%)	209 (46%)	47 (45%)	76 (55%)	37 (27%)	486 (45%)
Connected to Permanent Housing/HUD Vouchers	22 (40%)	NA	NA	22 (47%)	16 (21%)	NA	60 (34%)
Connected to Shelter or other Longer term Housing *	38 (69%)	30 (48%)	174 (83%)	34 (72%)	31 (41%)	27 (73%)	334 (69%)
Client Refused Shelter Assistance	11 (20%)	23 (37%)	26 (12%)	11 (23%)	20 (26%)	8 (22%)	99 (20%)

*Shelter includes emergency shelter placements, SROs, and similar arrangements. Longer term housing arrangements include skilled nursing facilities, board and care homes, subsidies for apartment rental deposits, hotel vouchers, and residential treatment.

Connection to Health Coverage and Income Benefits

Connection to health coverage and income benefits is an essential strategy for stabilizing the frequent user population. **Table 12** provides detail regarding health coverage outcomes across the sites. In terms of securing health coverage, the programs connected 80 percent of the uninsured to county coverage (64%) or MediCal (16%). In terms of connections to MediCal, a high percentage of applications in Alameda, Santa Cruz, and Tulare were approved.

As **Table 13** shows, programs enrolled some eligible clients in SSI, with Alameda proportionately assisting the most applications, which likely reflects of the program's close collaboration with a legal services and advocacy program. Average approval time ranges from 3 to over 6 months across the sites.

Table 12: Health Coverage Outcomes for All Clients Uninsured or Underinsured at Enrollment

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare	Total
	N=91	N=158	N=453	N=105	N=139	N=135	N=1081
Uninsured (Not on MediCal at enrollment)	64 (70%)	125 (79%)	273 (60%)	53 (51%)	82 (59%)	79 (59%)	676 (63%)
MediCal Applications	34 (53%)	21 (17%)	18 (7%)	33 (62%)	37 (45%)	17 (22%)	160 (24%)
MediCal Approved	30 (88%)	5 (25%)	6 (33%)	17 (52%)	35 (95%)	15 (88%)	108 (68%)
County Indigent Health Insurance Programs	30 (47%)	79 (63%)	222 (81%)	24 (45%)	32 (39%)	43 (54%)	430 (64%)

Table 13: Income and Benefits Outcomes for All Clients Without SSI at Enrollment

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare	Total
	N=91	N=158	N=453	N=105	N=139	N=135	N=1081
Clients without SSI at Enrollment	64 (70%)	145 (92%)	340 (75%)	68 (65%)	129 (93%)	116 (86%)	862 (80%)
# SSI Applications	34 (53%)	14 (10%)	31 (9%)	36 (53%)	37 (29%)	17 (17%)	169 (20%)
# SSI Applications Approved*	30 (88%)	5 (36%)	4 (13%)	9 (25%)	35 (95%)	6 (35%)	89 (53%)

*Percentages are calculated based on the number of applications submitted

Connection to Primary Care and Behavioral Health Services

Successful connection to primary care varies across sites and is influenced by availability of primary care services in the community, as well as the level of clinic participation and partnership in the collaboratives. **Table 14** presents data on connection to primary care services. Overall, the programs did fairly well referring clients to primary care clinics or assigning them to a primary care physician. It is important to note that in Santa Clara, all clients that did not already have a primary care home or primary care provider were assigned a PCP at enrollment, which is an important practice of this program. This policy was made a priority of the primary care clinic partners in their collaborative.

As presented earlier in **Table 8**, the sites individually and collectively are serving high numbers of individuals with mental illness and/or substance abuse issues. However, as shown in **Table 14**, the programs experienced varying success connecting clients to mental health and substance abuse services. Overall, slightly more than 40 percent of clients with mental health issues were connected to mental health services and 20 percent of clients with substance abuse issues were connected to substance abuse treatment. For mental health and substance abuse services, Alameda and Santa Cruz had success treating clients due to the composition of their multidisciplinary teams, which included mental health clinicians who could provide therapy services directly. Successful connection to mental health services in Tulare, and mental health and substance abuse services in Santa Clara, stemmed from strong collaborations with partners from county mental health and/or drug and alcohol services (Santa Clara only) that facilitated referral and linkage to services in the community. Over the course of the program, significant capacity issues posed challenges to the Tulare program for needed detox and substance abuse treatment services.

Because of the average length of stay in the LA program (average 4 months), it was difficult to connect clients with serious substance abuse problems to needed services, despite the program's location in Tarzana Treatment Center. All of the programs experienced access challenges due to wait lists and restrictive requirements (e.g., calling daily to remain on the list for substance abuse treatment) for both mental health and substance abuse treatment services. Client motivation and engagement in the program and follow through were also factors affecting service access and utilization.

Table 14: Connection to Primary Care and Behavioral Health Services for All Clients

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare	Total
	N=91	N=158	N=453	N=105	N=139	N=135	N=1081
Referred Client to Clinic	72 (79%)	95 (60%)	307 (68%)	32 (30%)	62 (45%)	94 (70%)	662 (61%)
Client Assigned PCP	52 (57%)	48 (30%)	75 (17%)	37 (35%)*	65 (47%)	55 (41%)	332 (31%)
Client has Attended Clinic Appointments	48 (53%)	52 (33%)	154 (34%)	85 (81%)	58 (42%)	80 (59%)	477 (44%)
Client Connected to Specialty Medical Care	23 (25%)	21 (13%)	25 (5%)	55 (53%)	10 (7%)	31 (23%)	165 (15%)
Clients w/ MH issues at enrollment	N=44	N=65	N=36	N=66	N=87	N=52	N=350
Client Connected to Mental Health Services	32 (73%)	18 (28%)	7 (19%)	31 (47%)	34 (39%)	25 (48%)	147 (42%)
Clients w/SA issues at enrollment	N=72	N=57	N=219	N=62	N=105	N=55	N=570
Client Connected to Substance Abuse Services	22 (31%)	18 (32%)	14 (6%)	25 (40%)	25 (24%)	10 (18%)	114 (20%)

*All others in Santa Clara already had a PCP at enrollment

VIII. PROGRAM ACCOMPLISHMENTS: COMPARISON OF EMERGENCY DEPARTMENT AND IN-PATIENT HOSPITAL UTILIZATION AND CHARGES

The following section presents results from analyses of hospital emergency department and inpatient data for the six programs. The goal of these analyses was to examine the impact of the programs on emergency department utilization and costs, and inpatient utilization and costs. Analyses in this section are organized into six parts:

- Total population enrolled before September 30, 2006: Comparison between one year pre- and one year post-enrollment;
- Clients engaged in and in contact with the program for at least one year: Comparison between one year pre- and one year post-enrollment;
- Clients on MediCal at enrollment: Comparison between one year pre- and one year post-enrollment;
- Homeless clients connected vs. not connected to permanent housing: Comparison between one year pre- and one year post-enrollment;
- Total population enrolled before September 30, 2005: Comparison of one year pre-enrollment and two years post enrollment; and
- Cost analysis of a sample of deceased clients.

Methodology: The grantees and their hospital partners were responsible for supplying the hospital utilization and charge data used in this evaluation. Five of the programs provided the evaluation with individual level data; however, due to Institutional Review Board issues, Santa Clara was only able to provide hospital data in the aggregate, which limited our ability to include

this site in some of the sub-analyses conducted and presented in the following sections. In addition, the charge data supplied to Los Angeles by Olive View Hospital applied an average charge methodology for ED and in-patient episodes rather than actual charges accrued by patients. Therefore, the overall charges presented for LA-Tarzana appear lower than the other programs.

As discussed earlier in this report, there were several issues and inconsistencies in the data received. To address these concerns, we developed a data cleaning strategy to address the data problems and improve the overall quality and integrity of the data analyzed, and enable valid comparisons across the programs. The following inclusion criteria were applied to create the data set:

1. **Program enrollment date was September 30, 2006 or earlier** to ensure that clients had a full year of exposure to the intervention and potential for using hospital services;
2. **At least 3 visits (ED or in-patient) in the year prior to enrollment.** Our rationale for this seemingly low visits threshold for a “frequent user” population was based on several factors. Programs enrolled clients using lists obtained through ED registration. However, the utilization and charge data generated by the hospitals were provided by hospital financial departments. If a visit to an emergency department did not generate a charge (e.g., client leaves without being seen or against medical advice), then these visits are not reflected in the utilization and charge data. In addition, in several hospital systems, if a client enters through the ED and is subsequently admitted to the hospital, the ED visit and any associated charges are recorded as part of the in-patient record.

After applying these criteria, a total of 598 cases were eligible for hospital data analyses. To be clear, although the programs enrolled a total of 1180 individuals over the course of the Initiative, many of these clients were enrolled in the **final year** of the program and therefore were not included in this analysis because there was **not sufficient time** in the post period to fully measure program impact.

The analyses presented below begin with the largest sample (N=598) in the first section. The subsequent sections present sub-analyses of this sample and, therefore, the sample sizes change accordingly. The specific sample size is included for each sub-analysis group. *It is important to note that the sample sizes for all analyses presented are sufficient for making statistically valid assessments of the data.* Table 15 presents a summary of all subgroups and sample sizes for the analyses presented.

Table 15: Sample Sizes Used for Analyses

Analysis	N
Total population enrolled before 9/30/2006: Comparison between one year pre- and one year post-enrollment	598
Clients engaged and in contact with the program for at least one year: Comparison between one year pre- and one year post-enrollment	419
Clients on <i>MediCal</i> at enrollment: Comparison between one year pre- and one year post-enrollment	280
Homeless clients connected vs. not connected to permanent housing: Comparison between one year pre- and one year post-enrollment	166
Total population enrolled before September 30, 2005: Comparison of one year pre-enrollment and two years post enrollment	180
Cost analysis of a sample of deceased clients	38

Analysis Approach. Univariate, bivariate, and multivariate analyses were conducted. Statistical tests presented are paired t-tests, which is a robust measure that takes into account the pre-post nature of the data (equivalent to repeated measures ANOVA). Tests on charges used logged variables (with a 1 instead of zeroes) to avoid negative numbers.

A. Total population enrolled before September 30, 2006: One year pre-post enrollment

As shown in Table 16, overall, the programs yielded decreases in both emergency department utilization (30%) and charges (17%), and inpatient admissions (14%), days (2%), and charges (8%). All of these decreases were statistically significant, with the exception of decreases in cumulative inpatient days.

Table 16: ED and Inpatient Visits Aggregated across Counties (N = 598)

	PRE	POST	DIFFERENCE	% DIFFERENCE
ED Visits	4,799	3,380	1,419	30% decrease*
ED Charges	\$8,531,971	\$7,066,670	\$1,465,301	17% decrease*
Inpatient Admissions	959	822	137	14% decrease*
Cumulative Inpatient Days	4,299	4,200	99	2% decrease
Inpatient Admission Charges	\$35,799,433	\$33,081,671	\$2,717,762	8% decrease*

*Statistically Significant

Program Impact on Emergency Department Utilization and Costs. A primary goal of the Frequent User programs was to reduce utilization rates in emergency departments. Tables 17 and 18 present findings that demonstrate the effectiveness of all the funded programs in reducing both number of ED visits and associated charges in the year following program enrollment. As Table 17 shows, reductions in ED use in the year after enrollment were statistically significant for

all six sites, with reductions ranging from 22 to 63 percent. All six programs had statistically significant reductions in emergency department charges in the year after enrollment, with reductions ranging from 34 to 55 percent (Table 18).

Table 17: Emergency Department Visits One Year Before and One Year After Program Enrollment by County (N=598)

Measure	Alameda N=66	Sacramento N=209	Santa Clara N=67	Santa Cruz N=96	LA N= 84	Tulare N=76
Sum of ED visits PRE	904	690	699	973	608	925
Sum of ED visits POST	581	591	590	628	479	511
Median** visits PRE	8	3	9	8	5	10
Median visits POST	3	2	7	3	3	5
PRE-POST Difference	5	1	2	5	2	5
PRE-POST % Difference (Median)	-63%*	-33%*	-22%*	-63%*	-40%*	-50%*

*Statistically Significant

** To address outliers, the median is presented as the most appropriate measure of central tendency.

Table 18: Emergency Department Charges Before and After Program Enrollment by County (N=598)

Measure	Alameda N=66	Sacramento N=209	Santa Clara N=67	Santa Cruz N=96	Tarzana N= 84	Tulare N=76
Sum of ED Charges PRE	\$605,598	\$4,278,965	\$1,035,655	\$1,640,163	\$673,056	\$287,530
Sum of ED Charges POST	\$401,681	\$3,588,154	\$1,142,811	\$1,228,164	\$530,253	\$165,341
Median** Charges PRE	\$4,030	\$15,464	\$3,381	\$11,093	\$5,535	\$2,400
Median Charges POST	\$1,822	\$8,631	\$2,188	\$7301	\$3,321	\$1,222
PRE-POST Difference in Median Charges	\$2,208	\$6,833	\$1,193	\$3792	\$2,214	\$1,178
PRE-POST % Difference	-55%*	-44%*	-35%*	-34%*	-40%*	-49%*

*Statistically Significant

** To address outliers, the median is presented as the most appropriate measure of central tendency.

Factors Predicting Frequent ED Use. We ran bivariate and multivariate analyses to identify variables associated with or predictive of lower ED use. Some of the variables tested included: age, race/ethnicity, education, gender, insurance status (MediCal or uninsured), presenting conditions at enrollment including homelessness, mental illness, substance abuse, chronic disease (and combinations thereof), client engagement and motivation, health decline, and clients lost to follow-up. Of these, only race (African American), homeless at enrollment, chronic medical condition, and education (high school education or less) were predictive of higher ED costs in the study period as compared to the year prior to enrollment.

Program Impact on Inpatient Admissions, Cumulative Days, and Costs

Understanding the impact of the frequent user programs on reducing inpatient admissions, cumulative days, and charges requires a more nuanced assessment of the contributing factors. As shown in **Table 19**, the change in inpatient admissions from one year pre-enrollment to one-year post-enrollment varied considerably across the programs (ranging from a 16 percent increase in Alameda to a 34 percent decrease in Santa Cruz). Similarly, the pre-post change in inpatient days ranged from a 55 percent increase in Alameda and a 48 percent increase in Tarzana to a 25 percent reduction in Santa Clara and an 18 percent reduction in Santa Cruz. Some sites, such as Tarzana and Tulare showed reductions in admissions, but increases in days, which likely reflects the acuity of the population being served. The hospital inpatient charge data presented in **Table 20** shows similar variation across the programs in terms of pre-post changes. Average charges range from \$13k in Tulare to \$115k in Santa Clara in the pre-period and changes from pre to post range from a 17 percent reduction in Sacramento to a 50 percent increase in Alameda.

Within the frequent user populations served by each program, there is a small proportion (~15%) of “super users” with significant catastrophic health events and terminal illnesses that is affecting the magnitude of change between the pre and post period for Year 1.

Table 19: Inpatient Admissions Before and After Program Enrollment by County (N=598)

Measure	Alameda N=66	Sacramento N=209	Santa Clara N=67	Santa Cruz N=96	Tarzana N= 84	Tulare N=76
Sum of Inpatient Admits PRE	71	260	242	122	124	140
Sum of Inpatient Admits POST	83	206	209	81	114	129
Mean Admits PRE	1.08	1.24	3.61	1.27	1.48	1.84
Mean Admits POST	1.26	.99	3.11	.84	1.36	1.7
PRE-POST Difference	+.18	.25	.50	.43	0.12	.14
PRE-POST % Difference	+16%*	-20%*	-14%*	-34%*	-8%	-8%
Sum of Inpatient Days PRE	232	1,321	1,060	616	457	613
Sum of Inpatient Days POST	358	1,200	792	509	679	662
Mean Days PRE	3.52	6.32	13	6.4	5.4	8.1
Mean Days POST	5.42	5.74	9.7	5.3	8.1	8.7
PRE-POST Difference	+1.9	-.58	-3.3	-1.1	+2.6	+.6
PRE-POST % Difference	+54%	-9%	-25%*	-18%*	+48%*	+8%

*Statistically Significant

Table 20: Total Inpatient Charges Before and After Program Enrollment by County (N=598)

Measure	Alameda N=66	Sacramento N=209	Santa Clara N=67	Santa Cruz N=96	Tarzana** N= 84	Tulare N=76
Sum of Inpatient Charges PRE	\$3,172,730	\$17,733,603	\$7,758,732	\$5,858,029	\$317,316	\$997,270
Sum of Inpatient Charges POST	\$4,786,708	\$14,692,136	\$6,629,254	\$5,801,704	\$291,726	\$892,635
Mean Charges PRE	\$47,380	\$84,849	\$115,802	\$61,021	\$3,777	\$13,219
Mean Charges POST	\$72,296	\$70,297	\$98,944	\$60,434	\$3,472	\$11,780
PRE-POST Difference in Mean Charges	+\$24,916	-\$14,552	-\$16,858	-\$587	-\$305	-\$1,439
PRE-POST % Difference	+53%*	-17%*	-15%*	-1%	-8%	-11%

* Statistically Significant

** LA-Tarzana provided data using a flat charge of \$3600 per inpatient day, so figures may not reflect the actual associated charges

Further Analysis of Inpatient Utilization and Charges

To better understand and interpret the inpatient utilization and charge data across the programs, we examined the distribution of inpatient charges in the pre and one-year post periods (**Table 21**). In the pre-period, 15 percent of the clients account for 80 percent of the charges. This skew continues in the year post enrollment, with 14 percent of the enrollees accounting for 84 percent of the charges. Across the board there were reductions in the numbers of clients and charges within each charge band. However, because of the skew and the significantly high cost of the top 15 percent, the overall impact on admissions, days, and charges in the year post enrollment period is limited when looking at this population as whole. Interestingly, the total number of charges for the entire group decreased, the number of patients in the post period with zero inpatient charges increased by 25 percent, and there were fewer clients generating charges.

Table 21: Skewed Distribution of In-Patient Charges (excluding Santa Clara)

Charges	1 Yr. Pre-Enrollment		1 Yr. Post-Enrollment		Pre to Post	
	N	Total Charges	N	Total Charges	Difference N	Difference Charges
\$0	246	\$0	308	\$0	62	\$0
\$1-10,000	70	\$309,364	56	\$255,005	-14	(-\$54,359)
\$10,001-50,000	92	\$2,472,850	63	\$1,641,365	-29	(-\$831,485)
\$50,001-100,000	44	\$2,858,952	31	\$2,351,716	-13	(-\$507,236)
>\$100,001	79	\$22,399,535	73	\$22,204,330	-6	(-\$195,205)
Total	531	\$28,040,700	531	\$26,452,417	0	(-\$1,588,283)

Who are the “Super Users” among the Frequent Users?

To determine the extent to which it is possible to “profile” the types of clients who might be less responsive to the range of interventions implemented in this Initiative, we conducted a variety of

multivariate (regression) analyses (described above in relation to ED utilization and charges) to identify characteristics predictive of inpatient utilization and charges. The results of these analyses were mixed and did not yield a specific profile. The only significant predictors were age (being older), being on MediCal at enrollment, and chronic disease.

Examining the top 3 “Super Users” in each program (excluding Santa Clara) provides insight into the complexity of their conditions and the catastrophic illnesses that affect their inpatient admissions, days, and charges. **Table 22** summarizes the characteristics of these clients by County. *For the purposes of confidentiality, the reasons for hospitalization (diagnoses) are not included.*

Of the 15 “Super Users,” the majority (9) were male, homeless at enrollment (11), nearly half (7) were over 50 years of age, and 8 were on MediCal at enrollment. Nearly all (14) had substance abuse issues, 11 had chronic diseases, and 5 had mental illness. The reasons for hospitalization varied, but included complications from surgery, chronic illness (e.g., diabetes, cardiovascular disease, and Sickle Cell), alcohol withdrawal, cellulitis, and septicemia.

Table 22: Profiles of Top 3 Individuals Accruing Inpatient Charges in the Year Post Enrollment by County (excluding Santa Clara)

Client	Alameda	Sacramento	Santa Cruz	LA	Tulare
High User A					
Charges 1 Year Pre-Enrollment	\$601,412	\$671,126	\$99,605	\$20,472	\$182,855
Charges 1 Year Post-Enrollment	\$871,491	\$849,692	\$1,921,152	\$33,267	\$140,504
Number of Admissions POST	1	10	7	13	2
MediCal at Enrollment	No	Yes	Yes	No	Yes
Age Range	41-50	Over 50	41-50	Under 40	41-40
Gender	Female	Male	Female	Male	Female
Race	Af Amer	White	Mixed	Latino	Unknown
Homeless at Enrollment	Yes	Yes	No	Yes	Yes
Mental Illness	No	No	Yes	Yes	No
Substance Abuse Issues	Yes	No	Yes	Yes	Yes
Chronic Disease	No	Yes	Yes	Yes	Yes
Engaged in Program	Yes	Yes	Yes	Not Avail	Yes
Time in Program	1 year	1 year	1 year	Over 1 year	6 months
Deceased	No	Yes	No	No	No
Cause of Death	N/A	Heart Failure, Infection	N/A	N/A	N/A

Table 22 (continued): Profiles of Top 3 Individuals Accruing Inpatient Charges in the Year Post Enrollment by County (excluding Santa Clara)

High User B					
Charges 1 Year Pre-Enrollment	\$7,819	\$308,816	\$58,993	\$17,913	\$123,402
Charges 1 Year Post-Enrollment	\$1,283,490	\$922,232	\$362,857	\$23,031	\$145,502
Number of Admissions POST	3	25	2	9	16
MediCal at Enrollment	Yes	No	Yes	No	Yes
Age Range	Over 50	Under 40	Over 50	Over 50	Under 40
Gender	Male	Male	Male	Male	Male
Race	Af Amer	Af Amer	White	White	White
Homeless at Enrollment	No	No	Yes	Yes	No
Mental Illness	No	No	Yes	No	No
Substance Abuse Issues	Yes	Yes	Yes	Yes	Yes
Chronic Disease	Yes	Yes	Yes	No	Yes
Engaged in Program	No	Yes	Yes	Not Avail	Yes
Time in Program	< 30 days	1 year	6 months	< 30 days	Over 1 year
Deceased	No	No	No	No	No
Cause of Death	N/A	N/A	N/A	N/A	N/A
High User C					
Charges 1 Year Pre-Enrollment	\$5,942	\$110,223	\$0	\$10,236	\$252,804
Charges 1 Year Post-Enrollment	\$691,900	\$744,828	\$374,138	\$17,913	\$91,775
Number of Admissions POST	3	4	5	7	6
MediCal at Enrollment	No	No	Yes	Yes	No
Age	Over 50	Over 50	41-50	Over 50	Under 40
Gender	Male	Female	Female	Male	Female
Race	Af Amer	Af Amer	White	Af Amer	Unknown
Homeless at Enrollment	Yes	Yes	Yes	Yes	Yes
Mental Illness	No	Yes	No	No	No
Substance Abuse Issues	Yes	Yes	Yes	Yes	Yes
Chronic Disease	No	No	Yes	Yes	Yes
Engaged in Program	Yes	Yes	Yes	Not Avail	Yes
Time in Program	6 months	1 year	Over 1 year	Over 1 year	< 3 mos
Deceased	No	Yes	No	No	No
Cause of Death	N/A	Stroke due to drug use	N/A	N/A	N/A

B. Clients engaged in and in contact with the program for at least one year: One year pre-post enrollment

The following section presents findings on a sub-set (N= 419) of clients (excluding Los Angeles). In an effort to expedite and increase enrollment, the programs sometimes enrolled clients who complete baseline paperwork, but then did not fully engage in services offered. The six grantees developed a common definition of engagement that could standardize this concept across the

sites. **Engagement was defined as: providing at least one service (after the initial intake assessment), such as assisting the client in filling out a benefits or housing application, or connection to a primary care, mental health, or substance abuse treatment service.** Using this definition, the programs conducted an assessment of all the clients enrolled to determine which engaged vs. did not engage. (LA-Tarzana was not able to conduct this assessment because the program ended in October 2007). In addition to this information, we then identified clients who were known/served by the program for a year, excluding those who were incarcerated or died. This analytic strategy also eliminates the problems discussed in the data limitations section of this report, including the concern about clients who are lost to follow up (those clients not in contact with the programs who may or may not be in the service area and at risk for using the hospitals or EDs within the study period).

As shown in **Table 23**, overall, clients that were engaged in the programs showed decreases in both emergency department utilization (29%) and charges (12%), and inpatient admissions (14%), days (9%), and charges (13%).

Table 23: Aggregate ED and Inpatient Visits and Charges: Clients Engaged In Program and Not Lost to Follow-up or Death (N = 419) (Excluding Los Angeles)

	PRE	POST	DIFFERENCE	% DIFFERENCE
ED Visits	3,430	2,452	-978	29% decrease*
ED Charges	\$6,353,642	\$5,579,708	-\$773,934	12% decrease
Inpatient Admissions	706	610	-96	14% decrease*
Cumulative Inpatient Days	3291	3011	-280	9% decrease
Inpatient Admission Charges	\$30,261,235	\$26,357,908	-\$3,903,327	13% decrease

* Statistically Significant

Program Impact on Emergency Department Utilization and Costs. **Tables 24 and 25** present findings that show reductions in both number of ED visits and associated charges in the year following program enrollment for clients who were engaged in services. As **Table 24** shows, reductions in ED use in the year after enrollment were statistically significant for all five sites, with reductions ranging from 25 percent in Santa Clara to 64 percent in Alameda. All five programs had statistically significant reductions in emergency department charges in the year after enrollment, with reductions ranging from 35 percent in Santa Clara and Santa Cruz to 44 percent in Alameda (**Table 25**).

Table 24: Emergency Department Visits One Year Before and One Year After Program Enrollment by County: Clients Engaged In Program and Not Lost to Follow-up or Death (N = 419) (Excluding Los Angeles)

Measure	Alameda N=46	Sacramento N=158	Santa Clara N=61	Santa Cruz N=89	Tulare N=65
Sum of ED visits PRE	548	529	645	934	774
Sum of ED visits POST	386	474	527	609	456
Median** visits PRE	7	3	8	8	10
Median visits POST	2.5	2	6	4	5
PRE-POST Difference	4.5	1	2	4	5
PRE-POST % Difference (Median)	-64%*	-33%*	-25%*	-50%*	-50%*

*Statistically Significant

** To address outliers, the median is presented as the most appropriate measure of central tendency.

Table 25: Emergency Department Charges Before and After Program Enrollment by County: Clients Engaged In Program and Not Lost to Follow-Up or Death (N = 419) (Excluding Los Angeles)

Measure	Alameda N=46	Sacramento N=158	Santa Clara N=	Santa Cruz N=89	Tulare N=65
Sum of ED Charges PRE	\$339,572	\$3,169,010	\$1,001,910	\$1,553,855	\$255,550
Sum of ED Charges POST	\$224,947	\$2,855,822	\$1,100,784	\$1,198,491	\$157,637
Median** Charges PRE	\$2,943	\$15,238	\$3,381	\$11,379	\$2,431
Median Charges POST	\$1,654	\$8,993	\$2,188	\$7,435	\$1,490
PRE-POST Difference in Median Charges	\$1,289	\$6,245	\$1,193	\$3943	\$941
PRE-POST % Difference	-44%*	-41%*	-35%*	-35%*	-39%*

*Statistically Significant

** To address outliers, the median is presented as the most appropriate measure of central tendency.

Program Impact on Inpatient Admissions, Cumulative Days, and Costs.

As shown in **Table 26**, the change in inpatient admissions from one year pre-enrollment to one-year post-enrollment varied considerably across the programs (ranging from a 17 percent increase in Alameda to a 34 percent decrease in Santa Cruz). Similarly, the pre-post change in inpatient days ranged from a 24 percent increase in Alameda to a 27 percent reduction in Santa Clara. Interestingly, the hospital inpatient charge data presented in **Table 27** shows a decrease across all the programs, including Alameda, which differs from the trend for the larger group (discussed above in Section A, **Table 20**). This difference provides evidence that engagement in the programs positively affects outcomes achieved.

Table 26: Inpatient Admissions Before and After Program Enrollment by County: Clients Engaged In Program and Not Lost to Follow-Up or Death (N = 419) (Excluding Los Angeles)

Measure	Alameda N=46	Sacramento N=158	Santa Clara N=61	Santa Cruz N=89	Tulare N=65
Sum of Inpatient Admits PRE	39	204	213	122	128
Sum of Inpatient Admits POST	46	172	185	81	126
Mean Admits PRE	.85	1.29	3.5	1.37	1.97
Mean Admits POST	1.0	1.09	3.03	.91	1.94
PRE-POST Difference	+.15	-.2	-.47	-.46	-.03
PRE-POST % Difference	+17%*	-16%*	-13%	-34%*	-2%
Sum of Inpatient Days PRE	153	1041	919	616	562
Sum of Inpatient Days POST	190	967	702	509	643
Mean Days PRE	3.33	6.59	15.06	6.92	8.65
Mean Days POST	4.13	6.12	11.5	5.72	9.89
PRE-POST Difference	+.8	-.47	4.1	-11.2	+1.24
PRE-POST % Difference	+24%*	-7%	-.27*	-17%*	+14%

* Statistically Significant

Table 27: Total Inpatient Charges Before and After Program Enrollment by County: Clients Engaged In Program and Not Lost to Follow-Up or Death (N = 419) (Excluding Los Angeles)

Measure	Alameda N=46	Sacramento N=158	Santa Clara N=61	Santa Cruz N=89	Tulare N=65
Sum of Inpatient Charges PRE	\$2,491,202	\$13,986,340	\$6,967,293	\$5,858,029	\$958,371
Sum of Inpatient Charges POST	\$2,035,452	\$11,843,868	\$5,829,820	\$5,801,704	\$847,064
Mean Charges PRE	\$54,156	\$88,521	\$114,218	\$65,820	\$14,744
Mean Charges POST	\$44,248	\$74,961	\$95,571	\$65,187	\$13,031
PRE-POST Difference in Mean Charges	-\$9,907	-\$13,559	-\$18,647	-\$633	-\$1,712
PRE-POST % Difference	-18%*	-15%*	-16%*	-1%	-12%

* Statistically Significant

Engaged vs. Not-Engaged: Differences in Charges Over Time

To further examine the patterns and differences between engaged vs. non-engaged clients regarding inpatient and emergency department charges, we examined the pattern by quarter. The following graphs show an overall trend of non-engaged clients having higher charges in the pre- and post-periods compared to the engaged clients.

Figure 1: MEAN INPATIENT CHARGES FOR ENGAGED AND NON-ENGAGED PARTICIPANTS, BY QUARTER

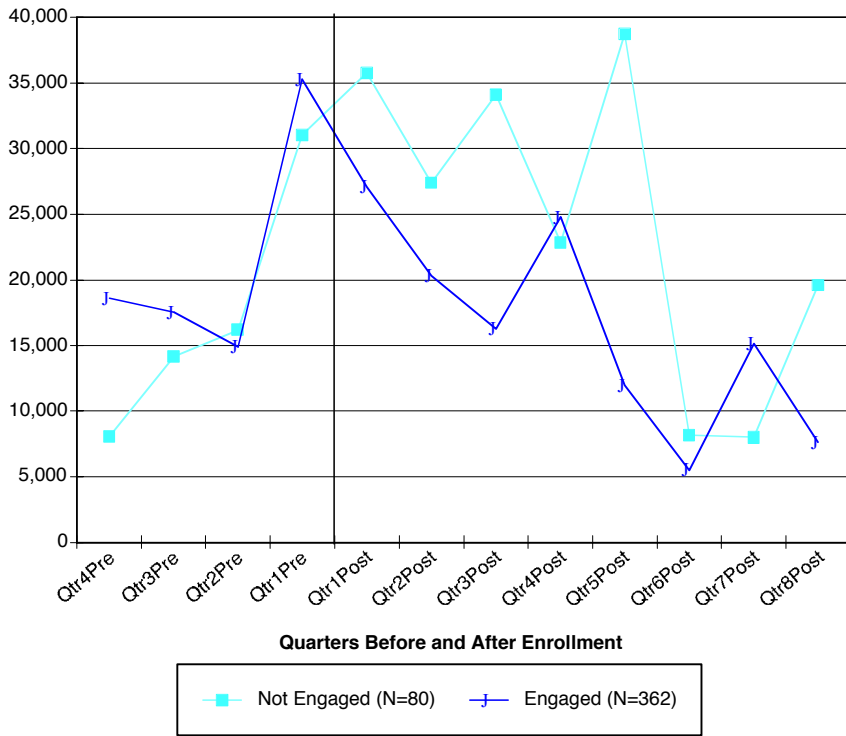
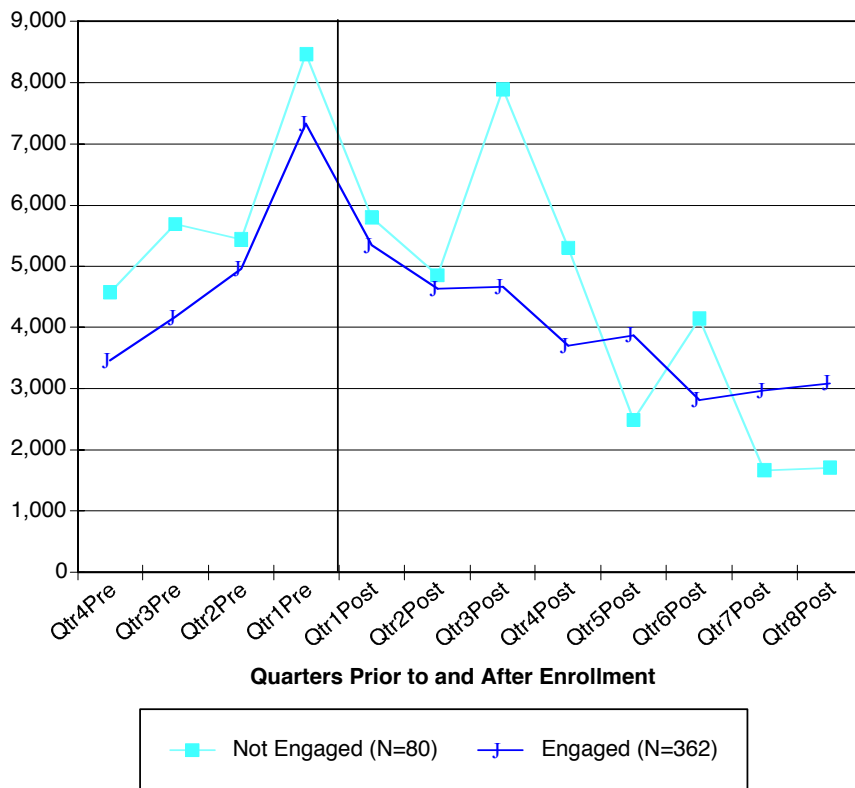


Figure 2: MEAN EMERGENCY DEPARTMENT CHARGES FOR ENGAGED AND NON-ENGAGED PARTICIPANTS, BY QUARTER



C. Clients on *MediCal* at Enrollment (One Year Pre-Enrollment, One Year Post-Enrollment)

Given that a large proportion (approximately 40%) of clients served by the programs were on *MediCal* at enrollment, the following section presents analyses on this sub-group to inform policy work specifically targeting this population segment. Analyses of **one year pre-enrollment and one-year post enrollment** for the *MediCal* sub-population are presented (N=280).

As shown in **Table 28**, overall, the programs yielded decreases in both emergency department utilization (34%) and charges (22%), and inpatient admissions (14%), days (<1%), and charges (1%). All of these decreases were statistically significant, with the exception of decreases in cumulative inpatient days and charges.

Table 28: ED and Inpatient Visits and Charges Aggregated across Counties, Excluding Santa Clara: Clients on *MediCal* at Enrollment (N = 280)

	PRE	POST	DIFFERENCE	% DIFFERENCE
ED Visits	2,581	1,692	889	34% decrease*
ED Charges	\$4,134,141	\$3,209,921	\$924,220	22% decrease*
Inpatient Admissions	427	366	-61	14% decrease*
Cumulative Inpatient Days	2011	2001	-10	<1% decrease
Inpatient Admission Charges	\$16,651,694	\$16,793,942	-\$142,248	1% decrease

* Statistically significant.

Program Impact on Emergency Department Utilization and Costs. Tables 29 and 30 present findings show statistically significant reductions in both the number of ED visits and associated charges in the year following program enrollment for clients on *MediCal* at enrollment. As **Table 29** shows, reductions in ED use in the year after enrollment were statistically significant for all five sites, with reductions ranging from 20 to 67 percent. All five programs had statistically significant reductions in emergency department charges in the year after enrollment, with reductions ranging from 20 to 61 percent (**Table 30**).

Table 29: Emergency Department Visits One Year Before and One Year After Program Enrollment by County: Clients on *MediCal* At Enrollment (N=280)

Measure	Alameda N=35	Sacramento N=101	Santa Cruz N=62	Tarzana N= 32	Tulare N=50
Sum of ED visits PRE	596	351	717	261	656
Sum of ED visits POST	382	281	475	164	390
Median** visits PRE	9	3	9	5	10
Median visits POST	3	2	5	4	7
PRE-POST Difference	6	1	4	1	3
PRE-POST % Difference (Median)	-67%*	-33%*	-47%*	-20%*	-24%*

*Statistically Significant

** To address outliers, the median is presented as the most appropriate measure of central tendency.

Table 30: Emergency Department Charges Before and After Program Enrollment by County Clients on MediCal At Enrollment (N=280)

Measure	Alameda N=35	Sacramento N=101	Santa Cruz N=62	Tarzana N= 32	Tulare N=50
Sum of ED Charges PRE	\$355,946	\$2,032,510	1,274,056	288,927	182,702
Sum of ED Charges POST	\$245,291	\$1,757,557	895,372	181,548	130,153
Median Charges PRE	\$4,373	\$15,464	12,185	5,535	2,433
Median Charges POST	\$1,724	\$9,308	8,565	4,428	1,570
PRE-POST Difference in Median Charges	\$2,649	\$6,156	3,620	1,107	863
PRE-POST % Difference	-61%*	-40%*	-30%*	-20%*	-36%*

*Statistically Significant

** To address outliers, the median is presented as the most appropriate measure of central tendency.

Program Impact on Inpatient Admissions, Cumulative Days, and Costs.

As shown in **Table 31**, the change in inpatient admissions from one year pre-enrollment to one-year post-enrollment varied considerably across the programs (ranging from a 17 percent increase in Alameda to a 34 percent decrease in Santa Cruz) for clients covered by MediCal at enrollment. Similarly, the pre-post change in inpatient days ranged from a 56% increase in Alameda to a 24 percent reduction in Santa Cruz. The hospital inpatient charge data presented in **Table 32** shows similar variation across the programs in terms of pre-post changes. Changes in charges range from a 71 percent increase in Alameda to a 10 percent decrease in Sacramento. The explanation for these variations in charges, especially the large increase in Alameda, is likely related to the discussion in Section A above regarding the inpatient utilization results for the overall population, which includes the skewed distribution of utilization by a high user group within the frequent user population. As shown above in **Table 22**, there was one Alameda client on MediCal who accrued over \$1.2 million of charges in the year after enrolling in the program, which alone accounts for the increase between the pre- and post enrollment period.

Table 31: Inpatient Admissions Before and After Program Enrollment by County: Clients on MediCal At Enrollment (N=280)

Measure	Alameda N=35	Sacramento N=101	Santa Cruz N=62	Tarzana N= 32	Tulare N=50
Sum of Inpatient Admits PRE	41	140	96	41	109
Sum of Inpatient Admits POST	48	104	63	44	107
Mean Admits PRE	1.17	1.39	1.55	1.28	2.18
Mean Admits POST	1.37	1.03	1.02	1.38	2.14
PRE-POST Difference	+.2	.36	.53	+.1	.04

Measure	Alameda N=35	Sacramento N=101	Santa Cruz N=62	Tarzana N= 32	Tulare N=50
in Mean Admissions					
PRE-POST % Difference	+17%*	-26%*	-34%*	+8%	-2%
Sum of Inpatient Days PRE	126	692	539	189	465
Sum of Inpatient Days POST	196	669	409	214	513
Mean Days PRE	3.6	6.85	8.69	5.91	9.3
Mean Days POST	5.6	6.62	6.6	6.69	10.26
PRE-POST Difference	+2	-.23	2.09	+.78	+.96
PRE-POST % Difference	+56%*	-4%	-24%*	+13%	+10%

* Statistically significant.

Table 32: Total Inpatient Charges Before and After Program Enrollment by County: Clients on MediCal At Enrollment (N=280)

Measure	Alameda N=35	Sacramento N=101	Santa Cruz N=62	Tarzana N= 32	Tulare N=50
Sum of Inpatient Charges PRE	\$1,671,132	\$9,032,912	\$5,188,865	\$104,919	\$653,866
Sum of Inpatient Charges POST	\$2,851,050	\$8,169,872	\$4,948,206	\$112,596	\$712,219
Mean Charges PRE	\$47,746	\$89,434	\$83,691	\$3,278	\$13,077
Mean Charges POST	\$81,458	\$80,889	\$79,809	\$3,518	\$14,244
PRE-POST Difference in Mean Charges	+\$33,711	-\$8,554	-\$3,881	+\$239	+\$1,167
PRE-POST % Difference	+71%*	-10%	-5%	+7%	+9%

* Statistically significant.

D. Homeless Clients Connected vs. Not Connected to Permanent Housing: One Year Pre-Enrollment Compared to One Year Post-Enrollment

Given the prevalence of homelessness in the frequent user population and ample evidence that housing is a critical factor in addressing the health concerns for this population, connecting clients to housing became a major focus of many of the frequent user programs. To understand the impact of securing housing for homeless clients on ED and inpatient outcomes, we conducted a sub-analysis comparing clients homeless at enrollment and connected to permanent housing vs. homeless clients not connected during the intervention period. Our findings suggest that connection to housing is a contributing factor in reducing rates of and charges for both ED and inpatient utilization. **Tables 33 and 34** present comparisons of these two groups for ED visits and charges between the pre- and post-enrollment period. Overall, clients connected to permanent housing showed greater reductions in both ED use and charges compared to those

who remained homeless or in less stable housing arrangements (a 34% reduction compared to a 12% reduction in ED visits, a 32% reduction compared to a 2% reduction in ED charges).

Table 33: Homeless at Enrollment: Comparison of Emergency Department Utilization for Clients Connected and Not Connected to Permanent Housing

Measure	Connected to Permanent Housing N=67	Not Connected to Permanent Housing N=99
Sum of ED visits PRE	770	649
Sum of ED visits POST	510	576
Mean visits PRE Enrollment	11.5	6.6
Mean visits POST Enrollment	7.6	5.8
PRE-POST Difference	-3.8	-.8
PRE-POST % Difference (Median)	-34%*	-12%*

* Statistically significant.

Table 34: Homeless at Enrollment: Comparison of Emergency Department Charges for Clients Connected and Not Connected to Permanent Housing

Measure	Connected to Permanent Housing N=67	Not Connected to Permanent Housing N=99
Sum of ED Charges PRE	\$813,298	\$1,491,478
Sum of ED Charges POST	\$553,309	\$1,456,732
Mean Charges PRE	\$12,138	\$15,065
Mean Charges POST	\$8,258	\$14,714
PRE-POST Difference in Mean Charges	-\$3,880	-\$351
PRE-POST % Difference	-32%*	-2%

* Statistically significant.

Tables 35 and 36 present comparisons of the homeless clients connected to housing vs. those not connected in terms of outcomes related to inpatient utilization and charges between the pre- and post-enrollment period. Although both groups fared similarly in terms of reductions in the number of inpatient admissions (27% decrease for those connected vs. 23% decrease for those not connected), the group connected to housing showed significantly greater reductions in the number of inpatient days (a 27% *decrease* for those connected vs. a 26% *increase* for those not connected) and inpatient charges (a 27% *decrease* for those connected vs. a 49% *increase* for those not connected). The difference between connected and not-connected homeless clients for inpatient days is likely related to the discharge planning issues hospitals face with homeless patients.

Table 35: Homeless at Enrollment: Comparison of Inpatient Admissions for Clients Connected and Not Connected to Permanent Housing

Measure	Connected to Permanent Housing N=67	Not Connected to Permanent Housing N=99
Sum of Inpatient Admits PRE Enrollment	100	116
Sum of Inpatient Admits POST Enrollment	74	89
Mean Admits PRE	1.5	1.2
Mean Admits POST	1.1	.9
PRE-POST Difference	-.4	-.3
PRE-POST % Difference	-27%*	-23%*
Sum of Inpatient Days PRE	521	463
Sum of Inpatient Days POST	379	584
Mean Days PRE	7.7	4.7
Mean Days POST	5.6	5.9
PRE-POST Difference	-2.1	+1.2
PRE-POST % Difference	-27%*	+26%*

* Statistically significant.

Table 36: Homeless at Enrollment: Comparison of Inpatient Charges for Clients Connected and Not Connected to Permanent Housing

Measure	Connected to Permanent Housing N=67	Not Connected to Permanent Housing N=99
Sum of Inpatient Charges PRE Enrollment	\$5,157,847	\$2,867,565
Sum of Inpatient Charges POST	\$3,744,385	\$4,263,783
Mean Charges PRE	\$76,902	\$28,965
Mean Charges POST	\$55,886	\$43,068
PRE-POST Difference in Mean Charges	-\$21,096	+\$14,103
PRE-POST % Difference	-27%*	+49%*

* Statistically significant.

E. Total Population Enrolled before September 30, 2005: One year pre-enrollment, two years post enrollment:

An important finding of the evaluation is the magnitude of change in ED and inpatient utilization when followed for two years post-enrollment. For this analysis, we have year 2 post-enrollment data on 241 individuals (excluding Santa Clara). *It is important to keep in mind that the individuals included in this analysis were enrolled prior to September 30, 2005, which means that*

the majority were enrolled during the first year the programs were in operation. Therefore, results for Year One post-enrollment look different and possibly more favorable than the Year One post-enrollment results reported above in Section 1 (n=598). Anecdotally, many programs reported that the acuity of the enrolled populations increased in the later years of implementation as the capabilities of the programs became more known to hospital personnel and more complex cases were referred.

Program Impact on Emergency Department Utilization and Charges 2 Years Post-Enrollment.

Table 37 presents findings that demonstrate statistically significant reductions in all five programs. Compared to ED utilization in the year prior to enrollment, ED visits reduced by 35 percent in the first year post-enrollment and 61 percent in the second year post-enrollment. Similarly, compared to ED charges in the pre-enrollment period, charges reduced by 28 percent in the first year and 59 percent in the second year post enrollment.

Table 37: Analysis of Emergency Department Visits and Charges for One Year Before and One and Two Years After Program Enrollment (N=241)

Measure	Pre-Enrollment	One Year Post Enrollment	Pre-1 Yr. Post % Difference	Two Years Post Enrollment	Pre-Year 2 Post Difference
Sum of ED visits	2,471	1,608	35% decrease	965	61% decrease
Mean ED visits	10.3	6.7	35% decrease*	4.0	61% decrease*
Sum of ED Charges	\$2,744,612	\$1,974,034	28% decrease	\$1,132,118	59% decrease
Mean ED Charges	\$11,388	\$8,191	28% decrease*	\$4,697	59% decrease*

* Statistically significant. Statistical tests were run only for difference between means, not sums.

Program Impact on Inpatient Admissions and Charges 2 Years Post-Enrollment. **Table 38** presents findings that present statistically significant reductions in inpatient admissions, days, and charges in the two years following program enrollment. In the first year after enrollment, inpatient admissions and charges decreased by 17 percent and 14 percent respectively. However, cumulative in-patient days increased slightly (+3%) in the first year, although this is not statistically significant. In contrast, comparisons between the year prior to enrollment and two years post-enrollment show significant decreases in admissions (-64%), days (-62%), and charges (-69%). This finding regarding the change in inpatient hospital utilization patterns after two years is very important and corroborates earlier reports from the Santa Clara program. It is hypothesized that year one post-enrollment increases are due in part to clients accessing appropriate primary care treatment through which medical treatment needs, such as surgery, are identified and scheduled. Once the clients' health conditions are stabilized through these interventions, the need for hospitalizations is reduced. In addition, during the first year of enrollment, many clients are getting connected to insurance, housing and income, which assist in the overall stabilization of the individual and may diminish hospitalizations in the subsequent year.

Table 38: Inpatient Admissions One Year Before and One and Two Years After Program Enrollment (N=241)

Measure	Pre-Enrollment	One Year Post Enrollment	Pre-1 Yr. Post % Difference	Two Years Post Enrollment	Pre-Year 2 Post Difference
Sum of Inpatient Admits	352	292	17% decrease	125	64% decrease
Mean Inpatient Admits	1.5	1.21	17% decrease*	.52	64% decrease*
Sum of Inpatient Days	1,528	1,568	+3%	579	62% decrease
Mean Inpatient Days	6.3	6.51	+3%	2.4	62% decrease*
Sum Inpatient Charges	\$11,285,258	\$9,705,218	14% decrease	3,538,952	69% decrease
Mean Inpatient Charges	\$46,826	\$40,270	14% decrease*	\$14,684	69% decrease*

* Statistically significant. Statistical tests were run only for difference between means, not sums.

Sub-Group Analyses of Clients with Two Years Post-Enrollment Data

The following tables (**Tables 39 – 44**) present findings on various subgroups (i.e., engaged and not lost to follow-up, clients on MediCal at enrollment, and homeless clients connected to shelter or housing) within the 241 cases with two years post-enrollment data. Similar to the data presented and discussed above, there are statistically significant patterns of reduction from baseline (year prior to enrollment) to year 2 post-enrollment for all the sub-groups presented.

Table 39: Emergency Department Visits and Charges for One Year Before and One and Two Years After Program Enrollment: Clients Engaged in Program and Not Lost to Follow-Up or Death (N=180)

Measure	Pre-Enrollment	One Year Post Enrollment	Pre-1 Yr. Post % Difference	Two Years Post Enrollment	Pre-Year 2 Post % Difference
Sum of ED visits	1,968	1,238	37% decrease	809	59% decrease
Mean ED visits	10.9	6.9	37% decrease*	4.5	59% decrease*
Sum of ED Charges	\$2,093,247	\$1,478,604	29% decrease	\$952,770	55% decrease
Mean ED Charges	\$11,629	\$8,214	29% decrease*	\$5,293	55% decrease*

* Statistically significant. Statistical tests were run only for difference between means, not sums.

Table 40: Inpatient Admissions One Year Before and One and Two Years After Program Enrollment: Clients Engaged in Program and Not Lost to Follow-Up or Death (N=180)

Measure	Pre-Enrollment	One Year Post Enrollment	Pre-1 Yr. Post % Difference	Two Years Post Enrollment	Pre-Year 2 Post % Difference
Sum of Inpatient Admits	283	221	25% decrease	82	69% decrease
Mean Inpatient Admits	1.6	1.2	25% decrease*	.5	69% decrease*
Sum of Inpatient Days	1,266	1,066	14% decrease	365	71% decrease
Mean Inpatient Days	7.0	6.0	14% decrease*	2.0	71% decrease*
Sum Inpatient Charges	\$9,905,168	\$7,144,377	28% decrease	\$2,824,710	72% decrease
Mean Inpatient Charges	\$55,028	\$39,690	28% decrease*	\$15,692	72% decrease*

* Statistically significant. Statistical tests were run only for difference between means, not sums.

Table 41: Analysis of Emergency Department Visits and Charges for One Year Before and One and Two Years After Program Enrollment: Homeless at Enrollment and Connected to All Types of Shelter and Housing (N=100)

Measure	Pre-Enrollment	One Year Post Enrollment	Pre-1 Yr. Post % Difference	Two Years Post Enrollment	Pre-Year 2 Post Difference
Sum of ED visits	965	667	31% decrease	448	54% decrease
Mean ED visits	9.7	6.7	31% decrease*	4.5	54% decrease*
Sum of ED Charges	\$1,323,866	\$870,467	34% decrease	\$604,134	54% decrease
Mean ED Charges	\$13,238	\$8,704	34% decrease*	\$6,041	54% decrease*

* Statistically significant. Statistical tests were run only for difference between means, not sums.

Table 42: Inpatient Admissions One Year Before and One and Two Years After Program Enrollment: Homeless at Enrollment and Connected to All Types of Shelter and Housing (N=100)

Measure	Pre-Enrollment	One Year Post Enrollment	Pre-1 Yr. Post % Difference	Two Years Post Enrollment	Pre-Year 2 Post Difference
Sum of Inpatient Admits	186	137	26% decrease	45	74% decrease
Mean Inpatient Admits	1.9	1.4	26% decrease*	.5	74% decrease*
Sum of Inpatient Days	956	705	26% decrease	218	77% decrease
Mean Inpatient Days	9.6	7.1	26% decrease*	2.2	77% decrease*
Sum Inpatient Charges	\$8,094,548	\$5,243,144	35% decrease	\$1,946,750	76% decrease
Mean Inpatient Charges	\$80,945	\$52,431	35% decrease*	\$19,467	76% decrease*

* Statistically significant. Statistical tests were run only for difference between means, not sums.

Table 43: Analysis of Emergency Department Visits and Charges for One Year Before and One and Two Years After Program Enrollment: Clients on *MediCal* at Enrollment (N=141)

Measure	Pre-Enrollment	One Year Post Enrollment	Pre-1 Yr. Post % Difference	Two Years Post Enrollment	Pre-Year 2 Post Difference
Sum of ED visits	1,771	1,093	38% decrease	720	60% decrease
Mean ED visits	12.6	7.8	38% decrease*	5.1	60% decrease*
Sum of ED Charges	\$1,783,755	\$1,194,295	33% decrease	\$799,970	55% decrease
Mean ED Charges	\$12,650	\$8,470	33% decrease*	\$5,673	55% decrease*

* Statistically significant. Statistical tests were run only for difference between means, not sums.

Table 44: Inpatient Admissions One Year Before and One and Two Years After Program Enrollment: Clients on *MediCal* at Enrollment (N=141)

Measure	Pre-Enrollment	One Year Post Enrollment	Pre-1 Yr. Post % Difference	Two Years Post Enrollment	Pre-Year 2 Post Difference
Sum of Inpatient Admits	251	213	17% decrease	82	67% decrease
Mean Inpatient Admits	1.8	1.5	17% decrease*	.6	67% decrease*
Sum of Inpatient Days	1,203	1,042	13% decrease	362	69% decrease
Mean Inpatient Days	8.5	7.4	13% decrease*	2.6	69% decrease*
Sum Inpatient Charges	\$8,676,251	\$5,778,477	33% decrease	\$1,719,517	80% decrease
Mean Inpatient Charges	\$61,533	\$40,982	33% decrease*	\$12,195	80% decrease*

* Statistically significant. Statistical tests were run only for difference between means, not sums.

F. Cost Analysis of the Deceased

Over the course of the intervention period, approximately 5 percent (n=58) of the enrolled population died. To understand the cost implications of this population, we analyzed the cause of death and the cumulative ED and inpatient charges (combining for charges accrued the year prior to enrollment and charges through the time of death) for a sample (N=38) of clients who died during the Initiative period. The following table (**Table 45**) illustrates the costs associated with the various 'primary diagnoses' listed by the hospital for cause of death in five of the sites (analysis does not include Santa Clara).

Table 45: Total ED and Inpatient Charges by Cause of Death (N=38)

Cause of Death	N=	Total Charges ED/Inpatient
Substance Abuse	13	\$4,887,286
Heart Failure/Cardiac Arrest	3	\$1,245,402
AIDS	2	\$856,886
Kidney Failure	4	\$688,189
Cancers	2	\$328,993
Complications from previous conditions	1	\$151,087
Murder	1	\$ 27,070
Trauma to the Head	1	\$12,467
Unknown*	11	\$3,140,053
Total	38	\$11,324,966

The following causes of death were listed for the 13 individuals who died of substance abuse related factors: end-stage liver disease, cirrhosis of the liver, alcoholism, stroke related to drug addiction, organ failure due to crack addiction, and heart failure due to years of alcohol abuse. While “kidney failure” has its own category for cause of death, an analysis of the reasons for ED and inpatient admissions for the individuals who ultimately died of kidney failure show numerous alcohol and drug related issues associated with their kidney disease. It is also important to understand the complexity of the “unknown” cause of death category. Of the 11 individuals listed with “unknown” cause of death, one patient alone from Sacramento had over \$2.3 million in hospital ED and inpatient charges during the last two years of life. Some of the diagnoses over the years of hospital utilization for this patient include congestive heart failure, cellulitis, open wound care, gangrene, and a parasitic infection. Diagnoses listed for the individual whose cause of death was “complications from previous health conditions” include alcohol withdrawal, alcohol abuse, cellulitis, contusions, and general pain.

The frequent user patients who died before the end of the grant period clearly experienced significant health and psychosocial problems related to their addictions and inconsistent access to needed medical treatment. The cost of treating the substance abuse related conditions of these patients is also significant and speaks to the broader policy issues of substance abuse treatment service capacity and access in the communities that serve this complex population.

IX. SYSTEMS CHANGE

From the inception of the Frequent Users Initiative, both foundations put forward an interest in demonstrating impact on more than just individual patterns of ED use. A central goal was to invest in and stimulate the development of a comprehensive, coordinated system of care to address the needs of the frequent users in each of the six funded communities. There was an expectation that the grantees’ funded interventions would address not only individual level behaviors, but also the fragmentation and service delivery silos that exist within the county systems of care. Reducing avoidable ED use and assessing the financial impact of the intervention on the hospital system is only a fraction of the Frequent User Initiative story. Through partnerships and collaborations formed among the range of agencies that touch upon

the lives of the frequent user population, the grantees successfully identified and addressed barriers to coordinating care, improving access to needed services, and enhancing the quality of care delivered for this vulnerable population.

As part of the Foundations' efforts to stimulate systems change activity in the funded counties, the Foundations introduced an intervention midway through the funding period (spring – summer 2006) that convened stakeholders in each county. These "Stakeholder Summits" aimed to create a forum for stakeholders and program partners, in each community, to set priorities and develop action plans to address systems change goals.

Program Accomplishments - Progress Toward and Achievement of Systems Change

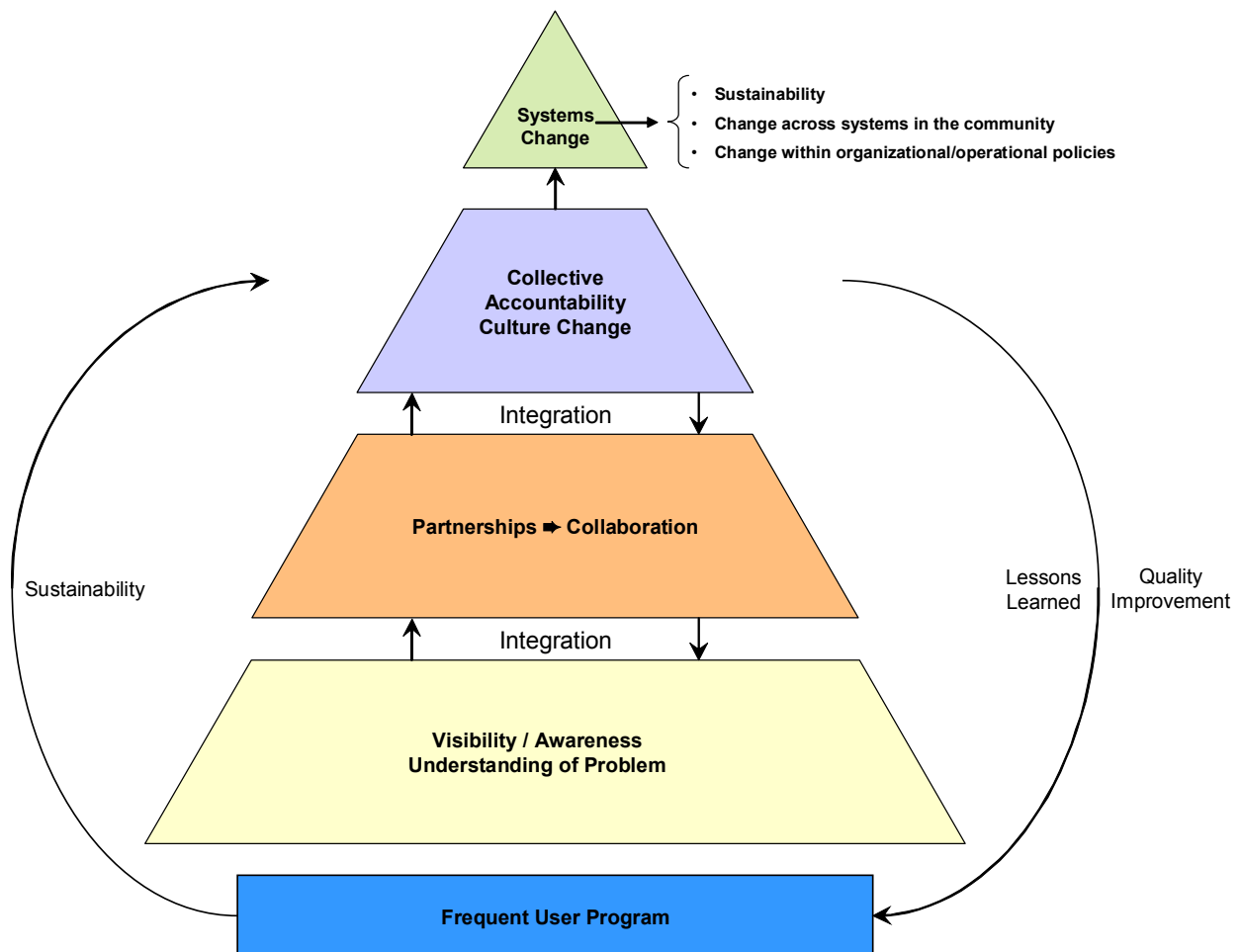
To document and assess the progress towards and achievement of systems change that occurred over the project period, the evaluation used the following definition of systems change:

- *Systems change*: A change in the policies and procedures of *individual organizations* and/or *between organizations* that improve the service system for the frequent user population by a) increasing access to existing services (e.g. through changes in eligibility, benefits, hours of operation, co-location of services, referral arrangements, sharing of information) or by b) adding services (e.g. newly funded services, blended programs) so long as the change is the result of the actions of organizations as opposed to official policies of a public body.

The collective experience of the grantees in advancing systems changes to meet the needs of the frequent user population followed a "developmental progression," with certain steps (pre-conditions) that facilitated success. **Figure 3** presents a framework (Linkins and Brya, 2007)¹ for conceptualizing and documenting the core "building blocks" that constitute the progression toward systems change. This progression is not linear and the components are not necessarily discrete phases of implementation. Rather, the progression is dynamic and ever-evolving within the program and among the various participating stakeholders and systems. This framework for change applies to different levels, including the program, within and across partnering organizations, and the broader community. Depending on the context, experience, and maturation of the site, grantees invested energy and resources within these different levels to advance systems change goals. In addition, grantees acknowledge there are external "enablers" outside the FUHSI programs (e.g., changes on the Board of Supervisors, new legislation) that often lead to breakthroughs that facilitate progress.

¹ Linkins, K. and Brya, J. (2007), "Measuring Policy and Systems Change: A Framework and Strategies for Developing Indicators, (under review) American Journal of Evaluation.

Figure 3: Building Blocks of Systems Change



Over the course of the Initiative, Alameda, Santa Cruz, and Santa Clara advanced their systems change activities by primarily focusing on expanding and strengthening partnerships and collaborations within their counties, while Sacramento, Los Angeles, and Tulare focused more on program marketing efforts, expanding awareness, and obtaining buy-in from partners and other community stakeholders. In some communities, where facilitating changes within and across delivery systems was particularly challenging, grantees identified barriers and challenges to their progress in achieving systems change goals.

A central goal of the Initiative was to stimulate the development of a comprehensive, coordinated system of care to address the needs of the frequent users in each of the six funded communities. **Table 46** below presents indicators within the various “building blocks” of systems change along with a summary of program accomplishments by county. Examples of systems change accomplishments are presented by county following the table below. Data for this analysis were collected through site visits, interviews, reviews of grantee reports, and summaries of stakeholder meetings. Data were analyzed using qualitative analysis techniques involving data coding, comparison, and triangulation to develop and track indicators.

Table 46: Building Blocks of Systems Change: Indicators

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare
Increasing Visibility/Awareness/Understanding of Problem						
Elevated awareness of the frequent user issue throughout the hospital	X		X	X	X	X
Increased awareness of the frequent user issue throughout the county to other systems of care that may be in contact with the population	X		X	X	X	X
Elevated community awareness of homelessness and the impact on health, and impact on hospitals	X	X	X	X	X	X
Marketed program through presentations and publications	X	X	X	X	X	X
Creating Partnerships → Collaborations						
Hospital partner recognizes program value, demonstrates ongoing commitment	X		X	X	X	X
Grantees formalized relationships among partnering agencies to provide integrated care/services (e.g., community clinic and benefits advocacy agreements)	X	X	X	X	X	X
Data sharing agreements are in place and service utilization of frequent user clients is shared across partner organizations	X			X	X	X
Expanded program penetration to multiple hospitals in county	X			X	X	X
“First Time” collaborations created across organizations (hospitals, CBOs, housing, MediCal managed care, sheriff/jail etc.)	X	X	X	X	X	X
Developing Collective Accountability/Culture Change						
Shift in hospital perception of role in addressing needs of frequent user population (e.g., expanded service offerings to include sobriety stations, on-site dialysis, outpatient care, respite options, post-discharge accountability)	X			X	X	
Created infrastructure for coordinating and monitoring care (e.g., pain contracts) across hospitals and providers	X			X	X	X
Case coordination and understanding between Frequent User program case managers and other county service case managers (e.g., MediCal managed care, mental health)				X	X	X
Collaborated with other community agencies to expand capacity for permanently housing homeless frequent user population	X			X	X	
Developed infrastructure for sharing information between program and criminal justice system to examine associated cost savings from program				X	X	

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare
Developed capacity to link data across county systems (e.g., health, behavioral health, social services) to track service utilization and client outcomes				X	X	
Collaborations across organizations/ coalitions extend beyond the “frequent ED use” issue	X			X	X	
Routine (weekly/monthly) interdisciplinary clinical case conference across providers and service systems (hospital, primary care, mental health, substance abuse, housing)	X			X		
Systems Changes						
<i>Intermediate Organizational Policy Changes</i>						
Hospitals changed operational policies in response to population (e.g., identification, referral and discharge planning practices, notifying PCP when patient presents in ED)	X		X	X	X	X
Community clinics changed operational policies (e.g., flexible/open scheduling, monitoring wait times, expanding specialty staffing)	X			X	X	X
Priority status given to frequent user clients for primary care appointments	X			X	X	X
<i>Program Sustainability</i>						
Team includes providers eligible for MediCal reimbursement	X			X	X	
Partnership with MediCal managed care	X				X	X
Partnership with housing agencies to provide and receive reimbursement for case management services to HUD voucher recipients	X			X	X	
Contracts with hospitals for case management services, partnership with primary care clinics	X			X	X	
<i>Broader Systems Change</i>						
Participation/Role in Coverage Initiative	X			X		
Program recognized and relied on for expertise in other community efforts	X			X	X	
IT solutions are in place to facilitate data sharing across hospital EDs in the county and primary care clinics to increase identification of frequent users and care coordination						X

The following section provides evidence and examples of the progress grantees are making towards systems change, where their primary focus is, as well as actual systems changes achieved.

Alameda

Systems change focal areas for Alameda included: 1) policy changes to improve and expand access to care, 2) collaboration with partner organizations to provide integrated services; 3) elevating the awareness (and importance) of the homelessness issue within Highland hospital and in the broader community, 4) creating buy-in through benefits advocacy that leads to organizational culture change and sustainability, and 5) participating in and taking a leadership role in other countywide initiatives that affect the frequent user population.

Policy changes to improve, increase, and streamline access to care. To improve and increase access to care, the program's Steering Committee made access to housing and primary care priority program outcomes. Program clients receive priority for Shelter + care, housing vouchers, and case management services. In addition, Lifelong Medical Clinic offers client priority scheduling, enabling clients to schedule primary care appointments within 1-2 days regardless of insurance status, and the clinic has expanded operating hours to be more flexible. Lifelong also contracted a psychologist to complete comprehensive assessments within 3 weeks of request. To enhance the program's case management, LifeLong Medical Care now has remote access to ED records through the Alameda County Medical Center (ACMC) computer system, which enhances the ability of case managers to monitor ED usage by clients and enhances communication between primary care and ED providers.

Collaboration with partners for integrated care. Close collaboration between the medical clinic and legal services within the program expedites needed services for clients. LifeLong Medical Care and Homeless Action Center (HAC) share data and work together to provide timely medical care/assessments and benefits advocacy simultaneously within the health care setting. In addition, program staff, LifeLong Medical Care providers, and the Alameda County Medical Center (ACMC) nurse case manager at Highland Hospital ED participate in monthly case conferences to communicate and coordinate the ongoing medical and other care needs of the frequent user clients.

Elevating awareness of the homelessness issue across the community. The Alameda program elevated the issue of homelessness for the hospital in terms of the county hospital role for responsible discharge planning and community connection for respite care. The Highland hospital CFO conducted an independent analysis of respite care options within the community and is considering funding shelter beds. One of the program's sustainability strategies is to maintain their strong linkage to housing organizations within the county. Because of the program's visibility in addressing homeless issues, program managers from both LifeLong Medical Care and the Alameda Health Consortium participate actively on subcommittees as part of the Everyone Home planning process, Alameda's Ten Year Plan to end homelessness.

Creating buy-in through benefits advocacy that leads to changes in organizational culture and program sustainability. A core component of program is benefits advocacy provided by the Homeless Action Center (HAC) to connect eligible clients to SSI and MediCal. As a result of HAC's success in connecting clients to SSI/MediCal, the Alameda County Medical Center can retroactively bill for \$1.1 million in charges for uncompensated care for previously uninsured clients. Over the course of the past three years, the program has built a case for and garnered the buy-in of Highland hospital in recognizing the value of the frequent users program. The hospital's role has evolved from primarily a referral source for clients to an active partnership with the program in which the hospital truly values the intensive case management provided. Now that the value of the program

has been demonstrated, the hospital's commitment to sustaining the program is even stronger. APMC now wants the program to develop a business plan for the on-going provision of case management services for frequent users.

Participating in and taking a leadership role in other countywide initiatives that affect the frequent user population. The Alameda program is now engaged in broader systems change activities in the county that extend beyond the issue of avoidable ED use, including: the Coverage Initiative (Alameda County Excellence Program (ACE)), the Ten Year plan to end homelessness, discharge planning for the homeless, respite care planning, specialty care planning, and planning to increase access for the uninsured. Stakeholders in the community that share goals and a collective responsibility for the frequent user population include the ACE program participants, the Hospital Council of Northern and Central California, East Oakland Community Project, the Alameda County Medical Center and the Alameda Health Consortium and the Alameda County Access to Care Collaborative. Of particular note is the program's influence in the Coverage Initiative, which is incorporating several components of the project's intervention model in an effort to re-design how health care services are delivered. These components include: establishing a medical home, intensive case management, and integrated care teams.

Santa Cruz

System change focal areas for Santa Cruz center on: 1) changing the belief systems across multiple organizations (hospital systems, Medi-Cal managed care, housing, criminal justice) that move "collaboration" to "collective accountability" across the county, 2) developing innovative strategies for service reimbursement and program sustainability, 3) expanding and increasing access to care, and 4) formalizing partnerships that address issues beyond "frequent use" of ED.

Changing belief systems that move partners from collaboration to collective accountability. In Santa Cruz, across many of their partnering systems, organizations have moved from collaboration around specific issues or tasks to a greater sense of responsibility for the frequent user population and provision of community services.

Hospitals. In 2007, a critical event spurred collaboration between the Santa Cruz program and partnering hospitals. Against the wishes and advice of project staff, a client enrolled in the program was discharged to a community motel following a hip surgery and within 24 hours of discharge, the patient passed away. Concerned about how fragile the client appeared, the motel manager contacted the program to check on the client, but by then it was too late. This event is an example of a number of key events and shared experiences between the hospital and the project that helped to clarify shared responsibilities and roles in follow-up care for indigent patients. Following this tragic outcome, social workers and nurse case management staff made time for the first time to come out to the campus of homeless services where the Santa Cruz program is co-located, make name and face connections to staff to whom they had been making referrals for years and familiarized themselves with both the strengths and limits of specific services and resources in the community.

As a result of these strengthened relationships, when a team of hospitalists began taking over care inpatient care for patients of county and community clinics, Project Connect staff were some of the first on the list invited to help coordinate appropriate and effective discharges.

Another example of increased accountability within the hospital system relates to the development, dissemination and monitoring practices of pain contracts for drug-seeking patients. The Central Coast Alliance for Health (CCAH) is training and strongly recommending to primary care providers that pain contracts be developed for drug-seeking patients. CCAH posts all pain contracts on the provider section of their internet site and established guidelines to keep physicians accountable to monitor this site for patients they assess and treat.

Medi-Cal Managed Care (Central Coast Alliance for Health). The Santa Cruz program developed a strong working relationship with the Central Coast Alliance, the single MediCal managed care plan serving Santa Cruz County. Program staff recently took Alliance staff members (Alliance director, case managers and client services staff) on a “ride-a-long” to visit frequent user program clients in their homes. Once Alliance staff saw with their own eyes, the multitude of conditions that many of their members were living with, they made referral calls on the spot to get resources to patients in need. The Alliance was initially skeptical about what could be accomplished to change the ED utilization patterns of this population, and the intensive, individualized engagement and services strategy was not one they were familiar with. They wondered about the cost-effectiveness of the person-centered approach to integrated health and psychosocial issues used by the program’s team. However, after being in the field, they better understood the complexity and severity of the care issues and the value of the inter-disciplinary staffing, including a nurse practitioner, and diverse skill sets included within the program’s team to deliver this level of care to Alliance members in the community. The Santa Cruz program was strategic in extending the “ride-a-long” invitation to a variety of personnel within the Alliance so the knowledge of their experience could filter throughout the organization. Alliance staff now join the Santa Cruz program staff in a monthly meeting to focus exclusively on enrolled and recently referred Alliance member frequent users and share strategies and resources to improve the program’s effectiveness with these clients.

The “ride-a-long” served to increase understanding between two distinct organizational cultures in which health and social services operate. The FUHSI project is forcing worlds to collide and, to achieve change, there needs to be movement towards a better understanding of the culture and values of the various systems involved. As a county operated health system, the Central Coast Alliance is often audited by the state. A recent audit questioned whether the Alliance was “too generous with their services” for members. Alliance Director, Barbara Flynn, stated they plan to use the Santa Cruz program’s data to document the work they do to track high users of services and respond with programs designed to address this specific issue. Following the ride-along for Alliance staff, program staff were invited to do a “desk-along” at the Alliance office, so that they could get a sense of the day-to-day challenges and issues faced by case management staff there, as they respond to the needs of the whole population of MediCal beneficiaries and providers across the county. And learn about all of the resources that the Alliance has to offer.

Housing. As part of their sustainability strategy, and as a service team within the County’s Health Care for the Homeless Program, the Santa Cruz program is looking to gain control of as many units of subsidized housing as possible for their homeless enrolled clients. The long-term homeless housing strategy in the county is to use available resources to purchase and as needed rehabilitate existing housing units rather than invest housing dollars in new construction. There are a very limited number of SROs in Santa Cruz and a limited supply of willing landlords to make their units available as supported housing units for individuals with disabling conditions and poor rent and credit histories. The program successfully articulated with several community projects to increase

the availability of permanent housing options for their clients: 1) HUD demonstration housing program grant for homeless serial inebriates which provides 33 units subsidized rental units through the county through a master lease program 2) a 13-Unit SRO Mod. Rehab permanent housing project funded by HUD, the State, the County and the City of Santa Cruz, and 3) 34 units made available through HUD funded Shelter-Plus-Care grant funds; all together, increasing the core stock of affordable permanent supportive housing units for homeless adults in the county to a total of 80.

Criminal Justice. The relationship between the County Sheriff's Department and Project Connect was a significant asset through the course of implementation, with the department sharing data on all bookings and incarceration days within County Detention Programs. Project Connect has acquired a database that includes jail data on all of their program enrollees for the year before they were enrolled and all the months for each client following enrollment. This enables Project Connect to demonstrate the impact of the program on reducing jail bookings and days incarcerated. The database can match criminal justice, mental health, and substance abuse data to track whether or not individuals arrested for drug-related offenses were connected to drug treatment or mental health services. Evidence that the program is associated with reduced jail bookings and jail bed days and associated costs has stimulated interest among community stakeholders to change expectations for this population and consider options to address their multiple needs. Project Connect has shifted from trying to demonstrate the value of their intervention to focusing on how to serve more people and expand their collaborations throughout the county.

Innovative strategies for service reimbursement and program sustainability. The program is looking into IT solutions related to coding and billing capabilities for nursing services provided in the field (hotels, shelters) with the goal of accessing web-based medical records from the community so staff can remotely access systems for billing and view histories of care and medications provided through County clinics. This would consolidate and streamline service delivery, billing, and reimbursement procedures. Sustainability strategies for Santa Cruz included leveraging the Coverage Initiative to provide case management service packages for uninsured individuals, providing case management services to a larger proportion of Alliance Medi-Cal members, and providing case management services to frequent users at primary care clinics. Unfortunately, Santa Cruz County was not selected for funding through this pilot program in the state.

Improving access to care. Santa Cruz clinics use an open scheduling system that allows for same-day and next-day visits. The Santa Cruz program is co-located with a Health Care for the Homeless Clinic that was established and expanded through a Health Care for the Homeless grant from the Health Resources and Services Administration (HRSA) that was secured in the program's first year. Needs assessment data from the program was used to support the successful application to HRSA, which covers an onsite pharmacy dispensary program and provides many visits on a walk-in basis. The program's nurse practitioner is a part-time provider at this clinic, increasing comfort and access for frequent user patients and improving integration of medical and behavioral health care services. The Santa Cruz program improves disease management access by linking primary and specialty care services. In addition, the program is having an impact on end-stage frequent users by connecting them to primary care, skilled nursing facilities and hospice services.

Formalizing partnerships that address issues beyond “frequent ED use.” The Health Improvement Partnership (HIP) Council and its the Safety Net Clinic Coalition initially coalesced around the issues of the frequent user population with the application to the Frequent Users of Health Services Initiative as one of the first projects put forward by these two new groups. The HIP Council and SNC Coalition partnership has formalized with regular meetings to plan and collaborate on a range of critical health care issues affecting the community. Both groups continue to provide support and sponsorship for Project Connect as it is established as an ongoing program in the community.

Santa Clara

Systems change focal areas for Santa Clara included: 1) elevating awareness of and expanding service capacity for the frequent user population through an active coalition with a systems change focus, 2) prioritizing and streamlining services for frequent users, 3) recognizing and prioritizing the connection between health and housing as a core issue for the frequent user population, 4) increasing accountability and developing a collective responsibility throughout the county for the medical and social needs of the population, and 5) countywide recognition of program accomplishments and sustainability.

Elevating awareness and expanding service capacity for the frequent user population through an active collaborative with a systems change focus. The program formed the Silicon Valley Health Coalition (SVHC) comprised of county and private organizations spanning the health, human services, and housing sectors in Santa Clara County. Members include: participating hospitals, Mental Health, Alcohol & Drug Services, Department of Social Services, two housing agencies, Catholic Charities, community clinics, transportation, Healthcare for the Homeless Programs, and Public Health. This coalition was not only instrumental in the program’s ability to achieve project objectives, but also introduced new thinking to the community by linking health and housing, and by bringing county medical services and community agencies together for the first time. The program acts as a neutral party at the collaborative’s center to move partners toward a collective solution on the frequent user issue.

Prioritizing and streamlining services for frequent users through interdisciplinary care conferences, priority status for PCP assignment, and other strategies. To increase access to needed medical care, program clients are given priority status for primary care services and all clients are assigned a primary care physician (PCP). The program holds bi-weekly interdisciplinary care conferences to discuss new and challenging cases with PCP providers, a psychiatrist from DADS, program staff and the medical director from Valley Health Care for the Homeless. Case conferences provide collective input from PCP providers, mental health, and ED providers on clinical issues and overall patient care. Regular input from an interdisciplinary team allows the program to identify gaps in service capacity throughout the county. Care conferences have surfaced issues related to polypharmacy, IV drug use and treatment options, access to mental health services for clients without serious and persistent mental illness clients, and myriad treatment issues related to frequent users. Responding to identified service needs of this population, the program and SVHC have been involved with the following system changes in Santa Clara county that streamline service access for frequent users: 1) an expedited process for obtaining food stamps, 2) an electronic, expedited SSI application process, 3) free bus transportation passes for homeless clients, and 4) planning for a respite care program for homeless patients discharged from hospitals or emergency departments.

Recognizing and prioritizing the connection between health and housing as a core issue for the frequent user population. Over the course of the Initiative, the program experienced a significant evolution in their thinking about the connection between health care and housing. The initial pilot program that served as the program's foundation centered primarily on addressing the health and behavioral health needs of the frequent user population. Overtime, housing and homeless organization partners became more central participants in the coalition and connection to stable housing became a core service component of the program's intervention. A key sustainability strategy for the program is to continue strong collaborations with homeless service providers in the community. In addition, the program is now recognized as a successful service model for working with and addressing the needs of the homeless population. The program has participated in the planning and implementation of Santa Clara's Blue Ribbon Commission to end homelessness and, moving forward, the intensive case management model will be used to support the homeless in the county.

Developing collective responsibility in the community for the medical and social welfare of individuals. Community and county hospitals have joined for the first time around a patient population rather than collaborating around provider training issues. In the past, the Hospital Council coalesced around provider education and diabetes education, but the Santa Clara program introduced issues such as respite care, discharge planning and community connections for the homeless population that overrides competition between for-profit, non-profit and religious institutions.

The hospital director at Santa Clara Hospital expressed an interest in physicians' developing their own group practice guidelines that specialize or focus on the frequent user population. Also, there is movement towards developing a clinic with sufficient supports, staff composition, and resources to address the complex medical and social needs of this population. The County is considering lowering the required patient load (1200 to 900 patient load) as incentive for physicians to take on a greater proportion of frequent user patients in primary care. Physicians engaging in this effort would need to offer flexible hours and drop-in scheduling to accommodate the population. Another example of a change in system values in Santa Clara is the shift in thinking around co-occurring disorder treatment and alcoholism. The new Department of Mental Health (DMH) director came from the Department of Alcohol and Drug Services (DADS). As a result, DMH is now focusing on treatment for co-occurring illness and reducing service fragmentation. In a related shift, DADS is looking to treat alcoholism with a chronic disease approach, which requires a shift in focus from emergency detox services to long-term supports for stabilization. These changes could lead to better coordinated disease management approaches for frequent users.

Countywide recognition of program accomplishments and sustainability. The accomplishments of the program have been recognized in both the health and human service systems in the county. As a result of the demonstrated effectiveness of the program, four hospitals in the county have contracted with the program for on-going case management services at a rate of \$6k per client. *The contracts with the hospitals contain language acknowledging that it may take 2 years of case management to achieve maximum results.* In addition, the program is receiving funding and vouchers from HUD for case management services for clients who are housed. The County Blue Ribbon Commission plans to fund additional case management services for the homeless (based on the program's case management model), which could bring between 50-100 new homeless frequent user clients into the program. Finally, the program has initiated the development of a Respite Care Center at a local

homeless shelter and will case manage patients discharged from this county program as another strategy for sustainability.

Tulare

Despite implementation challenges experienced during the first year, the Tulare program made significant progress toward several aspects of system change, including: 1) increasing program visibility and support within the county, 2) gaining buy-in from key stakeholders to develop collaborative thinking, 3) developing IT solutions that link county hospital systems to coordinate and share patient data, and 4) facilitating organizational policy changes that increase access to care for frequent users.

Increasing program visibility and support. The Tulare program made considerable progress building program and issue awareness within county departments, the hospital systems in the community and with insurance providers. Steering committee partners recognize the program as a community intervention and not just a small program within the Kaweah Delta Hospital. Tulare County Medical Services (TCMS) has declared the program a priority for the county. Tulare District Hospital has recently undergone changes in leadership positions, and as a result has re-established a relationship and a commitment to the program. The project coordinator has conducted outreach to the Hospital Council of Northern and Central California to increase program visibility through presentations at various council meetings. Through these discussions, the program is looking at ways to expand into surrounding counties and provide a role in discharge planning and ongoing case management.

In addition to gaining and maintaining support from county medical services and the hospital council, the program has secured buy-in and participation from Blue Cross Managed Care (BCMC) in their project collaborative. Recent data analyses demonstrated that the most common payor source of frequent users at all three hospitals in Tulare county is Blue Cross Managed Care. The program has gained support from BCMC and views this collaboration, and the opportunity to provide case management to high-end MediCal members as central to their sustainability strategy. Also, the program has secured support from Pine Recovery, an inpatient drug treatment program, which represents a new and much needed addition to the partnership collaborative in Tulare for the frequent user population.

Gaining program buy-in and fostering collaboration. Elevating awareness of the frequent user issue across the partnering organizations has led to culture changes for some participants. TCMS staff members stated that the program has created opportunities to put faces to names of hospital administrators and other partner organizations and systems, which has increased their sense of collective responsibility for the frequent user problem. Program staff have educated medical clinic personnel about the impact of referring patients to the ED. Clinic staff members interviewed said, “we no longer dump patients over to the ED because now we have greater empathy and understanding of the broader issue of frequent use.”

Tulare County Mental Health (TCMH) and program case managers have formed a strong collaborative team that strives to connect physical and mental health services for frequent user clients. As part of their commitment to the program, TCMH took the initiative and developed a protocol for referrals and ongoing case management for frequent user clients who are served by the program and county mental health. The protocol aims to enhance referrals to community

resources, increase compliance with scheduled appointments and pain contracts, and increase data sharing across mental health and medical providers. Frequent user clients that are referred to the program, but who have mental health issues as their primary reason for ED visits are transitioned to the TCMH team for case management. The program added language to their program consent form that allows project team members to share mental health information with TCMH to enhance communication and coordination of mental health services.

Developing IT solutions that increase data sharing and care coordination. The Tulare program, in collaboration with the Kaweah Delta IT department, developed a central database that links ED utilization at the 3 hospitals across the county in an effort to enhance communication between the hospital EDs, identify patients who meet the eligibility criteria for frequent ED use across hospital systems, and track the impact of the intervention countywide. To facilitate communication with the county primary care clinics, program staff send email alerts daily to Family Care Network (FCN) clinics to notify them when their patients are in the Kaweah Delta emergency department. The program is working on a strategy for sharing data from the other two community hospitals as well. Penetration across all three hospitals in the county minimizes the chance that frequent users will slip through the cracks. Long-term IT plans include a county-wide database that holds hospital, primary care clinic and mental health data, which would help identify service gaps and address the growing drug-seeking problem in Tulare County. Dr. Khushigian at Kaweah Delta hospital created his own database to track pain management assessments. He is deeply invested in the issue of pain management and coordinates training for ED physicians on his Tier 3 Pain Management (T3PM) system. The program is working towards integrating the pain management database with the county-wide system under development.

Organizational policy changes that increase access to care for frequent users. Currently there are “flags” within the county primary care clinic system to give priority appointments to frequent user program clients. County clinics have expanded their hours to increase access to primary care, with several clinics offering open access scheduling and after hours capabilities. Clinics now monitor their own wait times so that patients do not have incentives to visit the ED for primary care reasons. The program has implemented a multidisciplinary Resource Committee comprised of a clinical team of ED nurse managers, the ED director at Kaweah Delta and program staff. This committee meets to discuss clinical issues associated with clients and strategies for referral and transfers to specialty medical care in the county.

There are now eligibility workers on site at every county clinic to assist uninsured patients with MediCal applications. Community health technicians from the county clinics are working with program outreach specialists to identify social and medical services needed for patients. TCMS is county funded and there is no capacity to go into the community and conduct home visits or proactive outreach. Outreach to clinic patients and connection to MediCal ultimately saves the county money by shifting to state funded services.

Sacramento

System change activities in Sacramento focus on: 1) increasing program visibility throughout the county, 2) building stakeholder buy-in to broaden partnership collaboration, and 3) creating organizational policy changes within UC Davis hospital to enhance program implementation.

Increasing program visibility. The program has made progress on raising awareness of the issues faced by frequent users in Sacramento County and in increasing the program's visibility. The other hospitals in the county have recognized the problem of avoidable ED use and Sutter Hospital has implemented a frequent user project that relies on partnerships with some of the same agencies involved in the Sacramento program collaborative, including The Effort, a primary care clinic in the county that is awaiting FQHC status. UC Davis Medical Center and The Effort are developing strategies to collaborate when there is service overlap between the two frequent user programs in the county.

Creating stakeholder buy-in and increasing community collaboration. Through the course of implementation, The program and steering committee partners discussed issues that spanned various community-based organizations across the county, and building collaborations with housing agencies emerged as a priority for Sacramento. Through the Mayor's 10-year plan to end homelessness, housing opportunities for homeless frequent users will soon be available. Mercy Housing is developing 80 housing units with spaces available for Frequent User program participants – both the Sacramento program and the T3 Sutter program enrollees.

FUHSI introduced several “first time” opportunities for organizations across Sacramento to collaborate with one another. The program provided common ground for community-based organizations (MAAP, TLCS, Harm Reduction Services), the County, and UC Davis Medical Center to work cross-system, identify frequent users and connect them to appropriate care systems. Many stakeholders agree that the integration of peers into the medical setting is a significant strength of the program model because of the cross-cultural bridge it has created. This collaboration between the service community and the hospital has led to small changes in physician behavior, (e.g., not taking short cuts, taking the time to make a connection to offer the patient solid referral options) that ultimately paved the way for a change in organizational practice and culture.

Organizational policy change within UC Davis Medical Center. The Task Force worked with the hospital compliance department to change the interpretation of data sharing policy at UC Davis hospital. Due to EMTALA (Emergency Medical Treatment and Active Labor Act), prior hospital policy did not allow program staff to talk to patients about the program until *after* they have been seen by a physician and been through discharge planning. Program staff and the compliance department agreed to develop a basic script with talking points outlining the program, assess interest, and get follow up contact information on patients before they see the doctor. This is evidence of the confidence the hospital compliance department has in the staff to follow an agreed upon script and not violate EMTALA policies.

While UC Davis is committed to the issue and the project, there is still work needed to communicate and coordinate with the other 3 hospital systems in the county. Most stakeholders agree that success in Sacramento County relies on all 4 hospital systems coming together around the frequent user issue. At the present time, there is a desire to coordinate across the two frequent user programs now in place in Sacramento County, but specific strategies for coordination and any discussion of countywide systems change goals have not been formalized.

Los Angeles

In terms of the “building blocks of systems change,” the majority of the program's activities related to building awareness of the program and the frequent user issue, and identifying key capacity and

policy barriers in LA County that affected their ability to move forward in their progression towards systems change during the grant funded period.

Systems change focal areas for Los Angeles included: 1) identifying barriers to collaboration, 2) identifying partners to include in collaboration, and 3) documenting program findings that move their agenda forward.

Identifying barriers to collaboration and change. Program staff and their partners acknowledged that organizational change within the county is not possible without mandates issued by the Board of Supervisors. The political climate within LA is one that promotes maintenance of the “status quo” and, for change to occur, there would need to be a significant ideological shift within the county board. The program made efforts to influence decision makers through the presentation of compelling data that illustrated the programs’ impact on frequent user ED use and inpatient utilization. Several stakeholders shared the perception that it would take support from the board to facilitate data sharing across county agencies (Department of Human Services, Department of Mental Health, Department of Public Social Services). Data sharing across DMH, DPSS and DHS during the grant period occurred only because of personal relationships that were established, not because of organizational policies or infrastructure. Future program in-roads for the frequent user population in LA will require linkage with the county 10-year plan to end homelessness, and efforts to illustrate the impact of housing on health care outcomes. The program struggled with the political viability of the population served. Board supported activities center on families and children, and frequent user programs tend to serve single adult males, which is difficult to “market” because they are not viewed as “deserving dependents” in the system of care. Systems change efforts require significant support, leadership and advocacy. The program experienced challenges generating and maintaining sufficient buy-in from key stakeholders in the county capable of influencing the agencies that would be integral to systems change efforts.

Limitations to partnership and collaboration. The program learned that MOUs were not enough to ensure service access in the community for the frequent user clients enrolled in the program. The program had MOU agreements in place with several partners in their collaborative, but without funding in their budget to pay for services referred to partner organizations, access to needed services was not possible. In addition, the program learned that office space and co-location at the hospital ED does not translate into integrated or collaborative care. The program struggled to influence operational policy change within Olive View Hospital because the intervention team was not sufficiently integrated into the day to day operations of the ED and the hospital was simply too large to recognize the impact the program made on a relatively small number of frequent users.

Documenting program findings to elevate awareness and move the agenda. To garner further support for the program, the program and their collaborator in DHS worked strategically over the course of the grant period to compile evidence and report program accomplishments to partners and other relevant stakeholders. During program implementation, the program was in a position of “proving program value” rather than working collaboratively and collectively throughout the county towards a sense of greater accountability for the frequent user population.

X. PROMISING PRACTICES AND LESSONS LEARNED

Over the course of the Initiative, the grantees identified many promising practices and lessons learned through the course of implementation that can inform communities and potential funders interested in developing or investing in a frequent user program. The collective experiences of the FUHSI grantees, both successes and challenges, have generated significant lessons in the areas of program planning, staff composition, client engagement, service delivery, partnership development and data collection and evaluation. A summary of the implementation lessons learned through the course of the Initiative are summarized below in **Table 47**.

Table 47: Lessons Learned from the Frequent Users Initiative

Program Planning and Implementation
<ul style="list-style-type: none"> • Systems changes take time. It is challenging to develop and stabilize a program, strengthen and solidify partnerships, raise awareness among stakeholders and demonstrate program accomplishments and systems change in a 3-year period. • The distinction between “avoidable” and “appropriate” use of the emergency department needs clarification so that program outcomes can be interpreted accurately and in context. • Hospitals with linguistic capacity to accommodate diverse populations, or short-wait times, may inadvertently create incentives for using the ED as a primary care home. Community clinics need to provide efficient and culturally competent care so to compete with the “convenience” of seeking care at the ED – often perceived as a “one-stop shop” for health care. • Not all frequent users of the ED are uninsured. A significant portion of the patients referred to the FUHSI programs are on MediCal, which provides opportunities for the FUHSI programs to receive compensation for providing case management services to MediCal managed care members. • Based on the fact that frequent users are typically defined by the number of times that they present at the emergency room, there will be a mixture of both appropriate and avoidable users. The appropriate users are often very sick and case management may end up being hospice-like and will ultimately impact the bottom line because they are expensive to treat.
Staffing
<ul style="list-style-type: none"> • FUHSI program staff need to have experience working with a deeply complex population with multiple medical and psychosocial needs. • Including nurses on the FUHSI multidisciplinary team allows for greater connection with hospital nurses through their shared medical background and language. Many breakthroughs in relationship building occur between frontline staff working together towards collective compassion. • FUHSI programs need to implement flexible, yet routine schedules to enhance access to their EDs. This accessibility of program staff to ED providers helps promote ED buy-in and partnership.
Client Engagement
<ul style="list-style-type: none"> • Incentives such as food boxes, transportation assistance, benefits advocacy and housing vouchers greatly enhance client engagement and program participation. • Unhealthy clients, specifically those with mobility/ambulation problems, are more motivated to engage in support, and participate in the FUHSI program. Because of their compromised health status at enrollment, many frequent users do not experience significant health improvements despite access to needed services. • Integrating peer counselors into the FUHSI team mix enhanced client engagement and helped build rapport and trust with clients in the community.
Service Delivery
<ul style="list-style-type: none"> • To address problems of a complex and high-needs population, incorporate a multi-systemic, multi-modal approach. • A high percentage of frequent users are homeless or unstably housed. The Initiative has established

the valuable connection between housing and health care, and the lack of housing options for homeless individuals sabotages progress made through mental health services, substance abuse treatment, and medication stabilization.

- A persistent drug-seeking population emerged as the most resistant sub-groups served by the FUHSI programs. Availability of mental health or substance abuse treatment has not been enough to engage this population in program services. Effective interventions for this population require enormous cooperation across the medical community (e.g., hospitals, clinics, pharmacy) regarding prescription policies, pain contracts, data sharing and patient monitoring.
- Benefits advocacy and connecting clients to SSI and MediCal benefits the client and the hospital. The ability to connect uninsured clients to needed insurance and income greatly enhances program engagement, and enables the hospital to back bill uninsured patients and reduce costs associated with uncompensated care.
- Despite paying to hold shelter beds in the community, grantees experience some clients who choose to remain “homeless by choice” because of poor or unsafe conditions within the shelter system.
- Attending medical appointments with clients allows case managers to model appropriate rapport building with the provider, serve as the client’s “care historian,” and model for providers how to treat the clients with respect.

Collaboration/Partnership Development

- Clearly define roles and responsibilities of each partner agency in writing at the time the proposal is submitted.
- Establishing broad stakeholder buy-in is difficult because of perceptions about the frequent user profile (e.g., unemployed, homeless, primarily males with substance addiction). Taking a prevention approach in addition to serving existing or end-stage frequent users can enhance buy-in with some stakeholder groups.
- Sustaining hospital, especially ED provider commitment and buy-in, is challenging. High turnover and rotation of medical students and contract staff through the ED affect the continuity of program understanding and the referral process. A regular and consistent presence of FUHSI program staff in the ED is necessary to bridge organization cultures and reinforce relationships.
- “Program Champions” within the hospital are instrumental in building partnerships and creating buy in. Champions with management responsibilities in the ED are especially valuable in building strong relationships between the ED staff and the FUHSI program and creating long-term sustainability of the program.
- The “top-down” approach to collaboration is not sufficient to move the program forward during implementation. In addition to hospital administrators, FUHSI programs need to partner with ED providers, discharge planners, outpatient clinic providers and nurses to secure buy-in at the patient level.
- Community hospital participation is motivated by reducing inpatient bed utilization, reducing lengths of stay, minimizing bad debt and social responsibility. The need to reduce bad debt is a clear incentive for non-profit hospitals to join efforts to provide alternative services for the frequent user population.
- Cross-county hospital collaboration and greater program penetration increases visibility and allows the program to track frequent ED use across hospital systems.
- Creating better systems of communication between ED and primary care providers enhances care coordination for frequent users with complex medical needs.

Program Evaluation

- Hire an experienced data analyst and someone familiar with outcome measures right at the beginning. Quantifying health and mental health outcomes and developing the appropriate database can be challenging. However, if obtained appropriately, outcome data can be used for marketing other programs and leveraging additional grants.
- Establish an evaluation component at the beginning of the program. Program evaluation is not just about getting results; it’s about shaping the process. Information gleaned from program evaluation

in its earliest stages helps to inform program evolution.

- Have a strong data collection plan that is clearly defined and consistent among collaborating partners.
- Ensure that there is a mechanism in place to retrieve needed data from partnering agencies, particularly if retrieval of these data is key to reporting successful completion of project objectives. Ideally, the scope and breadth of agreed upon data sharing, including deadlines for reporting data, should be built into the scope of work for those agencies with subcontracts. For agencies without subcontracts, specific language should be built into the MOUs.
- Hospital Registration and Financial departments document “ED visits” in different ways, which impacts the way one looks at ED use. The financial department may not track every visit a patient makes if charges do not accrue or if the patient leaves without being seen or “AMA.” Frequent user programs may receive “hot lists” based on who registers at the ED, but some of these visits may not be logged by the hospital financial department creating discrepancies in data analysis and questions about costs.
- Share evaluation data with staff and partner agencies so they know that their efforts with clients have resulted in positive changes.

XI. FUTURE POLICY ISSUES TO ADDRESS

Despite the numerous accomplishments and lessons that have emerged from the Frequent User Initiative, the grantees continued to encounter organizational, political, and financial barriers that impeded program success. To improve service access and delivery, and to address the issue of frequent ED use effectively, the following policy barriers and service capacity issues will need to be addressed:

- This evaluation provides evidence that untreated alcoholism and drug addiction is a major contributing factor to the problem of frequent use of emergency departments. The cost of care in the last year of life related to substance abuse, in particular, provides evidence for the health policy arena to increase investment and access to substance abuse treatment programs and services.
- MediCal funded mental health services are restricted to clients with serious and persistent mental illness. Service access for individuals with “non-severe” diagnoses is limited.
- The number of county beds allocated for medical detoxification services are insufficient and limited to individuals with MediCal. Uninsured patients requiring medical detox are directed to hospital EDs.
- Restrictive “waiting list” policies for county mental health and substance abuse treatment services are aimed at minimizing the number of people on waiting lists, which leads to limited service access for those in need.
- Sober requirements for *temporary* shelter placement leaves case managers with few options for clients who are not in treatment or not ready to stop using substances.
- Permanent housing placement often requires that SSI clients use a payee in order to receive the voucher. Many clients hesitate to relinquish control of their finances to a payee, and these individuals have significant difficulty accessing housing.

- For grant sites that are actively addressing drug-seeking behavior through pain contracts, there are still many barriers to communication between hospital EDs and clinics, which affect the utility and enforcement of these contracts.
- MediCal policy barriers affect frequent user ED recidivism rates. Patients taking more than 8 prescription medications are restricted to a 30-day supply, yet they cannot see a PCP more than every 3 months if MediCal is reimbursing the associated cost. Many patients return to the ED to see a nurse practitioner or physician assistant to obtain prescription refills when they are in between PCP appointments.
- The inability to share data across systems is a significant barrier. Obstacles to sharing data with county mental health departments, social service agencies, Dept. of Corrections, and multiple medical providers make it very difficult to track clients who cross multiple service systems and demonstrate the effectiveness of coordination.
- More effective policies are needed to ensure access to psychiatric medication and ongoing psychiatric consultation for uninsured or homeless patients.
- In some locales, provider shortages have affected timely access to primary care clinics for patients. In some hospital EDs, a patient can be assessed, treated and released in less than 2 hours. Patient satisfaction is higher at the ED than in many clinics due to long wait times, therefore making hospital EDs the provider of choice for many people.
- ED providers from contracted medical groups have no incentive to keep people from frequenting the ED for care because they are paid per patient visit. In fact, contract providers often contribute to frequent ED use by scheduling follow-up appointments at the ED.

XII. CONCLUSIONS

Overall, the six programs funded through the Frequent User Initiative showed evidence of reducing avoidable use of emergency department services, reducing inpatient hospital utilization and connecting clients to housing, income benefits, health insurance and a primary care home. The grantees varied in terms of achieving system change goals throughout their counties, but all grantees gained considerable knowledge of the factors needed to achieve systems change as well as the barriers and challenges to overcome. In addition, four of the six programs were able to develop strategies to continue operating their programs post Frequent User Initiative funding.

This final section summarizes the strengths, achievements, challenges and overall effectiveness of each of the six funded programs.

Alameda

The Alameda program had strength in terms of their intensive case management model, and their staff composition, which included clinical providers that could provide direct and billable services under MediCal. The program has strong leadership, commitment and collaborations between LifeLong Medical Care, the Alameda Health Consortium, the Shelter + Care program, the Homeless Action Center, and ultimately Highland Hospital administration and ED providers. Significant strengths of the Alameda program include the partnership with housing and the ability to provide housing vouchers and case management to frequent user clients. The partnership with HAC enabled the program to connect clients to SSI and MediCal, which not only

stabilized the individual clients, but also allowed the hospital to back bill for over a million dollars in previously uncompensated care, which in turn, secured greater buy-in and support for their program. Alameda County has a history of working collaboratively across service systems, which proved to be a strength for the program in terms of working towards and achieving systems change. A public health orientation, and a sense of collective responsibility exists in Alameda when it comes to collaborating and improving access to care for vulnerable populations.

The Alameda program team was so successful in working with hard to treat populations with complex needs that the referrals they received over time became more complex and many of the individuals enrolled later in the program were very unhealthy – approaching end-stage in terms of medical acuity of their disease course. This affected the impact of their intervention on some outcomes in year one post-enrollment. Inpatient hospital utilization increased significantly during the first year of enrollment, but then reduced significantly in year two.

Overall, in terms of connecting clients to insurance, income, housing, primary care and mental health services, the Alameda program was successful. The program made significant progress in achieving systems change through their strong collaborative relationships and they demonstrated their success through the sustainability of their program. Due to the staff composition on the team and the complexity of the clients enrolled, the model is on the higher end of the operational cost range. Based on program estimates by CSH, the estimated average cost of FUHSI program services is \$4325/client per year (actual program costs ranged from \$2805/client per year to \$5845/client per year). Reasons for the variation in program costs include: team composition, type of services provided, number of participants, time clients remain engaged in the program, level of client complexity, and geographic location. Nevertheless, these program costs are lower than comparable models, such as Assertive Community Treatment, that serve the serious and persistent mentally ill, with high needs for intensive services.

Los Angeles

The intensive case management model of the program and the quality of the case management staff has always been an asset for the LA program. Team members (many of whom were bilingual) were committed to providing culturally competent, client-centered care to their caseloads. Case managers were challenged by service capacity issues and barriers to linking clients to needed services. LA County did not have sufficient affordable housing, primary care, or mental health treatment resources for many of the enrolled clients, and many clients left the program out of frustration with placement on waiting lists for services. Limited community resources served as a significant barrier to client engagement in the program. In the program's final report, the program director acknowledged that despite having MOUs in place, many partner organizations did not follow through in assisting with service access.

Another challenge of the program was the lack of integration and support from their hospital partner. The size of Olive View complicated the relationship building between the program, hospital administration, and ED staff providers. Despite program and client progress, the ED providers were not able to discern the value of the program's services due to the volume of ED patients that came through Olive View. Another limitation of the program was the single-hospital focus. Without greater penetration of the program throughout the county, it is not possible to know if patients are frequenting other EDs for care. Program impacts can only be framed in terms of reductions at Olive View – not reductions in overall ED use across LA County.

The LA program experienced many challenges in achieving systems change in the community. The program identified many barriers to creating effective collaborations across provider organization, but there was very little movement as a community to address the needs of the frequent user population. Geographic size and staff turnover within key positions of partnering organizations were factors in their ability to generate and maintain buy-in and elevate their partnerships across LA County. As a result of numerous challenges, the program was not sustained after the funding period ended in October 2007.

Sacramento

The strongest component of the Sacramento program was the integration of peer counselors into the service team and their success in the outreach and enrollment function of the program. The incorporation of peers into the model gave the program legitimacy within the community and a solid approach for developing rapport with clients and maximizing program engagement. Outreach and enrollment were clearly enhanced by the peer component as evidenced by the number of clients enrolled during the course of the Initiative (N=477). The program also successfully integrated the peer counselors into the hospital system operations at UC Davis Medical Center (UCDMC), which created a strong cross-system approach to care. However, the Sacramento program did not have penetration across the county; therefore, any program impact can only be framed in terms of impact to UCDMC. Also, the peer counselor approach, while strong in terms of outreach, was not as successful in terms of linkage to behavioral health and primary care services, or SSI benefits and MediCal. UCDMC continues to support the program within the hospital, but collaboration with other frequent user programs underway across the county is limited.

Because the program was based within the larger operations of UCDMC, it was difficult to develop and sustain successful partnerships throughout the county. The program did not have a strong housing agency partnership during the funding period, therefore connecting the homeless to permanent housing, with the exception of board and care placements and skilled nursing facilities was a challenge. Systems change in Sacramento, as it relates to the issues faced by frequent users, requires partnership across all four hospital systems in the county, and this did not occur. Therefore, the program's impact, resides primarily within the UC Davis health system and not in the broader community.

Santa Clara

The Santa Clara program was one of the most successful and effective programs involved in the Initiative. There were several factors that set their program apart from the other funded projects. First of all, Santa Clara had an existing frequent user project underway at the time of application and therefore had more than a year of implementation experience over the other sites. From the outset, Santa Clara treated their project as a research study, with a strong commitment to data collection in order to demonstrate program impacts by tracking individual-level outcomes and maintaining client engagement across several years. Because research was a priority, the program had a staff person dedicated to developing a cross-system database to collect outcome data and conduct analyses for their program.

Another major strength of the Santa Clara program is the support and public health orientation of the county hospital administration. Hospital administrators were motivated to collaborate with

the program because of their organizational values and shared vision that taking care of the health needs of vulnerable populations is a shared responsibility within a community. A strong partnership with the Hospital Council has allowed the program to elevate awareness of the frequent user population to all of the hospital systems in the county. The Santa Clara program brought together organizations across the community that had never partnered before in the development of the Silicon Valley Health Coalition. Committed partnerships formed through this coalition have brought housing and health care together, established the assignment of frequent users to a PCP and primary care home as a priority, and expanded their work to other issues affecting the frequent user populations such as discharge planning, respite care, and streamlining access to SSI, food stamps and MediCal coverage. The program successfully secured buy-in from the County Board of Supervisors and established the reputation as leaders in the community on how to address the needs of homeless frequent users. The program leadership actively participates on County's Blue Ribbon Commission that created a plan to end homelessness.

In terms of service delivery, the program has a strong case management team that includes social work interns to assist with outreach and enrollment, and they have developed a four tiered model to "step-down" care for better caseload management, which several of the other grantees have adopted. Bi-weekly case conferences with a variety of cross-system clinical providers is a promising practice for improving care coordination and communication of clinical and psychosocial needs of the clients enrolled. The Santa Clara program has also established the business case for their intensive case management model and is now fully sustainable through their case management contracts with all four hospitals in the county. As a result of their experience working with this population, they have successfully managed the expectations of their hospital partners by including language in their case management contracts that states maximum results require 2 years. The collective experiences of this program have provided valuable insights for the other 5 grantees involved in the Initiative.

Santa Cruz

One of the most compelling aspects of the Santa Cruz program has been their ability to share utilization data across multiple systems of care including hospitals, primary care clinics, county mental health, substance abuse, ambulance/EMS and the Sheriff's Department. Their access to cross-system data has allowed Santa Cruz to illustrate program impacts to other agencies that have involvement with the frequent user population, which has enhanced their buy-in with partners across the county. Santa Cruz also has strong leadership with "decision makers" at the county-level, which has been instrumental in their efforts at policy and systems change.

The program's team composition includes a public health nurse, nurse practitioner and LCSW, which gives them a broad clinical skill set and the capability of providing direct, billable services in the community, thereby circumventing the waiting lists for services. The program was very successful in maintaining client engagement, with most of the clients being enrolled for 16 months – the longest of any of the projects. The longer clients are engaged in the program, the more likely they are to be connected to needed services and resources. Similarly, the program is more likely to have follow up data and knowledge that the client is still in the county and at-risk for frequent use, which is important for assessing program effectiveness.

Santa Cruz also has county-wide hospital penetration which strengthens their statement of program impact because utilization can be tracked across hospitals. Santa Cruz has developed and maintained very strong collaborations with Health Care for the Homeless and the Central Coast Alliance for Health (MediCal managed care), both of which are integral to their sustainability strategy. Santa Cruz has been successful in achieving both individual-level outcomes and systems change goals. In addition, the program has successfully demonstrated the business case for intensive case management and established a sustainability plan through ongoing case management services for the homeless and Alliance members, county funding and support, and ongoing grant proposals written in partnership with other agencies throughout the county.

Tulare

The program has achieved significant results on individual-level outcomes of interest adopting a less expensive, paraprofessional intervention model based on service linkage, which relies more on referral and brokering of services rather than direct service provision. Program case managers demonstrated success in their aggressive outreach strategies that range from “cold-calling” lists provided by the hospital partners to home-visits in the community to market the program. For program enrollees, the team relies on strong partnerships with county mental health, ED case management staff, and primary care providers to coordinate care and improve access to needed services. Tulare also has county-wide program penetration to identify new and track existing frequent user clients.

One of the promising practices identified through the evaluation is Tulare’s pursuit of a cross-hospital database that tracks all ED utilization across the various hospitals in the county. The utility of this database, created by the program in collaboration with the IT department at Kaweah Delta, has far-reaching implications for county public health agencies and primary care clinics that ultimately will be included in the county-wide data sharing.

Another strength of the Tulare program is the ongoing support from Kaweah Delta Hospital, including the involvement of a physician champion interested specifically in pain management and creating a pain contract tracking mechanism across both hospital and primary care providers. The Chief Financial Officer (CFO) of Kaweah Delta Hospital, a very strong supporter of the project, recognizes the value from a financial perspective, and is willing to speak directly to the CFO’s of the other hospitals in Tulare County to advocate for ongoing funding to support the program. At the end of the grant period, Tulare was still negotiating the ongoing contractual relationships with the other 3 hospital partners in the county. Despite the numerous successes of the program, capacity issues within the county served as a barrier to connecting clients to services such as medical detox, permanent housing and specialty medical care services.

Appendix A

Frequent Users of Health Services Initiative: Logic Model

