EVALUATION OF THE SAN MATEO COUNTY ADULT COVERAGE AND SYSTEMS REDESIGN INITIATIVE

FINAL REPORT

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EXECUTIVE SUMMARY

This report provides results from a three-year evaluation—by the Urban Institute and the University of California at San Francisco—of the San Mateo County Adult Coverage and Systems Redesign Initiative. The initiative began in 2008 and is designed to both improve health coverage for otherwise uninsured adults in the county, as well as to improve access to and quality of care in county safety net clinics. The evaluation uses mixed methods, including:

- Qualitative components:
  - A case study of implementation and
  - Focus groups to assess client satisfaction.

- Quantitative components:
  - Analyses of aggregate data from clinics and the Health Plan of San Mateo
  - Analyses of individual level data from a client survey and from the largest clinic in the county, the Innovative Care Clinic (ICC).

This report provides a synthesis of findings across these diverse data sources. Outcomes studied include effects on access to care, utilization of services, satisfaction with care, continuity of care, quality of care, and cost of care.

The initiative led to positive outcomes for formerly uninsured adults. Included among many improvements outlined in the report are the following:

- The number of people enrolled in county coverage programs for uninsured adults more than doubled, due both to increased demand and to successful outreach and enrollment processes.

- Most of the components of systems redesign—an electronic medical record, team-based care, advanced access scheduling, and chronic care management—were implemented in most safety net clinics.

- The percent of enrollees with a usual source of medical care more than doubled after enrollment in county coverage programs.

- The percent of enrollees with a medical visit also doubled after enrollment.

- Use of preventive care and continuity of care increased after systems redesign at the ICC.

- The percent reporting routine care for their chronic conditions increased after enrollment.

- Users of county safety net clinics gave high courtesy ratings to their providers.

- Quality of care for diabetic patients covered by the initiative is high and improving.

At the same time the county coverage and systems redesign initiative continues to face challenges. Many of these challenges derive from the severe recession that set in just as the initiative was moving forward. These include:

- Frequent turnover in enrollment, making it difficult to provide continuous care.
- Long waits for non-urgent primary care appointments for newly enrolled patients.
- Continued heavy use of the emergency room, although there is evidence of decline in use in the second year of continuous enrollment and at the ICC after systems redesign.
- No reductions in average charges for care before and after systems redesign.

The challenges faced during the coverage expansion and system redesign efforts of 2008-2010 provide issues for the county to consider as it continues planning for additional expansions and systems redesign under its new waiver and the coming national health reform implementation. As a consequence, we recommend the following:

- The county should strive to develop ways to overcome access barriers for the newly enrolled in county coverage programs, particularly those who seek preventive care and primary care for less serious conditions. Providing better access to such care, combined with a goal of reducing emergency room use, could lead to cost reductions that have not yet occurred under the recent coverage expansions.
- Initiatives to improve continuity of enrollment should be undertaken in order to reap the benefits of improved preventive and primary care for those who remain enrolled over time.

In summary, San Mateo's adult coverage and systems redesign initiative provides many positive lessons for the nation and other localities. With limited resources, and numerous challenges, most notably the economic recession, the county—under strong leadership that persists in pursuing the goals of the initiative—has expanded coverage to a rapidly growing number of uninsured adults and improved the care they receive. This, in turn, has improved the health and health care of many county citizens. In spite of the challenges that remain (such as constrained supply of safety net primary care services), this provides an example for other communities to follow as they improve health care services for the most vulnerable members of society.

INTRODUCTION

In early 2008, San Mateo County embarked on a comprehensive Health Coverage and System Redesign Initiative. The goals of this initiative are to: provide coverage for low-income uninsured adult residents of the county; improve access to and quality of care within the county's ambulatory health care safety net; and assure the financial sustainability of the San Mateo Medical Center (SMMC). While the initiative began officially in early 2008, more limited but related efforts have been underway in the county for more than a decade.

About the time that these initiatives began, the county contracted with the Urban Institute and colleagues at the University of California/San Francisco to conduct an evaluation of the coverage and redesign initiatives. The evaluation is designed to:

- Assess the implementation and impact of the Access to Care for Everyone (ACE) coverage initiative;
- Assess the implementation and impact of safety net systems redesign initiatives.

To accomplish these objectives, the evaluation team:[1]

- Conducted two site visits to the county to interview key stakeholders in August 2008 and July 2009 to assess implementation of the initiatives;
- Conducted focus groups with ACE enrollees in September 2009 and June 2010 (eight groups in total) to assess client satisfaction;
- Analyzed aggregate data from safety net clinics operating in the county;
- Analyzed aggregate data on ACE enrollee characteristics, utilization, and cost from the Health Plan of San Mateo (HPSM);
- Analyzed individual-level data from the largest safety net clinic—the Innovative Care Clinic—located on the main campus of the SMMC;
- Analyzed data from a special survey of ACE enrollees at the time of enrollment and re-enrollment, using the on-line application system called One-e-App.

This is the final report from the three-year evaluation, which provides a summary of all evaluation findings. For more detail, particularly about county characteristics and the history of implementation of the initiatives, see previous evaluation reports (Howell, Benatar, & Hughes,

[1] These data sources are described more fully on pages 15-16 of this report.

2009; Howell, Hughes, Benatar, Klein, Palmer, & Kenney, 2010). The evaluation questions and associated data sources are contained in Appendix A.

Background

The nation is entering an era of major reform of the U.S. health care system by expanding health coverage for uninsured adults, improving access to and quality of health care, and moderating the growth of healthcare inflation. While much of the national effort is still in the planning stages, many state and local initiatives designed to accomplish similar objectives are already underway and provide a learning laboratory for the issues and challenges that the national reform efforts will face.

In California, counties are responsible for indigent health care. Many local initiatives, including efforts in San Mateo County, come from a growing awareness that expanding coverage does not alone provide improved health care. The network of primary care and other providers must be expanded and improved to meet the increased demand for care. Numerous efforts around the country have been undertaken to identify characteristics of high performing health systems, and use those lessons for further system reforms. For example, high performing systems often emphasize high quality patient-centered primary care, called the "medical home" model (Landon, Gill, Antonelli, & Rich, 2010; Doty, Abrams, Hernandez, Stremikis, & Beal, 2010); team-based care and special efforts to co-ordinate care for the chronically ill (Coleman, Austin, Brach, & Wagner, 2009); and use of electronic health records (McCarthy & Mueller, 2009).

It is particularly important to focus reform efforts on the delivery systems serving uninsured or other low-income individuals – the primary care "safety net" – since these systems already serve those who will be newly-covered under the Accountable Care Act. However primary care safety net system reform has lagged behind private sector efforts (Conway & Terrell, 2010). To address this, a special initiative to redesign care in some California safety net clinics has been sponsored by the California HealthCare Foundation and the California Health Care Safety Net Institute (Brousseau, 2010).

San Mateo County is one of a small number of innovative local California jurisdictions that is expanding coverage for uninsured adults and at the same time undertaking a reform of primary care systems (Pourat, et al. 2009). The impetus for the coverage expansion and systems reform in San Mateo County came from the county Board of Supervisors and its Blue Ribbon Task Force. The Task Force was convened in 2007 to address the continuing high rate of uninsurance

among low-income adults in the county, as well as the financial strain on county resources created by providing health services to the uninsured.[2]

The county operates six adult medicine primary care clinics: two in the northern section of the county, one (the largest) located mid-county, one on the coast, and two in the south county. There is also a federally funded community health center (Ravenswood Family Health Center) with two sites in the south county. These primary care clinics are all linked to specialty clinics at the mid-county public hospital, the San Mateo Medical Center (SMMC).

A key back-drop to understanding the implementation and impact of the San Mateo coverage initiative and systems redesign is the profound economic recession that began just as the initiatives were taking hold in mid-2008. While the county persisted in its efforts to enroll and serve low-income individuals needing health services, this became increasingly difficult in light of the swelling demand for services as documented in a recent issue brief from the evaluation (Benatar, Hughes, Howell, and Kenney, 2010)

Because the coverage and systems redesign efforts, while related, are somewhat distinct, we first describe the implementation of the coverage expansion and then the systems redesign. These sections are followed by data on outcomes of the initiative.

Throughout the report we intersperse quotes from patients to provide participant perspectives and enhance the "hard" numbers. Most data provided in the report cover the period January 2008 through December 2010. This is the period when the coverage and systems redesign initiatives were being implemented most intensively.

The Coverage Initiative

Residents of San Mateo County are, on average, prosperous compared to residents of other U.S. counties. This general prosperity, however, conceals the fact that there are many poor people residing in this affluent county. Many of the county's low-income adults have no insurance coverage for their health expenses. According to the California Health Interview Survey, in the period just prior to the initiatives (2003-2005) about 30 percent of adults under 200 percent of the federal poverty level (FPL) in the county were uninsured, and more recently (2007-2009) the proportion of uninsured rose to about 50 percent (Ask CHIS, 2003, 2005, 2007, and 2009). Because of small sample sizes, the survey estimates are unstable, but the data suggest an upward trend in uninsurance associated with the recent economic recession. This means that currently there are over 50,000 uninsured adults in the county, most of whom likely rely on safety net services when they become ill. Until the coverage initiative, most care for the uninsured at SMMC clinics was funded through county general funds.

[2] At the time the Blue Ribbon Task Force convened, the county had a large structural deficit and had been spending increasing amounts of general fund dollars to support care provided by the San Mateo Medical Center and its clinics.

In October 2007, California received a modification to its Medi-Cal waiver from the federal government that provided the state with $180 million per year for three years to expand coverage for documented uninsured adults (ages 19-64) below 200 percent of the FPL. San Mateo County was one of ten counties selected to participate (receiving $7.5 million per year). Prior to this time the county had a coverage program—known as WELL—which enrolled uninsured people using the county health system and some contracted specialty providers as the provider network. WELL was restricted to individuals below 200 percent of poverty who could be either documented or undocumented. The availability of new funds allowed the county to receive federal matching funds for care provided to documented individuals who would have formerly qualified for WELL and whose care would have been funded entirely with county funds, and another small group who did not previously qualify for WELL due to asset limits.

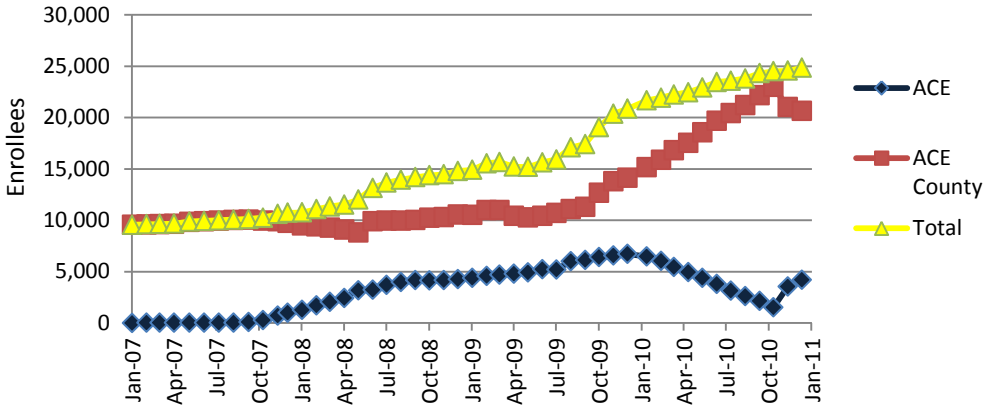
The new program was renamed Access to Care for Everyone (ACE). The eligibility determination process, benefits, and copayments are essentially the same for both documented ("ACE") and undocumented ("ACE County") enrollees. Due to the economic recession, enrollment growth for ACE and ACE County programs exceeded expectations and federal funds from the waiver were exhausted earlier than expected, in early 2010. At the same time, the steep increase in demand put pressure on the county's primary care capacity. Enrollment in the ACE program was then capped and all new enrollees (documented and undocumented) were assigned to the ACE County program (fully funded by county revenues).

Towards the end of 2010 a new federal waiver—with many new provisions—was signed and the county again began enrolling uninsured documented individuals in ACE. The provisions of the new waiver provide a "bridge to national health reform," intersecting with provisions of the new federal Accountable Care Act, which authorizes federal subsidies for coverage for uninsured adults beginning in 2014. Consequently beginning in 2011, San Mateo County has undertaken another set of initiatives—such as expanding primary care capacity—in order to begin preparing for national health reform implementation. The new federal waiver was negotiated in late 2010, so the experience documented in this report generally precedes that event. Consequently, we do not describe the new waiver in detail.[3]

Figure 1 shows enrollment growth in ACE and ACE County programs from January 2007 to December 2010. Enrollment in the two programs combined has risen dramatically over four years, from about 10,000 individuals in January 2007 to about 25,000 individuals in December 2010. (The drop in ACE enrollment in 2010 was due to the temporary cap on the program and conversion of ACE enrollees to the ACE County program.) This growth is likely associated with the economic recession, but could also be associated with greater awareness of the program among uninsured adults in the county.

[3] For more information see Kelch (2011).

Figure 1: ACE and ACE County Enrollment Trends, 2007-2010



Source: San Mateo County Health Department

The ACE and ACE County programs provide comprehensive benefits within a limited provider network: the San Mateo Medical Center (for most inpatient and all emergency room care), the six SMMC adult medicine clinics, Ravenswood, the SMMC specialty clinics, and selected pharmacies around the county. Ambulatory, inpatient, emergency room, pharmacy, radiology, laboratory, emergency dental,[4] vision, audiology, and selected other services are covered, most with required copayments for those with incomes above 100 percent of the FPL. An enrollment fee of $240 per year is also required. However, all financial cost-sharing is waived for those below 100 percent of the FPL; about two-thirds of enrollees in both programs meet this criterion (Health Plan of San Mateo, 2010).

A very important feature of the ACE and ACE County programs is that, beginning in September 2007 for ACE and January 2009 for ACE County, the Health Plan of San Mateo (HPSM) has served as a third party administrator of the programs. While the health plan is not at risk for a full package of services, it receives an administrative fee (about $8.75 per member per month currently). As the single public managed care plan for all public beneficiaries in the county (Medi-Cal, a Medicare Special Needs Plan, Healthy Families, and Healthy Kids), HPSM uses very similar member services, provider relations, care management and quality assessment procedures for all beneficiaries. The plan processes claims/encounter data from the SMMC system,Ravenswood, approves out-of-network providers and analyzes those data. HPSM also conducts HEDIS quality of care studies and "secret shopping" access-to-appointment surveys. These new procedures provide important services that were previously unavailable to WELL enrollees.

[4] Emergency dental services, primarily extractions, are provided on a limited basis in county clinics. For example, in the period September 2008 through August 2009 about 700 extractions were provided to ACE enrollees with abscessed teeth.

Clinic staff and application assistors observe that most people are enrolled in ACE/ACE County when they seek health services at one of the network providers. Others are enrolled at community sites or when one of their family members is enrolled. In focus groups, participants confirmed that some individuals enroll because they need services, but others enroll before they become ill because someone in their family or a friend is enrolled:

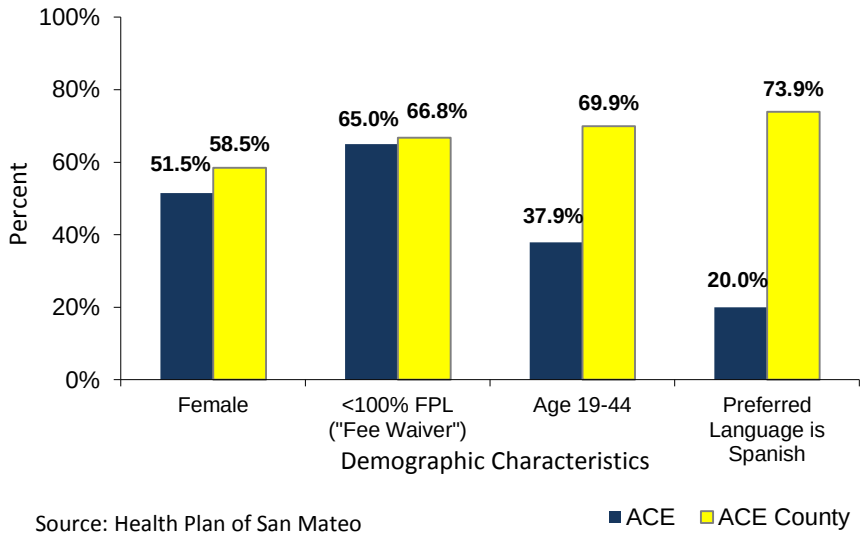
- *I heard it from a friend. I was really sick and she mentioned it to me.*
- *I heard it from a family member. Then my wife came and we got in together here.*
- *I found out through the clinic. When I came here to bring my kids, they offered me the program.*
- *I enrolled because I'm a single mother and I don't have money to pay for full insurance. The doctor told me to apply; she found something in my breast and she wanted me checked more intensively.*

County and Community Based Organization staff trained as Certified Application Assistors (CAAs) process enrollments, using the One-e-App on-line application system to collect and submit required enrollment data. The outreach and enrollment approach was developed during the county's successful launch of its universal children's health coverage effort, which has encouraged community trust and improved the enrollment process. All family members included in the application are enrolled in the coverage program for which they qualify (Medi-Cal−Medicaid; Healthy Families−CHIP; Healthy Kids−a program for children who are ineligible for other insurance; ACE or ACE County). At the time of enrollment each person selects a Primary Care Provider (PCP) from one of the SMMC clinics or Ravenswood. In focus groups, enrollees agree that this system is very easy for them. In a typical comment, one person said about her CAA: "She was so sweet and so very helpful."[5]

Figure 2 shows some key demographic characteristics of ACE and ACE County enrollees in October-December 2009, approximately mid-way through the study period. As shown, enrollees in the two programs are similar in their level of poverty (about two-thirds have family income less than 100 percent of the FPL) and gender (slightly more females than males). However the groups differ in age (a higher proportion of ACE County enrollees are younger adults) and language preference. Only about one-fifth of ACE enrollees prefer Spanish, while three-quarters of ACE County enrollees do. These demographic differences in the programs have been sustained, except for the period when ACE was capped in 2010.

[5] During the evaluation study period, the county health system consolidated two units that performed health coverage enrollment into a unified health coverage unit.

Figure 2: Demographic Characteristics of ACE and ACE County Enrollees October-December 2009



Source: Health Plan of San Mateo

Enrollment is for one year (as long as the person continues to reside in the county and meet income requirements). After a year the individual must re-enroll with a CAA, also using the One-e-App system. Data from One-e-App for a sample of enrollees who initially enrolled in June 2009 show that retention in the ACE and ACE County programs is somewhat low, since only 55.3 percent re-enrolled during the period 10-15 months after their initial application.[6] The relatively low level of retention is confirmed by data from HPSM that is available on ACE enrollees. Among the cohort of 3,983 people who initially enrolled in ACE at any time in 2009 and remained enrolled for a full year, only 40 percent (1,600) remained enrolled in ACE for a second full year. Table 1 shows that retention rates vary across demographic groups, with women, non-English speakers, those below the poverty level, and those with chronic conditions having higher retention rates.[7] Even among the group with both diabetes and hypertension, about 40 percent did not remain enrolled for two years. This highlights the challenge of providing high quality, continuous primary care to a mobile population. Retention data are not available from HPSM for the ACE County population.

Retention for ACE is very similar to that of comparable Medi-Cal enrollees. According to the Health Plan of San Mateo, 50.1 percent of adults ages 18-64 who enrolled in Medi-Cal in 2009 remained continuously enrolled for a full year. Data from neighboring San Francisco for a very similar coverage program also show a similar retention pattern (Colby, et al. 2011),

[6] This retention rate is likely an underestimate, since some enrollees renewed as early as 9 months after their initial enrollment.

[7] A similar pattern was found from the One-e-App data for both ACE and ACE County enrollees. On average, the individuals who reenrolled after a year were more likely to be female, non-English speaking, undocumented, married, have at least one child in the household, and have one or more chronic conditions.

confirming that about half the target population--often in transitory employment and housing circumstances--does not stay enrolled more than a year.

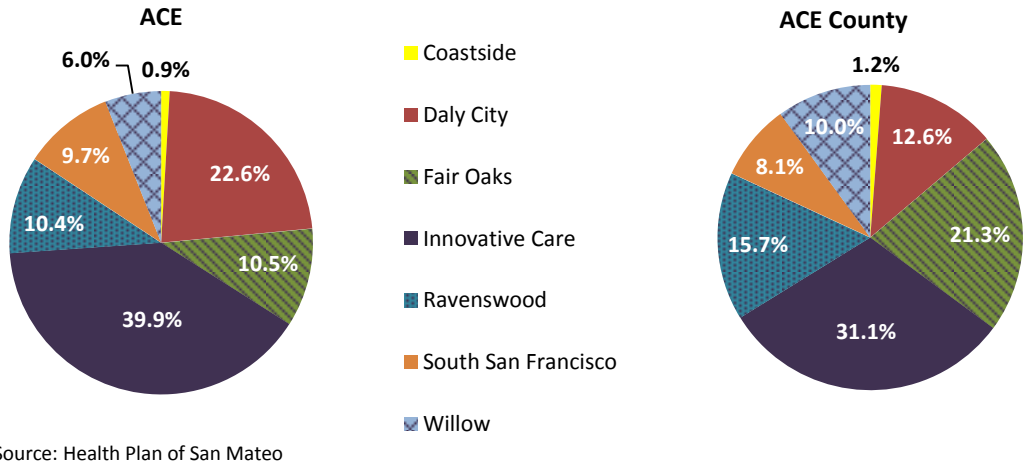
Table 1: Retention Rates for ACE Enrollees by Demographic Characteristics and Chronic Condition (2008 - 2009)

Characteristic	Percent Initially Enrolled in 2008 and Stayed Enrolled for 2 Years
Gender	
Female	45.6
Male	34.5
Language	
English	36.0
Spanish	50.8
Other	53.7
Poverty Level	
=<100% FPL	42.7
101-200% FPL	36.1
Chronic Condition	
Diabetes	58.0
Hypertension	53.3
Both Diabetes and Hypertension	59.3
Total	**40.2**

Source: Health Plan of San Mateo

Figure 3 shows the distribution of ACE and ACE County enrollees by Primary Care Provider (PCP). There is a similar distribution by site for the two programs, with about 40 percent of ACE enrollees and 30 percent of ACE County enrollees choosing the centrally-located Innovative Care Clinic (on the main campus of the SMMC) as their PCP. A higher proportion of ACE enrollees choose the Daly City clinic (22.6 percent), while a higher proportion of ACE County enrollees choose Fair Oaks (21.3 percent) or Ravenswood (15.7 percent), reflecting where the two groups are most concentrated.

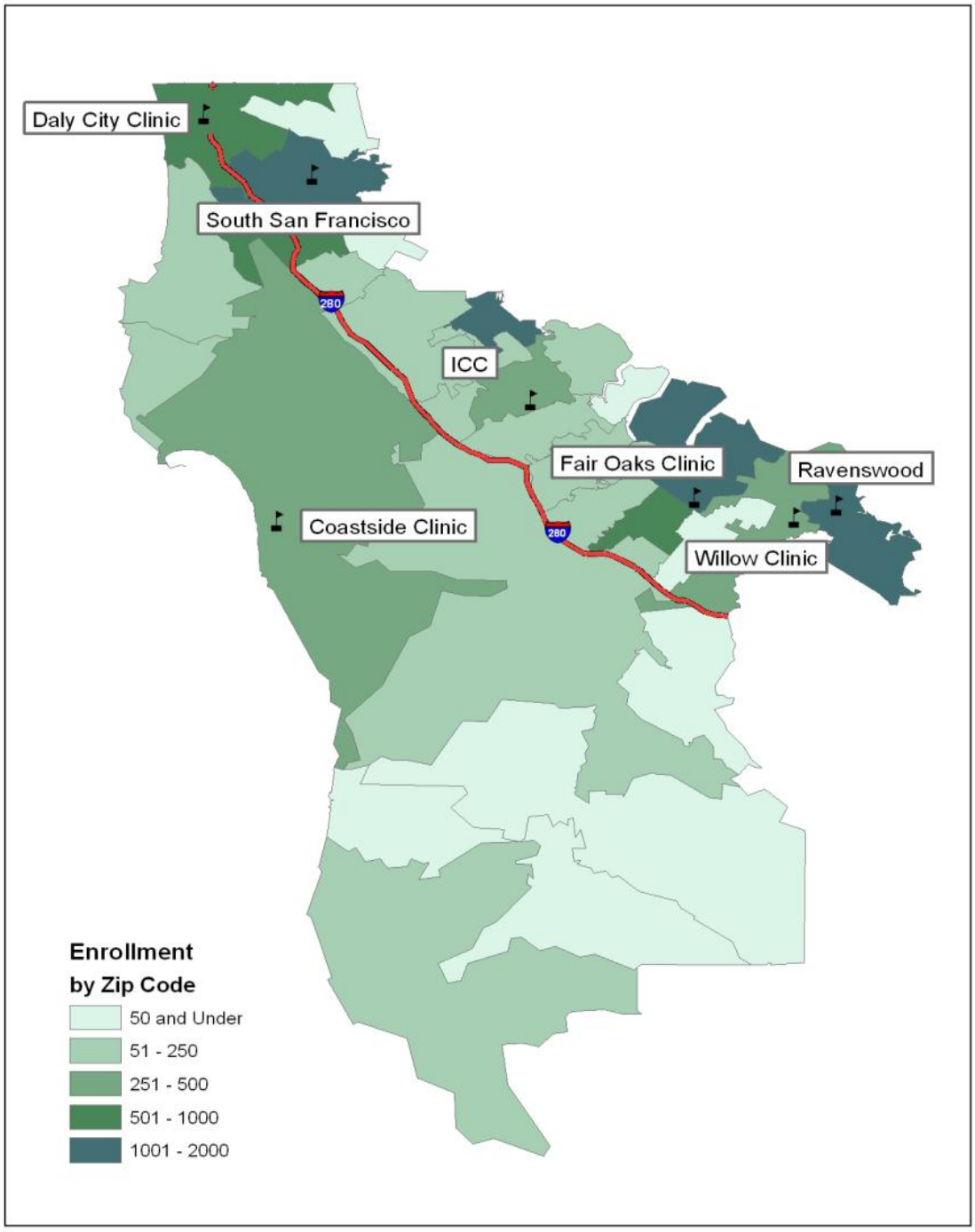
Figure 3: Primary Care Providers for ACE and ACE County Enrollees, 2009



Source: Health Plan of San Mateo

The geographic distribution of ACE and ACE County enrollees in 2009 is shown in Figure 4. The highest concentration of enrollees is in the areas near the primary care clinics serving as PCPs. A large section of the county to the west of I-280 and the mountains is under-populated and served by a single very small clinic (Coastside). In other areas of the county, most enrollees live close to at least one primary care clinic.

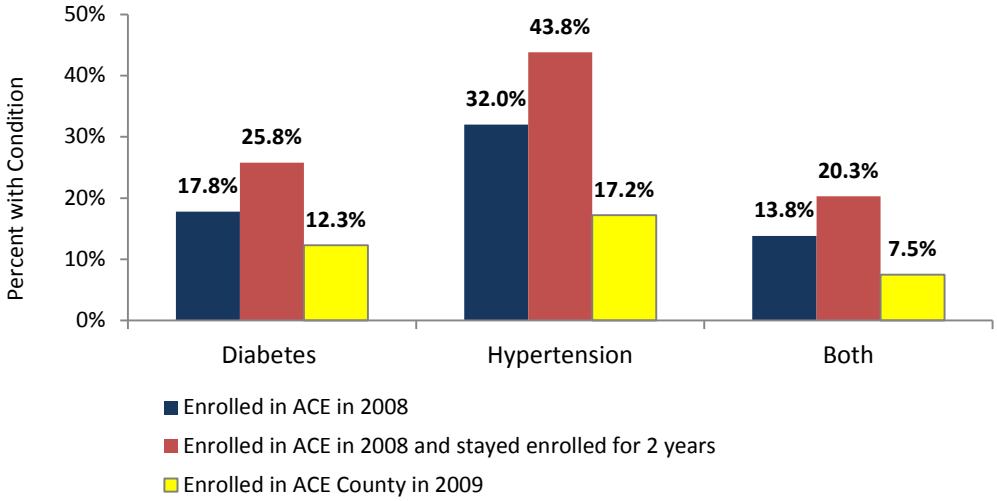
Figure 4: Geographic Distribution of ACE and ACE County Enrollees, 2009



Source: San Mateo County One-e-App data for ACE/ACE County Enrollees, 2009

Chronic disease is prevalent among ACE and ACE County enrollees. Figure 5 shows the prevalence of diabetes and hypertension for three groups: (1) those first enrolled in ACE in 2008; (2) those first enrolled in ACE in 2008 who stayed enrolled for two years; and (3) those first enrolled in ACE County in 2009. These prevalence data are based on diagnoses from claims/encounter data (i.e., the patient's condition was recognized in a visit and coded on a claim) and likely underrepresent actual prevalence to an unknown degree.

Figure 5: Prevalence of Diabetes and Hypertension Among ACE and ACE County Enrollees, 2008-2009



Source: Health Plan of San Mateo

In spite of this potential underreporting, the data suggest a relatively high prevalence of chronic conditions among the ACE population, especially for people who remain enrolled for at least two years. For example, for all those who enrolled in ACE in 2008 the diabetes prevalence according to claims/encounter data is 17.8 percent, rising to 25.8 percent for those who remain enrolled for two full years. For ACE County enrollees, the prevalence is somewhat smaller, 12.3 percent in the first year of enrollment. Data on ACE County enrollees who remain enrolled for two years are not available.[8] While no comparable data are available for the U.S. population from claims/encounter data, the rates for the ACE enrollees are higher than those found in a national survey that measures diabetes prevalence based on lab results (National Diabetes Information Clearinghouse, 2011). They are much higher than rates for all adults in San Mateo County, as measured by the San Mateo County Behavioral Risk Factor Survey of 2008, in which only 7.5 percent of adults age 18-64 report having diabetes.

[8] Since the HPSM only began managing ACE County enrollees in January, 2009, only one year of full claims/encounter data are available for that population.

Hypertension rates are also high among ACE enrollees. As the figure shows, enrollees in ACE and ACE County have hypertension rates from claims/encounter data of 33.0 and 17.2 percent respectively, while ACE enrollees who remain enrolled for two years have a much higher rate, 43.8 percent. This compares to a rate of 29.0 percent nationwide among all adults including the elderly, from the National Health and Nutrition Examination Survey (NHANES) survey which takes a blood pressure reading from all those interviewed (Egan, Zhao, & Axon, 2010).

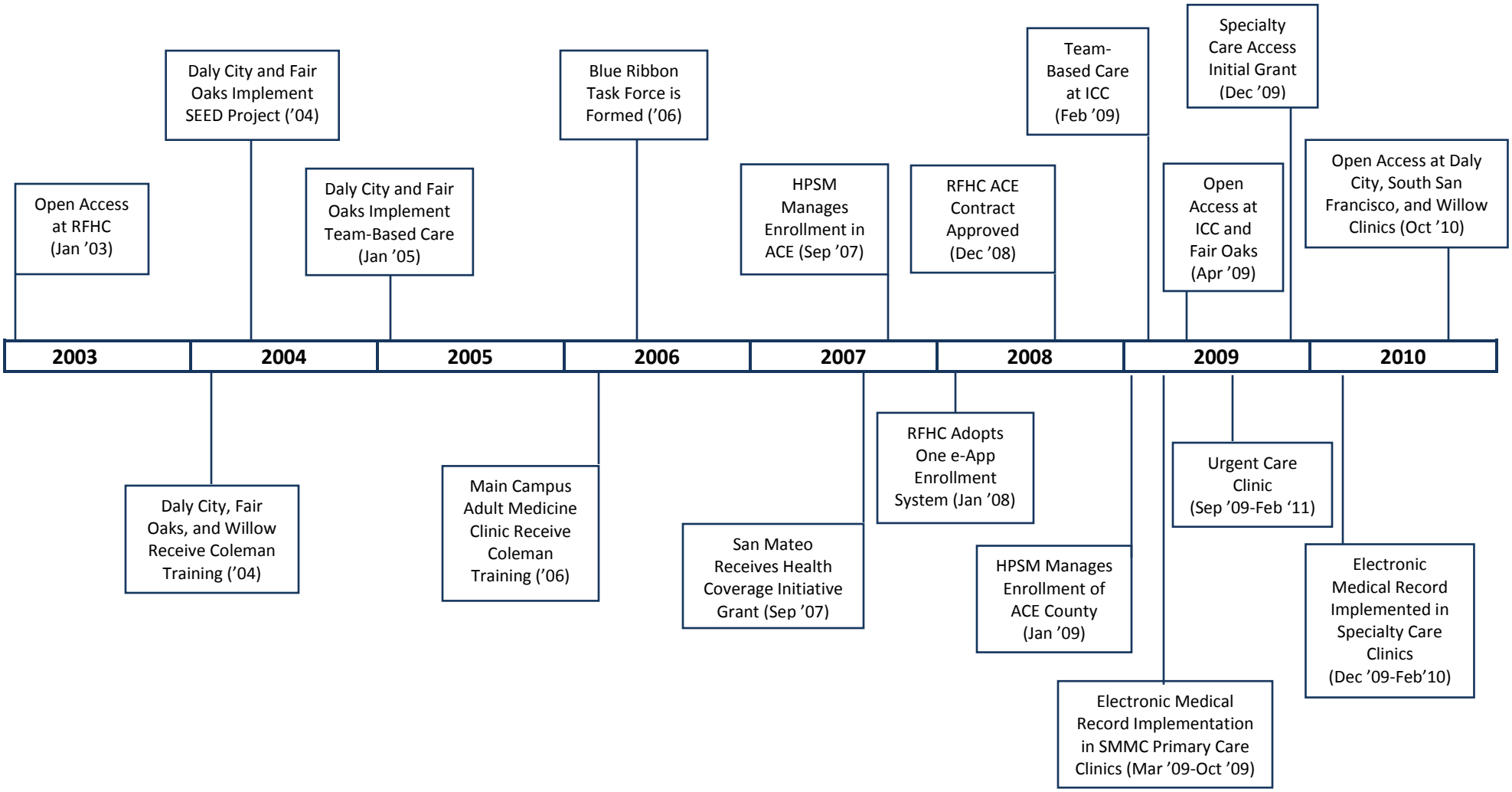
The prevalence of other chronic conditions among ACE enrollees is also high, especially for behavioral health problems. For example, among new ACE enrollees in 2009, 6.8 percent have a claim with a diagnosis of substance abuse, and 14.2 percent have a claim with a mental health diagnosis. Rates for ACE County enrollees are lower, at 2.7 percent and 10.7 percent respectively (data not shown).

The Systems Redesign

Previous evaluation reports have described the history of systems redesign at the safety net clinics in San Mateo County, including the six SMMC clinics and Ravenswood (Howell, Benatar, & Hughes, 2009; Howell, Hughes, Benatar, Klein, Palmer, & Kenney, 2010). As described, each clinic has had its own trajectory of systems redesign (See Figure 6). All of the clinics adopted some or all of the following four components:

- Electronic Medical Records (EMRs) to increase efficiency and coordination of care.
- Team-based care, to increase efficiency and leverage physician time through the use of other health professionals such as nurses. Under this model, patients are seen by the same physician, nurse and clerical staff team each time they visit a clinic.
- Disease management, primarily focusing on diabetes management, including an automated diabetes registry, group visits where diabetes patients learn about self-management, and the use of diabetes retinal cameras to do on-site screenings.
- Advanced access scheduling to improve patient flow and reduce waiting times for appointments at select clinics. Such an approach allows more patients without an appointment to be seen.

Figure 6. Timeline for Implementation of Coverage Initiative and System Redesign



San Mateo County is unusual among local public health departments in having adopted and completely implemented an *Electronic Medical Record* (EMR) for all ambulatory medical care provided by the county system. The EMR software used by the county is eClinical Works. EMR implementation began in the Innovative Care Clinic (ICC), located on the campus of the SMMC hospital, in April 2009 and was complete in all SMMC primary care clinics by the end of 2009. The system was implemented in specialty clinics in 2010. The system includes administrative functions (for example, appointment scheduling), medical records, and referrals between primary care and specialty care, among other features. It also provides reports that improve clinic management, such as measuring the number of visits for patients assigned to each clinic team. While the implementation of the EMR is designed to ultimately improve efficiency in the clinics, it caused delays in some routine clinic operations in the early months of implementation as staff learned and adapted to the new system.[9]

Ravenswood, as of the date of this report, has not yet adopted an EMR, though it is planned for 2012. The software system Ravenswood is planning to adopt is different from the SMMC EMR system, but Ravenswood plans to use it to manage referrals to the SMMC specialty clinics. (The referral system is currently manual, and leads to delays when paperwork is lost.)

Team-based care is also being used in the San Mateo County safety net clinics (both SMMC clinics and Ravenswood). Clinics have somewhat different configurations to their teams, but typically teams have a combination of a physician or nurse practitioner, an RN, and a medical assistant. Some teams have a clerical staff member, a pharmacist, and/or a social worker, but usually these functions are shared across teams. The team provides all services to the patient, from help with paperwork, to medical services, to patient education. The larger clinics (Daly City, Fair Oaks, and the ICC) have adopted a team-based model of primary care delivery, but others such as Willow find it impractical to implement.

Special *chronic disease management approaches* are also used in most of the San Mateo safety net clinics, particularly for diabetes patients. The clinics used diabetes registries to track patient care for several years before the EMR went on-line. They also use intensive patient education, often in group settings, and several clinics acquired retinal cameras and are conducting regular retinal screens for their diabetes patients. These innovations started with the Study of Effective and Efficient Diabetic Care Project (SEED) at the Daly City and Fair Oaks clinics in 2004.

[9] According to health department staff, the ICC "went live" on April 21, 2009. Prior to that date the clinic had seen about 20 patients a day. During the immediate post-implementation period for the EMR (April 21 to May 4) the clinic saw only 2 patients a day. There was a gradual build up in the patient load over time, but it was not until October, 2009 that the clinic was back to seeing 20 patients a day.

Advance Access scheduling is the last component of the systems redesign to be implemented and is still being phased in at the County Clinics; it has been implemented at Ravenswood. Advanced Access schedules require that a portion of the team's time be left open so that patients without appointments can be worked into the day's schedule. Due to the intense pressure for appointments caused by the growth in enrollment in ACE/ACE County, the SMMC clinics have not been able to implement Advanced Access scheduling for new ACE/ACE County patients (but do use it for new Medi-Cal patients and all established patients). However, Ravenswood has had Advanced Access since 2005 and is able to accommodate most patients on the same day they present with problems, whether they are new or established patients.

Systems redesign efforts have focused especially on the Innovative Care Clinic (ICC) during the study period. For example, prior to 2009 team-based care did not exist at all at the main campus clinic, which is the largest primary care clinic in the county. The clinic substantially increased its staff size, adding enough new staff (7) to form one new team (there are now three teams), as well as increase the support of pharmacists and other staff who make appointments and remind people of their appointments, among other functions. This is approximately a 20 percent increase in staff at that clinic. Most of the changes at the ICC were in place by the end of 2009.

Another focus, particularly in 2010, has been on improvements in access to specialty care. The central SMMC specialty clinics serve all primary care safety net clinics (including Ravenswood). The county has attempted (through using the EMR) to improve the efficiency of the referral process and consequently to reduce delays in obtaining specialty care appointments.

During 2009-2010, the growth in enrollment in ACE and ACE County – linked to the growth in the uninsured in the county - led to severe pressure on the safety net clinics and SMMC emergency room. This also coincided with the H1N1 flu epidemic and delays associated with EMR implementation. To relieve this pressure, in fall 2009 the SMMC established a temporary Urgent Care Clinic to provide episodic care to meet urgent needs. SMMC leadership chose to close the clinic in early 2011, because it did not fit the model they are trying to achieve of continuous primary care for all enrollees.

OUTCOMES FROM THE COVERAGE INITIATIVE AND SYSTEMS REDESIGN

The coverage initiative and systems redesign have the broad goal of improving care for uninsured adults and those served by the San Mateo County ambulatory care safety net. We investigated a range of outcomes from the coverage initiative and systems redesign; the outcomes fall into the following categories:

- Access to Care
- Utilization of Services
- Satisfaction with Care
- Continuity of Care
- Quality of Care
- Cost of Care

Multiple measures of these outcomes are available from various data sources.[10] The data sources are:

- *One-e-App Survey*. Two surveys were conducted of ACE and ACE County enrollees at the time of enrollment or re-enrollment, one in March-September 2009 and one in April-October 2010. Fifteen questions—most focusing on access to care, service use, or health status—were asked by CAAs at the time of application, and responses entered into the on-line application from which they were later extracted for analysis. The number of people who fully responded to all questions and can be identified as initial or renewal enrollees is 4,932 in 2009 (2,630 initial/2,303 renewal) and 5,092 in 2010 (2,945 initial/ 2,147 renewal). Participation in the survey was high. Fully, 89.3 percent who were asked the questions in their own language in 2009 responded to all questions, as did 84.8 percent in 2010. These data allow for a comparison of use in the year prior to initial enrollment, i.e., while uninsured, to the year following enrollment. Additionally, the One-e-App data are used to construct a small longitudinal sample, which includes 216 initial applicants in 2009 and who reapplied for coverage in 2010 and 524 renewal applicants in 2009 who reapplied in 2010.[11]

- *Health Plan of San Mateo Data.* The health plan provided a comprehensive set of tables documenting annual health care utilization and charges (using the county's charge register) for ACE and ACE County enrollees. Data are for three cohorts: (1) those newly

[10]See Appendix B for more technical background on each data source.

[11] Because of the small sample size and concerns about its representativeness, the longitudinal results may not be generalizable to the full ACE/ACE County population. Therefore the longitudinal analysis is presented as a supplement to the core analysis of the One-e-App data.

enrolling in ACE in 2009 who remain continuously enrolled for a year; (2) those newly enrolling in ACE County in 2009 who remain continuously enrolled for a year; and (3) those newly enrolling in ACE in 2008 who remain continuously enrolled for two years (data for their second year of enrollment). Charges for 2008 are inflated to 2009 using the Medical Care CPI. One limitation of the HPSM data is that it is not possible to adjust outcomes for patient characteristics, as it is with the individual-level data sources.

- *Aggregate Clinic Data.* The SMMC clinics and Ravenswood provided data on selected access and satisfaction measures collected variously using surveys or, more recently, using the Electronic Medical Record, over the period of the implementation of the systems redesign.

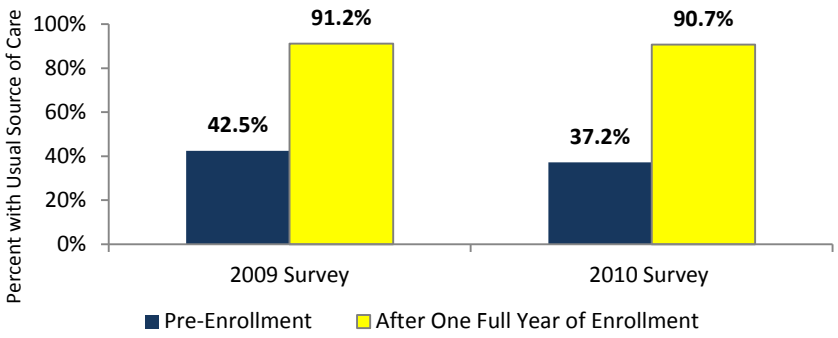
- *Individual-level Data from the Innovative Care Clinic.* The SMMC provided a year of post-enrollment claims-level data for two cohorts of enrollees: those newly enrolled in WELL between April and September of 2006 and those newly enrolled in ACE/ACE County between April and September of 2009. The data are limited to individuals who had at least one visit to the ICC in the year following enrollment. These data are enhanced by including inpatient hospital and emergency room services at other county hospitals (use, charges, and diagnoses). Charge data for 2006 are inflated to 2009 dollars using the Medical Care CPI for hospitals.

Access to Care

Both the coverage initiative and the systems redesign are expected to improve access to care for the uninsured. Some indicators for good access to care are (1) that a person has a place to go for medical care nearby when they need it (a "usual source of care"); (2) that one can receive an appointment on a timely basis; and (3) that one can be seen for prompt follow up care. The result of this ready access should be lower rates of delayed health care.

Usual Source of Care. In 2009, and again in 2010, new enrollees of ACE/ACE County were asked in the One-e-App survey: "Is there a place that you usually go to when you are sick or need advice about your health?" The same question is asked of those renewing their coverage after one year. The One-e-App survey shows that, after being enrolled in ACE or ACE County, the likelihood of having a usual source of medical care goes up dramatically (Figure 7), from only 37.2 percent to 90.7 percent. Both years of the survey show an almost identical result. In addition, the majority of established enrollees (69.8 percent) report they usually see the same doctor, nurse, or other health care professional when they go to their assigned clinic, compared to only 17.8 percent of the new enrollees who were uninsured prior to enrolling (data not shown).

Figure 7: Rate of Usual Source of Medical Care in Year Prior to Enrolling in ACE/ACE County and After One Year, 2009-2010



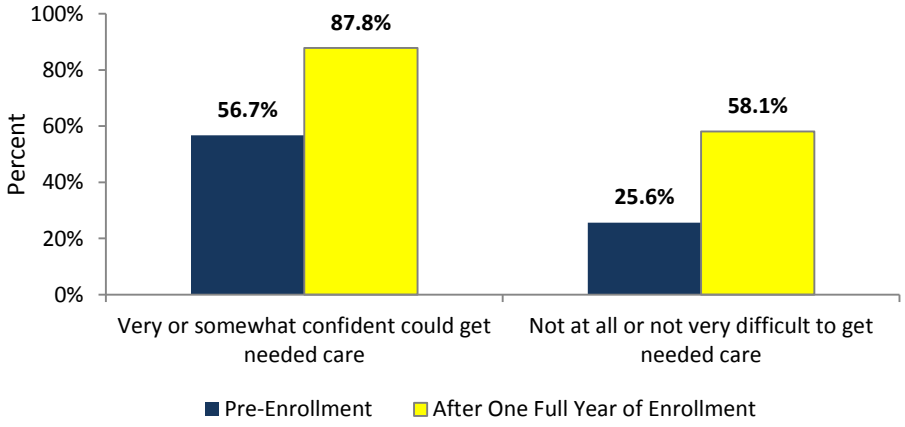
Source: One-e-App Survey
Note: Percentages are regression-adjusted for enrollee characteristics; differences between pre-enrollment and post-enrollment are statistically significant (p< 0.01).

Figure 8 shows two related measures from the 2010 One-e-App survey (rates are very similar for 2009) deriving from the following questions:

- During the past 12 months, how confident were you that you could get health care if you needed it?
- Overall, how difficult is it for you to get medical care when you need it?

Enrollees express much greater confidence in getting needed care after obtaining coverage. Nearly all (87.8 percent) established enrollees indicate that they are very or somewhat confident they can get health care when they need it, compared to 56.7 percent of new enrollees.

Figure 8: Confidence in Getting Care and Difficulty in Getting Care in Year Prior to Enrolling in ACE/ACE County and After One Year, 2010

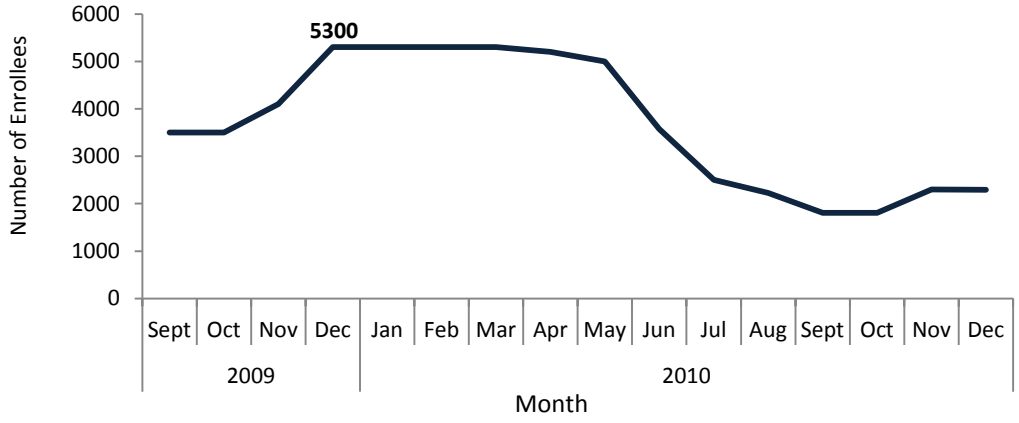


Source: One-e-App Survey
Note: Percentages are regression-adjusted for enrollee characteristics; differences between pre-enrollment and post-enrollment are statistically significant (p< 0.01).

Likewise, established enrollees are substantially more likely to report that it is not at all or not very difficult to get needed care compared to new enrollees (58.1 percent vs. 25.6 percent, respectively). On the other hand, as shown in Figure 8, over 40 percent of enrollees report that it is somewhat or very difficult to get needed care after one full year of enrollment, which indicates that many enrollees continue to experience difficulties getting care after enrolled.

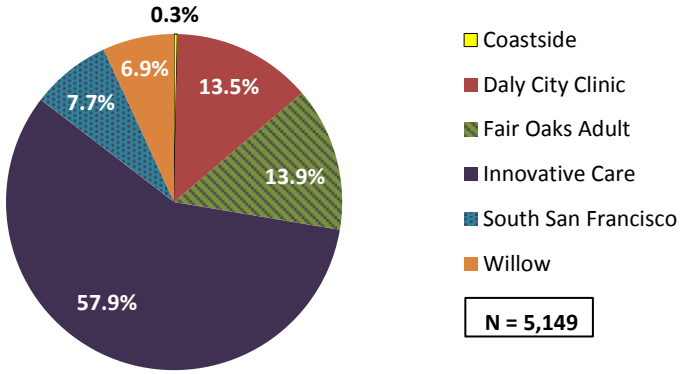
Wait Times for Appointments. The above data show that by the time they renew their coverage, almost all ACE/ACE County enrollees identify with a usual source of medical care and feel much more confident they can receive care when they need it. However, multiple data sources suggest that new enrollees have substantial problems obtaining an initial appointment at their PCP. In 2009, county health system leaders began to quantify wait times for non-urgent new primary care appointments across the SMMC clinics. The waiting list data reflect a startlingly high number of new enrollees waiting for appointments (Figure 9), especially in late 2009 and early 2010. Beginning in September, 2009—the first month of available data—there were over 3,000 people waiting for non-urgent appointments at SMMC primary care clinics, rising to over 5,000 at the end of 2009 (as the recession deepened). This number gradually diminished throughout 2010 as the efficiencies of the systems redesign (particularly the effects of the EMR), took hold. By the end of 2010, however, the number was still high, with over 2,000 people waiting to schedule their first non-urgent primary care appointment. Figure 10 shows that the largest proportion of patients awaiting an initial appointment (57 percent) are assigned to the ICC, a clinic in high demand with limited capacity. As a result of this analysis, the health department leadership has convened a cross-organization "Access" workgroup to identify barriers and strategies for improving access to primary care.

Figure 9: Number of new Enrollees Waiting for Appointments in SMMC Primary Care Clinics September 2009 - December 2010



Source: San Mateo County Health System

Figure 10: Proportion of New Enrollees Waiting for a Visit by SMMC Primary Care Clinic, January 2010

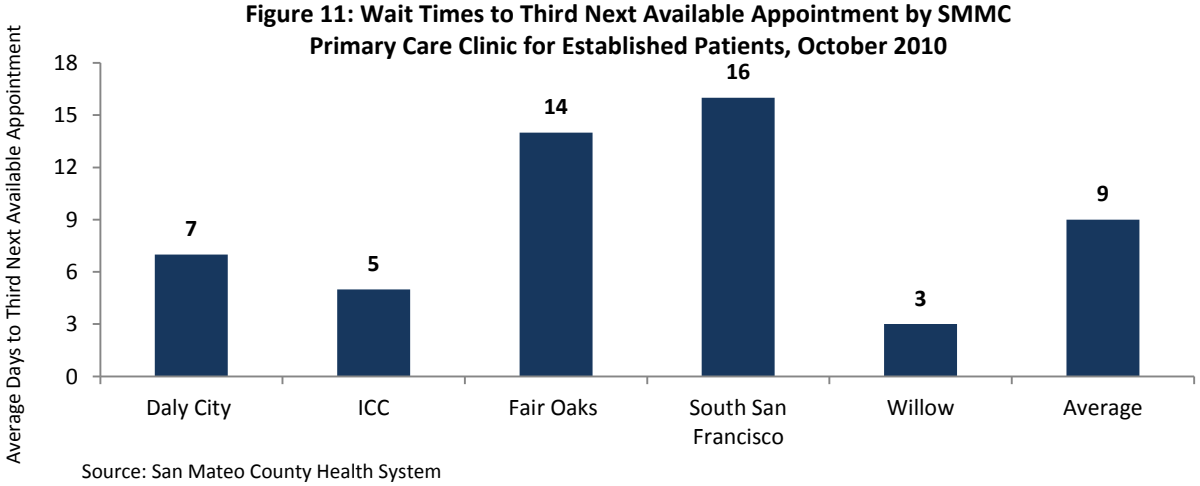


Source: San Mateo County Health System

This difficulty obtaining an appointment for new enrollees is confirmed by results of a "secret shopper" survey conducted in the fall of 2009. After posing as an ACE or ACE County patient requesting an appointment at each clinic, only one clinic offered an appointment to the prospective patient (i.e. the "secret shopper")—Willow—with a wait of one month for an orientation followed by another month's wait for an initial medical visit.

This situation does not pertain to established patients, or to patients at the Ravenswood Family Health Center. As mentioned, the Advanced Access systems redesign initiative applies to established patients in the SMMC clinics and appears to have had a positive effect. Figure 11 shows that in October, 2010 established patients had to wait only an average of 9 days for an appointment. The measure used is "third next available appointment" which is considered a more reliable and stable measure of appointment access (Institute for Healthcare Improvement, 2011). The time to an appointment varies from 5 days at the ICC to 16 days at South San Francisco. While Ravenswood does not have comparable data, a survey in June 2010 showed that 52 percent of established patients report being able to obtain a routine appointment within a day, and we are told that new patients receive similar treatment at Ravenswood.

Figure 11: Wait Times to Third Next Available Appointment by SMMC Primary Care Clinic for Established Patients, October 2010



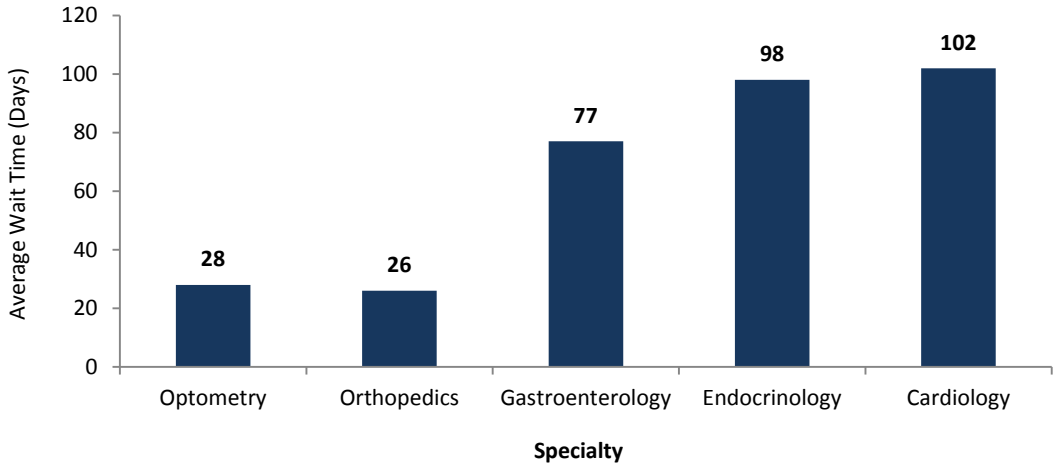
Source: San Mateo County Health System

The difference between many new and established patients is clear from comments by focus group participants when asked about difficulties getting appointments in clinics:

- *They told me it would take 6-9 months before I even got a primary doctor. I don't know what I do next.*
- *I'm still trying to make an appointment. They tell me to call in at 8 a.m. to talk to a nurse to make an appointment and I've been trying since February. [The focus group was in June.] They keep putting me on hold.*
- *The problem is for those people that are new to the program. The person that uses it frequently, they don't have problems. You just tell them that you need an appointment for what day, and they make it.*
- *In the case of my parents, they use it frequently because they are older, and they've never had a problem by telephone.*

Wait times are also long for some specialty care appointments (Figure 12), although the evidence is mixed on the extent of wait times. The SMMC reports that the average wait time for an appointment for five targeted specialties in October 2010 ranges from 26 days for an orthopedic appointment to 102 days for a cardiology appointment. However, a secret shopper survey in mid-2010 for a larger group of specialties (including general surgery) found shorter wait times, with 78 percent of patients being granted an appointment within two weeks.

Figure 12: Wait Times to Appointments in SMMC Specialty Clinics, October 2010

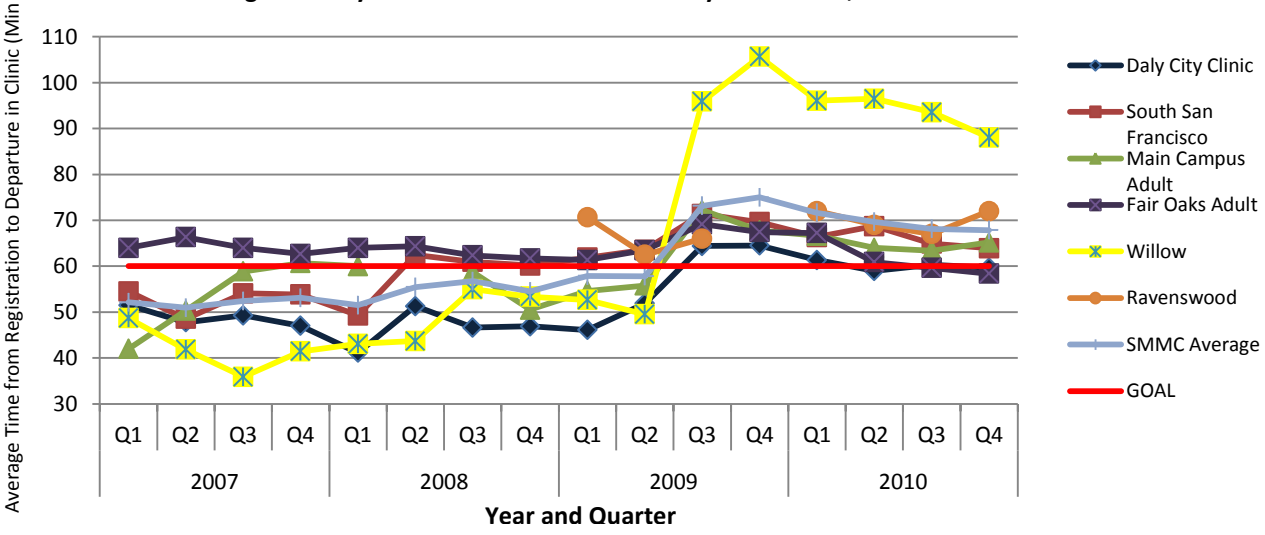


Source: San Mateo County Health System

Appointment Duration at the Clinic ("Cycle Times"). During the period of the systems redesign, county safety net primary care providers set a goal of 60 minutes for the amount of time patients should spend, from the time they register at the clinic until they leave—called the "cycle time." The SMMC clinics have tracked this measure since the third quarter of 2005 up through 2010 using varying methods. Prior to the implementation of the EMR, the clinics measured cycle times using logs at the registration desk, but more recently they use EMR data to measure cycle times.

Figure 13 shows that reported cycle times were generally below the 60 minute goal in most clinics prior to mid-2009 (when systems redesign was underway), and then rose to just at or somewhat above the goal after that (with the Willow Clinic having longer times). Likely, this is a function of how the data were collected, since the rise coincides with the implementation of the EMR. Implementing the EMR itself also may have led to longer cycle times, since learning how to use the system took time and resources from clinic staff. It will take more time to tell whether the SMMC primary care clinics are able to meet or exceed their cycle time goal. Our observations in clinic waiting rooms also showed a wide range in cycle times, with some patients waiting much longer than an hour and some being seen promptly.

Figure 13: Cycle Times in San Mateo Primary Care Clinics, 2007-2010

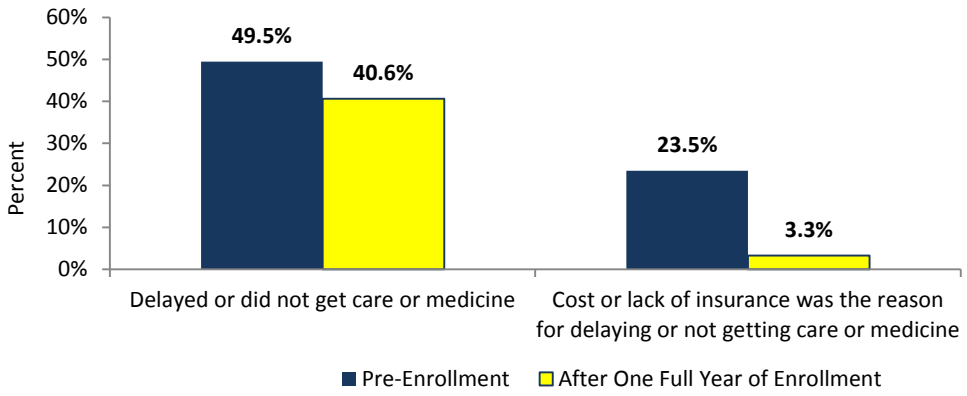


Source: San Mateo County Health System and Ravenswood

Delayed Health Care. The final access measures come from the One-e-App survey, measuring the extent to which respondents report experiencing a delay or unmet need in the 12 months prior to the survey, overall and due to the cost of care. Established enrollees are less likely to report having a delayed or unmet need for care relative to new enrollees (40.6 percent vs. 49.5 percent—see Figure 14). While the delays in care persist after enrollment in ACE/ACE County, almost none of the delay is due to the cost of care after enrollment. Almost a quarter of

new enrollees say they delayed care due to the cost or lack of insurance in the past year, while less than five percent say that is the reason after a year of enrollment in ACE/ACE County.

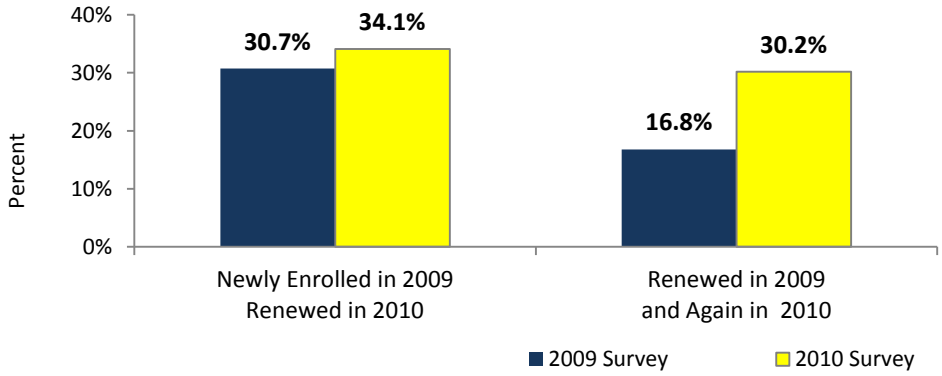
Figure 14: Delay in Care in Year Prior to Enrolling in ACE/ACE County and After One Year, 2010



Source: One-e-App Survey
Note: Percentages are regression-adjusted for enrollee characteristics; differences between pre-enrollment and post-enrollment are statistically significant (p<0.01).

In addition, evidence from the small longitudinal component of the One-E-App survey suggests that established enrollees experienced more delayed needs in 2010 than in 2009. As shown in Figure 15, among new enrollees in 2009, the level of delayed care was similarly high both before they enrolled (30.7 percent) and after a year (34.1 percent). Those who renewed coverage in both 2009 and 2010 report higher rates of delayed care at renewal in 2010 compared to at renewal in 2009—30.2 percent compared to 16.8 percent. Although the sample sizes are small and there are concerns about the generalizability of the results, this suggests that the continued growth in ACE County/ACE enrollment throughout late 2009 and 2010 may have made it more difficult for established ACE or ACE County enrollees to access needed care.

Figure 15: Delay in Care in Past Year Among ACE/ACE County Enrollees Renewing Coverage in 2010



Source: Longitudinal Component of the One-e-App Survey
Note: Differences between 2009 and 2010 are statistically significant (p<0.01) only among the enrollees who renewed coverage in 2009 and again in 2010.

Focus group participants also provide insights on why a person might have unmet need for medical care, even if they are enrolled in ACE/ACE County and have a usual source of care through their assigned PCP, and why people with chronic health problems who are persistent are more likely to get into "the system."

- *There [are] times when I get really sick and if I had my old insurance where I could go into the doctor and get seen and get my medicine and things were a lot easier, oh yes, I would go. But I know how hard it is now to get seen and I think – if I don't feel like I am going to die, I am not going to go there…. I think a lot of people are just like that. They don't want to go because they realize how much trouble it is going to be.*

- *[This comment is from a person with hypertension.] When I got on ACE it took me almost a year to get an appointment with a primary doctor which is now tentatively scheduled for August. I applied for a primary doctor the last week of October last year and only got a call 2 weeks ago that I have an appointment with a primary doctor.*

- *I wanted to keep my medical for my eyes to get back into bus driving, and they told me "we could only have you scheduled 4-5 months from now."*

- *I saw my doctor in February and I asked her for a mammogram. She said, "They cut back on those." I see her again in June. She said, "Maybe in September." This is all new to me and different. Usually they fit you in right away if you say you need a mammogram.*

- *I had a mild stroke. In March I joined ACE. Come April, I called them up and tell them I need to have an appointment, and they told me "no, you can't." I asked, "Why?" They said, "There's too many people; we're seeing people in November." I said, "I have to see a doctor now for my medication." Sure enough the nurse I spoke with set me up, I met with her, and she's great. Gave me the prescription, got them all filled and now, it's June.*

- *I called in several times before I got an appointment. Then I showed up and told them my situation…And then after that, it begins to flow regularly. The start-up was bad.*

Clinic Capacity. Data from the county on the aggregate number of visits to clinics in the SMMC system show why there is such a strained capacity at both primary and specialty care clinics. Table 2 shows that between 2008 and 2010—a period when the number of ACE and ACE County enrollees more than doubled—there was almost no increase in the number of visits to SMMC primary care clinics, and a slight reduction in the number of visits to specialty clinics. From the data presented above, it appears that the brunt of this strained capacity fell on new enrollees in the system (who had extreme difficulty obtaining their first appointment). It is apparent, however, that both new and established enrollees experienced access problems and associated delayed care.

Table 2: Adult Clinic Visits, San Mateo Medical Center, July - December, 2008 and July - December, 2010

Clinic	Visits 2008		Visits 2010	
	Number	Percent	Number	Percent
Primary Care:				
Coastside	1,263	2.0	1,460	2.4
Daly City	7,255	11.7	8,555	14.2
Fair Oaks	8,961	14.4	7,677	12.7
Main Campus Primary Care (now ICC)	10,920	17.6	11,748	19.5
South San Francisco	3,512	5.7	3,234	5.4
Willow	9,535	15.5	9,357	15.5
Subtotal, Primary Care	41,446	66.7	42,031	69.6
Specialty Care:				
Main Campus Medical Specialty	9,149	14.7	8,464	14.0
Main Campus, Surgical Specialty	11,539	18.6	9,898	16.4
Subtotal, Specialty Care	20,688	33.3	18,362	30.4
Total	**62,134**	**100.0**	**60,393**	**100.0**

Source: SMMC Board Reports for February 2009 and February 2011

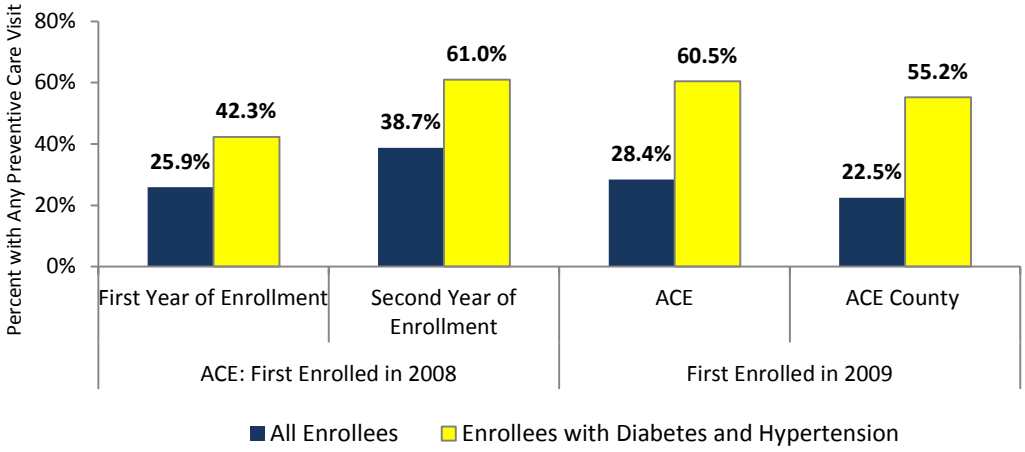
Utilization of Services

Preventive Care. One goal of the systems redesign is to improve use of preventive care, in order to identify and treat problems early. ACE and ACE County enrollees have relatively low use of preventive care services initially, but use rises over time and is higher for individuals with chronic conditions. Three sources of data on preventive care use are available: aggregate data from the Health Plan of San Mateo (HPSM); (for the ICC only) individual-level data on use for new enrollees in 2006 and in 2009; and individual-level data from the One-e-App survey.

In the HPSM claims/encounter data, preventive care is identified through selected procedure codes (see Appendix C). Figure 16 shows data from the HPSM on the rate of preventive care use for several groups: ACE enrollees who initially joined in 2008 and in 2009, and ACE County enrollees who initially joined in 2009. For each group, the figure separately displays preventive care use for all enrollees, and also for a select group of chronically ill enrollees (those with both diagnoses of diabetes and of hypertension from claims/encounter records).

While theoretically all enrollees should have a preventive care visit some time in their first year of enrollment, in order to be screened for problems and become acquainted with their PCP team, for those first enrolling in ACE in 2008 only 25.9 percent had a preventive visit. The rate of preventive care use is much higher for those with diagnoses of both diabetes and hypertension (42.3 percent). The figure shows that rates went up in the second year of enrollment for those who remained in ACE for a full second year, rising to 38.7 percent and 61.8 percent respectively for all enrollees and for those with diabetes and hypertension.

Figure 16: Any Preventive Care Visit in Year Following Enrollment, 2008-2009



Source: Health Plan of San Mateo

The second set of bars represents ACE and ACE County enrollees who first enrolled in 2009.[12] Use of preventive care remains low on average for all enrollees (28.4 and 22.5 percent respectively for ACE and ACE County enrollees), but is higher for those with chronic conditions (i.e., both diabetes and hypertension): 60.5 percent and 55.2 percent respectively. Thus, even during a period where capacity constraints were high, the system was providing preventive care to a majority of its most vulnerable patients. The rates of preventive care use vary by PCP. For example, preventive care use at the ICC (the largest clinic) is somewhat lower than the overall average (data not shown).

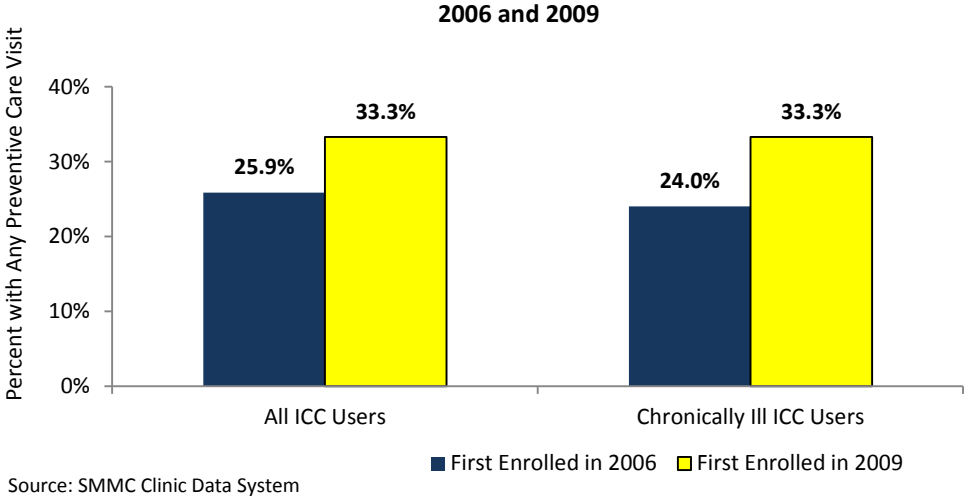
Individual-level data are available for patients using the Innovative Care Clinic (ICC). We compare annual use for new WELL enrollees in 2006 who used the ICC[13] at least once in the year following enrollment to use for new ACE/ACE County enrollees in 2009 who used the ICC. Because of new efforts at the clinic—such as the Electronic Medical Record and team based care—we expect that new patients in 2009 might be more likely to use preventive care. The individual-level clinic data allow for control of demographic characteristics and case mix in these comparisons. The definition of preventive care use is very similar to that used for the HPSM data analysis, but has a wider diagnostic screen (see Appendix C). The definition of chronically ill patients is also broader than in the HPSM analysis (for example, it includes patients with asthma).

[12]There are no data for new ACE County enrollees in 2008; the HPSM was not managing care for that group until 2009.

[13] At the time known as the 39th Avenue Adult Medicine Clinic.

Figure 17 shows rates of preventive care in the 2006 and 2009 cohorts, for all ICC patients and for chronically ill patients, adjusted for differences in patient characteristics between the two years. In both groups, preventive care use increased significantly after systems redesign at the ICC. Use of preventive care climbed from 25.9 percent to 33.3 percent among all ICC patients ($p < .10$). The increase for chronically ill ICC users is similar, but is not statistically significant (perhaps due to the small sample size).

Figure 17: Any Preventive Care Use by ICC Users in Year Following Enrollment in WELL/ACE/ACE County, 2006 and 2009



Source: SMMC Clinic Data System
Note: Percentages are regression-adjusted for enrollee characteristics. Differences between 2006 and 2009 are statistically significant for all enrollees ($p<0.10$), but not for chronically ill ICC users.

These rates can be compared to data provided by the HPSM for the San Mateo County Medi-Cal enrollees ages 18-64 and continuously enrolled for 12 months in 2009. Among those using one of the SMMC clinics as their PCP, 49.0 percent had at least one preventive care visit, a rate almost twice that for ACE enrollees using the same definition of preventive care.

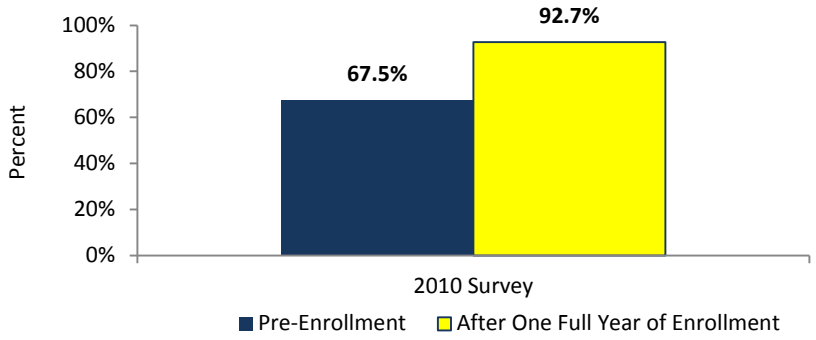
County health department staff point out likely reasons for the apparent lower use of preventive care among ACE and ACE County enrollees. First, almost all low income pregnant women, documented and undocumented, are eligible for Medi-Cal and almost all of them have some preventive prenatal care. In addition, there are separate preventive care programs that cover screening for breast and cervical cancer, and so those services are not billed to the ACE or ACE County programs, but are billed to Medi-Cal.

Another limitation in these data is that preventive care may be provided during a visit for a health problem and may not be documented in the claims/encounter data from HPSM. Data from the 2010 One-e-App survey show preventive care use for enrollees who report having any of a range of chronic conditions. This measure includes preventive care regardless of the type of visit. If they said they had an ongoing health condition, they were asked: "During the past 12

months, did you receive routine care (such as checking blood pressure) for these health conditions from a doctor, nurse, or other health professional? Please include routine and/or preventive care you received during any visit."

At the time of initial enrollment, about two-thirds report having some routine care in the past year for their chronic condition (Figure 18). After one year of being enrolled in ACE or ACE County, the rate increases to 92.7 percent. These rates of "routine care" are substantially higher than the preventive care reported in the claims/encounter records, although both data sources suggest higher preventive care use for chronically ill enrollees. This is both a result of differences in definitions of the chronically ill as well as in how preventive care is being defined and measured.[14]

Figure 18: Routine Care for Chronic Condition in Past Year Prior to Enrolling in ACE/ACE County and After One Year, 2010

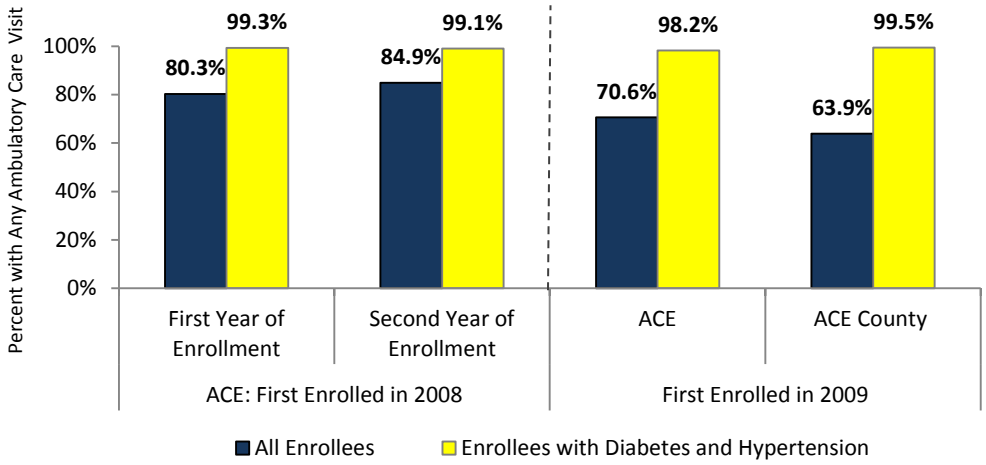


Source: One-e-App Survey
Note: Percentages are regression-adjusted for enrollee characteristics; differences between pre-enrollment and post enrollment are statistically significant (p<0.01) .

Any Ambulatory Care. Use rates of any ambulatory care are much higher than use of preventive care. Figure 19 shows annual use rates of any ambulatory care service from HPSM data, in the same format as presented for preventive care use. For the full population, those newly enrolled in ACE in 2008 have higher ambulatory care use than those newly enrolled in 2009 (80.3 percent vs. 70.6 percent respectively). Also, new enrollees in ACE in 2009 have higher use than new enrollees in ACE County (70.6 vs. 63.9 percent). Virtually all those with diabetes and hypertension have at least one ambulatory visit. The rates of ambulatory care use are similar across PCPs (data not shown).

[14] In the One-e-App survey, a larger proportion of new enrollees report receipt of routine care for chronic conditions in 2010 than in 2009, at 67.5 percent and 52.6 percent, respectively (percentages are regression-adjusted for enrollee characteristics). The level (and the increase) may be due in part to the requirement that premium assistance be provided only to those with chronic conditions.

Figure 19: Any Ambulatory Care Use in Year Following Enrollment in ACE/ACE County, 2008-2009



Source: Health Plan of San Mateo

Table 3 shows the average and median number of ambulatory care visits per year for each of the groups shown in Figure 16. Across all enrollees, the average number of visits is relatively high regardless of the group, ranging from 5.3 visits for ACE County new enrollees in 2009 to 11.2 average visits for the second year of enrollment, for those newly enrolled in ACE in 2008. These rates are all higher than the average for uninsured adults with chronic conditions nationally, at 4.9 average ambulatory care visits per year (Gulley, Rasch, & Chan, 2011). The medians are lower, showing that distributions are skewed with some very high users of ambulatory care bringing the average up. All of these statistics point to high rates of use for those who do get appointments and become part of the established patient panels in the primary care clinics.

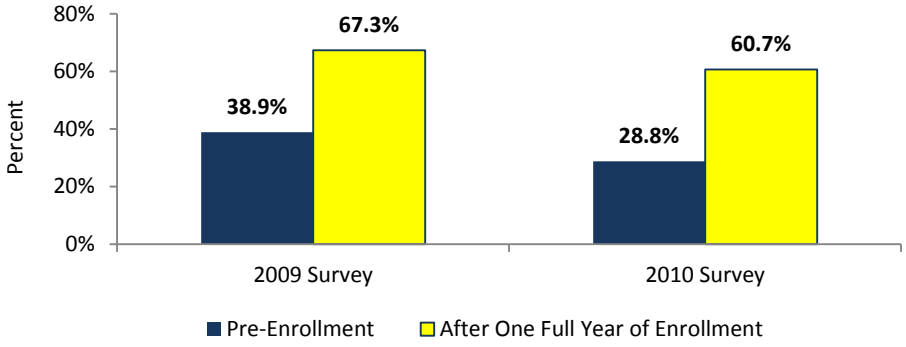
Table 3: Annual Average and Median Number of Ambulatory Care Visits for ACE and ACE County Enrollees, 2008-2009

	Average Number of Visits		Median Number of Visits	
	All Enrollees	Enrollees with Diabetes and Hypertension	All Enrollees	Enrollees with Diabetes and Hypertension
ACE, Initially Enrolled in 2008				
First Year of Enrollment	9.3	16.7	6	14
Second Year of Enrollment	11.2	16.9	9	15
ACE, Initially Enrolled in 2009				
First Year of Enrollment	6.8	15.4	4	14
ACE County, Initially Enrolled in 2009				
First Year of Enrollment	5.3	15.4	2	13

Source: Health Plan of San Mateo

The One-e-App survey asked new and renewing enrollees whether they have seen a doctor in the past year, as follows: "Other than overnight stays in the hospital or trips to an emergency room, have you seen a doctor, nurse or other health care professional during the past 12 months?" While only 28.8 percent had a visit in the year prior to enrolling (i.e., while uninsured), 60.7 percent had a visit in the year following enrolling (Figure 20). Data from the 2009 survey show similar results and the rate is similar to that found in the HPSM data for any ambulatory care use.

Figure 20: Any Health Care Professional Visit in Year Prior to Enrolling in ACE/ACE County and After One Year, 2009-2010



Source: One-e-App Survey
Note: Percentages are regression-adjusted for enrollee characteristics.; differences between pre-enrollme and post-enrollment are statistically significant (p<0.01).

These differences in rates of ambulatory care use between the uninsured and those with coverage are similar to those found in the Medical Expenditure Panel Survey (MEPS) for young adults in 2006. Only 32.6 percent of those uninsured for a full year had an ambulatory care visit, while 64.5 percent of those with insurance had a visit (Beauregard & Carper, 2009).

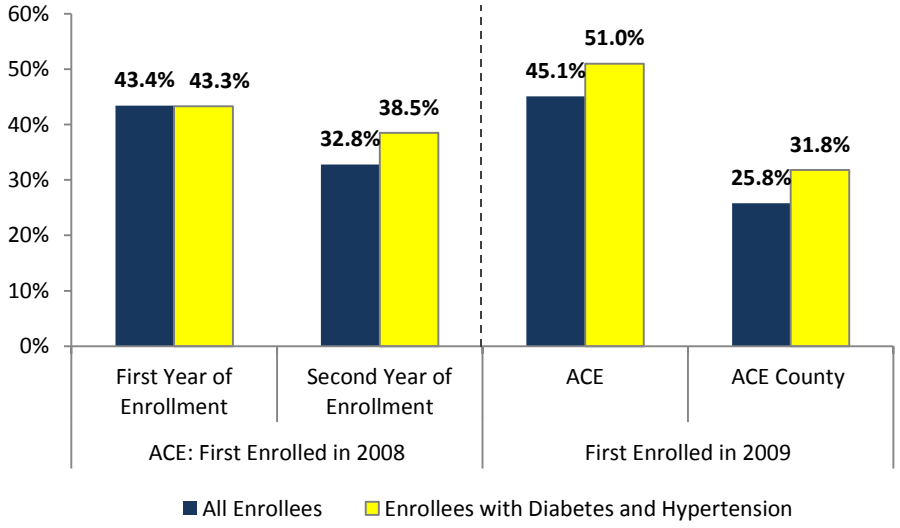
Emergency Room Use. One goal of the system redesign is to improve primary care in order to reduce use of the emergency room (ER). We provide data on ER use from three sources, the HPSM, individual-level clinic data before and after systems redesign at the ICC, and the One-e-App. The ICC data have the advantage of including use of all the ERs in the county, not just the ER at the SMMC.

From all of these data sources it is apparent that use of the emergency room is high, likely reflecting in part continuing access problems. Figure 21 shows the percent of enrollees who have any ER visit in a year. ER use rates are very similar for the chronically ill with both diabetes and hypertension and for the full population. Better access to preventive, primary, and specialty care for the chronically ill, who would otherwise be at higher risk of ER use, may be reducing their need for ER care. A recent study of diabetes management in family practice

showed a reduction in emergency admissions with good glycemic control, suggesting that such an effect is very plausible (Dusheiko, Doran, Gravelle, Fullwood, & Roland, 2011).

The rate of 45.1 percent of new ACE enrollees in 2009 having an ER visit in their first year of enrollment is high compared to new adult Medi-Cal HPSM enrollees in 2009, whose rate is only 34.1 percent in the first year of enrollment. So while Medi-Cal ER use is known to be high, it appears that during the time period of this study ER use among ACE enrollees may be higher still. (These are aggregate statistics and cannot be adjusted for enrollee characteristics.)

Figure 21: Any Emergency Room Visit in Year Following Enrollment or Renewal, 2008-2009



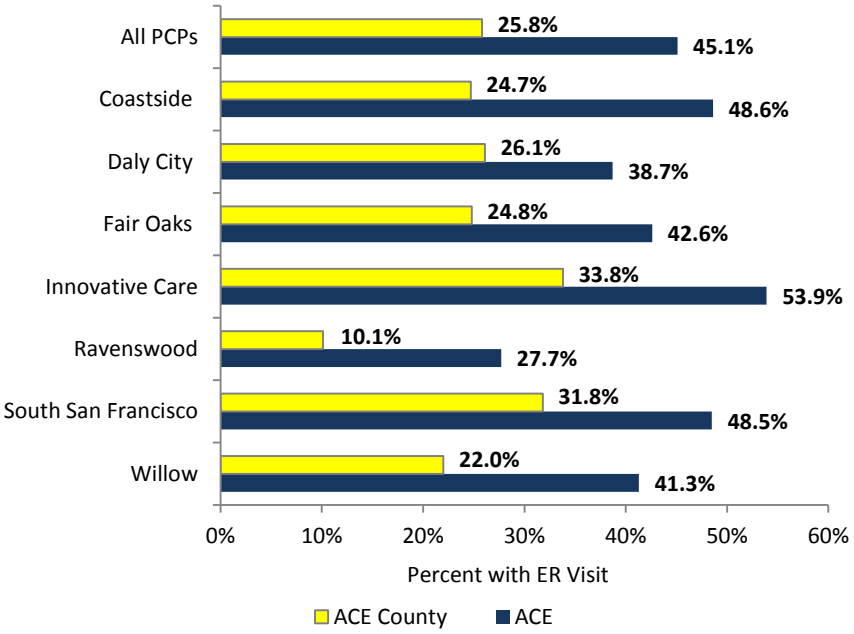
Source: Health Plan of San Mateo

Figure 22 shows that−in contrast to use of ambulatory care−the rate of ER use at the SMMC ER varies substantially from PCP to PCP, and between ACE and ACE County enrollees. For example, among ACE County enrollees, rates vary from 10.1 percent at Ravenswood to about 45 percent at the ICC. Rates are even higher for new ACE enrollees, with similar variation across PCPs. Since these data do not include visits to ERs outside the SMMC system, patients using the clinics which are further from the SMMC emergency room (such as Ravenswood) may be using other ERs, whose data are not reported to HPSM.

Figure 22 shows that ICC-assigned ACE patients have the highest rates of ER visits to the SMMC ER (which is adjacent to their clinic), with over half of ACE new enrollees with a visit. We examined ER use for ICC patients before and after systems redesign there, using individual-level clinic data. For both the 2006 and 2009 cohorts, we requested data from all county hospitals and Stanford (which is just over the county line) on all patients with at least one visit to the ICC during their first year of enrollment in WELL (for 2006) or ACE/ACE County (for 2009). Figure 23 shows that just over half of new 2006 enrollees using the ICC have at least one

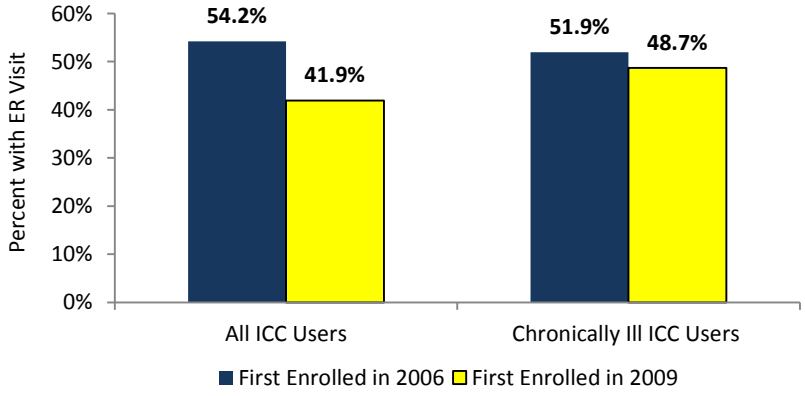
ER visit in their first year of enrollment. After adjusting for patient characteristics, ICC patients had significantly lower ER use in 2009 than in 2006, declining from 54.2 percent to 41.9 percent. The decline for chronically ill users is not statistically significant. The ICC clinic data likely reflect the experience of ICC users accurately, but perhaps are not reflective of the experience of other clinics.

Figure 22: Any Emergency Room Visit in Year Following Enrollment or Renewal by Primary Care Provider, 2009



Source: Health Plan of San Mateo

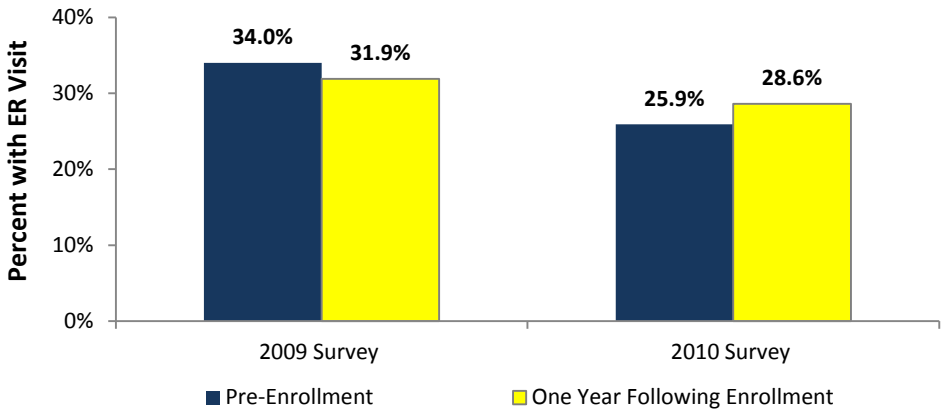
Figure 23: Any Emergency Room Visit by ICC Users in Year Following Enrollment in WELL/ACE/ACE County, 2006 and 2009



Source: SMMC Clinic Data System and Area Hospitals.
Note: Percentages are regression-adjusted for enrollee characteristics. Differences between 2006 and 2009 are statistically significant for all ICC users ($p<0.05$), but not for chronically ill ICC users.

The One-e-App data also show that ER use does not change significantly after enrollment in ACE or ACE County, when compared to the year prior to enrolling (Figure 24). This is true for both those interviewed in 2009 and in 2010. The lack of change before and after enrollment could reflect, in part, the reduced cost to the enrollee of care in the ER when compared to when they were uninsured.

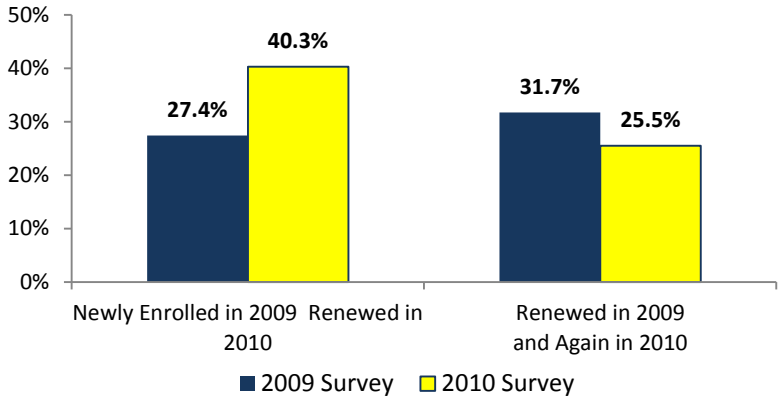
Figure 24: Any Emergency Room Visit in Year Prior to Enrolling in ACE/ACE County and After One Year, 2009-2010



Source: One-e-App Survey
Note: Percentages are regression-adjusted for enrollee characteristics; no statistically significant differences between use prior to enrollment and after one year.

There is evidence from the small longitudinal sample of One-e-App respondents of reduced ER use over time for those who are continuously enrolled in ACE/ACE County for two years. Among those who renewed in 2009 and answered the survey, 31.7 percent used the ER in the year prior to the survey; when the same group renewed a year later in 2010 only 25.5 percent had used the ER in the prior year, a significant difference (Figure 25). However, as indicated above, results from the longitudinal sample cannot be generalized to the full ACE/ACE County population because such a small number remained enrolled and answered the survey in both years. On the other hand, as also shown in Figure 25, for the new enrollees in 2009 there was a substantial increase in ER use from the year just before they enrolled (27.4 percent) to the year following enrollment (40.3 percent). This limited data for a small sample suggests that in the first year of enrollment use of the ER can increase, perhaps due to improved financial access as well as previously-established patterns of using the ER. Once primary care has been established, ER use may decline some in the second year.

Figure 25: Any Emergency Room Visit in the Past Year Among ACE/ACE County Enrollees Renewing Coverage in 2010



Source: Longitudinal Component of the One-e-App Survey
Note: Percentages are regression-adjusted for enrollee characteristics; differences between 2009 and 2010 are statistically significant for both groups ($p<0.05$).

Prescription Drug Use. One motivation for joining ACE and ACE County is to obtain free or subsidized medications, according to focus group participants.

- *I went into the ER with bronchitis and the medicine was $52. I didn't have any money to pay for it so they sent me to the ACE program.*
- *Before I was laid off, I was only paying $5 to Kaiser for my prescriptions. I had 5 prescriptions. When I lost the job and insurance, Kaiser was charging me $400 per prescription. So I went to the internet, and tried to look for help. Someone pointed me to ACE. And now I'm paying $7 per prescription.*
- *I'm diabetic. I have arthritis. I've got depression. At $1600 worth of medications a month, that I can pay $35-$60 for and walk away with it, this is great.*

Use of prescriptions is high and rises the longer a person is enrolled (Table 4). About half or more of all the groups shown in the table had at least one prescription in a year while on the program. The use is lowest for new ACE County enrollees (49.3 percent). Not surprisingly, almost all enrollees with diabetes and hypertension have a prescription covered by the program, regardless of which program they are in or when they enrolled.

Table 4: Prescription Drug Use for ACE and ACE County Enrollees, 2009-2009

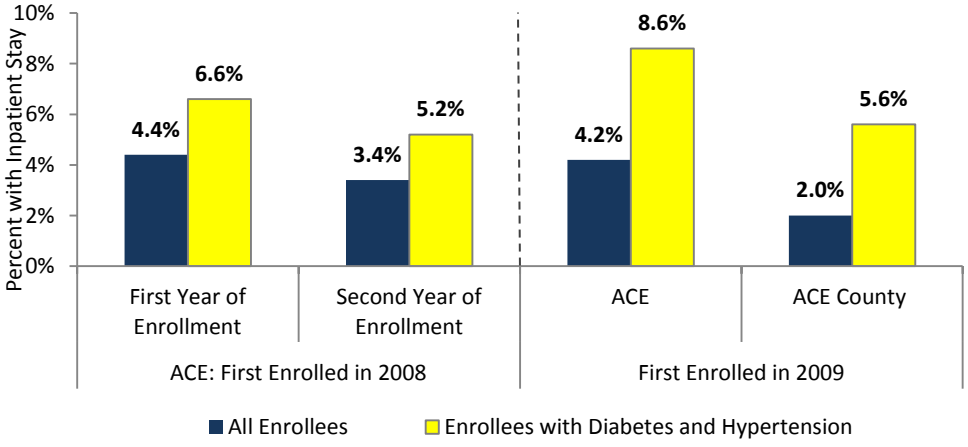
	Percent with Any Prescription Drug Use		Average Number of Prescriptions		Median Number of Prescriptions	
	All Enrollees	Enrollees with Diabetes and Hypertension	All Enrollees	Enrollees with Diabetes and Hypertension	All Enrollees	Enrollees with Diabetes and Hypertension
ACE, Initially Enrolled in 2008						
First Year of Enrollment	61.8	92.7	9.3	26.7	3	22
Second Year of Enrollment	81.9	99.6	18.5	38.7	13	34
ACE, Initially Enrolled in 2009						
First Year of Enrollment	58.5	96.1	7.4	26.3	2	22
ACE County, Initially Enrolled in 2009						
First Year of Enrollment	49.3	94.8	5.1	26.7	0	22

Source: Health Plan of San Mateo

What is striking in the table, however, is that the rate of use rises over time. For example, only 61.8 percent of ACE enrollees who enrolled in 2008 have a prescription in their first year, while 81.9 percent do in their second year on the program. In addition, as shown in the table, the average and median number of prescriptions per year rises dramatically over time. In the first year of enrollment the average is 9.3 prescriptions, with a median of 3, while in the second year the average is 18.5 with a median of 13. This suggests that the availability of prescription drug coverage is an important reason for retention in ACE. In addition, it suggests that program costs will increase over time unless the prescription costs are offset by lower use of the ER and inpatient hospital services.

Inpatient Hospital Services. The final service type examined with HPSM data and ICC clinic data is the rate of inpatient hospital admission, shown in Figure 26. For all those initially enrolled in ACE in 2008, hospital use declined from their first year of enrollment (4.4 percent with a stay) to their second (3.4 percent). The same pattern is observed for those with diabetes and hypertension.

Figure 26: Any Inpatient Hospital Use in Year Following Enrollment in ACE/ACE County, 2008-2009

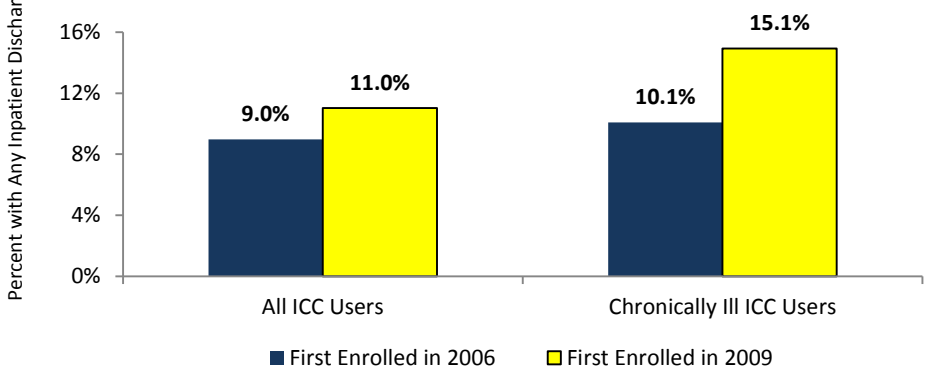


Source: Health Plan of San Mateo

The rate of hospital use for those with both diabetes and hypertension is much higher (8.6 percent). The rate of hospital use for new ACE County enrollees in 2009 is lower than for ACE enrollees (2.0 vs. 4.2 percent). The ACE County population is younger on average and has a lower rate of chronic health conditions (see Figures 2 and 5).

Data are also available from the ICC clinic cohorts on use of all hospitals in the county, since the data for ICC users have been matched to inpatient data from the other hospitals. According to these enhanced data, about 9.0 percent of patients using the ICC had an inpatient stay in the year following enrollment in 2006 and 11.0 percent had a stay in 2009 (see Figure 27). Among the chronically ill, there is an apparent climb to about 15.1 percent in 2009, these changes are not statistically significant after adjusting for patient characteristics. The ICC is on the grounds of the SMMC inpatient facility, which could lead to higher use for these cohorts than for other ACE/ACE County enrollees. Still, it is apparent that the systems redesign did not lead to a drop in hospital use for ICC patients where the systems redesign activities were most intense in this period.

Figure 27: Any Inpatient Hospital Use by ICC Users in Year Following Enrollment in WELL/ACE/ACE County, 2006 and 2009



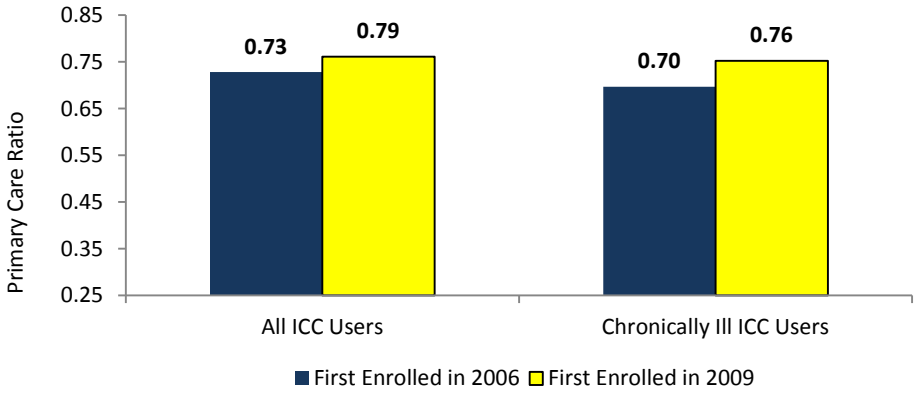
Source: SMMC Clinic Data System and Area Hospitals.
Note: Percentages are regression-adjusted for enrollee characteristics. Differences between 2006 and 2009 are not statistically significant for either group.

Continuity of Care

The ICC clinic cohort data for 2006 and 2009 also yield some promising news concerning continuity of care, which is perhaps the best near-term indicator of the impact of systems redesign (see Figure 28). Continuity of care is defined as the ratio of visits to the most frequently seen primary care provider (or team) to total primary care visits. This is measured only for those with two or more visits (which is 78.6 percent of the full cohort and 89.4 percent of the chronically ill cohort). The regression analysis controls for the number of primary care visits, as well as patient characteristics and diagnoses.

As shown, the continuity of care ratio rises from .73 to .79 for all patients served by the ICC and from .70 to .76 for chronically ill patients (p<.01). This improvement in continuity of care for those seen at the ICC, along with the significant improvement in preventive care use noted earlier, offer some hope that over time use of more expensive services--such as the ER and inpatient hospital--will go down. This will only happen more broadly across the entire ACE and ACE County population if access barriers to primary care can be reduced by expanding services such as those provided after systems redesign at the ICC.

Figure 28: Continuity of Primary Care in the Year Following Enrollment in WELL/ACE/ACE County, 2006 and 2009

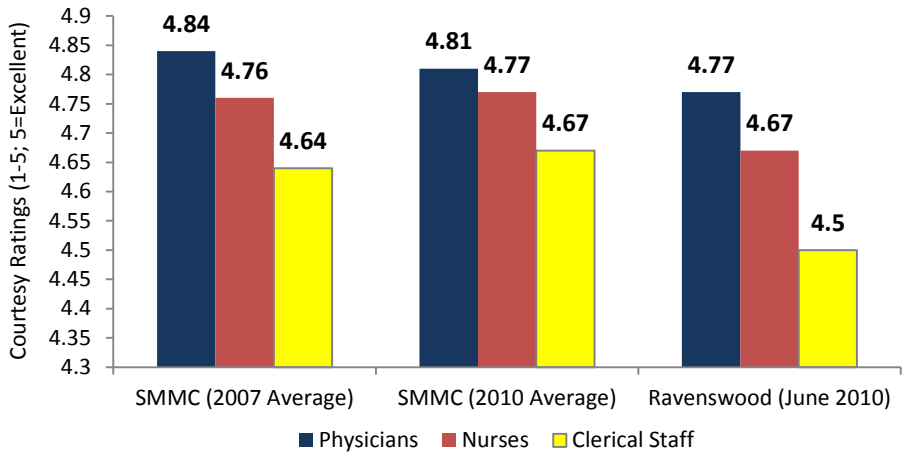


Source: SMMC Clinic Data System and Area Hospitals.
Note: The ratio is the number of visits to the most frequently seen primary care provider to the total number of primary care visits. Differences between 2006 and 2009 are statistically significant for all patients and for chronically ill patients (p<0.01).

Satisfaction with Care

For those who have access to the SMMC safety net primary care clinics, satisfaction is generally high with the care they receive, although there is some mixed evidence. Periodically users of the clinics are given an anonymous written survey and asked to rate the courtesy of their health providers as they leave a clinic visit. These ratings show high satisfaction (Figure 29). On a scale of 1 to 5, with 5 being excellent, in 2010 the ratings are high for both physicians and nurses in SMMC clinics (with a similar level for Ravenswood). Clerical staff are rated slightly lower. In spite of the restrictions on capacity at the clinics, these courtesy ratings have changed little since 2007, and suggest generally high levels of satisfaction that has been sustained.

Figure 29: Courtesy Ratings in San Mateo Primary Care Clinics, 2007 & 2010



Source: San Mateo County Health Department and Ravenswood

Focus group findings also reflect general, but not uniform, satisfaction with care.

- *I'm very satisfied with all that I've received.*
- *It's worth the wait because they give you medicine if you are sick. You are receiving medical attention that you need to have.*
- *If the doctor doesn't speak my language they bring me someone (to interpret).*

However, in addition to the access problems discussed by focus group participants, they also expressed dissatisfaction about some other aspects of care, including the clinic staff, time spent with the doctor, and difficulties filling prescriptions.

- *I'm happy with my doctor, but I'm not happy with the aids or staff.*
- *(Speaking of the clinic staff.) You can still see they're not 100% happy with their job, and it shows with the service.*
- *My doctor tries to rush me out of there. They ask if you have any questions, comments or concerns. I personally can't tell him or explain anything.*
- *(Speaking prescriptions at the pharmacy) Sometimes they don't have it ready until the next day.*
- *Sometimes it doesn't get there (a faxed prescription). They say "no, they haven't sent anything". Then you have to wait until the following day.*

In summary, the small but randomly selected group of ACE and ACE County focus group participants is pleased and grateful to have coverage to help reduce their medical costs, especially pharmacy costs, but they are not completely happy with all aspects of their care. The comments confirm the survey results that show that patients are happier with their medical doctors than with the support staff in the clinics.

Quality of Care for the Chronically Ill

In addition to the improvements in continuity of care noted above, there are also indications that clinical quality of care is improving. This comes from HEDIS data collected by the HPSM for diabetes care (Table 5). The data show that the quality of diabetes care for ACE/ACE County enrollees is equivalent to or better than that provided to diabetes Medi-Cal patients. Process measures include testing of hemoglobin, eye exams, LDL-C screening, and nephropathy monitoring are all higher for ACE/ACE County patients than for Medi-Cal. Also, outcomes are better, with better HbA1c, LDL-C, and blood pressure control than for Medi-Cal. These indicators are also higher than in other large safety net systems, such as the New York Health and Hospitals Corporation and Denver Health, and nationally for Medicaid (McCarthy and Mueller, 2008; Nuzum, et al. 2007). In addition to being better than Medi-Cal, the ACE/ACE County indicators improved from 2009 to 2010.

One possible reason for these differences is that all ACE and ACE County diabetes patients receive their care in county safety net clinics, which have for some time been concentrating on improving diabetes care. Medi-Cal patients receive their care from either safety net clinics or from private physicians.

Table 5: HEDIS® Scores for Patients with Diabetes, ACE/ACE County and Medicaid Enrollees, 2009 and 2010

	Score		
	ACE and ACE County		Medicaid
	2009	2010	2010
Sample Size	*329*	*411*	*411*
Process Quality Measures			
Hemoglobin A1c (HbA1c) tested	90.9	95.6	86.6
Retinal exam performed	62.6	64.5	60.3
LDL-C screened	86.0	89.3	80.5
Nephropathy monitored	85.4	88.8	85.4
Outcome Quality Measures			
Poor HbA1c control (>9.0%)			
(a lower score indicates better performance)	34.4	25.1	35.8
Good HbA1c control (<8.0%)	53.5	60.6	56.9
LDL-C controlled (<100 mg/dL)	49.2	52.3	45.0
Blood pressure controlled (<130/80 mm Hg)	46.5	49.2	37.0
Blood pressure controlled (<140/90 mm Hg)	66.3	70.8	62.3

Source: Health Plan of San Mateo

Cost of Care

One goal of the coverage expansion is to reduce the cost of health care for low-income uninsured adults, both the costs to the enrollees and the cost to the county.

Cost to Enrollees. Costs to the formerly uninsured are reduced dramatically after enrollment in ACE and ACE County. As shown earlier (Figure 14), enrollees also report that they are much less likely to delay needed care because of costs. The evaluation obtained comments from focus group participants, who emphasize how difficult it is to pay for medical care while uninsured, and how much of a difference it makes to have ACE/ACE County coverage.

- *They charge you to come here (when uninsured), and it was a lot of money for me. I'm a single mother with four kids. I told them that I couldn't pay because it was too expensive, so they offered me the program. Thank God, I qualified, and here I am.*
- *I was laid off, and COBRA was over $700 a month.*
- *When one goes to Stanford or San Mateo (the emergency room), the bills come out to $2,000; it's something you can't pay. ACE helps you.*
- *The bills were $500, but when I got over here, they said, "don't worry about the bills."*

Cost to the County. An important goal of the initiative is to reduce the county's continued financial burden for care for the uninsured and underinsured. Part of the way this has been accomplished has been to obtain federal financial participation for ACE program costs, through the state's Medi-Cal waiver. Another important strategy has been to reduce overall costs through improved care co-ordination and efficiency.

Table 6 shows charges[15] by type of service for ACE enrollees who first enrolled in 2008. Charges in the first year of enrollment (inflated to 2009 costs using the medical care CPI) are $6119 per person, and in the second year of enrollment they are somewhat higher at $6,633. As has been shown earlier (Figure 5), the enrollees who are retained for two full years have more chronic conditions than first-year enrollees. Figures 21 and 26 have shown small drops in ER and hospital use in the second year of enrollment for those who stay enrolled for two years. This is reflected in some declines in charges for those services in the second year of enrollment. For example, average annual charges for emergency room visits are $1060 per person in the first year of ACE enrollment, but only $826 in the second year (Table 6). There is a similar drop in hospital annual charges from $1117 at the SMMC in the first year to $684 in the second year.[16]

[15] In this section we use SMMC charges as a proxy for "cost" to the county, other public payers, and other county hospitals.

[16] We caution that some of the reduction in use and cost of these high-cost services could be "regression to the mean", since enrollment in ACE may be precipitated by a high-cost event.

However, the drop in ER and hospital charges is more than offset by increased outpatient and pharmacy charges.

Table 6: Charges by Type of Service for ACE Enrollees First Enrolled in 2008

	In First Year of Enrollment (2009 Dollars)		In Second Year of Enrollment	
Type of Service	Annual Average	Percent	Annual Average	Percent
Clinic	$2,080	34.0	$2,793	42.1
Other Physician	1,003	16.4	1,084	16.3
Emergency Room	1,060	17.3	826	12.5
Hospital				
SMMC	1,117	18.2	684	10.3
Other	389	6.4	639	9.6
Prescriptions	221	3.6	324	4.9
Laboratory and Radiology	122	2.0	140	2.1
Other	128	2.1	143	2.2
Total	**$6,119**	**100.0**	**$6,633**	**100.0**

Source: Health Plan of San Mateo

Note: First year of enrollment charges are multiplied by the medical care CPI for the 12 months ending October 2009 (3.2%).

ACE enrollees are more expensive than ACE County enrollees (Table 7). For those enrolling in 2009, the average annual charges for ACE are $4986, 58 percent higher than the average for ACE County enrollees at $3149. The differences persist for all types of services. Some of this difference is explained by the age differences in the two groups, since ACE County enrollees are younger on average. However, for enrollees ages 19-44 the disparity is the same (i.e. with ACE charges almost 70 percent higher than ACE County charges). In the age group 45-54, the charges for the two groups are more similar, and for the 55-64 year olds the charges are almost identical (data not shown). This pattern points to a health status difference between ACE and ACE County enrollees, primarily in the younger age groups. For example, among enrollees ages 19-24, ACE enrollees have an asthma prevalence of 8.1 percent (as reported in the claims/encounter data), while only 2.5 percent of ACE County enrollees are reported to have asthma. (Data not shown.) Unfortunately we do not have individual-level data to control statistically for all the differences in patient characteristics and diagnoses between ACE and ACE County enrollees.

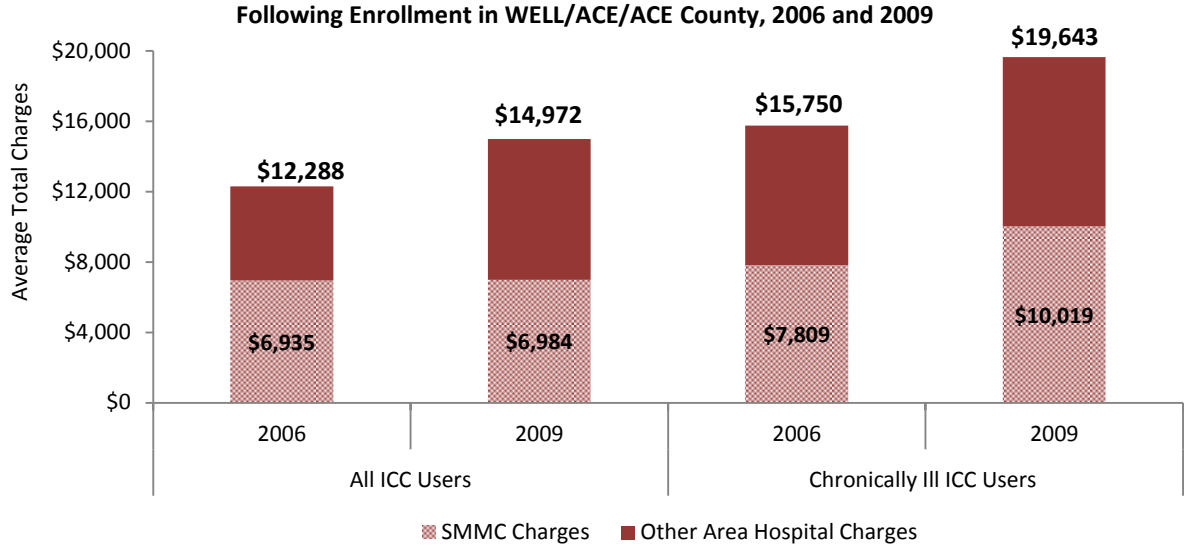
Table 7: Average Annual Covered Charges for New ACE and ACE County Enrollees by Type of Service, 2009

Type of Service	ACE Charges	ACE County Charges
Clinic	$1,591	$1,194
Other Physician	684	477
Emergency Room	1,095	506
Hospital	1,285	754
Prescriptions	142	63
Laboratory and Radiology/Other	190	154
Total	**$4,987**	**$3,149**

Source: Health Plan of San Mateo

Individual-level data are available from the ICC clinic data system which also records charges from the county charge master for each service. The data have been augmented with data from area hospitals for emergency room and inpatient hospital charges, for the 2006 and 2009 ICC clinic cohorts. Figure 30 shows average total charges (including non-SMMC ER and hospital charges), as well as charges just from SMMC facilities, regression-adjusted for patient characteristics including diagnoses and inflation-adjusted to 2009 dollars.

Figure 30: Average Total Charges (2009 dollars) by ICC Users in Year Following Enrollment in WELL/ACE/ACE County, 2006 and 2009



Source: SMMC Clinic Data System and Area Hospitals.
Note: Dollars are regression-adjusted for enrollee characteristics. 2006 dollars are inflated to 2009 dollars using the Medical Care CPI. Differences between 2006 and 2009 are not statistically significant .

Average total charges are $12,288 in 2006 and $14,972 in 2009, although the increase is not statistically significant due to large variability in charges across enrollees, especially for non-SMMC charges. Total charges are somewhat higher for the chronically ill. The charges for SMMC-provided services are only about half of total charges. This emphasizes the substantial contribution of local hospitals to the cost of ACE and ACE County enrollees. The county contracts with local hospitals for specialty services unavailable at SMMC, but does not reimburse them for the ER services that fall under their EMTALA responsibility.

Charges have been shown to be a very imperfect measure of the cost of care (Dobson, et al., 2005). We were not able to measure cost of care, which would be a much better measure of use of resources. The Agency for Health Care Research and Quality (AHRQ) reports a cost-to-charge ratio of .299 for all hospitals in 44 states (including California), with considerable variability across the nation. Should this average ratio apply across San Mateo County and for all services, the result would be total costs of $3674 in 2006 and $4360 in 2009 for the ICC cohorts.

Another indicator that is—for the finances of San Mateo County—as important as either charges or cost is the amount that Medi-Cal reimburses for care provided to Medi-Cal and ACE

patients. We were told by San Mateo health department staff that Medicaid pays about 30 cents per dollar of charges in San Mateo County. This would yield $3686 in total payments for the 2006 cohort and $4374 for the 2009 cohort. This estimate of 2009 spending should all charges be reimbursed at the Medi-Cal fee schedule is almost identical to the Center for Medicare and Medicaid Services estimate of $4,123 spent per non-disabled Medicaid adult nationally in 2009 (CMS, 2010). The estimated Medi-Cal payments and costs (using national cost-to-charge ratios) are remarkably similar.

At the time of the Blue Ribbon Task Force initial meetings (2006), the county general fund contribution to the San Mateo Medical Center was $58.9 million. Since that time, the county's contribution rose to $66.5 million (FY 2010) and then declined slightly to $64.5 million (FY 2011). This translates to a growth of 9.5 percent over a four-year period, or about 2 percent per year. While the county's contribution remains substantial, this is a much lower rate of growth than was forecast at the time of the Blue Ribbon Task Force, when the contribution was expected to rise to $81 million without substantial changes by FY 2011. The rate of growth is also lower than the growth in the medical care CPI, which was 3.2 percent between 2008 and 2009. Under California law, responsibility for providing health care to the indigent rests with counties and the enrollment in the counties' indigent care program has grown markedly since the task force's deliberations. So the costs to the county remain very high, but the coverage and systems redesign initiatives appear to have moderated the rate of growth in spending.

CONCLUSIONS

This evaluation of the San Mateo County Health Coverage and Systems Redesign Initiative has shown many positive results from the county's efforts, which reflects the strong leadership and effort by key individuals in the health department and county safety net health care providers. At the same time the county continues to face challenges to implementation that provide important lessons for national health reform and for other local jurisdictions that want to implement such initiatives.

Most Important Successes. The implementation of the initiative has led to many improvements for individuals and the health system. This progress is particularly impressive, given the back-drop of the recession and the increase in demand for county-sponsored health services. Some of the most important of these successes are the following:

- Successful enrollment of uninsured adults into ACE and ACE County through the on-line enrollment system (One-e-App), leading to more than doubling of enrollment in these county coverage programs.
- Use of the Health Plan of San Mateo to administer the ACE and ACE County programs, with associated management of services and monitoring of access to and quality of care.
- Integration of Ravenswood Family Health Center into the SMMC primary care safety net.
- Implementation of an Electronic Medical Record in all SMMC primary care and specialty care clinics.
- Implementation of three other systems redesign components (team-based care, chronic disease management, and advanced access appointment scheduling for established patients) into the operation of most SMMC safety net clinics, to varying degrees depending on the clinic.
- Improvements in several critical enrollee outcomes, such as the following:
    - A dramatic increase in the proportion of enrollees who have a usual source of medical care after enrollment.
    - Increased use of preventive care, especially for the chronically ill and for those who stay enrolled, starting from a low base.
    - Improved continuity of care in the ICC, the largest primary care clinic and where the systems redesign has been most concentrated during the study period. This is

likely due to key features of the systems redesign such as the EMR, team-based care, and advanced access scheduling for established patients.

- Continued and high satisfaction with care, especially with medical providers.
- High quality of care for ACE/ACE County diabetes patients when compared to Medi-Cal diabetes patients.
- Early suggestions that increased outpatient and prescription drug use is substituting for inpatient and ER care for chronically ill people who stay enrolled. This may be due to improved access over time and to increased continuity of care for such patients.

Continued Challenges. These sustained gains for systems integration and for individual enrollee outcomes should be viewed in light of the challenges that the county faces as it continues to implement the Health Coverage and Systems Redesign Initiative.

- Access to Care: the major challenge the initiative has faced—exacerbated by the deep economic recession that began just as the initiative was taking off—is restricted access to care (particularly for new enrollees). Almost all new enrollees report that they now have a place they can go when they need health care, and all are assigned to one of the primary care clinics as their Primary Care Provider (PCP). However, multiple data sources show that having such a usual source of care does not mean that they can readily obtain an appointment (e.g., for an initial screening visit, or for a minor health problem); generally the waits for such appointments for new patients are very long or appointments are completely unavailable. This is because the supply of health services at the PCPs serving ACE and ACE County enrollees—the six adult medicine primary care clinics serving as PCPs—has been fixed, while demand for services has doubled.
- Low Preventive Care Use: While preventive care use improved significantly for some patients after systems redesign, it remains relatively low. This means that—combined with the access problems noted above—early detection of health problems is not occurring as often as it should for many patients, meaning that such problems are more severe once they are identified and treated.
- High Emergency Room Use: A related challenge is the continued high use of ER services by ACE and ACE County enrollees, which appears to be higher even than for Medi-Cal patients who are known to use the ER heavily. For example, over half of enrollees using the ICC have an ER visit in a year. It is apparent that the ER continues to be a source of health care for some problems that could be detected and treated in primary care/outpatient settings. The early successes of systems redesign have not yet had a significant impact on this important indicator. While much of the high ER use is

likely due to continued difficulties obtaining appointments in clinics, it is important to recognize that high ER use can also be attributed to other factors, such as the following:

- Patient preferences—such as for afterhours care--and habits from their time while uninsured.
- The reduction in financial barriers to ER care provided by new health coverage.
- The challenge of reducing access to a health care resource—the ER—which must be paid for by the county and kept open for true emergencies.

Cost of Care. Another very important goal for the initiative has been to reduce the cost of care or—at a minimum—moderate the growth in costs. The picture at this time, only shortly after the most important systems redesign changes have been fully implemented, is mixed. At the individual level, there are preliminary suggestions that cost may be moderated for those who stay enrolled and have good access to care (more often the chronically ill), by some shifts away from institutional care. At this time that is only a small percentage of people. The challenge is to expand the base of people who receive this high quality, continuous primary care, to those who are newly enrolled and have few health problems currently. Over time the efficiencies in the system will possibly affect more people, and lead to reductions in average costs of care. However, up to the present this has not occurred, and the average charges per person actually increased moderately.

At the same time, we see a moderation in the growth rate of county indigent care expenditures after systems redesign activities took off. This was in a period of rapid growth in enrollment in ACE and ACE County, as well as heavy investment in infrastructure such as the EMR and upgrades to the ICC.

Implications for Health Reform. San Mateo County's experience provides many important lessons for state and local jurisdictions that are implementing the Affordable Care Act. By 2014, Medicaid programs nationwide will be extended for the first time to all documented adults under 138 percent of the federal poverty level. This group is similar in terms of age, and potentially in other characteristics such as health status, to the ACE population in San Mateo County. If San Mateo's experience is a predictor of the expansion in other places, state governments will be required to provide services to a group who has not had good access to primary care while uninsured, some of whom have a high prevalence of chronic health problems. At the same time, the primary care safety net system that has traditionally served low income uninsured adults will have fixed capacity for some period of time, potentially leading to the access problems experienced by new enrollees in San Mateo County. To the extent that safety net systems can prepare for the expansion before this pressure becomes intense, as well as implement systems reform initiatives such as those in San Mateo County, the safety net will be better prepared to provide ready access to primary care (as required by the ACA). Expanding the supply of

providers—either clinics or private providers who are willing to accept new Medicaid patients--is an important component of this preparation.

Implications for Indigent Care in San Mateo County. This evaluation has shown that the county's hard work to implement the coverage initiative has paid off in several ways, most notably increased coverage of uninsured adults; improved access to care (for some measures of access, and for some people); reduced financial barriers to care; improved use of preventive care and continuity of care after systems redesign; good satisfaction and high quality care, especially for chronically ill enrollees; and moderated cost increases for the county. Yet, the county faces continuing challenges to finish the work that began as early as a decade ago, and that culminated in the Coverage Initiative and Systems Redesign. The most important next steps include:

- Expanding Primary Care Capacity: The county has plans to expand the Coastside and Daly City Clinics in the coming year. Other initiatives that may also further the goal of expanded capacity could be adding hours and/or more providers at existing sites. Another possibility is to use more physician extenders (e.g. nurse practitioners) and more group visits, for example, as a way to orient new enrollees and introduce them to their PCP team. These types of visits could be used for patient education and medication management, as is currently done in some clinics for diabetics, possibly leading to reduced unnecessary ER use.

- Implementing Affordable Care Act Provisions: San Mateo County is already providing coverage under ACE for documented uninsured adults up to 200 percent of the federal poverty level (a higher income level than is required for Medicaid under national health reform), and the county's enrollment of clients into coverage will facilitate the transition to Medi-Cal for most ACE enrollees. Up to now the county has not had restrictions on how care must be provided. For example, the ambulatory network is restricted to SMMC clinics and Ravenswood, and the county is free to cap the program when federal money for the waiver runs out. Under the expansion of Medi-Cal included in the federal health reform law, responsibility for financing and arranging care will shift to the federal and state government, with administration at the local level by HPSM. Most of the ACE enrollees will be converted to Medi-Cal and HPSM will have responsibility for the provider network available Under the new Medi-Cal waiver the county is already—even before health reform is implemented nationally—required to provide greater timeliness in primary care access than has been possible in the initial implementation period for the Health Coverage and Systems Redesign Initiative. The county will continue to have full responsibility for undocumented uninsured adults. The framework established for ACE County over the past three years can be continued for such individuals (for example, care management by HPSM), and more attention should be provided to fine-tuning services for this group.

Summary. San Mateo's coverage and systems redesign initiative provides many positive lessons for the nation and other localities. With limited resources, and numerous challenges, most notably the economic recession, the county—under strong leadership that persists in pursuing the goals of the initiative—has expanded coverage to a rapidly growing number of uninsured adults and improved the care they receive. This, in turn, has improved the health and health care of many county citizens. In spite of the challenges that remain (such as constrained supply of safety net primary care services), this provides an example for other communities to follow as they improve health care services for the most vulnerable members of society.

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APPENDIX A

EVALUATION QUESTIONS AND DATA SOURCES

	Case Study/Focus Groups	Main Campus/ICC Data	Cross-Clinic Data	HPSM Encounter Data	One-e-App Data
Research Questions					
What is being done under the systems redesign? What changes have been made to the enrollment and service delivery system for low income adults?	**P**				
Who is served by the systems redesign? How has the composition of enrollees changed over time?		**P**		**P**	**S**
What services do clients receive? What are the trends over time?	**S**	**P**		**P**	**S**
What is the quality of care in redesigned clinics?	**S**	**P**	**P**		
Are clients satisfied with the redesigned program and its services?	**S**		**P**		
Are providers and other key stakeholders satisfied with the systems redesign?	**P**				
What is the impact of the systems redesign on access to care and use of medical services?	**S**	**P**	**S**	**S**	**P**
Does the system redesign have an impact on the health status of clients?		**P**			**P**

Note: P=Primary data source; S=Secondary data source.

APPENDIX B

TECHINICAL DOCUMENTATION OF DATA SOURCES

Case Study

We conducted two week long case studies to inform the evaluation's understanding of the San Mateo County health system. The first case study was conducted in August 2008, during which we interviewed 43 key informants. The second case study was conducted in late July 2009, during which we interviewed 28 key informant interviews. Key informants included San Mateo County and Ravenswood clinic managers, medical directors, and CHAs, as well as HPSM staff and county leadership. A one hour appointment with interviewees was scheduled in advance of our visit. Generally, two members of the evaluation team were present for each interview, and verbal consent was requested. One researcher led each interview and the other took extensive written notes which were analyzed for preparing annual reports.

Two interview protocols were developed: one for clinic staff and one for other key informants. Protocols were tailored slightly to be relevant to each specific discussion. All protocols were shared with SMMC staff in advance of our trip for feedback, and were approved by the Urban Institute IRB.

We also conducted observations at clinics in which a researcher sat in the clinic waiting room and observed the flow of patients and clinic registration operations. We observed the Daly City, ICC, and Ravenswood waiting rooms during the August 2008 site visit and the ICC, Fair Oaks, and Willow clinics in July 2009. Clinic observations also followed a standardized IRB-approved protocol, and sought to characterize the clinic waiting room based on the environment, the crowd, and the courtesy of staff. We followed patients as best we could, noting the times they entered the waiting room, and when they were called back to be seen.

Focus Groups

There were two rounds of focus groups. The first round was held in September 2009, and the second in June 2010. For both rounds, we recruited ACE and ACE County enrollees from the Daly City, Fair Oaks, ICC, and Ravenswood clinics. Potential participant names were selected at random by the Health Plan of San Mateo using the following criteria: ACE enrollment, language preference, and primary care provider (clinic), in order to cluster participants in Spanish or English groups at their primary care provider site. Community Health Advocates conducted initial recruitment phone calls, and 12-15 willing participants per clinic were contacted by our subcontractor, JBS International (formerly Aguirre International), to confirm interest and provide additional details about time and location of focus groups. Participants were paid a $50 honorarium as well as childcare and transportation stipends. A light meal was served during the group, and a self-administered questionnaire was distributed at the end of the groups during the first round to collect demographic information from participants. The size of groups ranged from 6 to 15 participants.

Focus groups with participants from the Fair Oaks Clinic and the Ravenswood Family Health Center were conducted in Spanish, and groups from the Daly City and ICC clinics were conducted in English. All groups were mixed gender, though women were overrepresented. Verbal consent was requested at the start of each group, and participants were given permission to leave if they were not comfortable. They would be paid the honorarium regardless of whether

or not they chose to stay; No participants chose to leave. We used a standard IRB-approved protocol for the groups.

Aggregate Clinic Data

We requested and obtained a variety of aggregate data related to clinic performance between 2007 and 2010 from the San Mateo Medical Center and Ravenswood Family Health Center. The measures that were tracked using a variety of clinic-specific methods, and include wait times for appointments, cycle times (or times spent at the clinic), and patient satisfaction. Data presented in this report reflect wait times for specialty visits, by specialty for 2010, cycle times in primary care clinics serving adults between 2007 and 2010 by quarter, wait times in primary care visits for 2010 and average courtesy ratings for the SMMC clinics and for Ravenswood Family Health Center for 2007 and 2010.

Patient Satisfaction. Historically, all of the SMMC clinics measured patient satisfaction with a uniform survey tool (though the methods by which it was administered varied slightly). In 2009, the ICC introduced a new instrument with more questions and different wording. This addressed particular needs of the ICC but made it difficult to compare results across the clinics. Ravenswood also utilizes a different patient satisfaction methodology. One measure that remains uniform is patient perceptions of the courtesy of health care providers and clinic staff. These data are presented here as an average for the SMMC clinics and for Ravenswood for 2010.

Cycle Times. Cycle times reflect the time patients spend in the clinic from the point of registration to check out. The definition is uniform across clinics, though methods of collecting the data for the 2007-2010 period vary slightly. Some clinics use front staff and/or nursing staff to record cycle times while others utilize a card that follows the patient and is time stamped at different visit intervals.

Wait Times for Primary Care Visits. Our early efforts to collect wait times for visits to primary care clinics were hampered by questions about the reliability of the data due to different methods used by clinics to measure wait times, as well as the fact that a large proportion of patients come to clinics not through "traditional" means (e.g., making an appointment by phoning the clinic) but through referrals from physicians, other county services, the emergency room, and other sources. This means that the availability of appointments from phone requests might be limited because a certain proportion of appointments are taken by patients from these various sources. However, more recently, the clinics employed the use of the "third next appointment" approach to measuring wait times. Though this does not capture patient volume generated from "non-traditional" means, its uniform use allows for comparison across clinics. (This measure is determined by reviewing the appointment scheduled for the first available appointment, moving to the next available appointment and then going to the next (3rd) available appointment and counting those. This approach is used because the first two might reflect cancellations or other random factors that can affect the availability of these appointments. The third appointment is considered the best representation of the real wait that patients experience.)

Wait Times for Specialty Visits. The SMMC reports wait times for specialty visits using a different method – i.e., periodically reviewing the schedules by specialty and recording wait times. The data presented here are those recorded by the SMMC Specialty Clinics.

Because the data were in aggregate form, we could not adjust for differences in patient characteristics between the clinics.

Aggregate Data from the Health Plan of San Mateo

We requested and obtained aggregate claims/encounter data from the Health Plan of San Mateo (HPSM) for annual measures of utilization and charges, for three cohorts. The cohorts are:

- **Cohort 1:** ACE enrollees who first enrolled (i.e. new enrollees) in January 2008 to December 2008.
- **Cohort 2:** ACE enrollees who first enrolled in January 2009-December 2009.
- **Cohort 3:** ACE County enrollees who first enrolled in January 2009-December 2009.[17]

For Cohort 1 we requested annual aggregate utilization rates and charges for the first full year of enrollment (for those continuously enrolled for the first full year), and for the second full year of enrollment (for those continuously enrolled for the second full year). For Cohort 2 and Cohort 3 we requested annual aggregate utilization rates and charges for the first full year of enrollment (for those continuously enrolled for the year). These data were obtained by Primary Care Provider (ie. clinic); age; diagnosis group; and type of service (outpatient/clinic; other physician; ER, Hospital, Prescriptions, and Lab/Radiology). For outpatient/clinics and other physicians, we further categorized utilization according to preventive care and other ambulatory care (see Appendix C for the definition of preventive care). We particularly focused the analysis on patients with diabetes and/or hypertension, according to diagnoses on claims/encounter data, using the diagnostic algorithm from HPSM from HEDIS reporting.

Since the data were obtained in aggregate form, it was not possible to adjust data according to enrollee characteristics as is done for the individual-level ICC clinic and One-e-App data. Charge data from 2008 are adjusted to 2009 charges according to the Medical Care Consumer Price Index which showed a 3.2 percent increase for the year.

One-e-App Data

Two surveys were conducted of ACE and ACE County enrollees at the time of enrollment or re-enrollment, one in March-September 2009 and one in April-October 2010. Fifteen questions—most focusing on access to care, service use, or health status—were asked by CAAs at the time of application, and responses entered into the on-line application from which they were later extracted for analysis. The number of people who fully responded to all questions and can be

[17] HPSM was not managing the care for ACE County enrollees in 2008, so data are not available on those enrollees for that time period.

identified as initial or renewal enrollees is 4,932 in 2009 (2,630 initial/2,303 renewal) and 5,092 in 2010 (2,945 initial/2,147 renewal). These data allow for a comparison of use in the year prior to initial enrollment (i.e., while uninsured) to the year following enrollment. Additionally, the One-e-App data are used to construct a small longitudinal sample, which includes 216 initial applicants in 2009 and who reapplied for coverage in 2010 and 524 renewal applicants in 2009 who reapplied in 2010.

The core One-e-App instrument is used to determine eligibility for a number of public programs. It includes approximately 50 questions on demographics, employment, income, and assets. This instrument—which is also used to determine eligibility for other programs such as Healthy Kids, Healthy Families, Medi-Cal, and the Discounted Health Care Program—is completed by an application assistor employed by the county who reads the questions aloud to the applicant and enters his or her responses.

We limited the number of survey questions to 15 in order to add no more than 10 additional minutes of time to complete the One-e-App. The questions and question wording are derived from a number of national and local surveys including the following: the National Health Interview Survey, the Medical Expenditure Panel Survey, the Kaiser Low Income Survey, the Federally Mandated CHIP evaluation survey, the California Health Interview Survey, the San Mateo Health and Quality of Life Survey, and similar evaluation questions added to the One-e-App in Fresno and San Francisco.

The evaluation questions were programmed into the One-e-App by a key staff member from the county. The program was then checked by this staff member as well as a member of the evaluation team in order to ensure that the question wording and response choices were displayed correctly and that the additional questions were included in the intended applications (i.e., non-elderly adults applying to ACE or ACE County) and excluded from others.

The evaluation questionnaire was piloted by several application assistors in early 2009. Training for the full group of application assistors was based on a training manual that was produced by the evaluation team and included instructions on how to ask and fill in each evaluation question, accompanied by screenshots.

Appendix D contains the list of evaluation questions added to the One-e-App.

The questions were administered in English or Spanish to any adult who was present and applying to ACE or ACE County. In situations where two adults from the same family applied for coverage, but only one was present, only the present adult was asked to respond to the survey. Of the non-elderly adults applying for coverage through ACE or ACE County in 2009 and 2010, 17.4 percent and 12.3 percent respectively were not present at the time of application. Participation in the survey was high; fully, 89.3 percent of non-elderly adults who were asked the questions in their own language in 2009 responded to all questions, as did 84.8 percent in 2010. Non-respondents were more likely to be Asian/Pacific Islander/Native Hawaiian, married, or applying in July, August, or September compared to respondents. Additionally, in 2010, roughly 35 percent of non-elderly adults applying for ACE/ACE County and who were subsequently

enrolled did not receive the survey. Staff from San Mateo confirmed that a problem with the computer system resulted in the survey being administered to only a subset of applicants over a number of months. The system was fixed shortly after the error was identified and the survey continued until October 2010 without further problems.

The survey was approved by the Urban Institute's Institutional Review Board (IRB), and appropriate data security measures were taken to protect the confidentiality of applicants and the information they provided through the application process.

The treatment group of established enrollees was defined as individuals who indicated that they been on ACE or ACE County for the 12 months prior to the interview for whom the enrollment information provided by the county also indicated that they had been enrolled previously. The comparison group was defined as individuals who said that they had been uninsured before enrolling in ACE or ACE.

While our outcome variables came from the evaluation questionnaire, many of our control variables came from the standard One-e-App questions. There were significant differences between initial and renewal enrollees in many domains. Renewal enrollees were more likely to be Hispanic, non-English speaking, and undocumented than initial enrollees. Renewal enrollees were also in somewhat worse health than initial enrollees, and they were more likely to have one or more chronic conditions.

In order to control for these differences between the two groups, we ran a logistic regression model defined as follows: $\ln (Pi/1-Pi) = b1 + b2Renewal + bkX$, where Pi is equal to the probability that the outcome i equals 1; Renewal indicates that the individual is a renewal enrollee and X is a vector of control variables. For each outcome variable, we used the estimates from this regression model to calculate regression-adjusted percentages. These regression-adjusted percentages are the levels of service use that would exist if all enrollees had the demographic characteristics of renewal enrollees.

Because this research is not based on a randomized design, the impact estimates are subject to several potential sources of bias. We performed several sensitivity analyses, which showed our results to be robust. In particular, we estimated separate regressions for key subgroups: ACE enrollees, ACE County enrollees, undocumented individuals, Spanish-speakers, and individuals with any chronic condition. Findings from these analyses also followed the patterns seen in our overall sample. Another source of bias could arise if enrollment in ACE or ACE County tends to be triggered by a period of health that is worse than usual for any given individual, resulting in "regression to the mean." To study this possible bias, we performed two alternative analyses. The first used enrollee's change in health status over the past 12 months as a control variable. For almost all outcomes, this analysis yielded impacts with the same direction and significance as findings from the core model. The second analysis used the same covariates as our core model but was limited to individuals who said their health remained about the same over the past 12 months. Again, results for almost all outcomes yielded impacts with the same direction and significance as the core model.

ICC Clinic Data

The study of the impact of systems redesign at the Innovative Care Clinic (where the most changes occurred during the study period) was conducted using data from One-e-App (for patient characteristics) matched to individual-level clinic data. We requested data for two cohorts of individuals: (1) those who enrolled in the WELL program (the precursor of ACE and ACE County), in April-September 2006, prior to systems redesign (N=646) and (2) those who enrolled in ACE or ACE County in April to September, 2009 (N=293). The two cohorts were limited to those who had at least one primary care visit to the ICC, using the appropriate clinic descriptor.

Newly enrolled individuals were defined as those who had no enrollment for a 12 month period prior to the beginning of the enrollment spell. Individuals were limited to those ages 19-64. We matched claims/encounter records from the SMMC data base for one full year following enrollment for each individual. SMMC clinic staff matched the One-e-App data to all inpatient hospital, emergency room, outpatient, and pharmacy records from the SMMC claims/encounter data base. The match was based on social security number, first name, last name, DOB, sex, and medical record number using the Oracle Soundex function.

The much smaller sample in the 2009 cohort was initially surprising, but was verified by benchmarking to HPSM data which were available for that cohort. The smaller cohort was due to the severe restriction on appointments for new patients in place at the time those individuals enrolled (due to the recession and resulting pressure on the county system).

We supplemented the SMMC-specific data with hospital data pulled from local area hospitals for emergency room and inpatient hospital use. Individuals in each of the cohorts were identified by clinic staff and a list was distributed to the following hospitals, in order to obtain any hospital claims that were not contained within the SMMC system: Kaiser RWC, Kaiser SSF, Mills-Peninsula, Sequoia, Seton, and Stanford University Hospital. These hospitals provided additional inpatient, outpatient, and emergency room data. The additional data was used to calculate additional visits of each type, associated charges, and up to four additional diagnoses identified through these data. Associated charges were added, and total charges for 2006 were inflation-adjusted by a factor of 1.207, derived from the Bureau of Labor Statistics consumer price index for hospitals.

OLS and logistic regression methods were used to estimate the effect of the clinic redesign on five key outcome variables: continuity of care, charges, inpatient use, emergency room use, and use of preventive care. Appendix C identifies the service codes and diagnosis codes that were used to identify preventive care for the analysis. Continuity of care was defined as the ratio of the most frequently seen primary care provider to total primary care visits. The analysis controls for the interaction between continuity of care and total number of visits.

Control variables in each regression include: Age and age squared, gender, language, legal status, assets, income, physical diagnoses (asthma, bronchitis, cancer, cellulitis, diabetes, diseases of the blood, endocrine, eye disease, gastritis, genitourinary, hypertension, ill-defined conditions, injury or poisoning, lipid disorders, mouth or tooth disorders, musculoskeletal

disorders, other circulatory disorders, other diseases of the nervous system, other repiratory disorders, other skin disorders, urinary tract disorders, and unspecified disorders), and mental health or substance abuse. Results are presented as regression adjusted means, constructed as described above for the One-e-App analysis.

Results are presented separately for all patients and for chronically ill enrollees. Chronically ill enrollees are defined as those who are diagnosed with: asthma, cancer, diabetes, endocrine disease, hypertension, or a lipid disorder.

ICC Study Population Characteristics

	2006 Cohort		2009 Cohort	
Age	N	Percent	N	Percent
19-24	50	7.7	24	8.2
25- 29	60	9.3	31	10.6
30- 34	48	7.4	34	11.6
35-39	56	8.7	34	11.6
40-44	62	9.6	24	8.2
45-49	105	16.3	47	16.0
50- 54	95	14.7	42	14.3
55-59	97	15.0	28	9.6
60- 64	73	11.3	29	9.9
Total	646		293	
Race/ Ethnicity				
Hispanic	358	55.4	128	43.7
White	112	17.3	68	23.2
Asian/Pacific Islander/Hawaiian	98	15.2	28	9.6
Black or African-American	20	3.1	9	3.1
Other	47	7.3	54	18.4
Native American	11	1.7	6	2.0
Total	646		293	
Primary Language				
English	331	51.2	215	73.4
Spanish	289	44.7	68	23.2
Other	26	4.0	10	3.4
Total	646		293	
Gender				
Female	376	58.2	157	53.6
Male	270	41.8	136	46.4
Total	646		293	
Citizenship				
Citizen	244	37.8	158	53.9
Legal resident	95	14.7	35	11.9
Undocumented	307	47.5	100	34.1
Total	646		293	
Income and Assets				
Average Monthly Income	$883		$885	
Average Assets	$373		$1,428	
Chronically Ill	387	59.91	159	54.2
Mental Health/Substance Abusers	109	16.87	58	19.8
Total Population	**646**	**100.00**	**293**	**100.0**

APPENDIX C

DEFINITION OF PREVENTIVE CARE FOR HPSM AND ICC CLINIC DATA ANALYSIS

CPT Codes	
Procedure	***Code***
Evaluation and Management	'99385' '99386' '99395' '99396'
Preventative Medicine Individual Counseling	'99401'- 04'
Preventative Medicine Group Counseling	'99411' '99412'
Administration and Interpretation of Health Risk Assessment Instrument	'99420'
Unlisted preventive medicine services	'99429'
Antenatal and Postpartum Care	'59400' '59410' '59430' '59425' '59426' '59510' '59515' '59610' '59614' '59618' '59622'
Patient Management	'0500F' '0501F' '0502F' '0503F'
Behavioral change interventions, Individual	'99406' '99407'
STD Screening	'87110' '87270' '87320' '87490' '87491"87492' '87810'
Education and Training for Patient Self- Management	'98960' '98961' '98962'
Mammography	'77055'- '57' '76083' '76090'-92'
Cytopathology	'88141'-43' '88147' '88148' '88150' '88152'-55' '88164'-67' '88174' '88175'
Blood, occult, by peroxidase activity (Laboratory)	'82270' '82274'
Endoscopy	'44388'-94' '44397' '45331'-35' '45337'-42' '45330 '45355' '45345' '45378'-87' '45391' '45392
Radiology of the Gastrointestinal track	'74280'
Vaccines	"90465'-70' '90471'-80' '90481'-90' '90491'-99' '90500'-510' '90511'-20' '90521'-30' '90531'-40' '90541'-50' '90551'-60' '90561'-70' '90571'-80' '90581'-90' '90591'-600' '90601'-610' '90611'-20' '90621'-30' '90631'-40' '90641'-50' '90651'-60' '90661'-70' '90671'-80' '90681'-90' '90691'-700' '90701'-710' '90711'-20' '90721'-30' '90731'-40' '90741'-49' '0771'
Cervical Screening	'G0123' 'G0124' 'G0148' 'G0104' 'P3000' 'P3001'' Q0091''G0101' 'G0141' 'G0143' 'G0144' 'G0145' 'G0147'
Colorectal Cancer Screening	'G0107' 'G0328' 'G0105' 'G0121'

County-Specific Codes	
Procedure	***Code***
Initial Visit and Antepartum Visit	Z1000
Postpartum Visit and Well Baby Visit	Z1004
Regular OB Global Rate	Z1006
CPSP Early, Antepartum and CPSP Comprehensive	Z1008
Postpartum Visit and Well Baby Visit	Z1012
CPSP Certified Global Rate	Z1014
Initial Prenatal Visit	Z1016
CPSP Early Visit	Z1018
CPSP Comprehensive Assessment	Z1020
Antepartum Visit	Z1022
Postpartum Visit	Z1026
Well Baby Visit	Z1028
Initial Antepartum Office Visit	Z1032
Antepartum Follow-up Office Visit	Z1034
Antepartum Tenth and Subsequent Visit	Z1036
Postpartum Follow-up Office Visit	Z1038
Initial First 30 minutes/Inc Case	Z6500

Diagnosis Codes	
Procedure	***Code***
Routine General Medical Examination at Health Care Facility	V700
Other General Medical Examination, Administrative Purposes	V703
Health Examination Defined Subpopulation	V705
Health Examination Population Survey	V706
Other Specialty General Medical Examination	V708
Unspecified General Medical Examination	V709
Gynecological Examination	V723
Routine Gynecological Examination	V7231
Encounter for Papanicolaou Cervical Smear to Confirm findings of Recent Normal Smear Following Initial Abnormal Smear	V7232
Pregnancy Examination – Pregnancy Unconfirmed	V724
Pregnancy Examination /Pregnancy Test Unconfirmed	V7240
Pregnancy Examination/Test Negative Result	V7241
Pregnancy Examination/Test Positive Result	V7242
Screen for Unspecified Viral and Chlamydial Disease	V739
Specialty Screen Examination for Unspecified Chlamydial Disease	V7398
Specialty Screen Examination for Unspecified Viral Disease	V7399
Screening Mammogram High Risk Patient	V7611
Screening Mammogram Other	V7612
Screening for Malignant Neoplasms of Cervix	V762
Screening Malignant Neoplasm-colon	V7651
Screening and Vaccination**	V011, V0179, V0261, V0262, V0389, V045, V047, V0481, V053
Health Supervision of an Infant or Child**	V200-V202
Persons encountering health services in other circumstances (social services, follow-up examinations and convalescence ** except the following: Follow-up after chemotherapy or radiotherapy-Categorized as cancer**	V6: Except 'V662' 'V671' 'V672'
Persons without reported diagnosis encountered during an examination** Except the following: Observation following an accident- Categorized as injury/ poisoning; Eye exam- Categorized as vision/ eye disease; Dental	V7: Except 'V713' 'V714' ‘V720’ ’V722’
Notes: **- These codes were used in the analysis of clinic data only	

APPENDIX D

QUESTIONS ASKED IN ONE-E-APP SURVEY

1. During the past 12 months, how confident were you that you could get health care if you needed it?

Very confident
Somewhat confident
Not very confident
Not at all confident
Don't know
Refused

2. During the past 12 months, how financially difficult was it to meet your health care needs? Would you say…

Very difficult
Somewhat difficult
Not very difficult
Not at all difficult
Don't Know
Refused

3. Is there a place that you USUALLY go to when you are sick or need advice about your health?

[If the individual answers "Yes," ask "What is the name of that place?"
If the individual names more than one place, ask "Where do you go most often?"]

39th Avenue (SMMC) Adult Primary Care Clinic
Coastside Health Center
Fair Oaks Adult Clinic
Mike Nevin (Daly City) Health Center
Ravenswood Family Health Center-Belle Haven
Ravenswood Family Health Center-East Palo Alto
Samaritan House
South San Francisco Health Center
Willow Clinic
SMMC Emergency Room
Other Emergency Room
Other Place (Specify:_____)
No Place
Don't Know
Refused
51

4. [Ask this question only if the individual has a place he/she goes when sick or needing advice about health. Otherwise, choose "Not Applicable (does not have a usual place of care)."]
Do you have a doctor, nurse, or other health provider or team of health providers that you usually see when you go there?
Yes
No
Not Applicable (does not have a usual place of care)
Don't Know
Refused

5. Did you delay or not get a MEDICINE that you or a doctor believed necessary during the past 12 months?
Yes
No
Don't Know
Refused

6. Did you delay or not get CARE from a regular doctor or other health care professional for an illness, accident, or injury when you thought you needed it during the past 12 months?
Yes
No
Don't Know
Refused

7. Have you seen a doctor or any other health care professional such as a physician assistant or nurse during the past 12 months? (Do not include doctors or health professionals you saw during an overnight stay in a hospital or a visit to a hospital emergency room.)
Yes
No
Don't Know
Refused

8. [Ask this question only if the individual saw a doctor or other health care professional. Otherwise, choose "Not Applicable (did not see a health care professional)."]
Sometimes people need to see a specialist, such as a pulmonologist, cardiologist, endocrinologist, psychiatrist, or other doctor who takes care of special parts of the body. Were any of those visits you just mentioned to see a specialist?
Yes
No
Not Applicable (did not see a health care professional)
Don't Know

Refused

9. During the past 12 months, how many times have you received care in a hospital emergency room?

0 times
1 time
2 times
3 times
4 times
5 to 9 times
10 to 14 times
More than 15 times
Don't Know
Refused

10. [Ask this question only if the individual had one or more ER visits in the past 12 months. Otherwise, choose "Not Applicable (no ER visits in past 12 months)."]

Thinking about your MOST RECENT visit, what was the MAIN reason you went to the emergency room instead of somewhere else like a doctor's office or clinic?

Injured in an accident
Had an urgent medical problem, like a heart attack or stroke
Doctor or nurse told me go to there
No other place open
Pregnancy related
It's where I always go
Do not have a regular doctor or clinic
Some other reason: _____
Not Applicable (no ER visits in past 12 months)
Don't Know
Refused

11. In general, compared to people your age, is your current health excellent, very good, good, fair, or poor?
Excellent
53
Very Good
Good
Fair
Poor
Don't Know
Refused

12. Compared with 12 months ago, is your health better, worse, or about the same?

Better
Worse
About the same
Don't Know
Refused

13. How many days during the past 30 days did poor physical or mental health keep you from doing your usual activities?

0 days
1 day
2 days
3 days
4 days
5 days
6-10 days
11-15 days
16-20 days
21-25 days
26-30 days
Don't Know
Refused

14. Now I'd like to ask you about whether you have ongoing health conditions for which you need to be monitored regularly or for which you often need medical care. Do you have:

[Read each response choice aloud, and fill in the checkbox for each condition the applicant has been diagnosed with. Do not read aloud "Don't Know" or "Refused," but select one of these options if appropriate.]

Arthritis or rheumatism
Asthma or other lung disease
Diabetes
Heart failure or other heart condition
High cholesterol
54
High blood pressure or hypertension
Liver disease
Depression
Any other physical or mental health problem (Specify _____)
Don't Know

Refused

15. [Ask this question ONCE if the respondent has any ongoing health conditions. Otherwise, choose "Not Applicable (no chronic condition)."]

During the past 12 months, did you receive routine care (such as checking blood pressure) for these health condition(s) from a doctor, nurse, or other health professional? Please include routine and/or preventive care you received during any visit.

Yes
No
Not Applicable (no chronic condition)
Don't Know
Refused

16. During the past 12 months, was there any time that you did not have any health insurance or coverage?

Yes, there was a time that I did not have health insurance or coverage during the past 12 months.
No, I was enrolled in ACE for the past 12 months.
No, I was enrolled in ACE County (WELL) for the past 12 months.
No, I had other health insurance or coverage during the past 12 months.
Don't Know
Refused