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Frequent Users of Health Services Initiative:

Final Evaluation Report

Table of Contents

I. EXECUTIVE SUMMARY

BACKGROUND

The Frequent Users of Health Services Initiative (*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 frequent users of emergency departments. *Initiative* funding supported a program office based for six years at the Corporation for Supportive Housing, and funded planning grants, implementation grants, technical assistance for all grantees, 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 serve this population more effectively, replacing a costly and avoidable health care utilization pattern with ongoing, coordinated, and multidisciplinary 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 request for proposals (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 where programs were 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

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

** Programs in Alameda and Santa Clara Counties were awarded implementation grants in 2004 that were renewed for an additional six months in 2007.

The six programs funded through the Frequent Users of Health Services Initiative developed specific models and interventions to address the range of frequent users' presenting conditions in their area hospitals and communities. A range of models were tested through the *Initiative*—

from various types of intensive case management to less intensive peer- and paraprofessional-driven interventions, to learn which strategies could help reduce the avoidable use of and reliance on emergency departments, and to create a more effective system of care for the frequent user population.

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 this outcome evaluation was to examine the impact of the *Initiative* programs in three areas: 1) individual-level outcomes, 2) emergency department and inpatient hospital utilization and costs, and 3) organizational and community systems of care. This final report represents a summary of findings on the outcomes, accomplishments, and learnings of the *Initiative* over a 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 (ED) utilization (30%) and hospital 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 greater magnitude in the second year after enrollment. Emergency department visits decreased by 35 percent in the first year of the program for this subset of individuals, and by year two, utilization decreased by more than 60 percent from the pre-enrollment period.

Inpatient utilization and charge data were more challenging to interpret in the first year of the programs because of a lack of longitudinal data points, with some programs showing decreases and others increases. Inpatient utilization and charge data were greatly influenced by "outliers" (e.g., individuals who accrue extremely high charges due to catastrophic illnesses or escalating chronic disease). In the first year post-enrollment, 15 percent of the clients accounted for nearly 85 percent of total inpatient charges. An analysis of clients with two years of data showed 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 programs. However, second year post-enrollment reflected significant decreases in inpatient admissions (-64%), cumulative days (-62%) and charges (-69%) for all sites. It is hypothesized that year one post-enrollment increases were due, in part, to clients accessing appropriate primary care treatment through which Medical treatment needs, such as surgery, were identified and scheduled. Once clients' health conditions were stabilized through these interventions, the need for hospitalizations was reduced. In addition, during the first year of enrollment, many clients were getting connected to insurance, housing, and income, all of which helped to stabilize individuals and may diminish hospitalizations in subsequent years.

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 were successful in connecting clients to needed resources. 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 Medi-Cal applications were filed for 25 percent.

Nearly half (45%) of the frequent user clients enrolled in the six programs were homeless at the time of 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.

Given the prevalence of homelessness in the frequent user population and evidence that housing is a critical factor in addressing the health concerns of 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-focus of the evaluation. In comparing the utilization of clients who were homeless at enrollment and subsequently connected to permanent housing with homeless clients *not* connected during the intervention period, analyses demonstrate that connection to housing for the individuals was a factor 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, clients connected to housing and clients not connected to housing fared similarly in terms of reductions in the number of inpatient admissions (27% connected vs. 23% not connected). However, those 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 of Health Services 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 frequent users 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 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 Users of Health Services Initiative story. Through partnerships and collaborations formed among the range of agencies that work with 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 to this vulnerable population.

Some programs were more successful in achieving their systems-change goals than others, and four of the six grantees were well on their way to fully sustaining their programs within their area hospitals and counties at the end of the funding period. Grantees focused their systems-change efforts in the following areas: elevating the awareness and understanding of the needs of frequent users across the county; establishing new collaborations to increase capacity for

housing homeless people; improving access to mental health and substance abuse treatment; improving communication and care coordination across hospital and primary care providers; streamlining processes for securing SSI benefits, food stamps, and Medi-Cal coverage; and developing a sense of "collective accountability" within the community for the frequent user 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 of Health Services Initiative, both in terms of the impact on individuals and the impact on grantee communities. In addition to the successes achieved and documented on the individual and organizational levels, the grantees' experiences and lessons learned through the course of implementation provide understanding about the ongoing challenges to serving frequent users, developing successful partnerships and demonstrating the value and impact of a frequent user program. Achieving success with frequent users 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 the frequent user population are complex. Treatment solutions will require long-term vision and commitment.

II. INTRODUCTION

This evaluation report is the final in a series of reports written as part of a three-year evaluation of the Frequent Users of Health Services Initiative (*Initiative*, or 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 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 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 setting of emergency departments. These individuals face barriers in accessing housing and Medi-Cal coverage, as well as 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 frequent users, replacing a costly and avoidable health care utilization pattern with ongoing, coordinated, and multidisciplinary 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 in specific communities 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 in which specific programs were awarded planning and/or implementation grants.

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* The Initiative awarded the Santa Cruz program an implementation grant in 2003 that was renewed for an additional year in 2006.
** Alameda and Santa Clara programs were awarded implementation grants in 2004 that were renewed for an additional six months in 2007.

The six programs funded through the Frequent Users of Health Services Initiative developed specific models and interventions to address the range of presenting conditions of frequent users in their area hospitals and communities. A range of models were tested through the *Initiative*—from various types of intensive case management to less intensive peer- and paraprofessional-driven interventions — to learn which strategies could be effective in reducing the avoidable use of and reliance on emergency departments, as well as in creating a more effective system of care for the frequent user population.

Technical Assistance Provided through the Program Office. The *Initiative* was managed for six years (one year of planning, followed by five years of program oversight) by the program office based at the Corporation for Supportive Housing in Oakland, California. To support the development and implementation of each program, the program office coordinated ongoing 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 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 hear from national experts and other frequent user-related programs to discuss specific concerns or learn about practices that could enhance their programs.

> **2) In-Person Meetings and Teleconferences (Planning Year 2003):** During the planning year, the program office sponsored two workshops covering a range of topics: the potential impact of HIPAA and confidentiality issues on frequent user programs, achieving cultural competency in programs, collaboration, systems change, and managing change. In addition, the program office hosted several teleconference sessions to expose planning grantees to best practice models (e.g., Boston Healthcare for the Homeless program and San Francisco's Direct Access to Housing program). The speakers presented their respective frequent user models and discussed challenges and how they were resolved in the areas of financing, staffing, facility licensing, outcomes measurement, stakeholder engagement, and sustainability.

> **3) In-Person Meetings and Teleconferences (Implementation Years 2004-2007):** During the implementation phase of the *Initiative*, the program office sponsored a variety of 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 Medi-Cal, caseload management, working in hospital settings, assisting homeless people in applying for SSI/SSDI benefits, evidence-based therapies, systems integration and sustainability, building program support (e.g., 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 the more established programs in Santa Cruz and Santa Clara to foster peer-to-peer learning and exchange. The program office also sponsored monthly case conference calls between grantees and a clinical psychologist to assist

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

External Evaluation. The *Initiative* funded a three-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 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, the program office project director and deputy director, and two director-level staff from the Corporation for Supportive Housing) 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 ongoing 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 evaluation data collection:

1. How effective were the programs (individually and collectively) in recruiting and retaining people who met the eligibility criteria?

2. How and to what extent did the programs increase or decrease use 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. How and to what extent 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 led 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 semiannual 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 evaluation's goal was to examine the impact of the Frequent Users of Health Services Initiative 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 (e.g., 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, X, and XI was based on data collected via site visits, interviews, and analyses of grantee progress reports. This data was analyzed using qualitative analysis techniques where data were coded, compared, and triangulated to develop major theme categories and sub-categories. Over the course of program implementation, and documented in past process evaluation reports, evaluators tracked information on barriers and facilitators related to outreach, enrollment, and engagement; service delivery; partnership development; and systems change. The 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, and 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 six 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, as well as enrollment and disenrollment information.

- **Stability Measure Checklist.** Intervention staff conducted chart reviews of all clients enrolled and served by the programs 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.** Allowing 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 September 30, 2006, to account for data reporting lags (three months for most hospitals) and to allow for analysis of a full year of post-enrollment data. 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 included:

1. In some of the hospital data submissions, there was no evidence of utilization for some clients in the year prior to enrollment. Also, in many of these cases, there was no utilization in the year post-enrollment. These data discrepancies may have been created by differences between hospital registration and hospital financial department documentation of ED visits; financial department practices of not tracking every visit a patient makes if charges do not accrue or if the patient leaves without being seen or "against Medical advice"; and frequent user programs receipt of "hot lists" of potential clients based on who registers at the ED, but some visits may not be logged by the hospital financial department.

This issue raises an analytic concern about the validity of some of the data. Analyses of the change from the pre to the 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 raised questions regarding 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 (the number of clients evaluated), we set a minimum threshold of three visits (ED or inpatient), which is lower than the number of visits required for program eligibility applied by any of the programs. This solution allowed 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 individual cases, for the same time period, and across submission periods. Evaluators learned from the programs affected that this anomaly was due to archiving practices by the hospitals and claims data lags. To address this issue, evaluators 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 area hospitals in Sacramento and Los Angeles made it difficult to determine with certainty that reductions in ED and inpatient utilization reflected a true change in the utilization pattern of clients in these communities. In these programs, it is impossible to know whether or not clients were using services at other hospitals in the counties. The utilization patterns reflected changes in utilization only for the partnering hospitals.

4. While the data in this report shows reductions from baseline utilization across all programs, 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 phenomenon that can often resemble program impact. Since clients were referred to programs for falling into the high range of patients who use ED and inpatient services, a later measurement could show lower ED and inpatient use, even without intervention. Because regression to the mean effects look similar to the effects of improvement due to program interventions, evaluators would expect use to be somewhat lower at follow-up intervals 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 have also contributed to a reduction in utilization. This is one of the limitations inherent in a pre-post design; 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, results include analyses of 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 comparisons of their utilization changes from baseline to the study period. This strategy was designed to minimize any threats to the validity of the analyses and deliver findings with confidence.

If regression to the mean, and not program impact, accounted for 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) was comparable across the board, it is fairly strong evidence that the program, and not regression effects, was at work. To examine this relationship, we analyzed the pre- and post-enrollment distributions (by quantile, dividing data sets into equal proportions) to determine whether clients with the most pre-enrollment utilization had the highest reductions in the post-enrollment period. We found that ED and inpatient utilization mean decreased *consistently* for each quantile. The percentage change from pre to post was not significantly different across the distribution; there was no trend towards greater decreases from pre to post in the highest utilization categories. This data indicated that regression to the mean did not significantly contribute to the outcomes reported. Additional analyses on ED and inpatient costs also illustrated significant post-enrollment decreases regardless of the level of pre-enrollment costs, a pattern *not* indicative of regression to the mean.

In addition to the statistical analyses that countered any concern that regression to the mean was a primary explanation for the evaluation findings, the acuity of the enrolled population and the complexity of their presenting conditions also supported program effects produced the outcomes, rather than simple regression to the mean. Given the level of impairment of the frequent user population (chronic medical conditions, mental illness, addiction, homelessness, etc.), evaluators would anticipate that many individuals' health conditions would require ongoing medical treatment, and improvement in health outcomes would be unlikely due to the stage of illness among this population. Based on presenting conditions at enrollment, frequent users enrolled in *Initiative* programs had very complex needs; many were very ill. The majority were not utilizing ED services because of episodic or catastrophic medical events, but rather because of chronic, often deteriorating end-stage conditions. Therefore, reductions in service utilization for this population were less likely to be explained simply by the effect of regression to the mean.

5. Financial return on investment was an important outcome measurement that specifically related to goals of the *Initiative*. However, sufficient data to conduct this type of analysis across the six programs were not available. The evaluation was designed to examine "cost offsets" between hospitals and community providers, which required data from multiple sources in each county that were not uniformly available in most counties. In order for all of these interested parties (hospitals, counties, and programs) to provide sufficient cost and utilization data, a level of partnership, collaboration, commitment, and investment is required, but the data-sharing memoranda of understanding (MOUs) established between the grantees and other providers within most of the programs 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 of frequent users (e.g., homelessness, poverty, mental illness, substance abuse, and chronic medical conditions), all of the grantees' interventions sought to redirect care from the emergency department (ED) 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 with a range of clinical (e.g., primary care, mental health, drug and alcohol treatment services) and non-clinical (e.g., housing, transportation, legal advocacy) care. The *Initiative's* interventions were designed to be client-centered and responsive to the immediate and long-term needs of the clients and to address their medical and social problems comprehensively and holistically.

The six FUHSI programs provided a range of direct and supportive services, including the following:

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

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

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 its frequent user population, the role and level of collaboration of program partners, and contextual factors within the county. **Table 2** presents a comparison of the six program intervention models.

Table 2: Comparison of Grantee Intervention Models, by County

Program Components	Los Angeles	Santa Clara	Alameda	Sacramento	Tulare	Santa Cruz
Enrollment and Discharge						
Enrollment Criteria	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 Medi-Cal	10 visits in 12 mos. or 4+ visits/yr. for 2 consecutive yrs.	4+ visits/12 mos., age 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
Identification and Enrollment	Frequent users identified by ED electronic flagging system and referred by ED medical personnel Case managers printed electronic report and attempted outreach to flagged patients Intake took place in the ED during peak hours and on weekends	Enrollment in the ED. Flagging ED system during triage Case managers had office space at each hospital	Development of hot lists Referral from all hospital personnel to the primary case manager Case manager in ED looked at database to identify 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) CM met with person in ED at time of referral or at later date CMs had office space at clinics and collaborating partner sites	Retrieve lists from EDs with list of frequent users meeting criteria Hot clients also identified by ED nurse case managers who faxed, called and emailed referrals to project coordinator Enrolled clients flagged in each ED practice management system

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

Program Components	Los Angeles	Santa Clara	Alameda	Sacramento	Tulare	Santa Cruz
Team Size and Structure						
Staffing (FTEs)	Masters Level Case Manager Supervisor: 1 Case Manager: 2 Project Evaluator: 0.25Data Entry 0.3 1 Hospital	Project Director: 1 LCSW Case Manager Supervisor: 1 Case Managers: 4 MSW Intern: 1 Psychiatrist: 0.125 Med Director: 0.125.(positions funded by *Initiative* and Health Trust) 5 Hospitals	LCSW Case Manager Supervisor: 1 Case Manager: 1 Benefits Advocate (attorney): 0.15 Mid-level Nurse Practitioner: 1 Consulting Physician Psychiatrist: 0.05 Program Manager 2 Hospitals	ED Case Manager: 1 Patient Navigator: 1.5 (BA) – with experience in related field Peer Counselor: 2.25 1 Hospital	Project Director:1 Program Coordinator: 1 Case Managers: 4 Case Manager provided as in-kind matching funding by participating hospital: 1 Program Coordinator overseeing all the case managers: 1 3 Hospitals	Project Director/Team leader: 1 LCSW Case Manager Supervisor: 0.8 Case manager: 1 Public Health Nurse Case Manager: 0.8 Part-time MSW Interns: 3 Admin. Mid-level Nurse Practitioner: .75 FTE 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 at one time, each case manager handling a mix of clients with intensive and less intensive needs)	25:1 (client/staff ratio)	60-80:1 (patients/team) 20:1 (client/case manager)	15:1 patient navigator 10:1 peer counselor	50:1 (annually)	29:1
Interdisciplinary team approach	No	Yes	Yes	No	No	Yes

Variations in Intervention Approach. Five of the six *Initiative* program models applied a longer-term case management approach, while one (in 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 led 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 approaches to working with the 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
Approach to addressing client medical/clinical issues						
Case managers referred clients to county/community clinics (primary and specialty care)	X	X	X	X	X	X
Case managers assigned clients to primary care physician/medical home				X		
Clinical team member (e.g., nurse practitioner, public health nurse) provided 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 the Los Angeles program to 16 months in the Santa Cruz program.

Table 4: Average Length of Time in Program, by County

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare	Total
	N=121	N=198	N=477	N=105	N=136	N=143	N=1180
Average Months in Program	10	4	5	11	16	10	9

Strengths and Model Components of the Frequent User Programs

The contextual environment, resource capacity, and readiness for program implementation varied among the six *Initiative* programs. 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, 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 provided an automated mechanism for hospital staff to identify patients who met program eligibility for timely referral. Automated processes reduced reliance on busy ED staff for patient identification and referrals.

- Co-location at the hospital ED, in addition to an electronic flagging system, provided referrals in "real time." Client enrollment was more challenging once the patient leaves the ED.

- Access to permanent housing vouchers assisted outreach by developing trust and offering individuals needed resources.

- Housing vouchers combined with ongoing case management minimized loss to follow-up with homeless clients and improved client engagement.

- Program penetration at multiple hospitals across the county minimized frequent users who could slip through the cracks. Clients who visited multiple hospitals throughout the region (county/community) could be identified as "frequent users," though they may not have been identified when only looking at utilization at one facility.

- Penetration across hospitals provided opportunities to identify frequent users when they re-emerged in the ED or attempted to access a different hospital system when drug-seeking.

- Program outreach and rapport building required extensive effort, time, and diversity of staff. Bilingual case managers 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 facilitated trust between clients and program staff and enhanced engagement in the program.

- Recruitment and engagement was 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 could easily contact program staff.

- Peer counselors could greatly enhance program outreach through their knowledge of community resources and street "credibility." Peers understood the population and often knew how to locate clients who had lost contact with the program.

- Transportation assistance was critical to client participation and engagement. Supplying bus tokens and taxi vouchers and providing home visits increased client attendance at medical appointments and improved overall program engagement.

Team Composition and Service Delivery

- A multidisciplinary team comprised of LCSWs and medical providers (nurse practitioner, psychiatry) allowed the program to bill for the provision of direct physical and mental health services.

- Benefits advocacy assisted clients with access to insurance coverage and income, which provided stability to the frequent user client population.

- Teams that were culturally and linguistically competent and provided written materials in multiple languages and interpretation assistance at medical appointments were necessary.

- Integrating peers with the hospital personnel bridged the hospital system with the community-based organization, which created a positive working collaboration. Peers also increased health literacy and modeled 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 *Initiative* program provided opportunities to address the clinical and social service needs, housing, substance abuse treatment, and psychiatric issues of the frequent user population.

- Programs that had access to a psychiatrist through in-kind services or team composition provided streamlined mental health services, offered medication management, and provided assessments for SSI applications.

- Co-location with the Health Care for the Homeless programs offered invaluable housing resources to a client population with a high rate of homelessness or unstable housing.

- As part of the intensive case management approach, staff actively educated and coached clients in navigating the health care system, including the consequences of missing appointments or abusive behavior (e.g., providers can drop them), which led to stabilizing their medical home.

- Balancing caseload acuity was important to achieve enrollment targets, manage service delivery, and provide "stepped care." Clients with high needs impacted service delivery and outreach capacity of staff; therefore, programs that triaged their referrals and moved clients through a tiered service system increased efficiencies in overall program management.

- Projects with lower operating costs (paraprofessional model) had 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 was instrumental both to identifying frequent users of the ED and tracking program effectiveness. Programs that did not have relationships with multiple hospital systems across the county had difficulty proving that the client did not visit the ED in another hospital in the community.

- Strong support from the hospital administration, which included a shared vision and dedication to holistic care of the patient, as well as a public health philosophy of care, created 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, served to develop a collective solution for the frequent user population that was able to override competition among for-profit, nonprofit, and religious hospital systems.

- Presence of a strong and committed physician "champion" within the hospital or a program "champion" within the county facilitated program buy-in during the course of implementation and promoted sustainability strategies and ongoing support. Specifically, a program champion from county administration could 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 enhanced 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 Medi-Cal managed care organizations increased referral and enrollment, created opportunities for streamlining access to primary care resources for clients, and played 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, were 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 allowed 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 moved beyond reporting on program operations and addressed policy and systems issues across the county that extended 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 was the most unresponsive to program intervention. To adequately address the issue of avoidable ED use, programs needed 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 required the ability to examine existing practices and share data and information in ways that identified opportunities for change.

Data Collection and Evaluation

- To establish the business case for investment in frequent user program interventions and to garner support and buy-in across stakeholder groups, programs needed to compile sufficient evidence of impact across multiple systems. A consistent, systematic data collection strategy with the hospital and other partner organizations allowed the program to track data over time that could 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 included: 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 countywide database linking hospital, primary care clinic and mental health service, and drug and alcohol treatment utilization enhanced data sharing capabilities and care coordination across medical and social service systems.

- Collecting and sharing data across systems not only served to enhance care coordination and illustrate the business case for a cross-system collaboration, it also shed 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 was no program that incorporated all of the successful components; rather, each program had 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, by County

	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 were co-located within the emergency department for "real time" access		X	X			X
Program had access to vouchers for permanent housing through partnerships with housing agency	X			X	X	
Program staff provided ongoing case management for housed clients to minimize loss to follow up	X			X	X	
Program had penetration/presence at multiple hospitals across the county	X			X	X	X

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

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare
Pain management and pain contracts for the drug-seeking population were addressed across medical providers in the community	X			X	X	X
Partners shared data and examined data in a way that identified opportunities for policy/systems change	X			X	X	X
Data Collection and Evaluation						
Programs were compiling evidence/data across service systems to establish the business case for the frequent user intervention model	X			X	X	
Programs had a process in place to systematically track data elements across multiple systems (hospital charge/costs, primary care, mental health, substance abuse, EMS, jail bookings)					X	
Countywide database linked hospital, primary care and mental health service utilization						X

VI. DESCRIPTION OF ENROLLED POPULATION

Enrollment, Disenrollment, Client Demographics

Over the course of the *Initiative*, programs enrolled and provided services to a total of 1,180 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 varied greatly across the six programs due to differences in how the programs defined disenrollment. For example, in the Sacramento program, clients were documented as disenrolled only when they were deceased, compared to Los Angeles where disenrolled clients were those no longer actively engaging with case managers or those who had 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 three 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 lacking Medi-Cal coverage were associated factors.

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

Baseline Demographic Status of Clients Enrolled through September 2007							
	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare	Total
Number of Clients Enrolled	121	198	477	105	136	143	1180
Total Clients Disenrolled*	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 varied greatly across the six programs due to differences in how the programs defined disenrollment.

** Reasons for losing eligibility in the *Initiative* programs included: transitioning to private insurance or Medicare, or the client transitioning to a different intensive case management program (based, for example, on a mental health diagnosis).

*** The Los Angeles County 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, age 40-59, and never married/separated or divorced. Programs with particularly notable characteristics were in Alameda County, where 77 percent of their enrolled population was African American, and Tulare, where nearly 80 percent of their enrollees were women (an exception to the characteristics identified). Not surprisingly, overall health status of the population across programs was significantly poorer than the average population for both physical and mental health as measured by the SF-12. The physical health and mental health score on the SF-12 averages 50 in the general population, whereas, among the frequent user population, the scores were 38.5 (physical health) and 43.5 (mental health), which indicates that this population was significantly less healthy than the general population.

Table 7: Demographic Profile of Clients Enrolled Across Programs, by County

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=1,081). 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 had 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. Among those with drug addiction, drugs of choice included (in order of prevalence) methamphetamines, crack/cocaine, heroin, and prescription drugs. One-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 was reported to be significantly lower among clients in the Sacramento-area program than the other five programs. Excluding the Sacramento-area program from the analysis, the average percentage of mental illness across the other five programs was 50 percent.

Table 8: Presenting Conditions and Issues at Enrollment, by County*

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare	Total
	N=91	N=158	N=453	N=105	N=139	N=135	N=1081*
Average Months 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 1,081 clients out of the total enrolled population of 1,180.
** The low percentage of mental illness in the Sacramento program, 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 includes information regarding the overlap of the conditions frequent user clients presented at program enrollment (data were not available from the Santa Clara County program). Of those clients with only one presenting condition, almost 60 percent had an unmanaged chronic illness, 20 percent were homeless, 15 percent had substance addiction, and 4 percent had mental illness. Across the sites, more than a third (36%) of enrollees had three or more conditions (e.g., some combination of mental illness, substance addiction, homelessness, and unmanaged chronic medical conditions) when entering the program. In the Alameda and Santa Cruz County programs, more than half of the clients had three or more presenting conditions, which added 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 County)**

# of Conditions	Alameda	Los Angeles	Sacramento	Santa Cruz	Tulare	Total
One Condition	13%	50%	32%	15%	46%	32%
Two Conditions	34%	27%	34%	34%	29%	32%
Three Conditions	34%	19%	31%	28%	19%	26%
Four or Five 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 was defined as connecting clients to services such as housing, health insurance, income benefits, and primary care — all 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=1,081) and were obtained via 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 who were 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 Medi-Cal applications were filed for 25 percent. Of the Medi-Cal 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 Programs

	N (Percentage)
Homeless at Enrollment	486 (45%)
Homeless Connected to Shelter, Board and Care, etc.	271 (54%)
Homeless Connected to Permanent Housing via Vouchers*	60 (12%)*
Clients Uninsured or Underinsured at Enrolment	676 (63%)
Medi-Cal Applications Submitted	160 (24%)
Medi-Cal Applications Submitted (160) and Approved	108 (68%)
Clients Connected to County Indigent Health Insurance Program	430 (64%)

* Only programs in Alameda, Santa Clara, and Santa Cruz counties 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 was a primary goal for case managers and program
staff. As **Table 11** shows, the percentage of clients who were homeless at enrollment varied from
27 percent in the Tulare County program to 60 percent in the Alameda County program. Based on
community capacity, program models, and resources, grantee success in connecting homeless
clients to stable housing varied considerably. Programs in Santa Clara and Alameda counties,
which worked 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, the Sacramento and Tulare County programs had 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 that connected homeless clients to temporary housing did so
through homeless shelter and SRO placements. The Los Angeles County program reported that,
despite having very few options for temporary shelter, they were able to connect homeless clients
to temporary housing through the acquisition of motel vouchers and subsidies. Through their
collaborations with the Salvation Army and the Cancer Society, the program in Sacramento also
offered motel vouchers and temporary shelter placements.

It is important to note that clients refused temporary placement in shelters for a variety of
reasons, including preference to live on the streets than in shelters, reluctance to share a room
with other people, unwillingness or inability to meet sobriety requirements, and objections to the
shelter location offered.

Table 11: Outcomes of Clients Homeless at Enrollment, by County

	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 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, single room occupancy hotels (SROs), and similar arrangements. Longer-term housing arrangements include skilled nursing facilities, board and care homes, subsidies (for rent or deposits), hotel vouchers, and residential treatment.

Connection to Health Coverage and Income Benefits

Connection to health coverage and income benefits was an essential strategy for stabilizing clients. **Table 12** provides details regarding health coverage outcomes across the sites. In terms of securing health care coverage, the programs connected 80 percent of the uninsured to county coverage (64%) or Medi-Cal (16%). In terms of connections to Medi-Cal, a high percentage of applications in Alameda, Santa Cruz, and Tulare County programs were approved.

As **Table 13** shows, programs enrolled some eligible clients for SSI, with the Alameda County and Santa Clara County programs proportionately assisting the most applications. The Alameda program's success likely reflects the program's close collaboration with a legal services and advocacy program. Average approval time ranged from three to more than six months across the programs

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

	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 Medi-Cal at Enrollment)	64 (70%)	125 (79%)	273 (60%)	53 (51%)	82 (59%)	79 (59%)	676 (63%)
Medi-Cal Applications	34 (53%)	21 (17%)	18 (7%)	33 (62%)	37 (45%)	17 (22%)	160 (24%)
Medi-Cal 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 Submitted	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 varied across sites and was influenced by the 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 primary care physicians. It is important to note that in the Santa Clara County program, all clients who did not already have a primary care home or primary care provider (PCP) were assigned a PCP at enrollment, which was 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 served 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, the programs in Alameda and Santa Cruz counties 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 the Tulare County program, and mental health and substance abuse services in the Santa Clara County program, 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 *Initiative*, significant capacity issues posed challenges to the Tulare County program for needed detoxification and substance abuse treatment services.

Because of the shorter average length of enrollment in the Los Angeles County area program (four months), it was difficult to connect clients with serious substance abuse problems to needed services — despite the program's location at 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, by County

	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 Clients to Clinic	72 (79%)	95 (60%)	307 (68%)	32 (30%)	62 (45%)	94 (70%)	662 (61%)
Clients Assigned PCP	52 (57%)	48 (30%)	75 (17%)	37 (35%)*	65 (47%)	55 (41%)	332 (31%)
Clients Attended Clinic Appointments	48 (53%)	52 (33%)	154 (34%)	85 (81%)	58 (42%)	80 (59%)	477 (44%)
Clients 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
Clients Connected to Mental Health Services	32 (73%)	18 (28%)	7 (19%)	31 (47%)	34 (39%)	25 (48%)	147 (42%)
Clients w/Substance Abuse 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 County already had a PCP at enrollment

VIII. PROGRAM ACCOMPLISHMENTS: COMPARISON OF EMERGENCY DEPARTMENT AND INPATIENT HOSPITAL UTILIZATION AND CHARGES

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

a) Total population enrolled before September 30, 2006: comparison between one year pre- and one year post-enrollment
b) Clients engaged in and in contact with the program for at least one year: comparison between one year pre- and one year post-enrollment
c) Clients on Medi-Cal at enrollment: comparison between one year pre- and one year post-enrollment
d) Homeless clients connected vs. not connected to permanent housing: comparison between one year pre- and one year post-enrollment
e) Total population enrolled before September 30, 2005: comparison of one year pre-enrollment and two years post-enrollment
f) Charges 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, the program in Santa Clara County was only able to provide hospital data in the aggregate, thus limiting our ability to include the program in some of the sub-analyses conducted and presented in the following sections. In addition, the charge data supplied to the Los Angeles program by Olive View Hospital applied an average charge methodology for ED and inpatient episodes, rather than actual charges accrued by patients. Therefore, the overall charges presented for the Los Angeles County program appear lower than the other programs.

As discussed, there were several issues and inconsistencies in the data. To address these concerns, evaluators developed a data-cleaning strategy to address the data problems and improve the overall quality and integrity of the data analyzed, and to 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 three visits (ED or inpatient) in the year prior to enrollment.** The rationale for this seemingly low visits threshold 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 left without being seen or against medical advice), then these visits were not reflected in the utilization and charge data. In addition, in several hospital systems, if a client entered through the ED and was subsequently admitted to the hospital, the ED visit and any associated charges were recorded as part of the inpatient 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 1,180 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 was 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 September 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 Medi-Cal 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	241
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, 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 emergency department utilization (30%) and charges (17%), and in 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 Programs (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 *Initiative*'s 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 programs, 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 (see **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	Los Angeles 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 included 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	Los Angeles 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. Evaluators 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 (Medi-Cal or uninsured); presenting conditions at enrollment such as 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), homelessness 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 the Alameda County program to a 34 percent decrease in the Santa Cruz County program). Similarly, the pre-post change in inpatient days ranged from a 55 percent increase in the Alameda County program and a 48 percent increase in the Los Angeles County program to a 25 percent reduction in the Santa Clara County program and an 18 percent reduction in the Santa Cruz County program. Some sites, such as the Los Angeles County program and the Tulare County program, showed reductions in admissions, but increases in inpatient days, likely reflecting the acuity of the health conditions among 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 ranged from $13,000 in Tulare County to $115,000 in Santa Clara County in the pre-period, and changes from pre- to post-intervention ranged from a 17 percent reduction in the Sacramento program to a 50 percent increase in the Alameda County program.

Within the frequent user populations served by each program, there was a small proportion (~15%) of "super frequent users" with significant catastrophic health events and terminal illnesses that affected 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	Los Angeles 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	0.99	3.11	0.84	1.36	1.7
Pre-Post Difference	+0.18	0.25	.50	0.43	0.12	0.14
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	-0.58	-3.3	-1.1	+2.6	+0.6
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	Los Angeles** 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

** The Los Angeles County program provided data using a flat charge of $3,600 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, evaluators 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 accounted for 80 percent of the charges. This skew continued 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 higher charges among 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. Further, fee schedules at some hospitals changed during the study period, with the result that charges for the same care or procedures increased between pre- and post-enrollment periods and likely decreased measured net reductions in charges.

Table 21: Skewed Distribution of Inpatient Charges (excluding the Santa Clara County Program)

	1 Yr. Pre-Enrollment		1 Yr. Post-Enrollment		Pre to Post	
Charges	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 the *Initiative*, evaluators 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 older age, being on Medi-Cal at enrollment, and chronic disease.

Examining the top three "super frequent users" in each program (excluding the Santa Clara County program) provides insight into the complexity of their conditions and the catastrophic illnesses that affected 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 frequent users," most were male (9), homeless at enrollment (11), nearly half were over 50 years of age (7), and just over half were on Medi-Cal at enrollment (8). All but one had substance abuse issues, 11 had chronic diseases, and five suffered from mental illness. The reasons for hospitalization varied, but included complications from surgery, chronic illness (e.g., diabetes, cardiovascular disease, and sickle cell anemia), alcohol withdrawal, cellulitis, and septicemia.

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

Client	Alameda	Sacramento	Santa Cruz	Los Angeles	Tulare
High User A					
Charges One Year Pre-Enrollment	$601,412	$671,126	$99,605	$20,472	$182,855
Charges One Year Post-Enrollment	$871,491	$849,692	$1,921,152	$33,267	$140,504
Number of Admissions Post	1	10	7	13	2
Medi-Cal 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	Afr. 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	NA	Heart Failure, Infection	NA	NA	NA

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 One Year Pre-Enrollment	$7,819	$308,816	$58,993	$17,913	$123.402
Charges One Year Post-Enrollment	$1,283,490	$922,232	$362,857	$23,031	$145,502
Number of Admissions Post	3	25	2	9	16
Medi-Cal 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	Afr. Amer.	Afr. 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	NA	NA	NA	NA	NA
High User C					
Charges One Year Pre-Enrollment	$5,942	$110,223	$0	$10,236	$252,804
Charges One Year Post-Enrollment	$691,900	$744,828	$374,138	$17,913	$91,775
Number of Admissions Post	3	4	5	7	6
Medi-Cal 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	Afr. Amer.	Afr. Amer.	White	Afr. 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 months
Deceased	No	Yes	No	No	No
Cause of Death	NA	Stroke due to drug use	NA	NA	NA

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

The following section presents findings on a subset (N= 419) of clients (excluding the Los Angeles County program). In an effort to expedite and increase enrollment, the programs sometimes enrolled clients who completed 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 who engaged and who did not engage (the Los Angeles County program was not able to conduct this assessment because the program ended in October 2007). In addition to this information, evaluators 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 were lost to follow-up (those clients not in contact with the programs who may or may not have been in the service area or 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 County Program)

	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 the 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 programs, with reductions ranging from 25 percent in the Santa Clara County program to 64 percent in the Alameda County program. All five programs had statistically significant reductions in ED charges in the year after enrollment, with reductions ranging from 35 percent in the Santa Clara County and Santa Cruz County programs to 44 percent in the Alameda County program (**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 County)

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 County)

Measure	Alameda N=46	Sacramento N=158	Santa Clara N=61	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 the Alameda County program to a 34 percent decrease in the Santa Cruz program). Similarly, the pre-post change in inpatient days ranged from a 24 percent increase in the Alameda County program to a 27 percent reduction in the Santa Clara County program. Interestingly, the hospital inpatient charge data presented in **Table 27** show a decrease across all the programs, including in Alameda County, 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 affected 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 County)

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	1.09	3.03	0.91	1.94
Pre-Post Difference	+0.15	-0.2	-0.47	-0.46	-0.03
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	+0.8	-0.47	4.1	-11.2	+1.24
Pre-Post % Difference	+24%*	-7%	-0.27*	-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 County)

| 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

Quarters Before and After Enrollment

Not Engaged (N=80)   Engaged (N=362)

Figure 2: Mean Emergency Department Charges for Engaged and Non-Engaged Participants, by Quarter

Quarters Prior to and After Enrollment

Not Engaged (N=80)   Engaged (N=362)
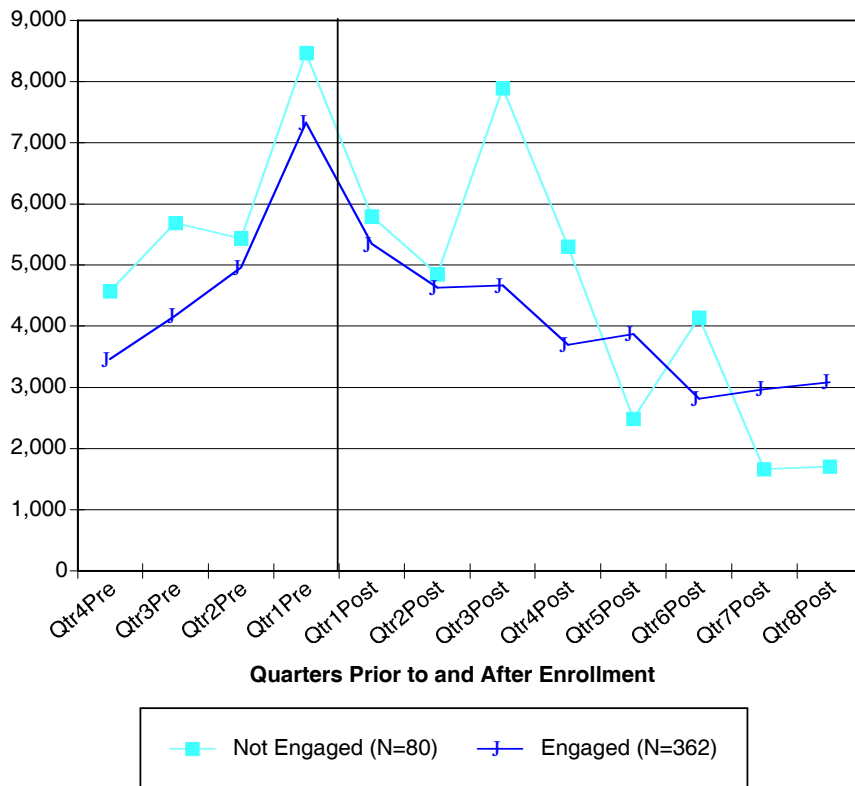
C. Clients on Medi-Cal at Enrollment (One Year Pre-Enrollment, One Year Post-Enrollment

Given that a large proportion (approximately 40%) of clients served by the programs were on Medi-Cal 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 Medi-Cal 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%) one year post-enrollment. 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 Programs, Excluding Santa Clara County Program: Clients on Medi-Cal 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 showing statistically significant reductions in both the number of ED visits and associated charges in the year following program enrollment for clients on Medi-Cal 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 percent to 61 percent (**Table 30**).

Table 29: Emergency Department Visits One Year Before and One Year After Program Enrollment, by County (Excluding Santa Clara County): Clients on Medi-Cal at Enrollment (N=280)

Measure	Alameda N=35	Sacramento N=101	Santa Cruz N=62	Los Angeles 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 Medi-Cal at Enrollment (N=280)

Measure	Alameda N=35	Sacramento N=101	Santa Cruz N=62	Los Angeles 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 County's program to a 34 percent decrease in Santa Cruz County's program) for clients covered by Medi-Cal at enrollment. Similarly, the pre-post change in inpatient days ranged from a 56% increase in the Alameda County program to a 24 percent reduction in the Santa Cruz County program. The hospital inpatient charge data presented in **Table 32** show similar variation across the programs in terms of pre-post changes. Changes in charges range from a 71 percent increase in the Alameda County program to a 10 percent decrease in the Sacramento County program. The explanation for these variations in charges, especially the large increase in the Alameda County program, is likely related to the inpatient utilization results for the overall population (see A., page 32), which includes the skewed distribution of utilization by a high-end use group within the frequent user population. As shown above in **Table 22**, there was one Alameda County program client on Medi-Cal who accrued more than $1.2 million in charges during the year after enrolling in the program, which alone accounts for the increase between the pre- and post-enrollment periods. This client was enrolled in the program for fewer than 30 days. Additional information is included below for Medi-Cal beneficiaries two years post-enrollment.

Table 31: Inpatient Admissions Before and After Program Enrollment, by County: Clients on Medi-Cal at Enrollment (N=280)

Measure	Alameda N=35	Sacramento N=101	Santa Cruz N=62	Los Angeles N= 32	Tulare N=50
Sum of Inpatient Admits Pre	41	140	96	41	109
Sum of Inpatient	48	104	63	44	107

Measure	Alameda N=35	Sacramento N=101	Santa Cruz N=62	Los Angeles N= 32	Tulare N=50
Admits Post					
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 in Mean Admissions	+0.2	0.36	0.53	+0.1	0.04
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	-0.23	2.09	+0.78	+0.96
Pre-Post % Difference	+56%*	-4%	-24%*	+13%	+10%

* Statistically significant

Table 32: Total Inpatient Charges Before and After Program Enrollment, by County: Clients on Medi-Cal at Enrollment (N=280)

Measure	Alameda N=35	Sacramento N=101	Santa Cruz N=62	Los Angeles 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 permanent 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	-0.8
Pre-Post % Difference (Mean)	-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	0.9
Pre-Post Difference	-0.4	-0.3
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, evaluators had year two post-enrollment data on 241 individuals (excluding the program in Santa Clara County). *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 (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 Two 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 Two Years Post-Enrollment

Table 38 presents findings that reflect 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 inpatient days increased slightly (+3%) in the first year, although this finding 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 program in Santa Clara County. It is hypothesized that year one post-enrollment increases were due in part to clients accessing appropriate primary care treatment through which medical treatment needs, such as surgery, were identified and scheduled. Once the clients' health conditions were stabilized through these interventions, the need for hospitalizations was reduced. In addition, during the first year of enrollment, many clients were getting connected to insurance, housing, and income, which assisted in the overall stabilization of the individual and may have diminished 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 (e.g., engaged and not lost to follow-up, clients on Medi-Cal 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 two 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 Medi-Cal 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 Medi-Cal 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*	0.6	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 five percent (N=58) of the enrolled population died. To understand the cost implications of this population, evaluators 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 the program in Santa Clara County).

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 factors related to substance abuse: 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 showed 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" causes of death, one patient alone from the Sacramento County program had more than $2.3 million in hospital ED and inpatient charges during the last two years of the client's life. Some of the diagnoses over the years of hospital utilization for this patient included 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" included 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 was also significant and speaks to the broader policy issues of substance abuse treatment service capacity and access to treatment in communities that serve this complex population.

IX. SYSTEMS CHANGE

From the inception of the Frequent Users of Health Services Initiative, both The California Endowment and the California HealthCare Foundation put forward an interest in demonstrating impact on more than 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 frequent users in each of the counties where the six programs operated. There was an expectation that the grantees' funded interventions would address not only individual behaviors, but also the fragmentation and service delivery silos that existed 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 *Initiative* story. Through partnerships and collaborations formed among the range of agencies that touched 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 their efforts to stimulate systems change activity in the funded counties, the two foundations introduced an intervention midway through the funding period 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 progress toward 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 b) adding services (e.g. newly funded services, blended programs) so long as the change is the result of the actions of organizations as distinct from official policies of a public body.

The collective experience of the grantees in advancing systems changes to meet the needs of frequent users followed a "developmental progression," with certain steps (pre-conditions) that facilitated success. **Figure 3** presents a framework[1] for conceptualizing and documenting the core "building blocks" that constituted the progression toward systems change. This progression was not linear and the components are not necessarily discrete phases of implementation. Rather, the progression was dynamic and ever-evolving within the program and among the various participating stakeholders and systems. This framework for change applied to different levels, including the program, within and across partner organizations and the broader community. According to 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 acknowledged there were external "enablers" outside the FUHSI programs (e.g., changes on boards of supervisors, new legislation) that often led to breakthroughs that facilitated progress.

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[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
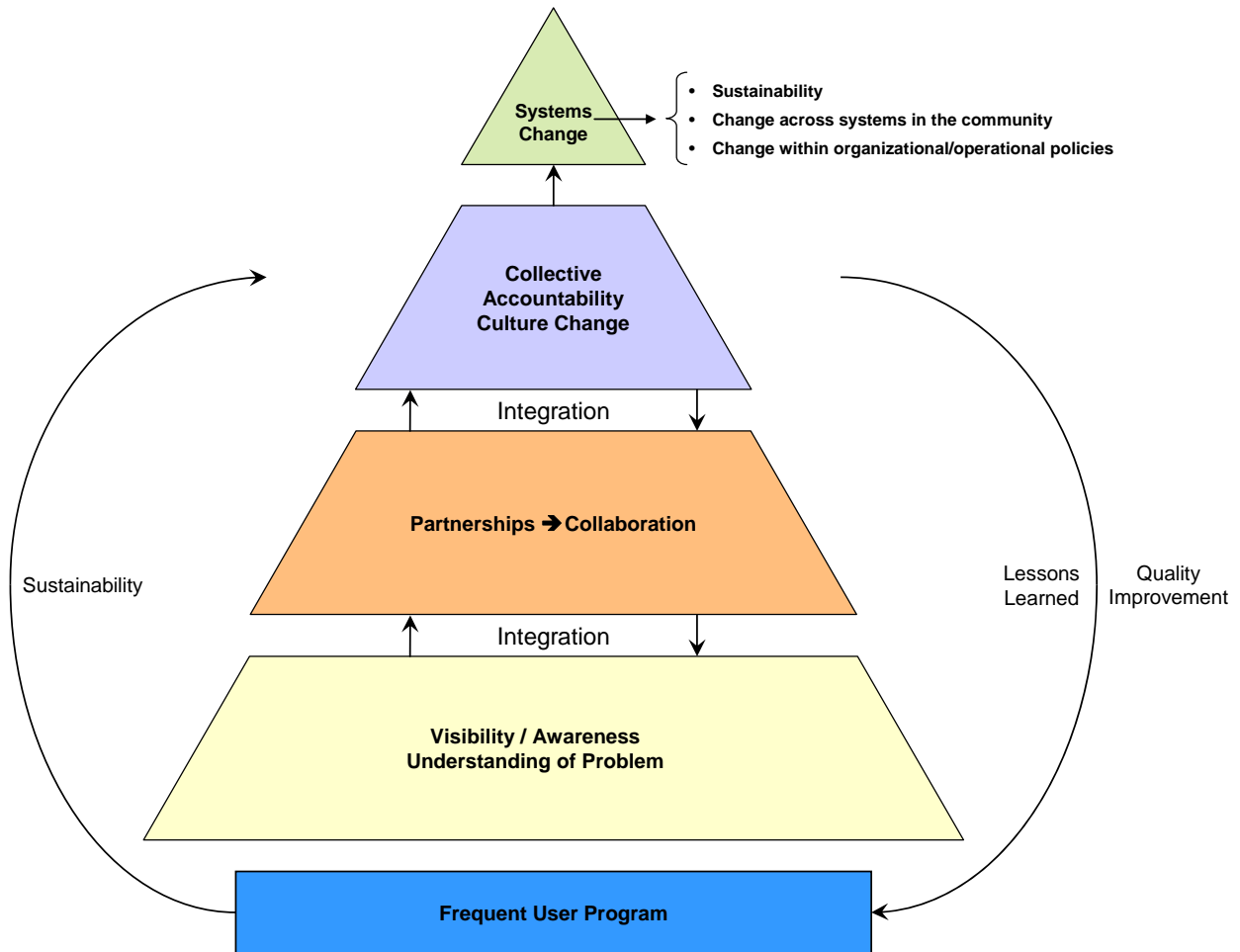
Over the course of the *Initiative*, programs in Alameda, Santa Cruz, and Santa Clara counties advanced their systems change activities by focusing primarily on expanding and strengthening partnerships and collaborations within their counties, while programs in Sacramento, Los Angeles, and Tulare counties 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, by County: 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 recognized program value, demonstrated 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 were finalized and service utilization of frequent user clients was 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, Medi-Cal 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., Medi-Cal 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	
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 extended beyond "frequent ED use"	X			X	X	
Routine (weekly/monthly) interdisciplinary clinical case conferences held across providers and service systems (hospital, primary care, mental health, substance abuse, housing)	X			X	X	

	Alameda	Los Angeles	Sacramento	Santa Clara	Santa Cruz	Tulare
Systems Changes						
Intermediate Organizational Policy Changes						
Hospitals changed operational policies in response to population (e.g., identification, referral and discharge planning practices, notifying PCP when patient presented to ED)			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
Program Sustainability						
Team included providers eligible for Medi-Cal reimbursement	X			X	X	
Partnership with Medi-Cal 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	
Broader Systems Change						
Participation/role in Coverage Initiative proposal (though not awarded funds)	X					
Program recognized and relied on for expertise in other community efforts	X			X	X	
IT solutions were 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 made toward systems change, as well as actual systems changes achieved.

Alameda (Project RESPECT)

Systems change focal areas for the program in Alameda County 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 homelessness within Highland Hospital and in the broader community, 4) creating buy-in through benefits advocacy that led to organizational culture change and sustainability, and 5) participating and taking a leadership role in 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 prioritized access to housing and primary care. Program clients received priority for Shelter Plus Care McKinney-Vento Homeless Assistance tenant-based vouchers, other housing vouchers, and case management services. In addition, LifeLong Medical Care offered frequent user clients priority scheduling, enabling clients to schedule primary care appointments within one to two days, regardless of insurance status. The clinic also expanded its

operating hours. LifeLong Medical Care contracted a psychologist to complete comprehensive assessments within three weeks of a request. To enhance the program's case management, LifeLong gained remote access to ED records through the Alameda County Medical Center (ACMC) computer system, which enhanced communication between primary care and ED providers and helped case managers monitor ED usage by clients.

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

Elevating awareness of homelessness across the community. The Alameda County program elevated the issue of homelessness for Highland Hospital in terms of the county hospital's responsibility for discharge planning and community connection for respite care. Highland Hospital's chief financial officer conducted an independent analysis of respite care options within the community and is now considering funding shelter beds. One of the program's sustainability strategies was 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 participated actively on subcommittees as part of the Everyone Home planning process, Alameda County's 10-year plan to end homelessness.

Creating buy-in through benefits advocacy that led to changes in organizational culture and program sustainability. A core component of the program was benefits advocacy provided by the HAC to connect eligible clients to SSI and Medi-Cal. As a result of HAC's success in connecting clients to SSI/Medi-Cal, Highland Hospital, Alameda County's Medical Center, can now retroactively bill for $1.1 million in charges for uncompensated care for previously uninsured clients. Over the course of the *Initiative*, Project RESPECT 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 evolved from primarily a referral source for clients to being an active partner with the frequent user program where 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. ACMC wants the program to develop a business plan for the ongoing provision of case management services for frequent users.

Participating and taking a leadership role in other countywide initiatives that affect the frequent user population. The Alameda County 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 EveryOne Home 10-year plan to end homelessness, discharge planning for people experiencing homelessness, respite care planning, specialty care planning, and planning to increase access for uninsured residents. Stakeholders in the community that share a collective responsibility for the frequent user population include the ACE program participants, the Hospital Council of Northern and Central California, the East Oakland Community Project, the Alameda County Medical Center, the Alameda Health Consortium, and the Alameda County Access to Care Collaborative. Of particular note is the program's influence on

the Coverage Initiative, which is incorporating several components of the *Initiative*'s intervention model in an effort to redesign how health care services are delivered. These components include establishing a medical home, intensive case management, and integrated care teams.

Santa Cruz (Project Connect)

Systems change focal areas for the program in Santa Cruz County centered on: 1) changing the belief systems across multiple organizations (hospital systems, Medi-Cal managed care, housing, criminal justice) that moved "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 addressed issues beyond "frequent use" of ED.

Changing belief systems that moved partners from collaboration to collective accountability. Across many of the partnering systems involved in the Santa Cruz County program, organizations moved from collaboration around specific issues or tasks to a greater sense of responsibility for the frequent user population and for the provision of community services.

Hospitals: In 2007, a critical event spurred collaboration between the Santa Cruz program and partnering hospitals. Against the advice of project staff, a client enrolled in the program was discharged to a community motel following 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 was 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 visit the homeless services campus where the Santa Cruz program was co-located, making name and face connections with staff to whom they had been referring patients for years, and familiarizing 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 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 related to the development, dissemination, and monitoring practices of pain contracts for drug-seeking patients. The Central Coast Alliance for Health (CCAH) began training and strongly recommending to primary care providers that pain contracts be developed for drug-seeking patients. CCAH posted all pain contracts on the provider section of their website and established guidelines to keep physicians accountable for monitoring 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 Medi-Cal managed care plan serving Santa Cruz County. Program staff recently took Alliance staff members on a "ride-along" to visit frequent user program clients in their homes. Once Alliance staff witnessed 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 with which they were familiar. 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 interdisciplinary staffing, which included a nurse practitioner, and diverse skill sets within the program's team to deliver this level of care to Alliance members in the community. 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 Central Coast Alliance for Health now provides an annual grant to Project Connect that helps to support the costs of the intensive intervention directed to their members enrolled in the project.

The ride-along served to increase understanding between two distinct organizational cultures in which health and social services operated. 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 Alliance plans to use the *Initiative* program's data to document the work they do to track high users of services and respond with programs designed to address their needs. Following the ride-a-long 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 as they respond to the needs of the entire population of Medi-Cal beneficiaries and providers across the county. The desk-along allowed program staff to learn about the resources that the Alliance had to offer as well.

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 hoping to gain control of units of subsidized housing for their enrolled clients who are homeless. 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 supportive housing units for individuals with disabling conditions and poor rent and credit histories. The program successfully collaborated with several community projects to increase the availability of permanent housing options for their clients, including the following: 1) a HUD demonstration housing program grant for homeless serial inebriates which provides 33 units of subsidized rental units through a county master lease program; 2) a 13-unit single room occupancy moderate rehabilitation HUD program permanent housing project that received funding from the state, the county, and the City of Santa Cruz; and 3) 34 units of permanent housing made available through HUD-funded Shelter Plus Care grant funds. These units increased the core stock of affordable permanent supportive housing units for homeless adults in the county by 80. Project Connect is hoping to gain control of more units.

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 acquired a database that included jail data on all program enrollees for the year prior to enrollment and for each month following enrollment. This interface enabled Project Connect to demonstrate the impact of the program on reducing jail bookings and days incarcerated. The database matched criminal justice, mental health, and substance abuse data to track whether individuals arrested for

drug-related offenses were connected to drug treatment or mental health services. Project Connect was able to provide evidence that the program was associated with reduced jail bookings and jail bed days and associated costs, which stimulated interest among community stakeholders to change expectations for this population and consider options to address their multiple needs. Project Connect 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 information technology (IT) solutions for 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. This capability would allow staff to remotely access systems for billing and view histories of care and medication provided through county clinics, making it possible to consolidate and streamline service delivery, billing, and reimbursement procedures. Sustainability strategies for Santa Cruz included leveraging the Coverage Initiative to offer case management service packages for uninsured individuals, which would provide case management services to a larger proportion of Alliance Medi-Cal members and to frequent users at primary care clinics. Unfortunately, Santa Cruz County was not selected for funding through this state pilot program.

Improving access to care. Santa Cruz clinics used an open scheduling system that allowed for same-day and next-day visits. The Santa Cruz County program was co-located with a Health Care for the Homeless Clinic that was established and expanded through a grant secured in the program's first year from the Health Resources and Services Administration. Needs assessment data from the program was used to support the successful application to HRSA, which paid for an onsite pharmacy dispensary program and provided many visits on a walk-in basis. The program's nurse practitioner was 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. Santa Cruz's *Initiative* program improved disease management access by linking primary and specialty care services. In addition, the program had an impact on end-stage frequent users by connecting them to primary care, skilled nursing facilities, and hospice services.

Formalizing partnerships that addressed issues beyond "frequent ED use." The Health Improvement Partnership 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 formalized with regular meetings to plan and collaborate on a range of critical health care issues affecting the community. Both groups continued to provide support and sponsorship for Project Connect as it is established as an ongoing program in the community.

Santa Clara (New Directions)

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 included participating hospitals, Mental Health, Alcohol and Drug Services, Department of Social Services, two housing agencies, Catholic Charities, community clinics, transportation, Healthcare for the Homeless programs, and the Department of 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 acted as a neutral party to move partners toward a collective solution to the challenges frequent users posed.

Prioritizing and streamlining services for frequent users through interdisciplinary care conferences, priority status for primary care physician assignment, and other strategies. To increase access to needed medical care, program clients were given priority status for primary care services, and all clients were assigned a primary care physician (PCP). The program held biweekly 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 provided collective input from PCP providers, mental health, and ED providers on clinical issues and overall patient care. Regular input from an interdisciplinary team allowed the program to identify gaps in service capacity throughout the county. Care conferences highlighted 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 a myriad of treatment issues related to frequent users. Responding to identified service needs of this population, the program and SVHC were 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 its 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. Over time, 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 was to continue strong collaborations with homeless service providers in the community. In addition, the program was now recognized as a successful service model for working with and addressing the needs of the homeless population. The program 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 needs of people experiencing homelessness in the county.

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

The hospital director at Santa Clara Valley Medical Center expressed an interest in physicians' developing group practice guidelines that specialized or focused on the frequent user population. Also, there was a movement toward developing a clinic with sufficient supports, staff composition, and resources to address the complex medical and social needs of this population. The county is now considering lowering the required patient load (1,200 to 900 patients per physician) as incentive for physicians to take on a greater proportion of frequent user patients in the primary care setting. Physicians engaging in this effort would need to offer flexible hours and drop-in scheduling to accommodate frequent user needs.

Another example of a change in system values in Santa Clara was the shift in thinking around co-occurring disorder treatment and alcoholism. The new Department of Mental Health Director came from the Department of Alcohol and Drug Services. As a result, DMH began focusing on treatment for co-occurring illnesses and reducing service fragmentation. In a related shift, DADS began considering treating alcoholism with a chronic disease approach, which would require a shift in focus from emergency detoxification 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 were recognized in the health and human service systems in the county. As a result of the demonstrated effectiveness of the program, four hospitals in the county contracted with the program for ongoing case management services at a rate of $6,000 per client. ***The contracts with the hospitals contained language acknowledging that it may take two years of case management to achieve maximum results.*** In addition, the program received funding and vouchers from HUD for case management services for clients who were housed. The County Blue Ribbon Commission plans to fund additional case management services for homeless residents (based on the program's case management model), which could bring between 50 and 100 new homeless frequent user clients into the program. Finally, the program initiated the development of a Respite Care Center at a local homeless shelter and is case-managing patients discharged from this county program as another strategy for sustainability.

Tulare (The Bridge)

Despite implementation challenges experienced during the first year, the Tulare County program made significant progress toward several aspects of systems 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 linked 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 insurance providers. Steering committee partners recognized the program as a community intervention and not just a small program within Kaweah Delta Hospital. Tulare County Medical Services (TCMS) declared the program a priority for the county. Tulare District Hospital recently underwent changes in leadership positions, and, as a result, re-established a relationship and a commitment to the program. The project coordinator 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 examined ways to expand into surrounding counties and provided 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 secured buy-in and participation from Blue Cross Managed Care 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 gained support from BCMC and viewed this collaboration, and the opportunity to provide case management to high-end Medi-Cal members, as central to their sustainability strategy. Also, the program secured support from Pine Recovery, an inpatient drug treatment program, which represented a new and much needed addition to the partnership collaborative in Tulare County for the frequent user population.

Gaining program buy-in and fostering collaboration. Elevating awareness of frequent users across the partnering organizations led to cultural changes for some participants. TCMS staff members stated that the program created opportunities to match faces to the names of hospital administrators and representatives of other partner organizations and systems, which increased the sense of collective responsibility for frequent avoidable use of hospitals. Program staff 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 and program case managers formed a strong collaborative team that strove 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 were served by the program and County Mental Health Services. The protocol aimed 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 were referred to the program, but whose mental health disorders were a primary cause of their ED visits were transitioned to the TCMH team for case management. The program added language to its consent form that allowed project team members to share mental health information with TCMH to enhance communication and coordination of mental health services.

Developing IT solutions that increased data sharing and care coordination. In collaboration with the Kaweah Delta IT department, the Tulare County program, developed a central database that linked ED utilization at the three hospitals across the county in an effort to enhance communication between the hospital EDs, identify patients who met the eligibility criteria for frequent ED use

across hospital systems, and to track the impact of the intervention countywide. To facilitate communication with the county primary care clinics, program staff sent email alerts daily to Family Care Network clinics as notification of clients 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 minimized the chance that frequent users would slip through the cracks. Long-term IT plans include a countywide 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 was deeply invested in the issue of pain management and coordinated training for ED physicians on his Tier 3 Pain Management system. The program is working to integrate the pain management database with the countywide system under development.

Organizational policy changes that increased access to care for frequent users. The program implemented "flags" within the county primary care clinic system to allow priority appointments for frequent user program clients. County clinics expanded their hours to increase access to primary care, with several clinics offering open access scheduling and after-hours capabilities. Clinics monitored their own wait times so that patients did not have incentives to visit the ED for primary care. The program 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 met to discuss clinical issues associated with clients and strategies for referral and transfers to specialty medical care in the county.

There were eligibility workers on site at every county clinic to assist uninsured patients with Medi-Cal applications. Community health technicians from the county clinics worked with program outreach specialists to identify social and medical services needed for patients. TCMS was funded by the county, and there was no capacity to go into the community and conduct home visits or proactive outreach. Outreach to clinic patients and connection to Medi-Cal ultimately saved the county money by shifting to state-funded services.

Sacramento (The Care Connection)

System change activities in Sacramento focused 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 Medical Center to enhance program implementation.

Increasing program visibility. The program made progress in 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 recognized the problem of avoidable ED use, and Sutter General Hospital 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 Federally Qualified Health Center (FQHC) status. UC Davis Medical Center and The Effort are developing strategies to collaborate on service overlaps 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. Building collaborations with housing agencies emerged as a priority for the program in Sacramento County. 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—for both the Sacramento program and The Effort 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 across systems, identify frequent users, and connect frequent users to appropriate care systems. Many stakeholders agreed that the integration of peers into the medical setting was a significant strength of the program model because of the cross-cultural bridge it created. This collaboration between the service community and the hospital 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 Medical Center. Due to the Emergency Medical Treatment and Active Labor Act (EMTALA), prior hospital policy did not allow program staff to talk to patients about the program until *after* they had 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 saw the doctor — evidence of the confidence the hospital compliance department had in the staff to follow an agreed upon script and not violate EMTALA policies.

While UC Davis Medical Center was committed to the issue and to the project, there is still work needed to communicate and coordinate with the other three hospital systems in the county. Most stakeholders agreed that success in Sacramento County will rely on all four hospital systems coming together to solve challenges presented by frequent users. 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 (Project Improving Access to Care)

In terms of the "building blocks of systems change," the majority of the activities of the Los Angeles County program related to building awareness of the program and of the frequent user issue, and identifying key capacity and policy barriers in Los Angeles County that affected their ability to move forward in their progression towards systems change during the grant-funded period.

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

Identifying barriers to collaboration and change. Program staff and their partners acknowledged that organizational change within the county was not possible without mandates issued by the Board of Supervisors. The political climate within Los Angeles was one that promoted maintenance of the

status quo and, for change to occur, there would have to be a significant ideological shift within the Board of Supervisors. 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 of Supervisors 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 resulted only from personal relationships that were established, not from organizational policies or infrastructure. Future program in-roads for the frequent user population in Los Angeles County will require linkage with the county's 10-year plan to end homelessness, as well as 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 centered on families and children, and frequent user programs tended to serve single adult males, which was difficult to "market" because they were not viewed as "deserving dependents" in the system of care. Systems change efforts required 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 in partnership and collaboration. The program learned that memoranda of understanding (MOUs) were not sufficient 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 did 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 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 — 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 of Health Services Initiative

Program Planning and Implementation
• 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 three-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 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 *Initiative* programs are on Medi-Cal, which provides some opportunities for the *Initiative* programs to receive compensation for case management services to Medi-Cal managed care members — though Medi-Cal currently does not reimburse any frequent user programs for case management services based on frequent avoidable use of the ED .
• 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 such patients are expensive to treat.

Staffing
• *Initiative* program staff need to have experience working with a deeply complex population with multiple medical and psychosocial needs.
• Including nurses on the frequent user program 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 toward collective compassion.
• Frequent user 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
• 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 frequent user program team mix enhances client engagement and helps build rapport and trust with clients in the community.

Service Delivery
• 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-group served by the *Initiative* programs. The programs learned that availability of mental health or substance abuse treatment is not enough to engage this population in program services. Effective interventions for this population requires 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 Medi-Cal 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, to serve as the client's "care historian," and to 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 frequent user 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, frequent user 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 nonprofit 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 such 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 have been logged by the hospital financial department, creating discrepancies in data analysis and questions about costs.
> • Share evaluation data with staff and partnering 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 Users of Health Services 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, as well as examination of different approaches to substance abuse treatment.

- Medi-Cal funded mental health services are restricted to clients with serious and persistent mental illness. Services access for individuals with "non-severe" diagnoses is limited. Medi-Cal also does not currently reimburse for many of the non-medical services frequent user programs offer.

- The number of county beds allocated for medical detoxification services are insufficient and limited to individuals with Medi-Cal. 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.

- Sobriety requirements for *temporary* shelter placement leave 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.

- Medi-Cal policy barriers affect frequent user ED recidivism rates. Patients taking more than eight prescription medications are restricted to a 30-day supply, yet they cannot see a PCP more frequently than every three months if Medi-Cal 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, corrections agencies, 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 two hours. Patient satisfaction is higher at the ED than in many clinics due to long wait times, making hospital EDs the provider of choice for many people.

- ED providers from contracted Medi-Cal 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 Users of Health Services 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 *Initiative* funding.

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

Alameda (Project RESPECT)

The program in Alameda County had a strong intensive case management model and staff composition, which included clinical providers who could provide direct and billable services under Medi-Cal. The program has strong leadership, commitment, and collaborations between LifeLong Medical Care, the Alameda Health Consortium, the Shelter Plus 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 Medi-Cal, which not only stabilized the individual clients, but also allowed the hospital to back bill for over $1 million 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 toward and achieving systems

change. A public health orientation and a sense of collective responsibility exist in Alameda County 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 County 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 the Corporation for Supporting Housing program office, the estimated average cost of *Initiative* program services in the Alameda County program is $4,325/client per year (actual program costs ranged from $2,805/client per year to $5,845/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 (Project Improving Access to Care)

The intensive case management model of the program and the quality of the case management staff has always been an asset for the Los Angeles 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. Los Angeles 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 Hospital 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 Los Angeles County.

The Los Angeles County 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 Los Angeles County. As a result of numerous challenges, the program ceased operations at Olive View at the end of the grant period. It received one-year continuation funds from local sources and currently serves frequent users on a limited scale at two private hospitals.

Sacramento (The Care Connection)

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, 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 Medi-Cal. 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 (New Directions)

The Santa Clara program was one of the most successful and effective programs involved in the *Initiative*. There were several factors that set the program apart from the other projects. First of all, Santa Clara had an existing frequent user project under way 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 Medi-Cal 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. Biweekly 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 two years. The collective experiences of this program have provided valuable insights for the other five grantees involved in the *Initiative*.

Santa Cruz (Project Connect)

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 ability to provide 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 countywide 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 (Medi-Cal 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 Bridge)

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 countywide 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 countywide 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 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 CFOs 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 three 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

Interventions

Intermediate Outcomes

Long Range Impacts

Planning Grants

Other Grantee Activities
- Meetings/Convenings
- Other activities

Implementation Grants
- Structure
- Intensity

Broader FUI Initiative
- Policy papers
- Other activities

Enrolled TP Client
- Outcomes
- Service utilization
- Costs

Organizations
- Policies and practices
- Data systems
- MOUs
- Changes in services

County System
- Data systems
- Financing
- Collaborations
- New services
- Restructuring

State & County Level
- Laws and regulations
- Budget and financing

Service Delivery Changes
- Alternative 1 - Client-based: Compare enrolled clients at beginning and end of grant period (utilization and cost)
- Alternative 2 - System-based: MIS analysis of changes in the patterns of service utilization and costs system wide

Systems Change
- County
- State