Physicians, Physician Groups, Clinics, and Hospital Emergency Departments

Measuring Access to Medi-Cal Covered Healthcare Services

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1. INTRODUCTION

This paper describes the overall construct of the California Department of Health Care Services' (DHCS) systematic process for evaluating access to Medi-Cal administered healthcare services. Provisions in both Federal and State statutes mandate that administrators ensure that the entirety of Medi-Cal's population maintains access to appropriate healthcare services. In this paper, DHCS focuses on four unique provider types: (1) physicians, (2) physician groups, (3) clinics, and (4) hospital emergency departments. These provider types provide the bulk of the access to primary care and together form the initial gateway into the Medi-Cal health care delivery system. Focusing on access to these provider types provides an in-depth example of how DHCS intends to evaluate its network of providers and evaluate beneficiaries' access to Medi-Cal funded healthcare services. DHCS proposes to perform similar analyses for each provider type that will be impacted by the proposed rate reduction.

Measuring and monitoring healthcare access provides administrators with a better understanding of whether "they are purchasing value in the form of efficient high quality care for" beneficiaries enrolled in Medi-Cal. For instance, Congress' Medicaid and Children's Health Insurance Program (CHIP) Payment and Access Commission (MACPAC) notes that access measurement and monitoring helps identify "whether providers are available to enrollees, as well as, whether or not enrollees appropriately use and receive high-quality and efficient care." Additionally, the evaluation of healthcare access assists DHCS in determining whether Medi-Cal FFS programs are positively affecting beneficiaries' health outcomes. DHCS' approach to measuring access to healthcare services in the Medi-Cal program originates from a synthesis of access measurement methods and processes identified in an analysis of relevant literature. DHCS' framework for evaluating access is closely based on the access measurement approach endorsed by MACPAC.

Similar to MACPAC's recommended framework for evaluating healthcare access among Medicaid and CHIP beneficiaries, this analysis focuses on three broad areas of study: enrollees and their unique characteristics, provider availability, and healthcare utilization. First, DHCS provides a detailed description of Medi-Cal Fee-for-Service (FFS) enrollees with a focus on this population's size, demographic characteristics, linguistic diversity, geographic dispersion, enrollment length, and disease burden. Next, DHCS examines physician, physician group, clinic, and hospital emergency room supply and addresses the adequacy of the Medi-Cal provider network or "potential access." This examination includes an assessment of active providers by type, provider-patient ratios by geographic region, and provider participation rates. In this section, DHCS determines whether Medi-Cal's provider network contains a sufficient number of providers for the population served. Finally, DHCS analyzes healthcare service use or "realized access" among Medi-Cal FFS beneficiaries. In this section, DHCS' focus is on whether Medi-Cal eligibles are actually utilizing services delivered by the network of providers evaluated in step two. This examination of realized access made use of trend analyses, comparisons of Medi-Cal's realized access to recommended standards, and comparisons of Medi-Cal's realized access to realized access nationwide.

2. BACKGROUND

Medi-Cal, California's Medicaid program, is a public health insurance program that provides comprehensive health care services at no or low cost for low-income individuals including families with children, seniors, persons with disabilities, foster care children, and pregnant women. The federal government dictates a mandatory set of basic services including, but not limited t0: physician services, family nurse practitioner services, nursing facility

services, hospital inpatient and outpatient services, laboratory and radiology services, family planning, and early and periodic screening, diagnosis, and treatment services for children. In addition to these mandatory services, the state provides optional benefits such as outpatient drugs, home and community based waiver services, and medical equipment, etc.

California Assembly Bill (AB) 97, Chapter 2, Statutes of 2011 requires DHCS to implement a 10% provider payment reduction, which requires federal approval prior to implementation. In general, the proposed rate reduction will affect all services except contract acute hospital inpatient services, critical access hospitals, federal rural referral centers, federally qualified health centers (FQHCs) , rural health clinics (RHCs), services provided through the Breast and Cervical Cancer Treatment and Family PACT programs, and hospice services. Facilities owned or operated by the State Department of Mental Health or the State Department of Developmental Services and federal payments generated by certified public expenditures and intergovernmental transfers are also exempt.

In this paper, DHCS focuses on access to physicians, physician groups, clinics, and hospital emergency departments. But it should be noted that within the clinic category there are two significant providers of services in this group that are exempt from the proposed payment reduction: FQHCs and RHCs. Where appropriate, DHCS has presented information that separately reports utilization for these provider types. In some geographic regions of the state, these two provider types, which are exempt from the proposed provider payment reduction, render the majority of health care services that are measured in this paper. In the table below, DHCS presents the percentage of users for various levels of FQHC/RHC utilization. For example, in Alameda County, roughly 39 percent of the beneficiaries who generated a physician, physician group, clinic, or hospital visit, incurred 90% of their visits at a FQHC or RHC.

Table 1: Percentage of Physician, Physician Group, Hospital ED, and Clinic Users by Various Levels of FQHC/RHC Utilization, Beneficiaries Eligible For Medi-Cal Only and Participating in Medi-Cal's FFS System

County	% of Beneficiaries with 70 - 79 Percent or More of their Visits incurred at a FQHC or RHC	% of Beneficiaries with 80 - 89 Percent or More of their Visits incurred at a FQHC or RHC	% of Beneficiaries with 90 Percent or More of their Visits incurred at a FQHC or RHC
Alameda	2.78	3.51	39.28
Alpine	0	0	3.62
Amador	1.26	1.13	7.27
Butte	6.84	9.77	39.87
Calaveras	4.38	6.46	30.81
Colusa	4.68	7.14	31.65
Contra Costa	2.92	3.94	50.78
Del Norte	5.64	6.3	36.55
El Dorado	3.92	4.31	26.86
Fresno	1.68	2.4	24.74
Glenn	7.39	9.61	32.26
Humboldt	5.9	7.66	39.76

County	% of Beneficiaries with 70 - 79 Percent or More of their Visits incurred at a FQHC or RHC	% of Beneficiaries with 80 - 89 Percent or More of their Visits incurred at a FQHC or RHC	% of Beneficiaries with 90 Percent or More of their Visits incurred at a FQHC or RHC
Imperial	4.31	4.48	28.06
Inyo	3.03	4.66	25.54
Kern	2.39	3.13	33.15
Kings	7.49	11.26	51.55
Lake	8.24	10.8	42.7
Lassen	4.31	8.13	54.31
Los Angeles	1.15	1.4	15.7
Madera	3.88	5.11	20.02
Marin	5.23	7.63	34.52
Mariposa	7.05	7.97	30.26
Mendocino	5.4	9.76	54.74
Merced	5.39	6.95	33.18
Modoc	3.36	6.73	71.99
Mono	4.53	9.44	60.34
Monterey	1.91	3.43	60.79
Napa	2.82	2.57	32.58
Nevada	4.29	4.02	20.24
Orange	0.51	0.72	6.59
Placer	0.95	0.74	5.79
Plumas	4.09	9.74	64.8
Riverside	0.83	0.76	11.97
Sacramento	0.6	0.69	4.77
San Benito	6.62	7.66	47.81
San Bernardino	0.87	0.82	5.36
San Diego	2.49	3.07	34.89
San Francisco	3.08	3.84	43.37
San Joaquin	1.66	1.93	19.3
San Luis Obispo	2.66	5.88	43.97
San Mateo	1.65	2.41	50.74
Santa Barbara	2.45	4.65	35.18
Santa Clara	1.8	2.41	42.67

County	% of Beneficiaries with 70 - 79 Percent or More of their Visits incurred at a FQHC or RHC	% of Beneficiaries with 80 - 89 Percent or More of their Visits incurred at a FQHC or RHC	% of Beneficiaries with 90 Percent or More of their Visits incurred at a FQHC or RHC
Santa Cruz	1.78	3.64	29.18
Shasta	6.86	7.41	31.38
Sierra	5.42	9.94	62.35
Siskiyou	5.07	7.19	39.45
Solano	2.07	2.42	42.9
Sonoma	4.16	5.29	42.23
Stanislaus	4.11	4.61	27.52
Sutter	6.46	7.54	36.3
Tehama	6.55	7.27	27.55
Trinity	8.23	8.53	35.57
Tulare	3.73	5.17	54.62
Tuolumne	5.65	8.41	30.99
Ventura	2.24	3.06	26.64
Yolo	1.99	3.56	36.11
Yuba	7.25	8.97	42.69

Source: Created by DHCS Research and Analytic Studies Section utilizing paid claims data with dates-of-service occurring in CY 2009.

3. METHODLOGY

An analysis of the available literature pertaining to healthcare access identified long-standing and widely accepted methods for measuring and evaluating healthcare access. Over 70 articles were examined, and provided the basis for the methods selected for appropriately measuring access to healthcare services. Information published by MACPAC was used as the primary source of material for developing DHCS' framework for evaluating healthcare access. Additional sources of information that contributed to this effort included published work from the Institute of Medicine, Agency for Healthcare Research and Quality (AHRQ), and the published works of health services researchers.

DHCS' analysis of health care access represents a three pronged approach. First, DHCS evaluated the characteristics of the FFS Medi-Cal population. Utilizing retrospective data analysis, DHCS documented the size of the population, demographics, clinical conditions, trends in enrollment, geographic dispersion, length of continuous enrollment, and utilization patterns for the populations studied. This was performed to provide a clear picture of the population, their healthcare needs, and context for evaluating Medi-Cal's network of providers. The second phase of DHCS' analysis focused on evaluating the adequacy of Medi-Cal's provider network.

Evaluating network capacity entailed determining whether the number of providers, in this case physicians, physician groups, clinics, and hospital emergency departments afford

sufficient capacity for the patient load. DHCS utilized population to provider ratios to evaluate potential access throughout the state. DHCS utilized ArcGIS software to geocode provider rendering addresses as well as beneficiary home addresses in order to map and evaluate physician adequacy along a variety of geographic designations. Provider capacity metrics were plotted geographically by California county and Medical Service Study Area (MSSA).

Utilizing relative benchmarking, DHCS compared the ratio of population to the providers by geographic area. Geographic variances in the population to provider ratios were assessed relative to statewide medically underserved areas as well as the total Medi-Cal population served. In addition to relative benchmarking, DHCS also utilized normative benchmarking to assess provider network capacity. This method involved appraising the adequacy of provider supply by comparing actual population-to-provider ratios to a pre-determined ratio of population-to-provider. The Health Resources and Services Administration (HRSA) Health Professional Shortage Area (HPSA) population to primary care physician ratio of 3,500:1 was used as a benchmark for "high need" in our normative analysis.

Another variation of the normative benchmark utilized was physician "panel" size. Panel size is defined as the number of individual patients under the care of a specific provider. The maximum panel size was defined as 2,000-2,500 patients per provider for this analysis. It was recognized that there are limitations to using panel size as a normative benchmark. One "provider" may have more than one physician or physician extender (Physician Assistants and Nurse Practitioners) available at their location, which gives providers the potential to manage a larger panel size. On the other hand, some physicians may not be full-time-equivalent (FTE) clinical providers and may only devote a portion of their time to clinical care. Unfortunately at present, there are no readily available data sets that can be referenced to evaluate these limitations. Finally, the third prong of DHCS' analysis focused on "realized" access.

As described by MACPAC in their third component of the Commission's framework, utilization represents "realized access." Realized access refers to how individuals enrolled in Medi-Cal are actually using healthcare services. In this section, DHCS focused on:

- How patterns of service use differs among subpopulations,
- How patterns of service use differs among geographic regions,
- How patterns of service use differs among age groups,
- How Medi-Cal's access to services compares to national norms and or standards that have been established by recognized standard setting organizations,
- How service venue has changed over time,
- How service use trends have changed over time.

DHCS extracted data from the Department's administrative data sources for the period 2007 through 2009. During the period 2007 to 2009, the Medi-Cal program absorbed nearly one million additional beneficiaries. DHCS exploited this natural experiment to evaluate the increased enrollment's impact on access to health care services over time. Data on healthcare service utilization was interpreted by employing three general approaches: trend analysis-comparing Medi-Cal utilization over time, comparing Medi-Cal utilization to a clinical standard or quality measure, and comparing Medi-Cal utilization to national statistics.

Eligibility and administrative claims data were compiled for all beneficiaries eligible for Medi-Cal only and enrolled in Medi-Cal's FFS system. Monthly utilization statistics, in this case visits, were compiled for each of the three provider types and six eligibility categories: (1) aged, (2) blind/disabled, (3) family, (4) undocumented, (5) foster care, and (6) other (for a detailed description of each aid code category, please refer to Appendix A).

DHCS compiled three years of FFS paid claims data reflecting services used by Medi-Cal eligible only beneficiaries enrolled in the FFS program for calendar years 2007 through 2009. This examination of healthcare utilization focused on the following provider types:

1. Physicians, including physician groups
2. Clinics,
3. Hospital Emergency Departments (EDs)

Because physicians may render health care services in various care settings, DHCS grouped service use data into distinct categories. The Department grouped physician utilization data based on the following health care settings:

- Physician services delivered in hospital EDs, level of care equal to emergent
- Physician services delivered in hospital EDs, level of care equal to urgent
- Physician group services delivered in hospital EDs, level of care equal to emergent
- Physician group services delivered in hospital EDs, level of care equal to urgent
- Physician group services delivered in a setting other than a Hospital ED
- Physician services delivered in a setting other than a Hospital ED
- Healthcare services rendered in clinics, including federally qualified health centers, rural health clinics, county clinics, and other organized outpatient clinics

For each of these service settings, healthcare utilization rates were calculated per 1,000 member months across broad age groupings (adult, ages 21 and above) versus (children, ages 0 to 21) and aid code categories, which were used as a proxy for health and disability status. Service use trends were evaluated over the 36 month period between 2007 and 2009.

Overall healthcare utilization trends were examined in the context of changes in enrollment and or provider capacity. Rates of service use were determined based on units of services (e.g. visits, prescriptions, etc.) in relation to the number of member months in a given age and or aid code category. Below is the formula utilized to calculate the service use metric.

Service use rate per 1,000 member months = (visits / member months) X 1,000

Two theories were considered when evaluating utilization trends in the present context. These theories represent the model used for interpreting the results of the analysis.

Theory 1:

If enrollment increases within a subpopulation and the network of available physicians, physician groups, clinics, and hospital EDs do not absorb additional demand for health care services, beneficiaries will experience difficulties accessing ambulatory health care services.

If the assumption above is correct, then the results should be as follows:

- Based on theory 1, DHCS would expect to recognize a specific outcome that is detectable in administrative paid claims data. The service use rate per 1,000 member months will decrease after the enrollment increase. For example, if physician, physician groups, and clinics do not provide needed capacity, the service rate per 1,000 member months will decline, as beneficiaries forego health care services.

Theory 2:

If enrollment increases and the network of available providers absorbs additional demand or new providers enter to afford additional supply, the population may experience a change in accessing ambulatory health care services.

If the above assumption above is correct, then the results should be as follows:

- Based on theory 2, DHCS would expect to recognize specific outcomes that are detectable in administrative claims data. If the theory 2 assumption is correct, we would expect that the service use rate per 1,000 member months will remain constant, increase, or recognize no significant decrease in service rate per 1,000 member months.

Utilization data was also compared to national clinical standards or identified medical best practices where applicable. The American Academy of Pediatrics (AAP) clinical guidelines for the frequency and content of routine physician visits were utilized as a benchmark to evaluate realized access for children.

Many national clinical standards are incorporated into surveys which are collected nationally. Some of these surveys include the National Health Interview Survey (NHIS), the Medical Expenditure Panel Survey (MEPS), and the National Survey of Children's Health (NSCH). The results of these surveys are widely published and offer comparison data. Measurement of healthcare utilization of broad national interest is collected through these survey sources. Most of the surveys mentioned above collect data on the annual use of ambulatory care for both children and adults. Where appropriate, we utilized these national standards as benchmarks and compared Medi-Cal realized access to the applicable national utilization standard.

In this paper, DHCS utilized two methods for evaluating variances in access among different geographic regions of the state. The two methods were necessary as some of the data sets did not contain readily accessible geocodes (i.e., claims data used to evaluate realized access). Therefore, ArcGIS could not be utilized for some specific geographic analyses. As an alternative, DHCS made use of the ERS Rural-Urban Continuum Codes as shown in Table 1. The Rural-Urban Continuum Codes are calculated by examining the size of a county and its proximity to a metropolitan area. Rural-Urban Continuum Codes form a classification scheme that distinguishes metropolitan (metro) counties by the population size of their metro area, and nonmetropolitan (nonmetro) counties by degree of urbanization and adjacency to a metro area or areas. The metro and nonmetro categories have been subdivided into three metro and six nonmetro groupings, resulting in a nine-part county codification. The codes allow researchers working with county data to break such data into finer residential groups beyond a simple metro-nonmetro dichotomy, particularly for the analysis of trends in nonmetro areas that may be related to degree of rurality and metro proximity.

Table 2: Rural-Urban Continuum Codes Used For Evaluating Utilization Metrics or Service Use

Rural-Urban Continuum Code	Description	Counties	Number of Counties
1	Counties in metro areas of 1 million population or more	Alameda, Contra Costa, El Dorado, Los Angeles, Marin, Orange, Placer, Riverside, Sacramento , San Benito , San Bernardino,San Diego, San Francisco, San Mateo, Santa Clara, Yolo	16
2	Counties in metro areas of 250,000 to 1 million population	Fresno, Kern, Monterey, San Joaquin, Santa Barbara, Santa Cruz, Solano, Sonoma, Stanislaus, Tulare, Ventura	11
3	Counties in metro areas of fewer than 250,000 population	Butte, Imperial, Kings, Madera, Merced, Napa, San Luis Obispo, Shasta, Sutter ,Yuba	10
Subtotal Metro Counties			37
4	Urban population of 20,000 or more, adjacent to a metro area	Lake, Mendocino, Nevada, Tehama, Tuolumne	5
5	Urban population of 20,000 or more, not adjacent to a metro area	Humboldt	1
6	Urban population of 2,500 to 19,999, adjacent to a metro area	Amador, Calaveras, Colusa, Glenn, Lassen, Modoc	6
7	Urban population of 2,500 to 19,999, not adjacent to a metro area	Del Norte, Inyo, Mono, Plumas, Siskiyou	5
8	Completely rural or less than 2,500 urban population, adjacent to a metro area	Alpine, Mariposa, Sierra, Trinity	4
9	Completely rural or less than 2,500 urban population, not adjacent to a metro area	None	0
Subtotal Nonmetro			21
Total All Counties			58

DHCS utilized ArcGIS to assess provider capacity. DHCS performed the following. Beneficiary addresses and provider addresses were matched to geographic coordinates through the process of geocoding. Geocoding employs specialized software that matches addresses, in this case for beneficiaries and providers, against a database of addresses and their associated geographical coordinates. Although accuracy is highly dependent on the quality of the address data available for beneficiaries and providers, the geocoding process typically matches 90 to 98 percent of the individual addresses.

The results of the geocoding process allowed locating beneficiaries and providers within various geographic regions. For this study, the geographic regions included Counties, Medical Service Study Areas, Medically Underserved Areas, Medically Underserved Populations and Health Provider Shortage Areas within the State of California. In turn, this allowed DHCS to map individual providers as well as provide statewide geographic visualization of the distribution of providers or beneficiaries and other associated statistics.

4. LITERATURE REVIEW

The purpose of this section is to summarize the available literature on how healthcare access has been defined and operationalized in health services research. An analysis of relevant literature provided recommendations for how to effectively measure health care access in Medicaid health systems.

4.1 - Congress' Medicaid and Children's Health Insurance Program (CHIP) Payment and Access Commission's (MACPAC) Access Measurement Framework

MACPAC's report to Congress incorporates many of the previously mentioned features in their framework for measuring access for Medicaid and CHIP populations. The Commission, which is in the process of developing an access early warning system, places emphasis in three main areas: the unique characteristics of Medicaid and CHIP enrollees; the availability of Medicaid and CHIP providers; and the appropriate utilization of healthcare services. The Commission recognizes that most Medicaid beneficiaries are lower income, making cost-sharing requirements for services particularly challenging. The Commission's report recognizes that a large proportion of the Medicaid population is culturally and linguistically diverse, and many may have difficulties understanding and acting upon healthcare information. Additionally, MACPAC notes that the Medicaid beneficiary population is comprised of a large proportion of disabled and people with complex healthcare needs. The Commission also recognizes the importance of provider availability in terms of the supply of providers and the mix of provider types to meet the demands of the Medicaid population within a geographic location. In addition, provider supply may be driven by payment and other program policies, and may further influence whether providers are willing to accept new Medicaid patients. The final area in which the Commission focuses is the utilization of services by Medicaid beneficiaries. This area places attention on what services are being used ("realized access"), the affordability of such services, how easily beneficiaries can navigate the health system, as well as beneficiary experiences and feedback. For example, evaluating healthcare utilization by Medicaid beneficiaries may include identifying whether beneficiaries have a usual source of care, difficulties in fulfilling cost-sharing requirements, availability of medical appointments, transportation difficulties, language difficulties and the availability of translation services.

The Commission's report provides further guidance on how access may be evaluated, and has identified three areas of evaluation: 1) appropriateness of services and service setting, 2) efficiency, economy and quality of care, and 3) impact on healthcare outcomes. Appropriateness of services includes hospitalization rates for conditions viewed as avoidable with adequate access to primary care, emergency department visits for conditions that could have been handled in an ambulatory care setting, and adequacy of prenatal care. Quality evaluations, which may parallel those found in managed care organizations, include HEDIS measures for select conditions. Lastly, although no specific guidance on healthcare outcomes is given, the Commission notes the importance of healthcare outcome measures since they are the output of appropriate healthcare service utilization. MACPAC's report appreciates that substantial differences in state program policies exist, and places emphasis on tailored measures that reflect the local health system and the needs of the local populations. The framework recommended by MACPAC offers a realistic approach that considers data limitations and other resource constraints, with a focus on implementing measures more likely to reveal important barriers to healthcare access.

4.2 – Unique Characteristics of Medi-Cal Enrollees

4.2-1 - Comparing the Medicaid Population to the Privately Insured and Uninsured

A better understanding of the Medicaid population's unique characteristics is needed in order to appropriately gauge beneficiaries' access to services. Using data from the 2009 National Health Interview Survey (NHIS), DHCS compared individuals enrolled in Medicaid during 2009 to those insured by private, Medicare, uninsured, etc. in the same period with

respect to specific chronic conditions, functional limitations, health status, health behaviors and health care access.

Findings indicated that, on average, the Medicaid beneficiaries are significantly less healthy than other populations. Medicaid beneficiaries are far more likely than either the privately insured or the uninsured to report being in fair or poor health and to report having activity limitations and chronic conditions. For instance, among adults under age 65, individuals covered by Medicaid had higher percentages of diabetes, ulcers, kidney disease, and liver disease than those covered by private insurance or who were uninsured. Among adults aged 65 and over, beneficiaries covered by both Medicaid and Medicare had higher percentages of diabetes, kidney disease, and liver disease than those with private insurance or who had only Medicare health care coverage.

4.3 – Provider Supply

4.3-1 - Demand and Provider Supply

Healthcare demand has been studied in various ways, focusing both on assessing community-wide healthcare resources available to serve the needy, as well as considering the unique characteristics of the population placing demand for serves in the safety net system. Population characteristics such as age distribution, the level of illness and disability, cultural diversity and geographic distribution of the population have been identified in the literature as important factors to consider when assessing access to healthcare services, since each in some way relates to specific demands for services (MACPAC). For example, a population comprised predominantly of older adults or disabled places greater demand on specialty services such as cardiology or orthopedic surgery, while a population comprised mainly of children places greater demand for pediatric services. Other studies which focus on assessing healthcare capacity examine community-level factors of access such as availability of providers offering services within the community, the overall availability of hospital beds, the preponderance of poverty in the community, and market factors such as the extent to which managed care is the primary health delivery model.

Provider supply, which is probably the most commonly used community-level measure of healthcare access, is associated with many positive health outcomes. For example, studies have found a significant association between high primary care physician supply and lower mortality, longer life expectancy, and better birth outcomes (Shi 2001). These positive outcomes occur even in the presence of individual-level inequities such as income and racial/ethnic characteristics (Shi 2001). Studies assessing the impact of provider supply have examined several practice characteristics such as location (rural vs. urban), healthcare setting (large group, public or private hospital, academic medical centers or community health clinics), and provider specialty area. For example, healthcare resources are scarcer in rural and poor inner-city areas, and public and teaching hospitals tend to serve a larger proportion of the uninsured or publically-insured patients. When the number of public hospitals shrinks, or when the proportion of low-income patients who reside in rural or inner-city areas grows, the supply and demand for services change in marked ways.

The availability of specific professional subgroups (primary care physicians, obstetricians, gynecologists, specialty care and surgical specialty practitioners) in the health care system can impact a patient's access to services.

The accessibility of providers and specialists is even more poignant when examining the differences in provider supply within rural vs. urban areas. While 20% of Americans live in rural areas, only 9% of the nation's physicians practice there. Rural residents account for a large proportion of America's disabled population (Lishner 1996). Rural areas have difficulties in

attracting and retaining qualified health care professionals, and often lack the resources necessary to offer highly specialized services. In comparison to urban residents, patients living in rural areas have access to fewer hospital beds, physicians, nurses and specialty providers per capita and increased transportation barriers (Lishner 1996). The limited supply of providers offering services in rural areas can lead to patients making fewer physician visits and seeking care later in the course of their illness (Lishner 1996). Provider supply has been a long-standing issue affecting healthcare access for patients in rural parts of the US. Identifying areas of oversupply and shortages of safety net providers and specialists is critical in assessing access and meeting the demand for safety net health care services.

4.3-2 - Primary Care and Usual Source of Care

Patients are more likely to utilize health care services when continued relationships are established with the same provider over time. Long-term relationships with the same provider, commonly referred to as a "usual source of care," is considered an important measure of a patient's access to care. A usual source of care serves as a bridge between providing health care coverage and promoting access.

Researchers have taken the concept of a usual source of care further by confining the usual source to that specifically of a primary care physician. More recently, an expanded definition referred to as the "medical home," has been identified as a critical component in an effective, efficient and equitable health delivery system. The medical home has four key features: 1) a first-contact point for care for each new health problem; 2) a long-term and person-focused relationship with a primary care practitioner; 3) care provided for all needs except those too complex for a primary care practitioner; and 4) coordination of care in instances where referrals are necessary (Starfield 2004). Once a person secures a usual source of care, they are more likely to gain access to routine primary care and preventive services (DeVoe 2003). Receipt of primary care, in turn, is associated with improved health status, lower morbidity and mortality in adults, and reduced illness and disease complications in children (Stevens 2006). Primary care visits have also been attributed, in part, to reduced hospitalization rates and emergency department visits as a result of the ability to address and manage acute and chronic health problems (Bindman 1995).

4.3-4 - Approaches for Measuring Provider Supply

There are three complementary methodologies available for evaluating the adequacy of provider networks. These are *relative benchmarking, normative benchmarking and economic analysis of the physician labor market*[i] (Coffman, Quinn, Brown, and Scheffler, 2004).

Relative Benchmarking

This measurement approach compares the ratio of certain types of providers to the population in the geographic area of interest to other geographic areas. A county or local provider-to-population ratio that is well below the mean for the state could be an indication of under-supply and a signal for Medicaid officials to investigate further.

Normative Benchmarking

Another approach towards evaluating adequacy of provider supply utilizes a pre-determined desired ratio of providers-to-population against the actual ratio. The HPSA's population to primary care physician ratio of 3,500:1 as a benchmark for "high need" is an example of a normative ratio. Of course, such ratios vary by provider type and demand for

services by specific specialty. The number of visits to pediatricians or family practice physicians, per thousand members, is likely to be greater, for example than the number of visits to dermatologists or ophthalmologists.

Another variation of the normative benchmark is physician "panel" size. Panel size is simply defined as the number of individual patients under the care of a specific provider. While the maximum panel size is typically defined as 2,000-2,500 patients per provider, there are limitations to using panel size as a normative benchmark. One "provider" may have more than one physician or physician extender (Physician Assistants and Nurse Practitioners) available at their location, which gives providers the potential to manage a larger panel size. On the other hand, the physicians who are at such a location may not be full-time-equivalent (FTE) clinical providers and may only devote a portion of their time spent on non-appointment or nonclinical duties such as hospital rounds, operating room duties, procedures, management duties and meeting time.

Economic Analysis of the Physician Labor Market

The third approach towards evaluating provider supply adequacy is the analysis of the provider "market," and the impact of reimbursement rates and compensation, as various health care organizations compete for the limited supply of physician services by offering higher payments. However, as illustrated in the previous discussion on participation by different types of providers, not all providers share the same sensitivity, or elasticity to price. Some physicians are able to accommodate a greater number of Medi-Cal beneficiaries as a percentage of their overall practice than others.

> "Although high fee levels increase the probability that individual physicians will accept Medicaid patients, high fee levels do not necessarily lead to high levels of physician Medicaid acceptance in an area. Numerous other physician practice, health system, and community characteristics also affect Medicaid acceptance. The effects of Medicaid fees on Medicaid acceptance are substantially lower in areas with high Medicaid managed care penetration and for physicians who practice in institutional settings. The results suggest that a broad range of factors need to be considered to increase access to physicians for Medicaid enrollees (Cunningham, Nichols, 2005)."[ii]

Many provider market analyses seek to build in estimates based on future events to determine whether provider shortages may occur in the years ahead. These analyses look at such variables as the number of medical school graduates choosing specialty medicine over primary care, the attractiveness of medicine as a profession, the number of future physicians overall, the aging of the population that will need to access services, and the growth of the economy[iii] (Blumenthal, 2004).

4.4 – Medi-Cal Utilization – Realized Access

Appropriate health care utilization is the ultimate outcome of achieving effective health care access. Many of the studies cited previously have measured the significance of various barriers to accessing care in relation to healthcare service use. These studies examine healthcare utilization patterns to identify whether patients receive widely recommended preventive medical care such as an annual ambulatory office or dental visit, receipt of cancer screening, prenatal care, immunizations, or whether those with chronic conditions receive recommended disease management services. More recently, researchers have been studying and monitoring preventable hospitalizations. These studies examine a set of ambulatory sensitive conditions,

which are conditions for which good outpatient care can potentially prevent the need for hospitalizations or for which early intervention can prevent complications or more severe disease (Bindman). Studies have demonstrated that any one of several barriers to access may hinder the ability for patients to access appropriate primary care services and increases the likelihood for those with chronic conditions to delay needed care or to seek care in emergency departments.

Studying healthcare utilization patterns can provide a signal that a particular subgroup or region of the state may have an access issue. In the MACPAC's report to Congress, one of three focus areas of the report includes utilization of services by Medicaid beneficiaries. This area of study not only places attention on what services are being used ("realized access"), but also on the affordability of such services, how easily beneficiaries can navigate the health system, as well as beneficiary experiences and feedback. For example, evaluating healthcare utilization by Medicaid beneficiaries may include identifying whether beneficiaries have a usual source of care, difficulties in fulfilling cost-sharing requirements, availability of medical appointments, transportation difficulties, language difficulties and the availability of translation services.

5. UNIQUE CHARACTERISTICS OF MEDI-CAL ENROLLEES

Analysis of these sub-populations provides direction to administrators seeking to develop an efficient and effective provider network. For example, a population comprised of children requires a provider network that includes sufficient numbers of pediatricians. Similarly, a population of adult women requires an adequate number of Obstetric and Gynecological specialists. In addition to enrollee characteristics, DHCS also evaluated trends in enrollment and the distribution of Medi-Cal eligibles by healthcare delivery model type: FFS vs managed care. As California's Medi-Cal program transitions additional populations from the FFS to the managed care delivery model, the FFS population to provider ratios (available capacity) will be materially altered. These transactions result in additional FFS capacity as the FFS Medi-Cal population served declines and the available provider network remains constant, which is what recent FFS Medi-Cal provider counts are displaying.

5.1 - General Characteristics of the Medi-Cal Population

Unlike the more homogenous populations covered by commercial and employer-based private insurance, Medi-Cal provides medical coverage to a variety of disadvantaged sub-populations. The Medi-Cal population is comprised of a diverse set of sub-populations with unique demographic traits, clinical characteristics, benefit packages, and Medi-Cal administrative complexities.

As of January 1, 2010 the Medi-Cal program provided healthcare coverage to roughly 7.3 million Californians. Approximately, 8.9 million people were enrolled in Medi-Cal for at least one month during FY 2009-10. This enrollment total represented 23% of California's population over the same time period.

There are two primary Medi-Cal models for healthcare delivery: FFS and Managed Care. Each of these models includes beneficiaries who are eligible for Medi-Cal only or are dually eligible for Medi-Cal and Medicare. Over the past several years, the managed care delivery model has overtaken fee-for-service as the predominant healthcare delivery model for Medi-Cal beneficiaries. This enrollment growth into the managed care delivery model reflects two developments. First, the majority of new beneficiaries enrolled after 2007, due to the economic

recession, qualified for coverage under Family aid categories. These aid categories required "mandatory" enrollment into managed care health plans in managed care model counties. Second, rising managed care enrollment also reflected the transition of additional counties from the fee-for-service to the managed healthcare delivery model.

Chart 1: Trend in Medi-Cal Fee-For-Service and Managed Care Enrollment

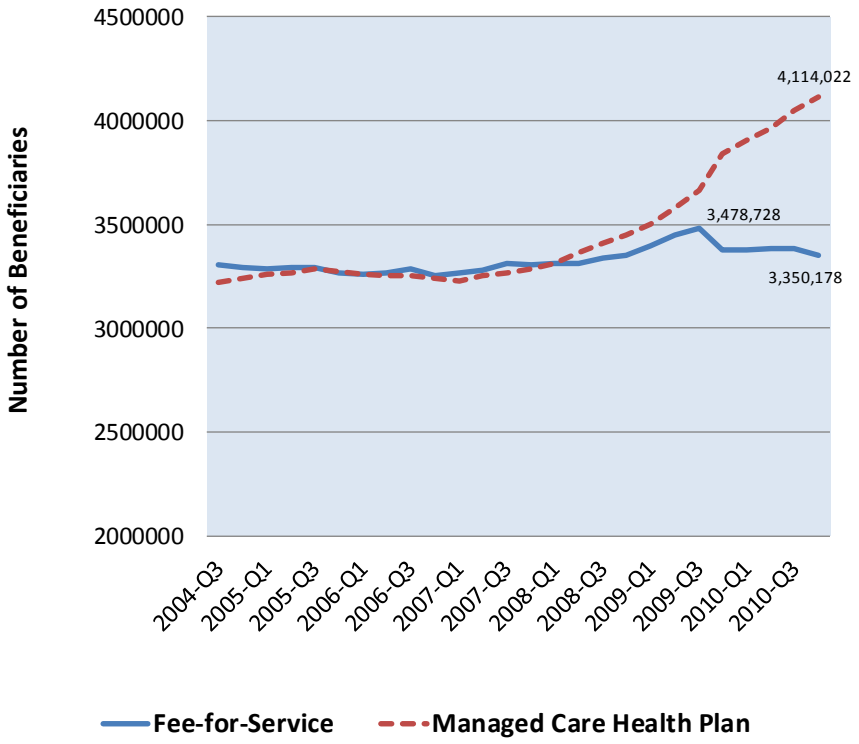


Table 3, below, provides the schedule for counties and/or groups that have shifted or will shift from the FFS to the Managed Care healthcare delivery model. In addition to transitioning specific counties from FFS delivery systems to managed care models, specific populations are also being transitioned from the FFS system to managed care health plans. For instance, the Section 1115 Demonstration Waiver that was approved by CMS in November 2010 will shift beneficiaries who are enrolled in one of 23 distinct aged, blind and disabled aid codes that reside in one of 16 "expansion" counties into managed care health plans beginning July 2011[1]. These beneficiaries are often referred to as Seniors & Persons with Disabilities (SPD). Enrollment into health plans for this group is expected to occur over a 12-month period.

[1] Beneficiaries in the SPD Target Group are eligible for eligible for Medi-Cal only and have no other healthcare coverage.

Table 3: Planned Transitions of Selected Counties and Groups from the Fee-for-Service to the Managed Care Model

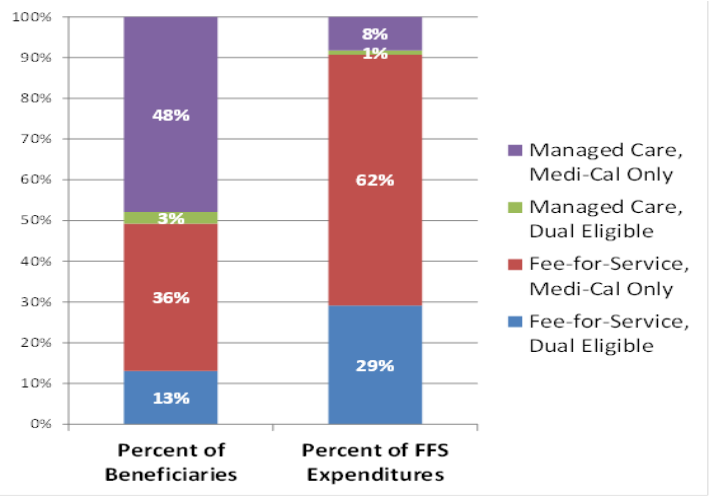
County or Group	Plan Model Type	Implementation Date	Estimated Total Annual Member Months	Average Monthly Eligibles
San Luis Obispo	COHS	Mar 1, 2008	206,224	25,778
Working Disabled	Mixed	July 1, 2009	136,583	11,382
Sonoma	COHS	Oct. 1 2009	529,872	44,156
Merced	COHS	Oct. 1 2009	767,364	63,947
Kings	Two-Plan	Oct. 1 2010	286,768	23,897
Madera	Two-Plan	Oct. 1 2010	333,975	27,831
Ventura	COHS	Jan. 1 2011	1,193,784	99,482
Seniors and Persons with Disabilities (Not Medicare Eligible)	Two-Plan, GMC	June 1, 2011	4,101,600	341,800
Mendocino	COHS	July 1, 2011	257,040	21,420
Marin	COHS	July 1 2011	195,984	16,332

Source: Medi-Cal Budget Estimate, May Revise for 2008, 2009, 2010 and November Estimate for 2010

This shift in enrollment, from FFS Medi-Cal to managed care delivery models, positively impacts FFS Medi-Cal provider capacity. As the number of FFS beneficiaries declines due to the shift, the population-to-physician ratio improves. In addition, the number of Medi-Cal FFS physicians has also increased over the period 2008 through 2010, which results in additional capacity.

The following chart displays the distribution of Medi-Cal beneficiaries by delivery of care model and the corresponding percentage of Medi-Cal FFS expenditures. For example, while beneficiaries in the Managed Care, Medi-Cal only category accounted for 48% of all beneficiaries, they only accounted for 8% of FFS expenditures.

Chart 2: Distribution of Medi-Cal Beneficiaries and FFS Expenditures by Delivery of Care Category and Coverage Source



Note: Only the costs for DHCS administered services are displayed.
Source: Created by the DHCS Research and Analytic Studies Section using data from MEDS Eligibility System, MMEF File. Data reflects a 12-month reporting lag.

The following table displays the distribution of beneficiaries between age groups among healthcare delivery models and eligibility coverage groups.

Table 4: Distribution by Coverage and Care Delivery Category and Age Group; CY 2010

Age Group	FFS, Medi-Cal Only	Managed Care, Medi-Cal Only	FFS, Dual Eligible	Managed Care, Dual Eligible
Months of Eligibility				
Age 00 to 18	11,892,361	30,515,595	700	901
Age 19 to 64	16,628,259	14,439,173	2,940,420	1,004,419
Age 65 or Older	1,142,350	333,824	7,887,371	1,795,581
Grand Total	29,662,970	45,288,592	10,828,491	2,800,901
Monthly Average				
Age 00 to 18	991,030	2,542,966	58	75
Age 19 to 64	1,385,688	1,203,264	245,035	83,702
Age 65 or Older	95,196	27,819	657,281	149,632
Grand Total	2,471,914	3,774,049	902,374	233,408
Percentage				
Age 00 to 18	40.09%	67.38%	0.01%	0.03%
Age 19 to 64	56.06%	31.88%	27.15%	35.86%
Age 65 or Older	3.85%	0.74%	72.84%	64.11%

Source: Created by the DHCS Research and Analytic Studies Section using data from MEDS Eligibility System MMEF File. Data reflects a 12-month reporting lag.

5.2 - Medi-Cal Subpopulation for Whom DHCS Ensures HealthCare Access

Although the monthly enrollment in the Medi-Cal program, currently, totals about 7.3 million beneficiaries, the actual population for whom DHCS assumes direct responsibility for ensuring access to care is much smaller. Fifty-one percent of the Medi-Cal population is enrolled in managed care health plans that have assumed responsibility for providing care. Additionally, another 13% of beneficiaries are enrolled in both Medicare and Medi-Cal, with Medicare generally serving as primary payer and assuming direct responsibility for ensuring access to physician, physician groups, clinics, and hospital emergency departments.

DHCS is directly responsible for ensuring access to health care providers for beneficiaries enrolled under the FFS delivery of care model, where the Medi-Cal program serves as the primary source of coverage. As noted previously, these beneficiaries represented 36% of the total Medi-Cal population and generated 62% of total FFS expenditures. DHCS is also responsible for ensuring healthcare access to individuals who are disenrolled from managed care health plans or for some reason remain outside the reach of Medi-Cal health plan enrollment. These beneficiaries are generally those who have been exempted from managed care enrollment or who are newly eligible for Medi-Cal and spend the first 60 days or so in the FFS system.

Table 5: Size of FFS Population Covered by Medi-Cal Only; CY 2010

Number of FFS Enrolled- Medi-Cal Only Beneficiaries enrolled in the Medi-Cal Program at least one month during CY 2010	4,828,718
Total Months of Medi-Cal Enrollment	29,662,970
Beneficiary Years (Average Monthly Enrollment)	2,471,914
Enrolled Medi-Cal Beneficiaries on July 1s,t 2010	2,484,880

Source: Created by the DHCS Research and Analytic Studies Section using data from MEDS Eligibility System, MMEF File. Data reflects a 12-month reporting lag.

Table 6: FFS Population Covered by Medi-Cal Only By Aid Category: CY 2010

Medi-Cal Beneficiary Population; Calendar Year 2010	Member Months	Average Monthly Enrollment
All FFS Enrolled- Medi-Cal Only Beneficiaries	29,662,970	2,471,914
Undocumented	(9,694,534)	(807,878)
Full Scope	19,968,436	1,664,036
Aged	717,857	59,821
Blind/Disabled	5,221,206	435,101
Families	9,410,902	784,242
Foster Care	1,328,398	110,700
Other	3,290,073	274,173
Total Full Scope	**19,968,436**	**1,664,036**

Source: Created by the DHCS Research and Analytic Studies Section using data from MEDS Eligibility System, MMEF File. Data reflects a 12-month reporting lag.

The degree of responsibility for ensuring access to care may vary depending on the sub-population and type of service. For instance, as displayed in the table above, roughly, 33%, or 807,878, of total FFS, Medi-Cal Only beneficiaries are undocumented aliens who are entitled to emergency and/or pregnancy-related services only. For these beneficiaries, DHCS is responsible for ensuring access to prenatal care, emergency department and obstetrical services only. After excluding the undocumented alien population, there are 1,664,036 FFS, Medi-Cal Only beneficiaries who are eligible for full-scope services. Additionally, roughly 380,000 FFS, Medi-Cal Only beneficiaries in Blind/Disabled aid codes are expected to be mandatorily enrolled into Medi-Cal managed care plans under Medi-Cal's recently approved Section 1115 demonstration waiver. As a result, DHCS expects the FFS, Medi-Cal eligible only, full scope population to continue to decline as beneficiaries shift from FFS to managed care. When assessing the DHCS' level of responsibility for ensuring access, it is important to understand the sub-population and its unique status in the Medi-Cal program. Subpopulations may be transitioning from FFS to managed care, be entitled to a limited scope of services, or Medi-Cal may be the secondary payer and only provide access to a limited scope of services or have a limited role in ensuring access.

5.3 - Enrollment Trends For the Medi-Cal Eligible Only Population Enrolled In The FFS Program

Between 2007 and 2009, Medi-Cal beneficiaries eligible for Medi-Cal only and participating in the FFS system increased by 4.6%. The population residing in a metropolitan region grew by only 4.3%, but comprised ninety-nine percent of the total population. Beneficiaries residing in non-metropolitan areas grew by 9% but comprised only one percent of

the population. DHCS is presenting 2007 through 2009 eligible trends here, as these years were utilized to evaluate realized access and establish benchmarks in latter in this paper.

Table 7: Average Monthly Eligible Percent Change from 2007 to 2009, Statewide

Statewide		Average Monthly Eligibles			Percent Change
Age Category	**Aid Category**	**2007**	**2008**	**2009**	
Children Age 0-21	Blind/Disabled	83,190	84,465	85,341	2.6%
	Families	516,104	535,574	565,521	9.6%
	Foster Care	121,685	118,867	115,343	-5.2%
	Other	228,422	225,451	231,432	1.3%
	Undocumented	227,529	218,442	211,798	-6.9%
Adults Age 21+	Aged	56,496	58,849	59,593	5.5%
	Blind/Disabled	353,522	353,304	356,540	0.9%
	Families	223,746	234,258	255,003	14.0%
	Other	52,198	51,378	52,626	0.8%
	Undocumented	549,256	557,627	590,029	7.4%
Grand Total		**2,414,153**	**2,440,222**	**2,525,234**	**4.6%**

Table 8: Average Monthly Eligible Percent Change from 2007 to 2009, Metropolitan Counties

Metropolitan Counties		Average Monthly Eligibles			Percent Change
Age Category	**Aid Category**	**2007**	**2008**	**2009**	
Children Age 0-21	Blind/Disabled	79,763	80,989	81,882	2.7%
	Families	465,674	484,065	510,479	9.6%
	Foster Care	117,596	114,880	111,346	-5.3%
	Other	218,874	215,283	220,499	0.7%
	Undocumented	225,339	216,085	209,333	-7.1%
Adults Age 21+	Aged	56,245	58,570	59,280	5.4%
	Blind/Disabled	336,158	335,436	338,214	0.6%
	Families	198,822	208,840	227,438	14.4%
	Other	50,347	49,587	50,749	0.8%
	Undocumented	545,103	553,169	584,945	7.3%
Grand Total		**2,295,928**	**2,318,912**	**2,394,164**	**4.3%**

Table 9: Average Monthly Eligible Percent Change from 2007 to 2009, Non-Metropolitan Counties

Non Metropolitan Counties		Average Monthly Eligibles			Percent Change
Age Category	**Aid Category**	**2007**	**2008**	**2009**	
Children Age 0-21	Blind/Disabled	3,427	3,475	3,460	0.9%
	Families	50,430	51,509	55,042	9.1%
	Foster Care	4,089	3,987	3,997	-2.2%
	Other	9,547	10,168	10,933	14.5%
	Undocumented	2,190	2,358	2,465	12.6%
Adults Age 21+	Aged	251	279	314	25.1%
	Blind/Disabled	17,364	17,868	18,326	5.5%
	Families	24,925	25,417	27,564	10.6%
	Other	1,850	1,791	1,877	1.4%
	Undocumented	4,153	4,458	5,084	22.4%
Grand Total		**120,232**	**123,318**	**131,070**	**9.0%**

Between 2007 and 2009, Medi-Cal beneficiaries eligible for Medi-Cal only and participating in the Fee-for-Service increased by 4.6%. The population residing in a metropolitan region grew by only 4.3%, but comprised ninety-nine percent of the total population. Beneficiaries residing in non-metropolitan areas grew by 9% but comprised only one percent of the population. DHCS is presenting 2007 through 2009 eligible trends here, as these years were utilized to evaluate realized access and establish benchmarks in latter in this paper.

5.4 - Demographic Characteristics of DHCS' FFS – Medi-Cal Only Population

5.4-1 - Age and Gender

Consistent with the overall Medi-Cal population's gender distribution, the following table displays that the FFS, Medi-Cal Only population was 57% female and 43% male. Only 4% of this population was older than age 64, which reflected the fact that most beneficiaries 65 years of age and older are dually eligible for both Medicare and Medi-Cal. Additionally, 42% of the FFS, Medi-Cal only population consisted of children age 0 to 19, while 54% were adults between the ages of 19 and 64.

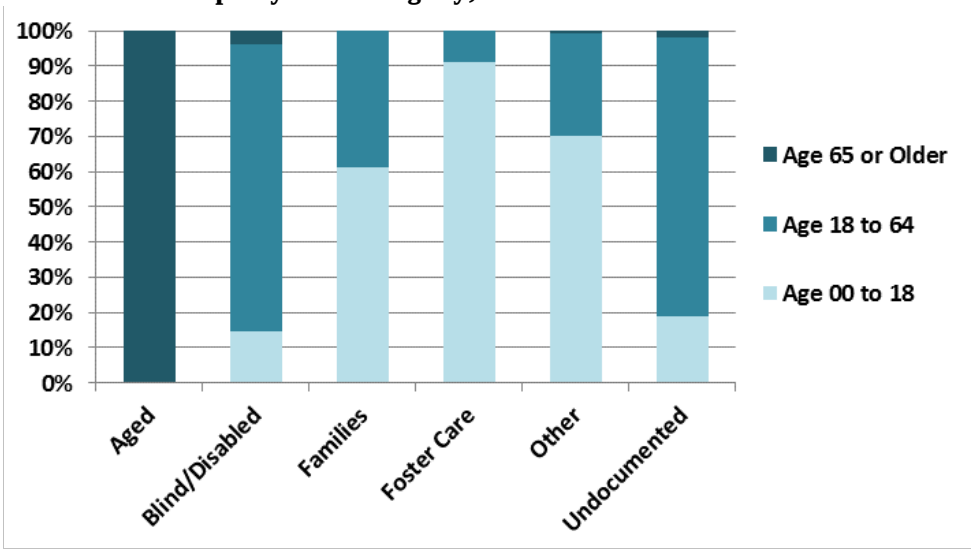
Table 10: Distribution of FFS Population Covered by Medi-Cal Only By Age Group and Gender; CY 2010

Gender	Female		Male		Total	
Age Group	***Average Monthly Eligibles***	***Percent***	***Average Monthly Eligibles***	***Percent***	***Average Monthly Eligibles***	***Percent***
Age 0 to 18	481,338	19.47%	509,692	20.62%	991,030	40.09%
Age 19 to 64	867,391	35.09%	518,298	20.97%	1,385,688	56.06%
Age 65 or Older	60,072	2.43%	35,124	1.42%	95,196	3.85%
Total	1,408,801	56.99%	1,063,114	43.01%	2,471,914	100.00%

Source: Created by the DHCS Research and Analytic Studies Section using data from MEDS Eligibility System, MMEF File. Data reflects a 12-month reporting lag.

The following chart presents the age distribution of the FFS, Medi-Cal Only population by aid category. Children formed the majority of beneficiaries in the Family. In contrast, adults were more heavily represented in the Undocumented, and Blind/Disabled groups.

Chart 3: Distribution of FFS Medi-Cal Only Population within Age Groups by Aid Category; CY 2010

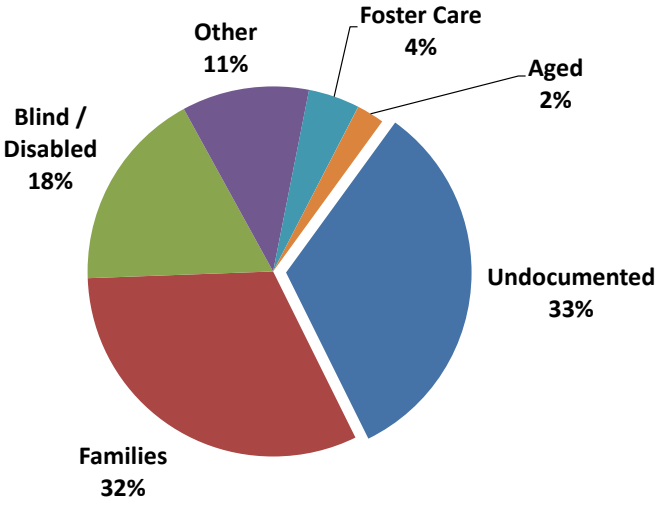


Source: Created by the DHCS Research and Analytic Studies Section using data from MEDS Eligibility System, MMEF File. Data reflects a 12-month reporting lag.

5.4-2 - Aid Category

The distribution by aid category revealed that 33% of the FFS, Medi-Cal only population were undocumented aliens and 32% were enrolled in family aid codes. The remainder of the FFS, Medi-Cal population consisted of beneficiaries in blind/disabled aid codes, foster care, other, and aged beneficiaries.

Chart 4: Distribution of FFS, Medi-Cal only Population by Aid Category; CY 2010

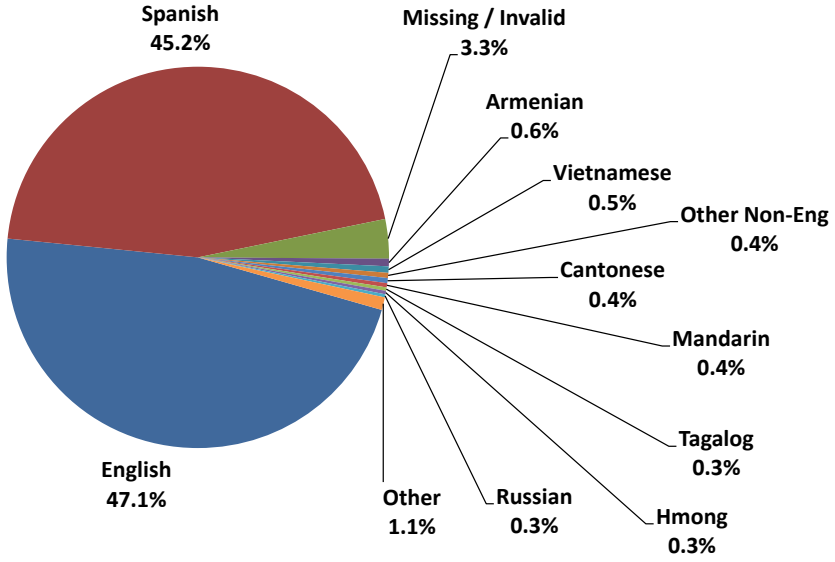


Source: Created by the DHCS Research and Analytic Studies Section using data from MEDS Eligibility System, MMEF File. Data reflects a 12-month reporting lag.

5.4-3 - Language

In CY 2010, 45% of the FFS, Medi-Cal Only population spoke Spanish. Other non-English languages spoken by this population included Vietnamese, Hmong, Cantonese, Mandarin, Tagalog, Armenian, and Russian.

Chart 5: Distribution of FFS, Medi-Cal only Population by First Language; CY 2010

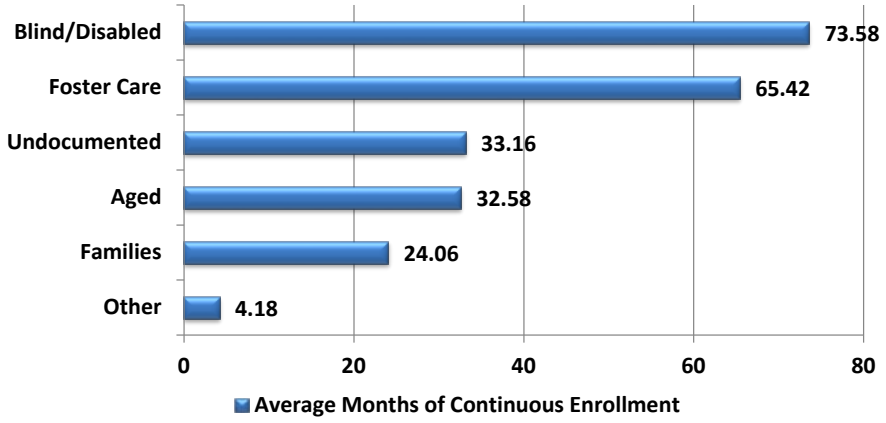


Source: Created by the DHCS Research and Analytic Studies Section using data from MEDS Eligibility System, MMEF File. Data reflects a 12-month reporting lag.

5.5 - Length of Enrollment

The following chart shows that FFS, Medi-Cal Only beneficiaries in the blind, disabled, LTC and foster care aid codes had the longest periods of continuous enrollment in the Medi-Cal program from January 2000 to July 2010. In contrast FFS, Medi-Cal Only beneficiaries enrolled in family aid codes had shorter durations of enrollment.

Chart 6: Average Length of Continuous Enrollment in Months; FFS, Medi-Cal Only Beneficiaries Enrolled July 2010

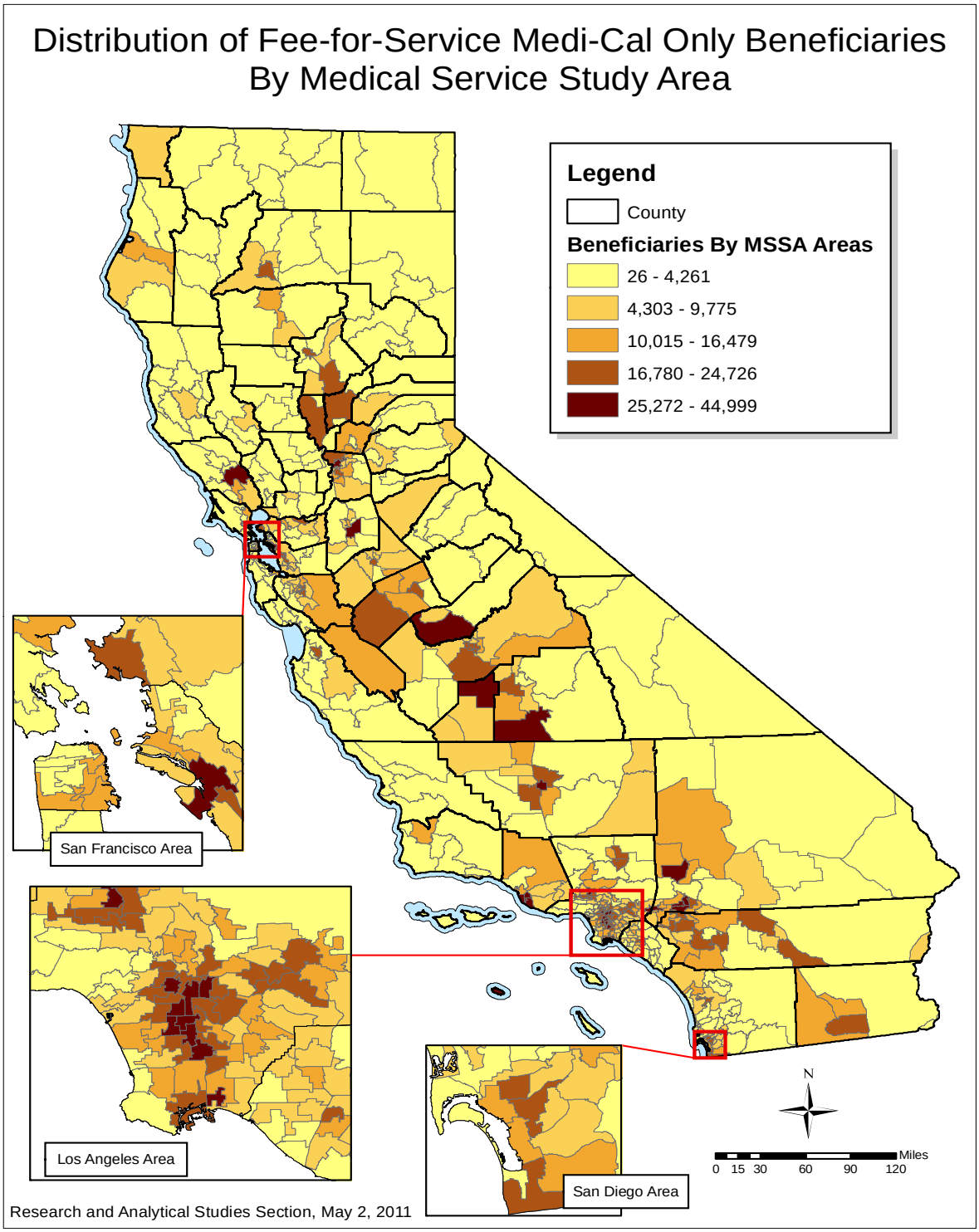


Source: Created by the DHCS Research and Analytic Studies Section using data from MEDS Eligibility System, MMEF File. Data reflects a 12-month reporting lag.

5.6 - Geographic Dispersion of the FFS – Medi-Cal Only Population

The following map displays where FFS, Medi-Cal Only beneficiaries resided during FY 2008-09. Beneficiaries are notably absent in the coastal counties that primarily utilize the County Organized Health System (COHS) model of managed care. Additionally, large concentrations of beneficiaries resided in the Two-Plan and GMC counties, which are more urbanized counties of the state. The beneficiaries in these counties are presumably in blind and disabled aid codes, as beneficiaries in these aid codes were not required to enroll in managed care as of FY 2008-09. In addition, there are beneficiaries enrolled managed care mandatory aid codes that are newly eligible for Medi-Cal and may be enrolled in the FFS system for short durations.

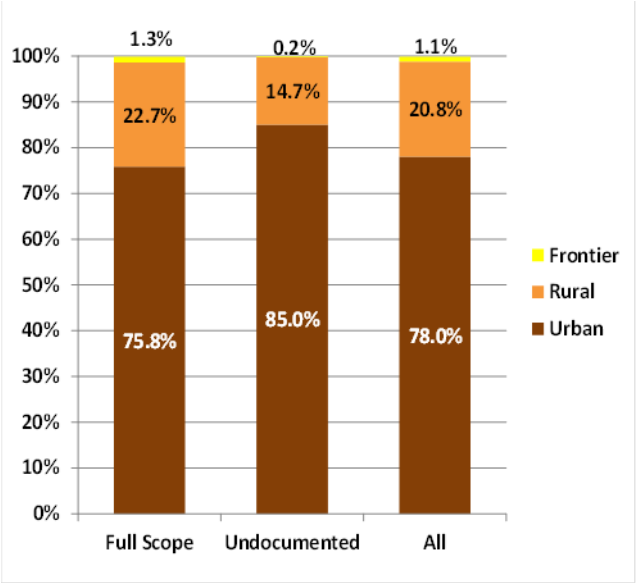
Chart 7: Distribution of FFS, Medi-Cal Only Beneficiaries by Medical Service Study Area (MSSA)



Source: Created by the DHCS RASS using an extract from the MEDS Eligibility file. Data reflects a 6-month lag.

Roughly 25% and 15% of the FFS, Medi-Cal Only population's full scope beneficiaries and undocumented aliens resided in rural or frontier areas respectively. The California Health Manpower Policy Commission defines a Rural Medical Service Study Area as a Medical Service Study Area (MSSA) that has a population density of 250 persons or less per square mile and has no incorporated area greater than 50,000 persons. Additionally, a Frontier Medical Service Study Area is an MSSA with population densities equal or less than 11 persons per square mile.

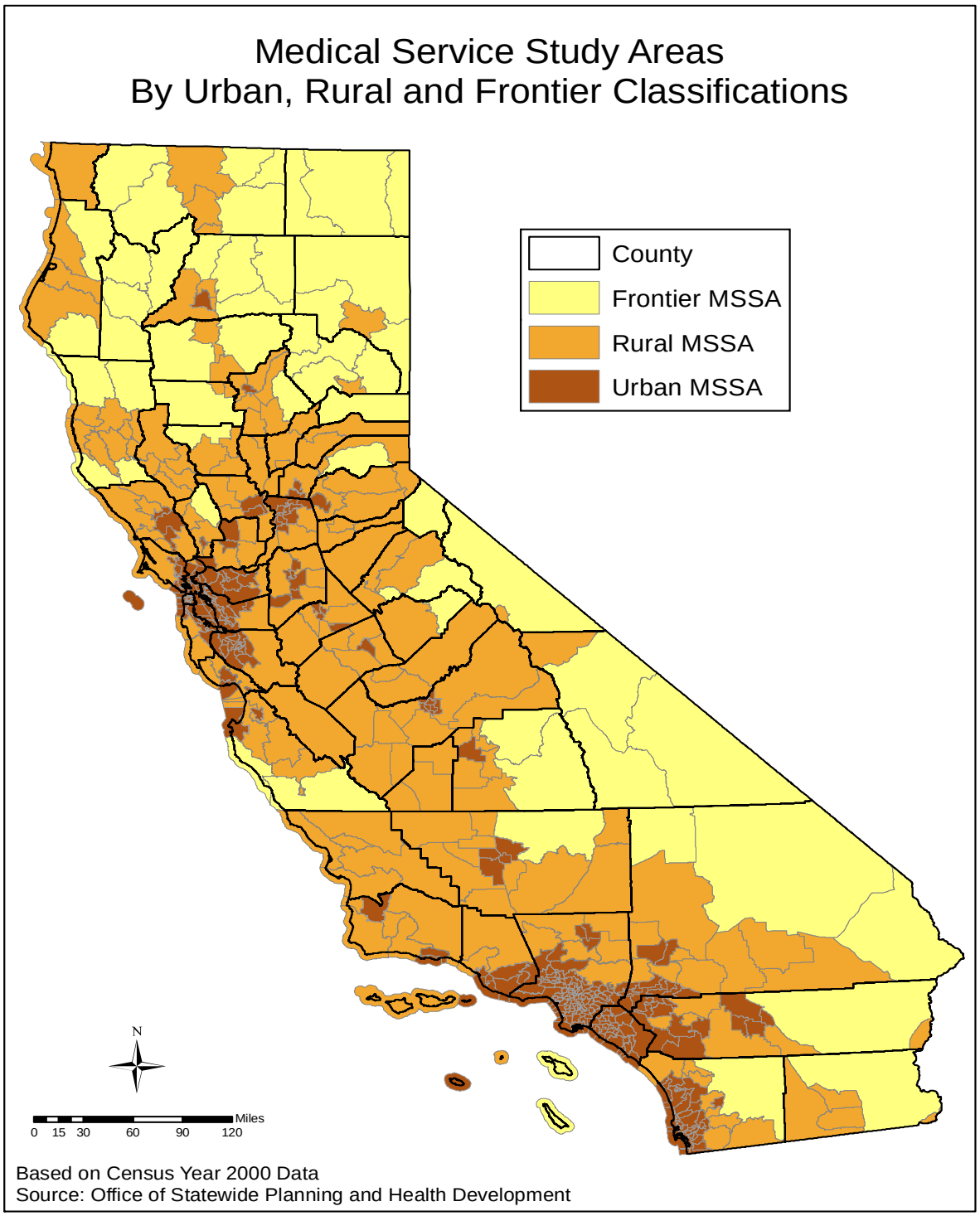
Chart 8: Percent of FFS, Medi-Cal-Only Population in Urban, Rural and Frontier Designated MSSAs



Source: Created by the DHCS Research and Analytic Studies Section using data from MEDS Eligibility System, MMEF File. Data reflects a 12-month reporting lag. Created using SFY 2008-09 MEDS eligibility data.

As highlighted in Chart 8 and the following map (Chart 12), roughly 78% of beneficiaries eligible for Medi-Cal only and are enrolled in the FFS system reside in urban areas, while 22% were reside in areas classified as rural or frontier.

Chart 9: MSSAs by Area Type



Source: Created by the DHCS RASS using an extract from the MEDS Eligibility file. Data reflects a 6-month lag.

5.7 - Prevalence of Clinical Conditions for the FFS – Medi-Cal Only Population

The different groups within the FFS, Medi-Cal Only population are not only demographically, but also clinically heterogeneous. In order to understand the needs of the beneficiaries in each group, it is necessary to analyze the leading clinical conditions driving each group's cost and utilization. AHRQ's Clinical Classification Software was used to identify specific clinical conditions. The Clinical Classification Software collapses over 14,000 diagnosis codes into a smaller number of clinically meaningful categories that are sometimes more useful for presenting descriptive statistics than are individual International Classification of Diseases 9th Revision –Clinical Modification (ICD-9-CM) codes.

In order to better understand the clinical condition's driving healthcare utilization, DHCS analyzed seven clinically distinct FFS, Medi-Cal Only sub-populations. These sub-populations include: Full Scope Children with no CCS services, Full-Scope Children with CCS-authorized services, Full-Scope Women, Undocumented Women, Blind and Disabled Adults, Seniors, and Full Scope Beneficiaries with any Mental Illness Diagnosis. The percentages presented below represent the percent of the unduplicated enrolled beneficiaries within each sub-population having a diagnosis for the clinical condition.

Full Scope Children with no CCS Services

Among this group of children the leading clinical conditions were:

- Other upper respiratory infections (12.1%)
- Otitis media and related conditions (4.7%)
- Disorders of teeth and jaw (4.5%)
- Blindness and vision defects (4.2%)
- Allergic reactions (3.3%)
- Viral infection (3.1%)
- Other lower respiratory disease (3.0%)
- Other upper respiratory disease (2.9%)
- Acute bronchitis (2.4%)
- Asthma (2.3%)

Full Scope Children with CCS Services

Among this group the leading clinical conditions were:

- Other upper respiratory infections (17.8%)
- Other lower respiratory disease (13.5%)
- Developmental disorders (13.2%)
- Other congenital anomalies (13.0%)
- Paralysis (12.8%)
- Other nutritional; endocrine; and metabolic disorders (11.8%)
- Other gastrointestinal disorders (10.5%)
- Cardiac and circulatory congenital anomalies (10.3%)
- Rehabilitation care; fitting of prostheses (9.7%)
- Other ear and sense organ disorders (9.5%)

Full Scope Women, ages 19-64

Among this group of adult women the leading clinical conditions were:

- Any Pregnancy-Related Condition (19.5%)
- Normal pregnancy and/or delivery (17.1%)
- Blindness and vision defects (10.9%)
- Other complications of birth; puerperium affecting the management of the mother (9.3%)
- Abdominal pain (9.1%)
- Spondylosis; intervertebral disc disorders (8.3%)
- Other complications of pregnancy (7.6%)
- Essential hypertension (7.5%)
- Mood disorders (7.5%)
- Other upper respiratory infections (7.4%)

Undocumented Women, ages 19-64

Among this group of undocumented women the leading clinical conditions were:

- Any Pregnancy-Related Condition (25.4%)
- Normal pregnancy and/or delivery (29.1%)
- Other complications of birth; puerperium affecting the management of the mother (16.9%)
- Other complications of pregnancy (11.2%)
- Abdominal pain (5.5%)
- Early or threatened labor (4.7%)
- Contraceptive and procreative management (4.7%)
- Urinary tract infections (4.4%)
- Hemorrhage during pregnancy; abruptio placenta; placenta previa (4.1%)
- Fetopelvic disproportion; obstruction (4.0%)

Blind and Disabled, Age 19-64- Full-Scope Only

Among this group of beneficiaries enrolled under Blind and Disabled aid codes the leading clinical conditions were:

- Essential hypertension (20.6%)
- Blindness and vision defects (18.9%)
- Mood disorders (17.0%)
- Spondylosis; intervertebral disc disorders; other back problems (16.8%)
- Other lower respiratory disease (16.1%)
- Diabetes mellitus without complication (14.6%)
- Other non-traumatic joint disorders (14.4%)
- Other connective tissue disease (14.1%)
- Nonspecific chest pain (14.0%)
- Abdominal pain (13.8%)

Seniors Age 65 and older - Full-Scope Only

Among this group of full-scope seniors the leading clinical conditions were:

- Essential hypertension (34.5%)
- Blindness and vision defects (19.8%)
- Diabetes mellitus without complication (19.1%)

- Disorders of lipid metabolism (17.7%)
- Other lower respiratory disease (14.2%)
- Nonspecific chest pain (12.9%)
- Other non-traumatic joint disorders (11.9%)
- Cataract (11.4%)
- Spondylosis; intervertebral disc disorders; other back problems (11.1%)
- Abdominal pain (11.1%)

Full Scope Beneficiaries with Any Diagnosis for Mental Illness

Among all full-scope beneficiaries enrolled under FFS with Medi-Cal coverage only, the leading clinical conditions were:

- Mood disorders (3.8%)
- Anxiety disorders (2.0%)
- Developmental disorders (2.0%)
- Schizophrenia and other psychotic disorders (1.8%)
- Attention-deficit conduct and disruptive behavior (1.5%)
- Substance-related disorders (1.1%)
- Adjustment disorders (.08%)
- Screening and history of mental health and substance abuse (.044%)
- Alcohol-related disorders (.044%)
- Disorders usually diagnosed in infancy, childhood (.040%)

5.8 - Burden of Major Chronic Diseases for the FFS – Medi-Cal Only Population

In order to evaluate the burden of chronic disease on the FFS, Medi-Cal Only population, DHCS reviewed chronic diseases based on their prevalence. The table below presents the most common major chronic conditions among Medi-Cal beneficiaries eligible for Medi-Cal only and participating in the FFS system. During FY 2008-09, the most prevalent chronic diseases afflicting the FFS, Medi-Cal Only population included: Hypertension, Diabetes, Spondylosis; Back disorders, Hyperlipidemia and Bipolar Disorder. Together, these chronic diseases affected more than ten percent of the population.

Table 11: Most Common Major Chronic Conditions among FFS, Medi-Cal only population

Most Common Major Chronic Diseases		
Diseases	**Beneficiaries**	**% Total**
Hypertension	243,098	14.8%
Diabetes	193,009	11.8%
Spondylosis; back disorders	188,117	11.5%
Hyperlipidemia	173,962	10.6%
Bipolar Disorder	168,379	10.3%
Asthma	136,714	8.3%
COPD	102,083	6.2%
Arthritis	70,767	4.3%
Schizophrenia	67,192	4.1%
Pneumonia	59,902	3.7%
Coronary Artery Disease	48,853	3.0%
Cancer	47,887	2.9%
Renal Failure	33,562	2.0%

Most Common Major Chronic Diseases		
Diseases	**Beneficiaries**	**% Total**
Congestive Heart Failure	32,282	2.0%
Respiratory Failure	26,039	1.6%
Septicemia	19,056	1.2%
Hemophilia	13,921	0.8%
HIV	12,391	0.8%
Leukemia	3,315	0.2%

Source: FFS, DHCS administered, Medi-Cal '35' file paid claims data

6. AVAILABILITY OF MEDI-CAL PROVIDERS

The number of providers available to meet the needs of Medi-Cal beneficiaries is a function of both provider supply and provider participation. In other words, the actual number of providers available to Medi-Cal beneficiaries may result from (1) the overall, state or region-wide, supply of certain types of health care professionals, and (2) from the decision of those providers who are present, in the state or region, to either treat, or not treat Medi-Cal beneficiaries. The term "potential access" is also frequently employed to describe the supply of physicians available to treat a given population. In contrast, the term "participation" is used to describe the actual level of involvement with Medi-Cal beneficiaries among available physicians.

The following sections will compare physician supply and participation among physicians, physician groups, clinics, and hospital emergency departments along a variety of dimensions.

6.1 - Provider Supply

The following table presents the total number of physician and surgeon licenses in California during 2010. This reflects the total physicians and surgeon providers available to California's population as a whole. The number of licenses per 1,000 residents statewide is 265 per 100,000 residents, which closely matches the US Census Bureau report of 269 physicians per 100,000 Californians as of December 31, 2008[iv].

Table 12: Ratio of Population to Physician and Surgeon Licenses in California for In-State Physicians; 2010

Population (As of Jan. 1, 2010	Physician and Surgeon Licenses	Ratio of Population to Physician and Surgeon Licenses	Physician License Per 100,000 Residents
37,223,900	98,816	376.6	265.5

Sources: Physician Licenses: "2009-2010 Annual Report" Medical Board of California. Data reflects physicians with renewed and current licenses excluding those in an inactive, retired, or disabled license status (6,415 total licenses)
URL: http://www.medbd.ca.gov/publications/annual_report_2009-2010.pdf.
California Population Figures: CA Department of Finance, E-1 Population Estimates for Cities, Counties and the State — January 1, 2010 and 2011
URL: http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php

A large body of research has documented disparities in the availability of health care professionals and resources in different geographic areas and among certain populations. As

organized efforts to identify and address areas of need, both the Health Resources and Services Administration (HRSA), a branch of the US Department of Health and Human Services, and California's Office of Statewide Health Planning and Development (OSHPD) are charged with identifying medically underserved areas within the United States and California. These organizations utilize **population-to-provider ratios** in their methodologies for determining Health Professional Shortage Areas (HPSAs). OSHPD's Shortage Designation Program (SDP) provides technical assistance to clinics and other primary care providers seeking recognition as a federally designated Health Professional Shortage Area (HPSA) for the Primary Care, Dental Health, and Mental Health disciplines or as a Medically Underserved Area /Medically Underserved Population (MUA/MUP).

The federal PCHPSA (Primary Care HPSA), designation, for example, identifies areas as having a shortage of health care providers on the basis of availability of primary care physicians. To qualify for designation as a PCHPSA, an area must be:

(1) A rational service area: California recognizes Medical Service Study Areas as rational service areas;
(2) A population to primary care physician ratio: 3,500:1 or 3,000:1 plus population features demonstrating "unusually high need;" and
(3) A lack of access to health care in surrounding areas because of excessive distance, overutilization, or access barriers[2].

In the sections below, we utilize population-to-provider ratios to measure the availability of physicians potentially available to provide services to the Medi-Cal population. The population-to-physician ratio divides the number of beneficiaries in the universe by the number of providers. For example if there were 100 beneficiaries and 2 providers, the population to provider ratio is 50. A low ratio indicates a greater level of providers relative to the population, while a high ratio indicates that there are fewer providers. We employ population-to-provider ratios to identify Counties and Medical Supply Service Areas where the population-to-provider ratio is high compared to the statewide average, and/or other areas within the state.

The population-to-physician ratios also can reflect the size of the population accessing services. In the following tables and charts, the population numerator that is used reflects only that portion of the Medi-Cal population for whom the DHCS is directly responsible for ensuring access. These are beneficiaries who receive health care under the Fee-for-Service delivery of care model and who have coverage under Medi-Cal only. This group includes "full-scope" beneficiaries who are eligible for all Medi-Cal benefits and "restricted-scope" beneficiaries eligible for only a limited range of services.

6. 2 - How Many Physician, Physician Group, Clinics, and Hospital Outpatient Providers Does the FFS-Medi-Cal Only Population Potentially Have Access to?

The Medi-Cal Provider File (PMF) provides a monthly listing of enrolled physicians. In December 2009 the PMF listed 380,723 providers[3] from 70 different provider types. Of these, there were 24,754 **Active,** or billing, physicians and physician groups, and 84,448 **Indirect** or "rendering" providers. The status of the remaining providers was pending, inactive, deceased, rejected or suspended.

[2] OSHPD Healthcare Workforce Development Division; http://www.oshpd.ca.gov/HWDD/HPSA.html
[3] In this case a "provider" is defined as a distinct individual or organization providing a specific category of service at a distinct location.

Active or "billing" providers are providers who submit claims for services to the Medi-Cal program's fiscal intermediary and are paid directly. Indirect or "rendering" providers are enrolled providers who are employed by another "active" Medi-Cal provider, such as a Physician Group, Hospital or Clinic. Active and Indirect status physicians represent mutually exclusive categories. For purposes of this analysis, each physician is counted only once in a single category. Out-of-State providers who may have treated Medi-Cal beneficiaries are excluded from these totals and are not counted in any of the summaries below.

Table 13: Individual Physicians, Physician Groups, Clinics and Emergency Departments; 2008-2010

Individual Providers	December 2008	December 2009	December 2010
Physicians and Physician Groups			
Active / Billing			
Physicians Group	6,480	6,747	6,967
Physicians	17,411	18,007	18,441
Total Active / Billing	**23,891**	**24,754**	**25,408**
Indirect / Rendering			
Physicians Group	11	9	14
Physicians	79,420	84,439	88,262
Total Indirect / Rendering	**79,431**	**84,448**	**88,276**
Total Unduplicated			
Physicians Group	**7,601**	**6,756**	**6,978**
Physicians	**96,676**	**100,479**	**104,239**
Clinics			
Clinic Exempt From Licensure	122	127	143
Community Clinic	381	398	415
County Clinics Not W/ Hospital	37	36	36
Free Clinic	10	10	10
Indian Health Services	48	46	46
FQHC / Rural Health Clinics	918	922	939
Total Clinics	**1,516**	**1,539**	**1,589**
Emergency Departments			
Community Outpatient Hospital ED	369	375	301
County Hospital Outpatient ED	17	17	15
Total Emergency Departments	**386**	**392**	**316**

Source: DHCS Provider Master Files for December 2008, 2009 and 2010.

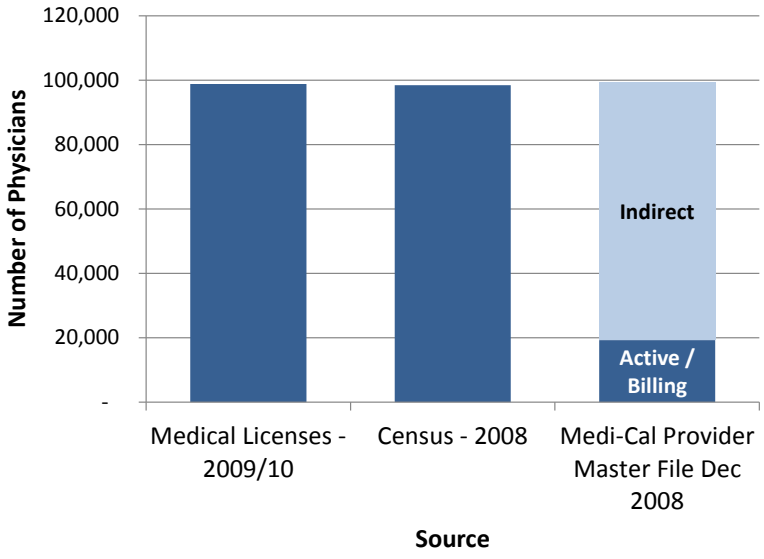
Table 14: Physicians, Physician Groups, Clinics and Emergency Departments Locations; 2008-2010

Provider Locations	December 2008	December 2009	December 2010
Individual Physicians			
Active / Billing			
Physicians Group	7,591	8,086	8,518
Physicians	17,903	18,538	18,985
Total Active / Billing	**25,494**	**26,624**	**27,503**
Indirect / Rendering			
Physicians Group	11	9	14
Physicians	79,665	84,698	88,522
Total Indirect / Rendering	**79,676**	**84,707**	**88,536**
Total Unduplicated			
Physicians Group	**7,601**	**8,095**	**8,532**
Physicians	**96,676**	**101,264**	**105,040**
Clinics			
Clinic Exempt From Licensure	122	135	159
Community Clinic	381	409	428
County Clinics Not W/ Hospital	37	37	37
Free Clinic	10	10	10
Indian Health Services	48	50	48
FQHC / Rural Health Clinics	918	936	951
Total Clinics	**1,516**	**1,577**	**1,633**
Emergency Departments			
Community Outpatient Hospital ED	369	375	301
County Hospital Outpatient ED	17	17	15
Total Emergency Departments	**386**	**392**	**316**

Source: DHCS Provider Master Files for December 2008, 2009 and 2010.

The following chart compares counts of Physicians in California as reported by the Medical Board of California and the US Census Bureau to the count of Active and Indirect enrolled providers participating in the Medi-Cal program. As displayed, the numbers of enrolled "Active" and "Indirect" physicians were high relative to the number of total physicians in California as reported by both California Medical Board Licensure report and the US Census Bureau survey of Active Physicians and Nurses by State.

Chart 10: Number of Physicians Statewide and Enrolled in as Medi-Cal Providers



6.4 - Provider-Patient Ratios

Provider Type

There are various ways to count providers, each of which can produce dramatically different totals. Providers can be counted as (1) the number of distinct individuals or billing organizations, (2) as the combination of individuals or organizations at a distinct service location, or (3) as individuals or organizations at a distinct service location providing specific categories of service. For example, it is not unusual for a single hospital organization to have multiple locations and to provide multiple categories of services (inpatient, outpatient, clinic, dialysis, rehabilitation, etc.).

For the purpose of evaluating beneficiary access to care using provider-to-population ratios, the third listed method is most appropriate, since geographic accessibility and appropriateness of care are two major elements of access. In the tables below, the reporting unit for providers is the unique combination of the provider ID, location identifier, and provider type. The numbers of physicians and other providers reported in the tables below reflect enrolled providers with an active (billing) or indirect (rendering) status as reported in the Medi-Cal Provider Master File. These providers represent the "potential access" available to Medi-Cal beneficiaries, since all are eligible to provide services to Medi-Cal beneficiaries.

Four sets of beneficiaries and providers are evaluated:

1. All Fee-for-Service beneficiaries with Medi-Cal coverage only enrolled in December 2008, 2009 and 2010 to all Active and Indirect Physicians enrolled during the corresponding months.

2. All **full-scope** Fee-for-Service beneficiaries with Medi-Cal coverage only (and excluding restricted undocumented aliens) enrolled in December 2008, 2009 and 2010 to all Active and Indirect Physicians enrolled during the corresponding months.
3. All adult women, ages 19-64, enrolled under Fee-for-Service and with Medi-Cal coverage only, in December 2008, 2009 and 2010 to all Active and Indirect Physicians with an Obstetrics and/or Gynecology specialty enrolled during the corresponding months.
4. All **full-scope** children enrolled under Fee-for-Service and with Medi-Cal coverage only, in December 2008, 2009 and 2010 to all Active and Indirect Physicians with a Pediatric specialty enrolled during the corresponding months.

Table 15: Ratio of Physicians Physician Groups and Clinics to all Beneficiaries enrolled under FFS arrangements and having Medi-Cal coverage only, including undocumented immigrants. Ratios reflect enrollment in December 2008, December 2009 and December 2010.

Population: Full Scope, FFS, Medi-Cal Only (Excludes Undocumented Immigrants)	Population-to Provider Ratio			Number of Provider Locations		
	Dec-08	Dec-09	Dec-10	Dec-08	Dec-09	Dec-10
Active Providers						
Physicians	136.8	134.0	127.4	17,903	18,538	18,985
Physician Groups	322.7	307.1	284.0	7,591	8,086	8,518
Physicians and Physician Groups	96.1	93.3	87.9	25,494	26,624	27,503
Clinics	1,615.8	1,574.7	1,481.2	1,516	1,577	1,633
All Active Physicians and Clinics	90.7	88.1	83.0	27,010	28,201	29,136
Indirect Rendering Providers						
Physicians	30.7	29.2	27.3	79,665	84,968	88,522
***HPSA Benchmark**	*3500:1*					

***** Indicates provider-to-population ratio of "high need" based on HRSA Health Professional Shortage Areas methodology
Sources: Fiscal Intermediary's 35-File of Paid Claim records with dates from July 1, 2008 through July 31, and DHCS provider Master files for December 2007, 2008, and 2009.

Table 15 indicates that in December 2009 there were 134 beneficiaries for every physician with an active status, and 29.2 beneficiaries for every physician with an indirect status. This compares favorably to the 376.6 persons for every physician medical license reported in table 11 and to the HRSA Health Professional Shortage Areas criterion of 3,500:1. There is a slight decrease in the ratio during the three years reported indicating a small improvement in provider supply relative to population.

Table 16: Ratio of Physicians Physician Groups and Clinics to all Full-Scope Beneficiaries enrolled under FFS arrangements and having Medi-Cal coverage only, excluding undocumented immigrants. Ratios reflect enrollment in December 2008, December 2009 and December 2010

Population: Full Scope, FFS, Medi-Cal Only (Excludes Undocumented Immigrants)	Population-to Provider Ratio			Number of Provider Locations		
	Dec-08	Dec-09	Dec-10	Dec-08	Dec-09	Dec-10
Active Providers						
Physicians	93.4	90.6	85.4	17,903	18,538	18,985
Physician Groups	220.3	207.6	190.4	7,591	8,086	8,518
Physicians and Physician Groups	65.6	63.1	59.0	25,494	26,624	27,503
Clinics	1,103.0	1,064.6	993.2	1,516	1,577	1,633
All Active Physicians and Clinics	61.9	59.5	55.7	27,010	28,201	29,136
Indirect Rendering Providers						
Physicians	21.0	19.8	18.3	79,665	84,968	88,522
***HPSA Benchmark**	*3500:1*					

***** Indicates provider-to-population ratio of "high need" based on HRSA Health Professional Shortage Areas methodology
Sources: Fiscal Intermediary's 35-File of Paid Claim records with dates from July 1, 2008 through July 31, and DHCS Provider Master files for December 2007, 2008, and 2009.

In Table 16, undocumented immigrants have been removed from the population numerator. The ratios for full scope beneficiaries only indicate that in December 2009 there were 85 beneficiaries for every physician with an active status, and 18 beneficiaries for every physician with an indirect status. This compares favorably to the 376.6 persons for every physician medical license reported in table 12 and to the HRSA Health Professional Shortage Areas criterion of 3,500:1. Once again, there is a slight decrease in the ratio during the three years reported indicating a small improvement in provider supply relative to population.

Table 17: Ratio of Physicians with an Obstetrics and/or Gynecology Specialty to Women, age 18-64. Includes both Full-Scope and Undocumented women enrolled under FFS arrangements and having Medi-Cal coverage only. Ratios reflect enrollment in December 2008, December 2009 and December 2010.

Population: Women 18-64; Full Scope and Undocumented, FFS, Medi-Cal Only	Population-to Provider Ratio			Number of Provider Locations		
	Dec-08	Dec-09	Dec-10	Dec-08	Dec-09	Dec-10
Active Providers						
OB/GYN	575.1	565.9	546.6	1,463	1,524	1,563
Indirect Rendering Providers						
OB/GYN	185.3	180.2	171.7	4,542	4,787	4,977
***HPSA Benchmark**	*3500:1*					

***** Indicates provider-to-population ratio of "high need" based on HRSA Health Professional Shortage Areas methodology
Sources: Fiscal Intermediary's 35-File of Paid Claim records with dates from July 1, 2008 through July 31, and DHCS provider Master files for December 2007, 2008, and 2009.

As displayed in Table 17, in December 2009 there 566 adult female beneficiaries for every OB/GYN physician with an active status, and 180 adult female beneficiaries for every OB/GYN physician with an indirect status. This compares favorably to the 376.6 persons for every physician medical license reported in table 12 and to the HRSA Health Professional Shortage Areas criterion of 3,500:1. There is a slight decrease in the ratio during the three years reported indicating a small improvement in the number of OB/GYN physicians relative to adult female population.

Table 18: Ratio of Physicians with a Pediatrics Specialty to Children, age 0 – 18, Includes Full-Scope children only, enrolled under FFS arrangements and having Medi-Cal Coverage only. Ratios reflect enrollment in December 2008, December 2009 and December 2010.

Population: Children age 0-18; Full Scope only, FFS, Medi-Cal Only (Excludes Undocumented Immigrants)	Population-to Provider Ratio			Number of Provider Locations		
	Dec-08	Dec-09	Dec-10	Dec-08	Dec-09	Dec-10
Active Providers						
Pediatricians; primary care and specialty	611.4	585.0	545.4	1,413	1,461	1,488
Indirect Rendering Providers						
Pediatricians; primary care and specialty	101.1	94.9	86.6	8,548	9,009	9,367
***HPSA Benchmark**	*3500:1*					

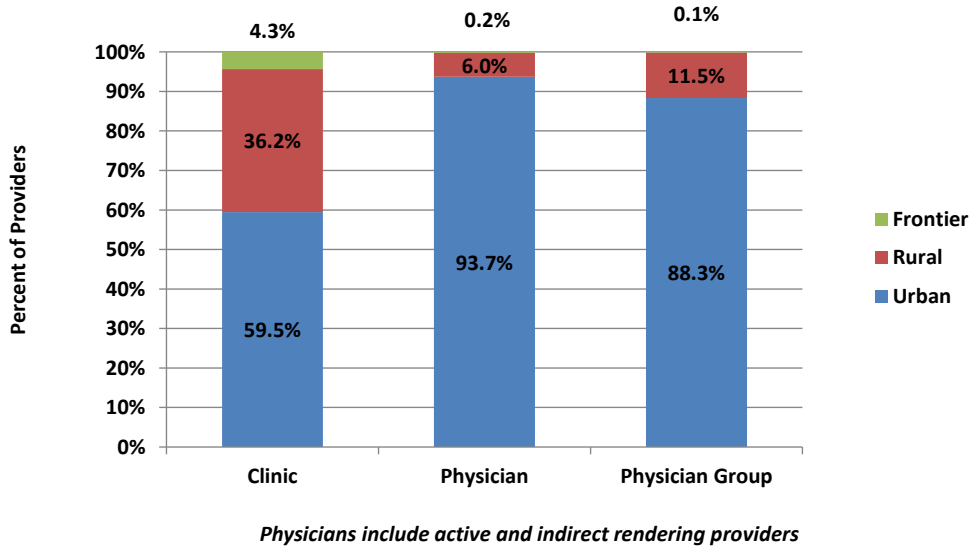
***** Indicates provider-to-population ratio of "high need" based on HRSA Health Professional Shortage Areas methodology
Sources: Fiscal Intermediary's 35-File of Paid Claim records with dates from July 1, 2008 through July 31, and DHCS provider Master files for December 2007, 2008, and 2009.

The table above indicates that in December 2009 there 585 full-scope beneficiaries, age 0-18, for every Pediatric physician with an active status, and 95 full-scope beneficiaries, age 0-18, for every Pediatric physician with an indirect status. This compares favorably to the 376.6persons for every physician medical license reported in table 12 and to the HRSA Health Professional Shortage Areas criterion of 3,500:1. There is a slight decrease in the ratio during the three years reported indicating a small improvement in the supply of physicians with a Pediatric specialty relative to childhood population.

6.5 - Medical Service Statistical Area (MSSA) and Population Density

As indicated by the ongoing efforts of HRSA to identify and map medically underserved areas, the availability of physicians in rural areas is a concern for policy makers seeking to ensure adequate access to care. The chart below displays the distribution of Physicians, Physician Groups and Clinics by Population Density Category[4] (Urban, Rural and Frontier). The Physician category includes providers with either an active or an indirect rendering status. The Physician Group category includes both primary care and specialty practices. Clinics include RHCs, FQHCs, free clinics, community clinics, county clinics not associated with hospitals, and IHCs. Clinics comprise a significant portion of the providers in rural areas, while physicians are overwhelmingly found in urban areas.

Chart 11: Distribution of Physicians, Physician Groups and Clinics by MSSA Population Density Category; January 2009

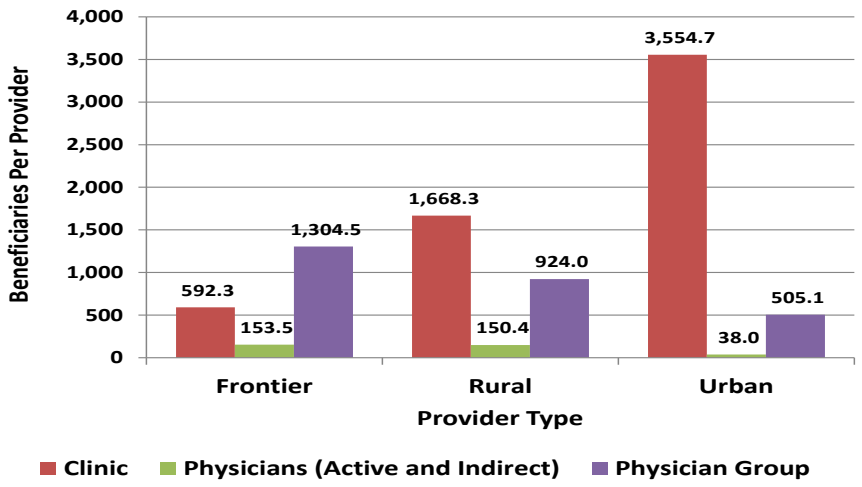


Source: DHCS Provider Master File for January 2009.

[4] The definition of a Rural Medical Service Study Area is a Medical Service Study Area (MSSA), as defined by the California Health Manpower Policy Commission that have a population density of 250 persons or less per square mile and have no incorporated area greater than 50,000 persons. The definition of a Frontier Medical Service Study Area is an MSSA with population densities equal or less than 11 persons per square mile

The chart below displays the population to provider ratio for physicians, physician groups, and clinics in three geographic settings. There was a greater availability of physicians, and physician groups in urban settings compared to both rural and frontier settings. Clinics were a more frequent care setting in rural and frontier locations than in urban locations.

Chart 12: Population-to-Provider Ratio By MSSA Population Density and Provider Type; SFY 2008-09



Sources: Fiscal Intermediary's 35-File of Paid Claim records with dates from July 1, 2008 through July 31, and DHCS Provider Master file for January 2009.

DHCS evaluated population-to-provider ratios by county. Small rural counties utilizing the FFS delivery of care model had the fewest physicians relative to the population. The population-to-provider ratios by county ranged from 4.8 to 289 beneficiaries per physician. This range of ratios falls well below the level deemed to indicate "high need (i.e., a ratio of population to physicians of 3,500: 1)."

Medi-Cal beneficiaries, as well as all Californians with other types of health care coverage, residing in rural counties have the fewest physicians relative to population. Additionally, rural counties also have the highest proportion of Medi-Cal beneficiaries who receive health care under the Fee-for-Service delivery of care model. In these counties, Medi-Cal was directly responsible for ensuring access to care, and almost all beneficiaries were included in the population numerator. While the population-to-physician ratios in the more rural fee-for-service counties were generally higher than in the urban areas of the state, a mitigating factor was the greater availability of clinic-based care. Compared with physicians, clinics in California utilize a greater number of non-physician extenders, such as nurse practitioners, and physician assistants, and have a substantially greater proportion of Medicaid, uninsured, and minority patients. (Grumbach, Hart, Mertz, Coffman, Palazzo, 2003)

The proportion of Fee-for-Service beneficiaries was smaller in counties utilizing the Two-Plan and GMC Managed Care delivery models where heath plan enrollment was mandatory for some segments of the Medi-Cal population and voluntary for others. In COHS counties where heath plan enrollment is mandatory for everyone, the proportion of Fee-for-Service beneficiaries was the smallest. In the counties that utilize the managed care delivery model, health plans assume legal responsibility for ensuring access to care for plan enrolled beneficiaries. Consequently, there were fewer Fee-for-Service, Medi-Cal only beneficiaries included in the population numerator.

In the coastal counties utilizing the County Organized Health System (COHS) model, health plan enrollment is mandatory for all groups except undocumented aliens. These counties had the fewest beneficiaries in the population numerator. In the more urban counties utilizing the Two-Plan and Geographic Managed Care (GMC) plan model types, only beneficiaries enrolled in the Family aid category were required to mandatorily enroll in a health plan. Enrollment for Aged/Blind/Disabled (ABD) beneficiaries was voluntary up until June 2011. In these counties therefore Aged/Blind/Disabled (ABD) beneficiaries comprised a large segment of the remaining Fee-for-Service population in the numerator. While the numbers of Fee-for-Service beneficiaries in the managed care counties is low and continues to decline, the number of Fee-for-Service physicians available to treat them, as reported by the Medi-Cal Provider Master File, has actually increased. The combination of declining numbers of beneficiaries and increasing numbers of providers is responsible for the low population-to-provider ratios reported for these counties.

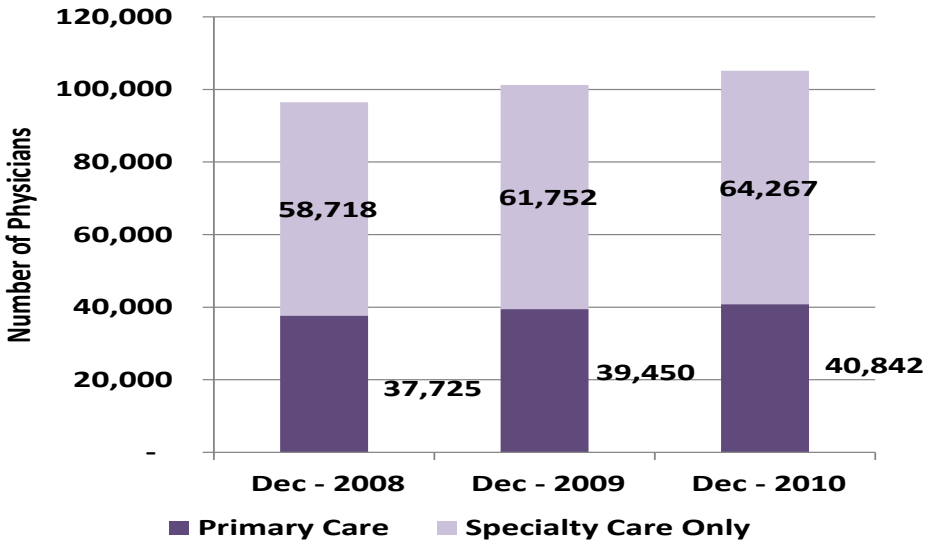
An even clearer picture of provider capacity, both in absolute terms and in relation to population, emerges when it is studied at the MSSA (Medical Study Service Area) level. Medical Service Study Areas (MSSAs) are the defined geographic analysis unit for the Office of Statewide Health Planning and Development (OSHPD) and are reproduced on the decadal census. The boundaries are approved by the Health Manpower Policy Commission and the U.S. Department of Health and Human Services, Health Resources Service and Administration (HRSA) formally recognizes California MSSAs as the Rational Service Area (RSA) for medical service for California. They are composed of one or more complete U.S. Census Bureau census tracts.

Ratios calculated at the MSSA help highlight differences in physician supply within counties related to geography, population density and socio-economic differences. This is especially useful in California which has a number of counties featuring mountainous topography and a combination of urban, rural and frontier regions within their boundaries. Factors such as time and distance may influence access to care. Individual counties may contain medically underserved areas (MUAs and medically underserved populations (MUPs).

The maps entitled Ratio of Fee-for-Service Medi-Cal Only Beneficiaries to Providers by Medical Study Service Area and Fee for Service Medi-Cal Only Beneficiaries per Physician by MSSA (click on hyperlink to see map) present a clearer picture of provider capacity. The range of population to provider ratios expands from 0.8 to 3,140.0. The areas reported as having no physicians represent medically underserved areas and are underserved for all California residents as displayed on the map entitled Medically Underserved Areas and Populations. While there certainly were individual MMSA-level areas with dramatically higher population-to provider ratios than average, none approached the 3,500- 1 criterion of “high need” set forth in HRSA’s methodology.

6.6 Provider Specialty

Chart 13: Enrolled Physicians by Primary Care and Specialty Care Indicator. Physicians with Active/Billing and Indirect rendering status only



Another dimension studied was that of physician specialty. The Medi-Cal Provider Master file reports up to three specialties per enrolled physician. In December 2010 thirty-nine percent of the physicians with active and indirect status had a primary care specialty, while sixty-one percent had a non-primary care specialty only.

As indicated below, there were 63 Fee-for-Service, Medi-Cal Only beneficiaries for every physician with a primary care specialty in December 2009. This compares favorably to the 376.6 persons for every physician medical license reported in table 12 and to the HRSA Health Professional Shortage Areas criterion of 3,500:1. There is a slight decrease in the ratio during the three years reported indicating a small improvement in provider supply relative to population.

Table 19: Population-to-Provider Ratio for Primary Care and Specialty Physicians

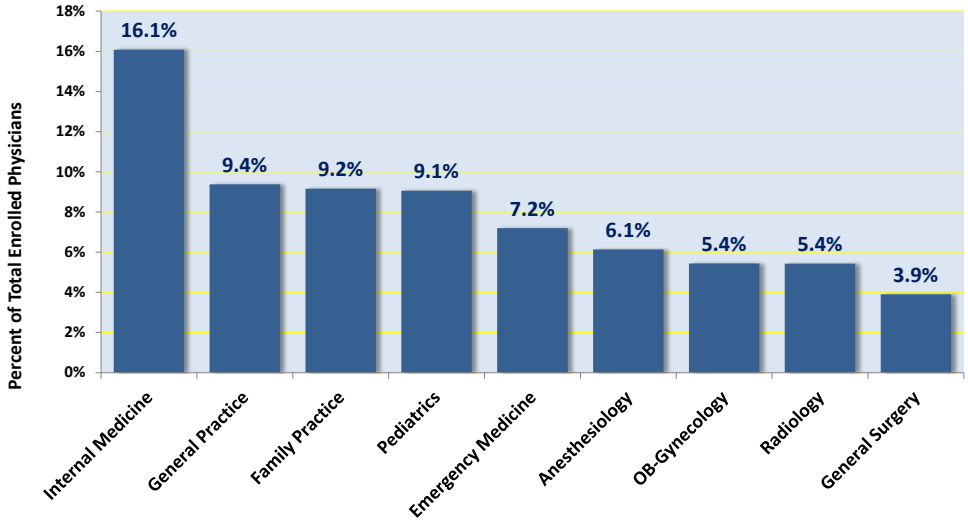
	Population-to Provider Ratio			Number of Providers		
Population: FFS, Medi-Cal Only						
	Dec-08	**Dec-09**	**Dec-10**	**Dec-08**	**Dec-09**	**Dec-10**
Enrolled Physicians						
Primary Care	64.9	62.9	59.2	37,725	39,450	40,842
Specialty Care Only	41.7	40.2	37.6	58,718	61,752	64,267

The population-to-provider ratio for primary care physicians by county ranged from 12.6 in Solano County, a COHS county, to 711.9 in Imperial County, a Fee-for-Service county. The average number for the population statewide was 59.2. There was a slight decrease in the ratio during the three years reported indicating a small improvement in the supply of primary care physicians relative to the population. In no county, even rural, did the ratio approach the HRSA

Health Professional Shortage Areas criterion of 3,500:1. This is not surprising, since, as the literature tells us (Cunningham, May 2006) populations in rural areas tend to have a higher proportion of Medicaid beneficiaries and less opportunity to shift to individuals with other types of coverage.

The chart below displays the percent of enrolled Medi-Cal physicians with an active or indirect status having any of the top nine specialties for Medi-Cal providers. The table below it displays the top specialties among physicians and surgeons nationwide as reported by the US Bureau of Labor Statistics. A comparison of the two indicates that the distribution of physicians by specialty in the Medi-Cal program closely follows the distribution for all physicians in the nation.

Chart 14: Top Specialties among Medi-Cal Enrolled Physicians; December 2010



Source: Medi-Cal Provider Master file for December 2010.

Table 20: Percent distribution of active physicians in patient care by specialty in the United States, 2007

Specialty	Percent
Internal medicine	20.1
Family medicine/general practice	12.4
Pediatrics	9.6
Obstetrics and gynecology	5.6
Anesthesiology	5.5
Psychiatry	5.2
General Surgery	5.0
Emergency Medicine	4.1

Source: American Medical Association, 2009 Physician Characteristic and Distribution in the US[5].

[5] Bureau of Labor Statistics, Occupational Outlook Handbook, 2010-11 Edition, Physicians and Surgeons, URL: http://www.bls.gov/oco/ocos074.htm

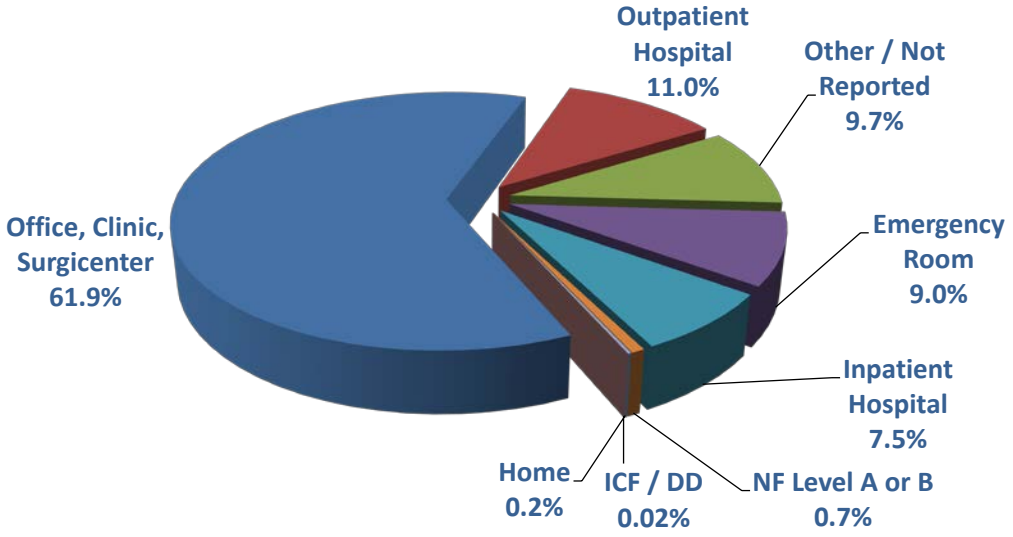
6.7 - Point-of-Access

The primary gateway into Medi-Cal's health care system is through an encounter with a physician. From this access point a beneficiary may be referred to a pharmacy, durable medical supply provider, laboratory, diagnostic radiology or any other provider of medical care. Medi-Cal beneficiaries may access the health care system in a variety of settings, including clinics, emergency departments, outpatient hospital facilities, Adult Day Care Centers and local physician or physician group offices. Out of all potential healthcare settings, the primary care setting is associated with the more cost-effective delivery of services and improved health outcomes. This relationship is strongly supported by a body of research. "Primary care physician supply was associated with improved health outcomes, including all-cause, cancer, heart disease, stroke, and infant mortality; low birth weight; life expectancy; and self-rated health[v]." (Macinko, Starfield, Shi, 2007) Greater utilization of primary care was associated, not only with better health outcomes, but also with more cost-effective care, "The mix of the physician workforce plays a critical role in the use of highly effective care. States with relatively more general practitioners have both higher rates of use of effective care and lower spending", (Baicker, Chandra 2004)[vi].

The following charts display the distribution of non-emergency outpatient and ambulatory care encounters by Medi-Cal beneficiaries enrolled under FFS arrangements and having Medi-Cal coverage only. The universe (numerator) for these summaries is the population of beneficiaries enrolled under Fee-for-Service and covered by Medi-Cal only.

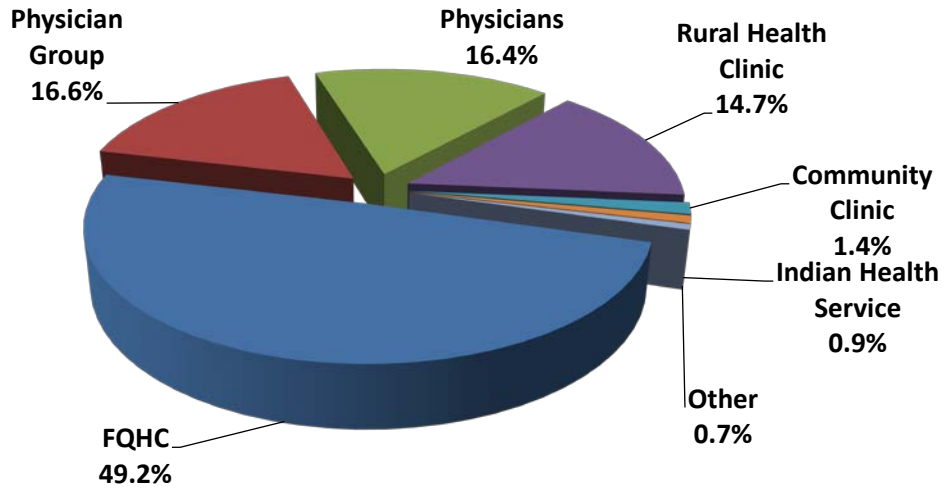
The distribution of encounters by "Place-of-Service" indicates that Medi-Cal beneficiaries obtain 38% of their outpatient/ambulatory care outside of the physician/office and clinic setting and 62% within that setting. Although the place of Service title is Office, Clinic, Surgicenter, there were very few Surgicenter providers as displayed in chart 16. Within the physician/office and clinic place-of-service setting, 66% of encounters occurred in clinics while 33% of encounters were with a Physician or a Physician Group. Encounters in the Emergency Room setting represented nine percent of total encounters.

Chart 15: Distribution of Outpatient / Ambulatory Care Encounters by Place of Service Setting; Lab providers excluded. For dates of service from January 2009 through December 2009



Source: Fiscal Intermediary's 35-File of Paid Claim records with dates from January 1 to December 31, 2009.The universe of claims includes FQHC/RHC office visits, visits with CPT codes for Evaluation and Management, Medicine,(CPT 90000-99199) and local Medi-Cal codes for prenatal and antepartum care.

Chart 16 - Distribution of Outpatient/Ambulatory Care Encounters by Provider Type in the "Office / Clinic / Surgicenter" Place of Service Setting; Lab providers are excluded, dates of service from January 2009 through December 2009



Source: Fiscal Intermediary's 35-File of Paid Claim records with dates from January 1 to December 31, 2009. The universe of claims includes FQHC/RHC office visits, visits with CPT codes for Evaluation and Management, Medicine, (CPT 90000-99199) and local Medi-Cal codes for prenatal and antepartum care.

6.6 - Concentration of Beneficiaries among Providers

Although a physician or provider organization may be enrolled as an approved Medi-Cal provider with an active or indirect status, more information is required to determine their level of participation. The level of provider participation in Medi-Cal has several dimensions to be explored. First, does the provider see Medi-Cal beneficiaries at all, or has he chosen to exclude them them from his practice entirely? Second, what proportion of the provider's patients do Medi-Cal beneficiaries comprise? As reported in the literature, some types of providers are better able than others to accommodate larger numbers of Medicaid patients in their practice than others. Cunningham and May[vii], report that "care of Medicaid patients is becoming increasingly concentrated among the minority of physicians who provide a relatively large amount of care to Medicaid patients", and they cite several variables. These include:

- Size ("*care of Medicaid patients is also characterized by a shift away from small, office-based practices toward larger group practices and institution-based practices, including hospitals, academic medical centers and community health centers*"),

- Specialty ("*General internists and family practitioners are the most likely to report that their practices are closed to new Medicaid patients, while pediatricians and specialists are the least likely to have closed Medicaid practices.*"), and

- Location ("*Physicians in large metropolitan areas (population greater than 200,000) were less likely to accept new Medicaid patients compared with physicians in smaller metropolitan areas and in rural areas.*")

In order to develop the first dimension of provider participation, DHCS looked at physician, physician group and clinic providers enrolled in December 2008. Next, DHCS captured claims data to determine how many of those enrolled either submitted Fee-for-Service claims for Medi-Cal paid services, or were listed as the indirect rendering physician for another billing provider submitting Fee-for-Service claims. DHCS captured claims for dates of service from January through December 2009 and focused on Office, Clinic, and Hospital ED-based settings. Providers with claims from any Medi-Cal beneficiary, including beneficiaries enrolled in Medi-Cal managed care health plans and those eligible for Medicare, were counted. Claims for family-planning services under the Family-Pact program were excluded.

The number of active or indirect providers enrolled in December 2008 and listed on claims during the 12-month service period should not be interpreted to represent the total number of providers treating Medi-Cal patients for that 12-month period, but more of a monthly average. Some physicians may have left active or indirect status after December 2009, while others may have enrolled and others who gained who active or indirect status after that date.

The table below lists the number of active or indirect status physicians, physician groups and clinics enrolled with Medi-Cal on December 2008. A single individual provider with two distinct service locations would be counted twice. Among "active/billing" providers, the number of distinct billing physicians with claims for Medi-Cal paid during calendar year 2009 equaled 80% of the December 2009 enrolled physicians.

Among the "indirect /rendering physicians" the number of distinct rendering physicians listed on claims for Medi-Cal paid services incurred during calendar year 2009 represented 71.6% of December 2009 enrolled physicians.

Table 21: Number of Active or Indirect Physicians, Physician Groups and Clinics Enrolled on January 2009, Number With Claims for Services Provided January - December 2009

Status	Provider Type	Enrolled Providers	Have Claims for Services	
		As of December 2008	*Unduplicated California Providers on Claims -Dates of Service from January 2009 - December 2009*	
		#	*#*	*% of December Enrolled*
Active / Billing	**Physicians**	17,903	14,395	80.4%
	Physicians Group	7,591	5,259	69.3%
	Clinic Exempt From Licensure	122	81	66.4%
	Community Clinic	381	268	70.3%
	County Clinics Not W/ Hospital	37	27	73.0%
	Free Clinic	10	3	30.0%
	Indian Health Services	48	42	87.5%
	FQHC / Rural Health Clinics	918	918	100.0%
	All Clinics	1,516	1,339	88.3%
Total Active / Billing		**27,010**	**22.3%**	**20,993**
Indirect / Rendering Physicians		79,665	57,027	71.6%

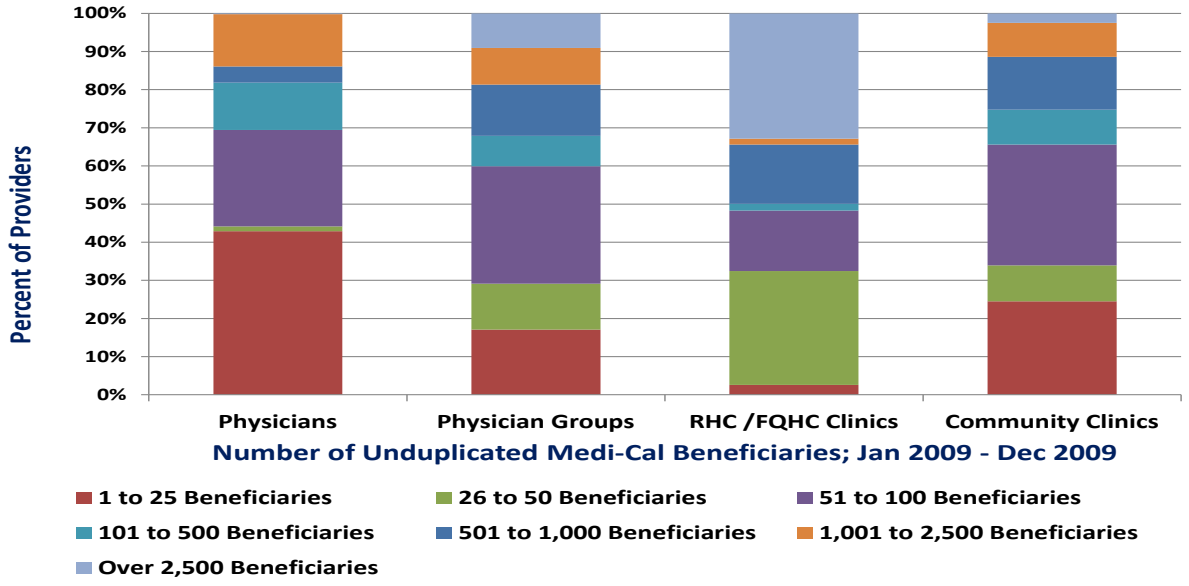
Sources: Fiscal Intermediary's 35-File of Paid Claim records with dates from July 1, 2008 through July 31, and DHCS Provider Master file for January 2009. Unduplicated Providers -Dates of Service from January 2009 - December 2009

6.8 - Distribution of Physicians and Physician Groups by Range for Number of Beneficiaries Seen

To explore the second dimension of provider participation, we looked at the distribution of providers by number of beneficiaries treated during the one year. The charts and table that follow indicate that Medi-Cal physician practices, physician groups and clinics include providers of distributed along a wide continuum of sizes relative to the number of beneficiaries treated. Forty-four percent of active physicians treated 50 or fewer beneficiaries during the 12-month period studied, while fifty-nine percent of indirect or rendering physicians treated 50 or fewer beneficiaries. Wide differences in practice size are to be expected in a state as large and diverse as California with it remote rural and densely populated urban areas.

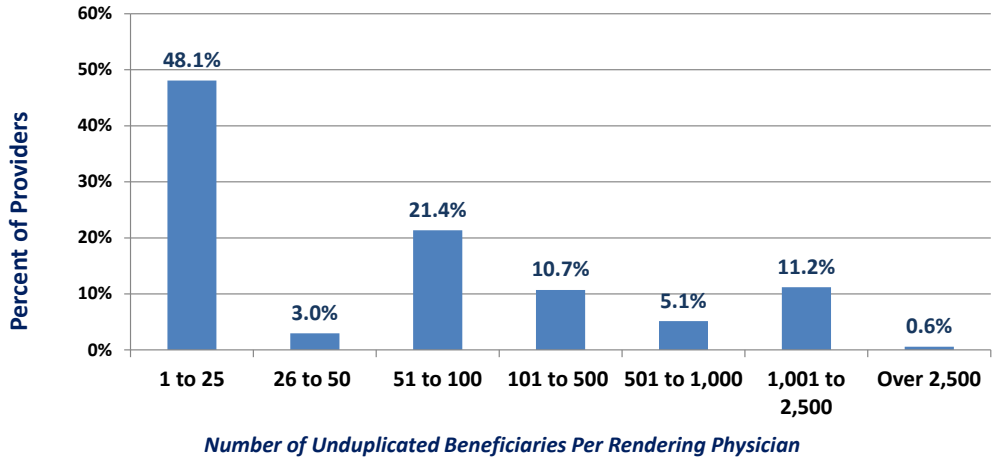
Physicians, in contrast to Physician Groups and FQHC /RHC clinics, on average, provided services to a much larger volume of Medi-Cal beneficiaries. The distribution of encounters among providers support the findings of Cunningham and May regarding physician participation in Medicaid, discussed in the literature review above. The distribution suggests that while solo practitioner physicians may experience difficulty building a practice serving a large percentage of patients with Medi-Cal coverage, clinics and large physician groups may be better able to accommodate and serve the Medi-Cal population.

Chart 17: Percent of "Active" Status Billing Physicians, Physician Groups, RHC/ FQHCs and Other Outpatient Clinics Distribution by Number of Unduplicated Beneficiaries Treated; Dates of Service from January 2009 through December 2009



Sources: Fiscal Intermediary's 35-File of Paid Claim records with dates from January 1, 2009 through December 21, 2009

Chart 18: Indirect / Rendering Physicians. Distribution by Number of Unduplicated Beneficiaries Treated; Dates of Service from January 2009 through December 2009



Sources: Fiscal Intermediary's 35-File of Paid Claim records with dates from July 1, 2008 through July 31, and DHCS Provider Master file for January 2009.

Table 22: Statistics for Physician, Physician Group, Community Clinics and FQHC/RHC with Paid Claims for Services Provided between Januaryand December 2009

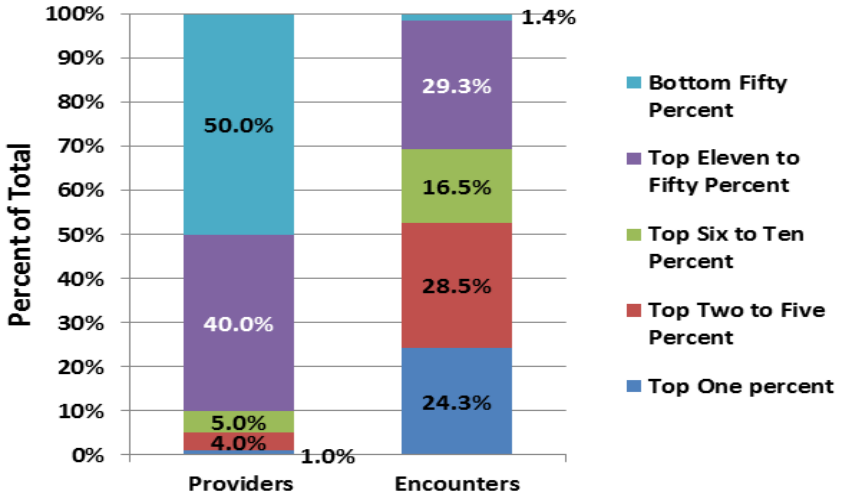
Status	Active / Billing				Indirect
Provider Type	Physicians	Physician Groups	RHC / FQHC Clinics	Community Clinics	Rendering Physicians
Number of Providers with Paid Claims	14,395	5,259	959	404	57,027
Number of Unduplicated Beneficiaries Per Provider					
Mean	130.72	908.45	2,551.99	437.07	168.51
Standard deviation	284.17	2,021.58	3,163.62	719.97	451.43
Minimum	1	1	1	1	1
Maximum	7,975	28,971	29,720	5,798	18,390
Lower Quartile	7	50	600	26	4
Median	39	246	1,490	172	29
Upper Quartile	141	791	3,304	527	139

Sources: Fiscal Intermediary's 35-File of Paid Claim records with dates from July 1, 2008 through July 31, and DHCS Provider Master file for January 2009.

The chart above displays the distribution of FFS encounters among physicians. In this summary, a "physician" has been defined as either an active / billing physician or an indirect / rendering physician providing services in a physician group, FQHC/RHC or organized outpatient clinic setting. The universe of services includes FQHC/RHC office visits, visits with CPT codes for Evaluation and Management, Medicine, (CPT 90000-99199) and local Medi-Cal codes for prenatal and antepartum care. Additionally, this summary defines an encounter as a service involving the unique combination or interaction of one beneficiary, with one provider on a single date of service.

The summary discloses that the top five percent of physicians in terms of number of encounters were responsible for 53% of total encounters. This highly concentrated distribution indicates once again that care to the Medi-Cal population is delivered by a wide range of providers of different sizes and widely varying levels of participation.

Chart 19: Distribution of Physician and Clinic based Encounters among Providers.



Source: Fiscal Intermediary's 35-File of Paid Claim records with dates from July 1, 2008 through July 31, 2009.Universe of claims includes FQHC/RHC office visits, visits with CPT codes for Evaluation and Management, Medicine,(CPT 90000-99199) and local Medi-Cal codes for prenatal and antepartum care.

6.9 - Conclusion

- DHCS' analysis employed population-to-provider ratios based on enrolled "Active" and "Indirect" providers to measure potential access along a variety of dimensions. These ratios disclosed no alarming patterns that suggest acute shortages of physicians. The ratio of 59 beneficiaries for every primary care physician was nowhere near the 3,500- 1 ratio of "high need" based on HRSA's methodology.

- A very high percentage of the licensed physicians in California appeared to be enrolled to participate in Medi-Cal. The number of enrolled "Active" and "Indirect" physicians in the Medi-Cal Provider Master File was nearly the same as the total number of physicians in California as reported by the California Medical Board Licensure report and the US Census Bureau survey of Active Physicians and Nurses by State.

- County-level population-to-provider ratios tended to parallel trends for the entire State population and health system. The ratio ranged from 4.8 physicians per beneficiary in San Mateo County to 289 physicians per beneficiary in Glenn County. Urban areas enjoyed greater numbers of physicians relative to the population than rural areas. A greater proportion of care in rural counties was clinic-based compared to urban areas.

- The presence of Medi-Cal managed care also strongly influenced ratios. The population numerator used to determine the ratio included only beneficiaries enrolled FFS arrangements, and not covered by Medicare, and excluded those enrolled in Medi-Cal health plans. Therefore, counties with a greater managed care presence reported greater numbers of physicians relative to the remaining and smaller FFS population.

- No decreases in physician supply were observed during the period studied. The absolute number of both enrolled "Active" and "Indirect" physicians increased from 2008 to 2010, while the number of Medi-Cal beneficiaries in the numerator rose from 2008 through 2009 and then fell afterward reflecting the shift of several counties to the managed care model. The number of enrolled billing Physicians increased by 6%, Physician Groups increased by 12% and FQHC / RHC clinics by 7%. The number of "Active" and "Indirect" physicians with either an OB/GYN or Pediatric specialty both increased by 9%.

- DHCS' analysis of provider participation revealed a high number of unduplicated physicians providing services, as reflected in the Fee-for-Service claims data, relative to the number of enrolled physicians with an "Active" and "Indirect" status. Among billing physicians, about 80% of the active physicians enrolled in December 2008 had paid claims in 2009. The number of physicians listed as "rendering" providers on paid claims in 2009 represented 72% of physicians enrolled in December 2008 with "Indirect" status.

- The number of beneficiaries treated by each physician varied widely with services concentrated among a smaller number of providers and provider types. These findings mirror those of other research on Medicaid access to care; particularly that of Cunningham and May (2006)[i]

- Cunningham and May (2006) reported that care of Medicaid patients was becoming increasingly concentrated and some providers were more dependent upon a Medicaid patient base than others. DHCS found that the top five percent of billing and rendering physicians with claims for clinic visits and office-based primary care were responsible for 53% of the total encounters.

- Additionally, Cunningham and May (2006) reported a shift away from small office-based practices towards larger physician groups and clinics. DHCS found that billing physicians accounted for 16% of all the encounters for clinic visits and office-based primary care classified under the "Office/Clinic/Surgicenter" Place of Service, while physician groups accounted for 17%, and FQHC and RHC clinics accounted for 64%.

- DHCS found that among the various provider types, the FQHC/RHCs and Physician Groups treated a much higher average number of Medi-Cal beneficiaries during the year compared to billing Physicians and other organized outpatient clinics. For each category, the mean number of patients seen was far above the median, which suggests that a small number of providers in each category had adapted to serving large numbers of Medi-Cal beneficiaries. The FQHC/RHCs are exempt from Medi-Cal's proposed payment reduction.

7. UTILIZATION OF MEDI-CAL SERVICES

7.1 - Trend Analysis Results

DHCS examined trends in physician and clinic visits for beneficiaries eligible for Medi-Cal only and participating in Medi-Cal's FFS system using broad age groupings (adult vs. child) and aid codes as a proxy for health and disability status, factors which are known to influence utilization patterns. Additionally, utilization patterns were examined by metropolitan vs. non metropolitan designation area to identify whether differences in physician and clinic visits varied by these broad geographic categories. Utilization rates were calculated for three annual periods (2007, 2008 and 2009), and are presented in the table below.

Table 18: Total Physician and Clinic Visits per 1,000 Beneficiary Months, Statewide Utilization, 2007- 2009

Statewide Trends in Total Physician and Clinic Visits				
	Statewide Rates			
	2007	*2008*	*2009*	
Adults				
Aged	932.6	919.4	928.0	
Blind/Disabled	1076.8	1100.0	1134.2	*
Families	558.1	558.7	564.0	
Other	1162.0	1234.6	1284.8	*
Undocumented	277.7	274.4	262.6	*
All Adults	***624.5***	***629.4***	***628.8***	
Children				
Blind/Disabled	542.1	544.0	590.7	*
Families	308.8	306.7	321.5	
Foster Care	268.9	266.8	285.4	
Other	480.6	480.2	486.2	
Undocumented	230.9	222.9	206.3	*
All Children	***339.5***	***337.2***	***348.4***	

Table 19: Total Physician and Clinic Visits per 1,000 Beneficiary Months, Metropolitan Area Utilization, 2007- 2009

Metropolitan Area Trends in Total Physician and Clinic Visits				
	Metro Area Rates			
	2007	*2008*	*2009*	
Adults				
Aged	933.28	919.64	928.05	
Blind/Disabled	1077.79	1103.5	1137.85	*
Families	547.94	547.32	552.29	
Other	1168.41	1241.47	1291.19	*
Undocumented	277.79	274.52	262.72	*
Children				
Blind/Disabled	541.10	543.09	590.99	*
Families	302.97	300.21	314.77	
Foster Care	264.89	263.73	282.38	*
Other	478.65	477.71	484.93	
Undocumented	231.30	223.00	206.46	*

Table 20: Total Physician and Clinic Visits per 1,000 Beneficiary Months, Non Metropolitan Area Utilization, 2007- 2009

Non-Metropolitan Area Trends in Total Physician and Clinic Visits				
	Non-Metro Area Rates			
	2007	*2008*	*2009*	
Adults				
Aged	891.11	1018.84	1025.94	
Blind/Disabled	1058.77	1036.22	1069.17	
Families	638.99	652.4	661.51	
Other	1001.28	1046.71	1116.93	*
Undocumented	277.47	270.93	264.17	
Children				
Blind/Disabled	570.69	575.07	595.66	
Families	363.62	367.86	384.44	
Foster Care	385.79	357.74	371.28	
Other	523.91	533.72	511.83	
Undocumented	227.11	220.32	209.95	

Source for tables above: Fiscal Intermediary's 35-File of Paid Claim records with dates from January 1, 2007 through December 31, 2009, and data from the MEDS Eligibility System, MMEF File.
* Data points for 2009 are statistically different from Years 2007 at α = .05.

Overall use of physician and clinic visits was lower among children than for adults. In most instances, utilization rates among children were 50% less than rates among adults of similar disability status. Physician and clinic visit rates for adult beneficiaries were generally higher for those receiving care in metropolitan areas of the state. However, among adult beneficiaries in the Family aid category, utilization among those in non-metropolitan areas was slightly higher. For children, those receiving care in non-metropolitan areas of the state had notably higher utilization rates than those in metropolitan areas.

In order to test whether statistically significant differences appeared over time, comparisons of rates for 2007 and 2009 were made using rate ratio methods. Utilization rates for physician and clinic visits varied little over the three annual time periods for both adults and children, except among beneficiaries in the Other, Blind/Disabled and Undocumented aid categories. For both adults and children in the Blind/Disabled aid groups, utilization was significantly higher in 2009 than in either two previous time periods. Among Blind/Disabled children, the physician and clinic utilization rates went from 541.1 visits per 1,000 member months in 2007 to 590.9 visits per 1,000 member months in 2009. Utilization rates for Blind/Disabled adults increased from 1076.8 visits per 1,000 member months in 2007 to 1134.2 visits per 1,000 member months in 2009. Rates for physician and clinic utilization among adult beneficiaries in the "Other" aid category also experienced a significant increase from 2007 to 2009 (1162.0 visits per 1,000 member months to 1184.8 visits per 1,000 member months). While beneficiaries in the "Other" and Blind/Disabled aid groups experienced an increase in ambulatory care utilization during the period 2007 to 2009, beneficiaries in the Undocumented aid groups experienced a significant decline in physician and clinic visits. Beneficiaries in the undocumented immigrant aid categories are restricted to services for emergency and pregnancy-related conditions. During this same time period (2007-2009) the state experienced a downward trend in the overall birth rate. Since most office visits among the undocumented immigrant population are attributed to prenatal care and other pregnancy-related visits, it is not surprising that ambulatory visit trends for this population are also experiencing a downward trend.

7.1-2 - Evaluating Ambulatory Healthcare Utilization

In order to evaluate overall access to ambulatory care services for beneficiaries eligible for Medi-Cal only and participating in Medi-Cal's FFS system, DHCS plotted monthly physician and clinical visit rates per 1,000 member months over the period 2007 to 2009. DHCS used Shewhart control charts to identify whether ambulatory care utilization changed over this time period. Control charts are a chronological time series of measures presented in a graph and plotted with an overall mean, upper and lower control thresholds. These thresholds or control limits are generally set at three standard deviations (or equivalent) from the mean, and define the natural range of variability expected from the plotted measures. Since Medi-Cal data captures a large volume of services and members per month, this analysis employed an XmR control chart which is suited for these large samples of monthly utilization data. XmR control charts are based on the following equation:

Center line	$\overline{x} = \frac{\sum_{i=1}^{m} x_i}{m}$
Control limits	$\overline{x} \pm 3\frac{\overline{MR}}{d_2}$

In the above equation, the variable $\overline{MR}$ represents the average moving range in data values from month to month.

Comparing the plotted measures to the mean and upper and lower control limits can lead to inferences regarding whether the data are within an expected or predictable range, or whether there are marked changes in the data over time. Potential marked changes include:

- Eight or more consecutive points either all above, or all below, the mean line which indicates a "shift" in utilization patterns.
- Six or more consecutive points all going in the same direction (either up or down) which indicates a trend.

Marked changes in the plotted data could represent either continued improvement or deterioration in ambulatory care utilization trends.

Results for Medi-Cal FFS Children

Overall utilization rates for ambulatory care services among Medi-Cal FFS children show no marked or sustained change over the time period 2007 to 2009. However, among children in the undocumented immigrant aid categories, downward shifts in ambulatory care utilization are noted for the period May 2007 through February 2008 (eight measures above the mean) compared to the period December 2008 through December 2009 (twelve measures below the mean). Differences in undocumented immigrant utilization rates for these time periods proved statistically significant using summary statistics computed for 2007, 2008 and 2009. As undocumented immigrant beneficiaries are limited to restricted scope and pregnancy related benefits, we believe that downward shifts in ambulatory care for these children are due, in part, to decreases in the teen pregnancy rate statewide.

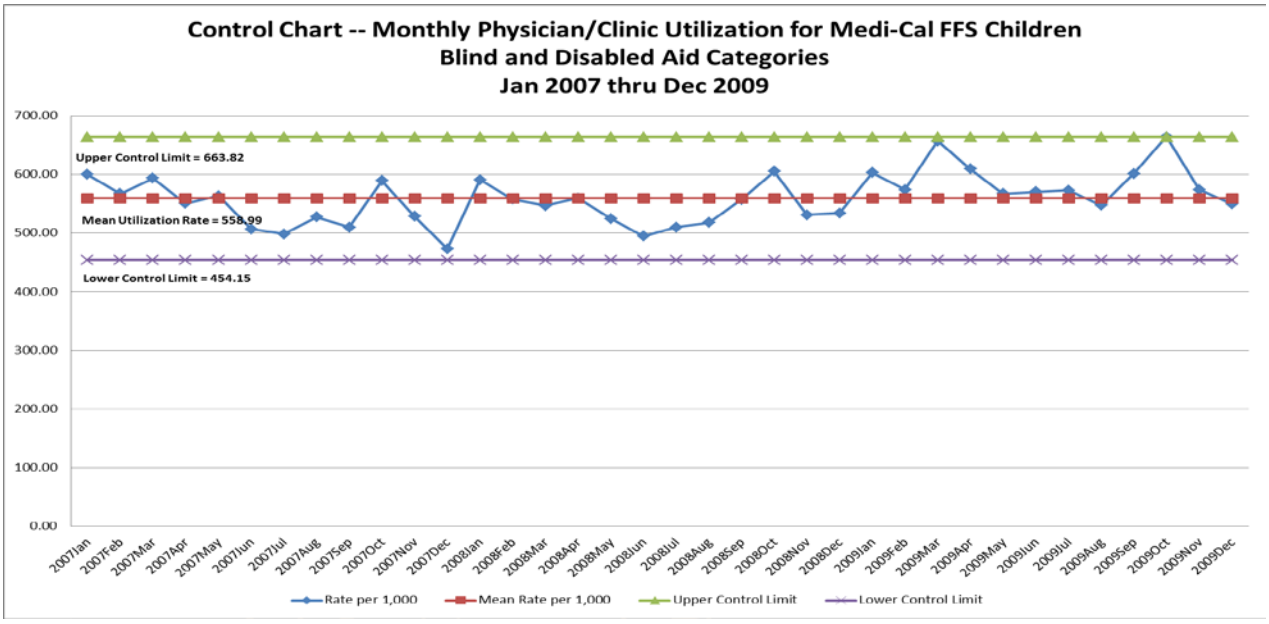
Results for Medi-Cal FFS Adult Beneficiaries

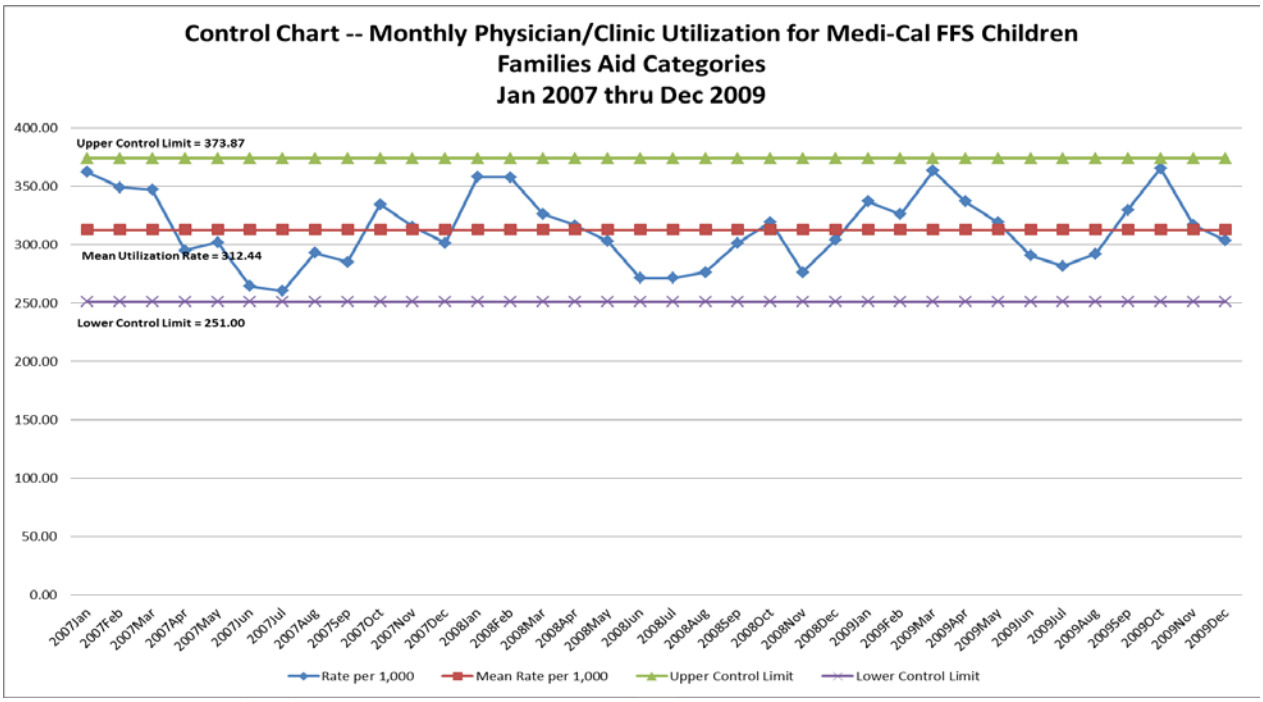
Overall utilization rates for ambulatory care services among FFS, Medi-Cal only adult beneficiaries showed no marked change over time. However, among adult beneficiaries in the Blind and Disabled aid categories, an upward shift in ambulatory care rates is noted for the period February 2007 through September 2007 (eight measures at or below the mean) compared to the period March 2009 through October 2009 (eight measures above the mean). Summary analysis identified statistically significant increases in ambulatory care utilization rates for the Blind/Disabled during 2007, 2008 and 2009. Upward shifts are also noted for adults beneficiaries in the "Other" aid categories for the period January 2007 through September 2007 (nine measures at or below the mean) compared to the period March 2009 through December 2009 (ten measures at or above the mean). Statewide shifts in ambulatory care rates for adult beneficiaries in the "Other" aid categories were also found to be statistically significant. Since these upward shifts in utilization rates did not fluctuate beyond the upper and lower control limits, DHCS considers these fluctuations to be within the overall expected range of variability for this data.

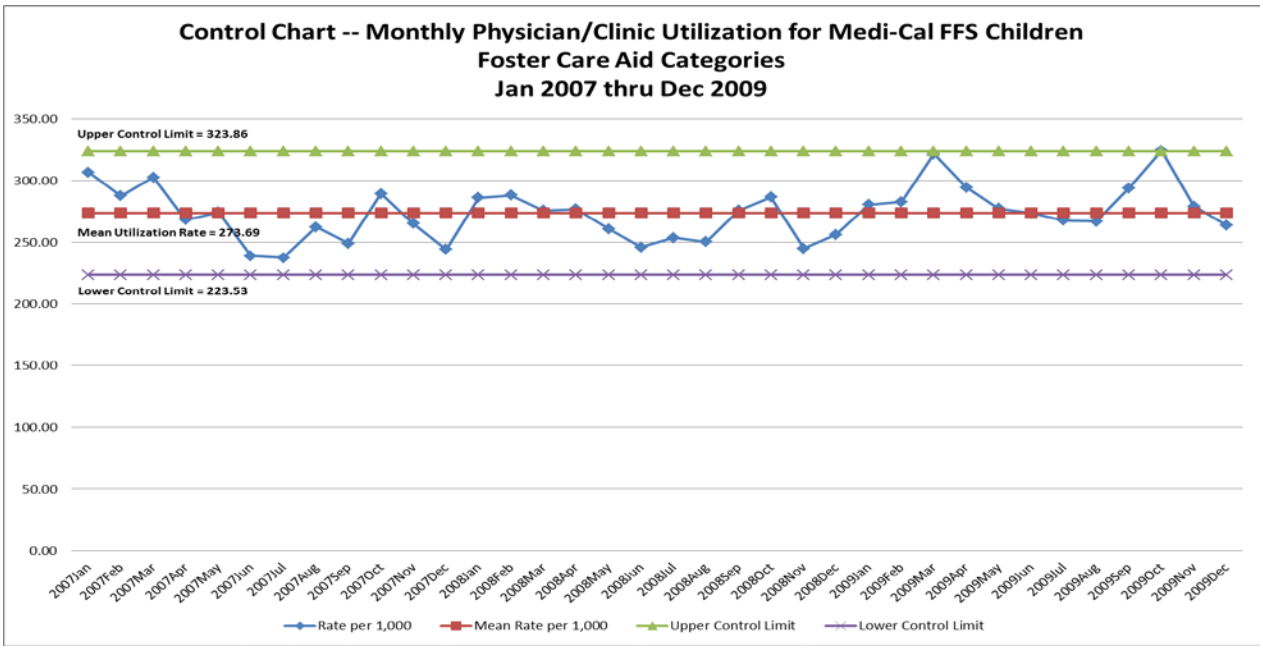
7.2-3 - Using Control Charts to Monitor Access to Healthcare Services

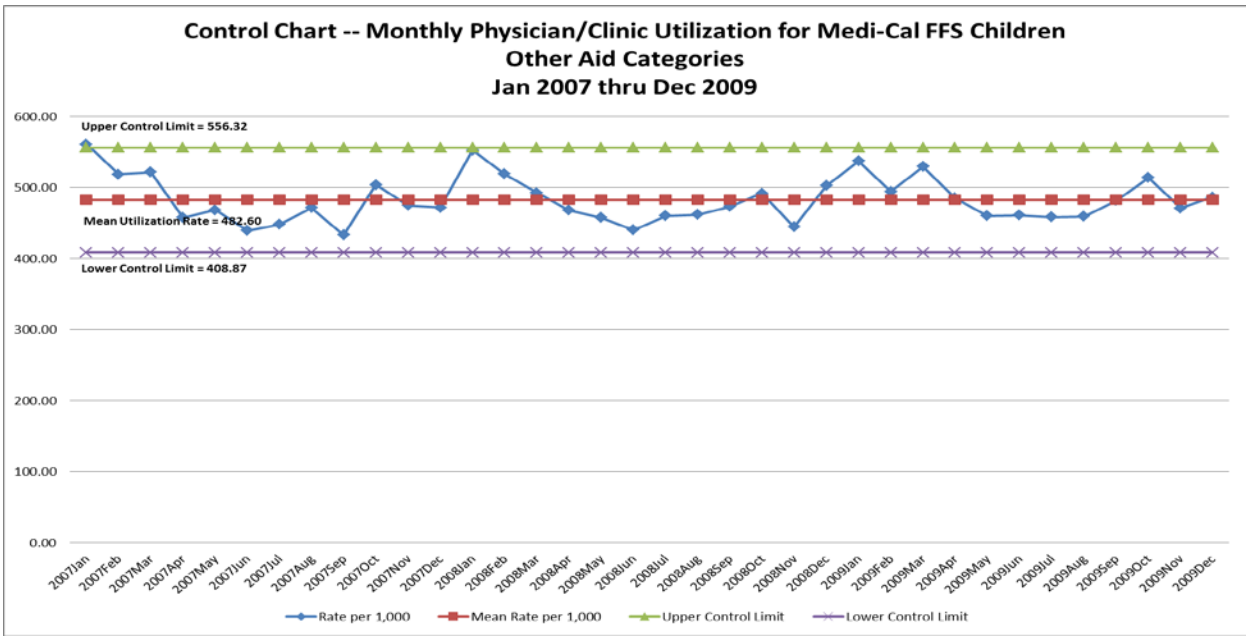
In addition to providing a tool for evaluating the current state of healthcare utilization in the Medi-Cal population, DHCS proposes the use of control charts for on-going monitoring of future healthcare utilization. DHCS anticipates that ambulatory care utilization will follow much the same course as this baseline analysis encompassing the period 2007 through 2009. The retrospective analysis of historical data, presented above, will serve as the reference or established mean, upper and lower control limits. Future data points will be plotted in the control charts using these established limits. Two or more consecutive points plotted outside of these established limits will provide a signal indicating that healthcare utilization has deviated markedly from the expected range. In these circumstances, further investigation will be warranted.

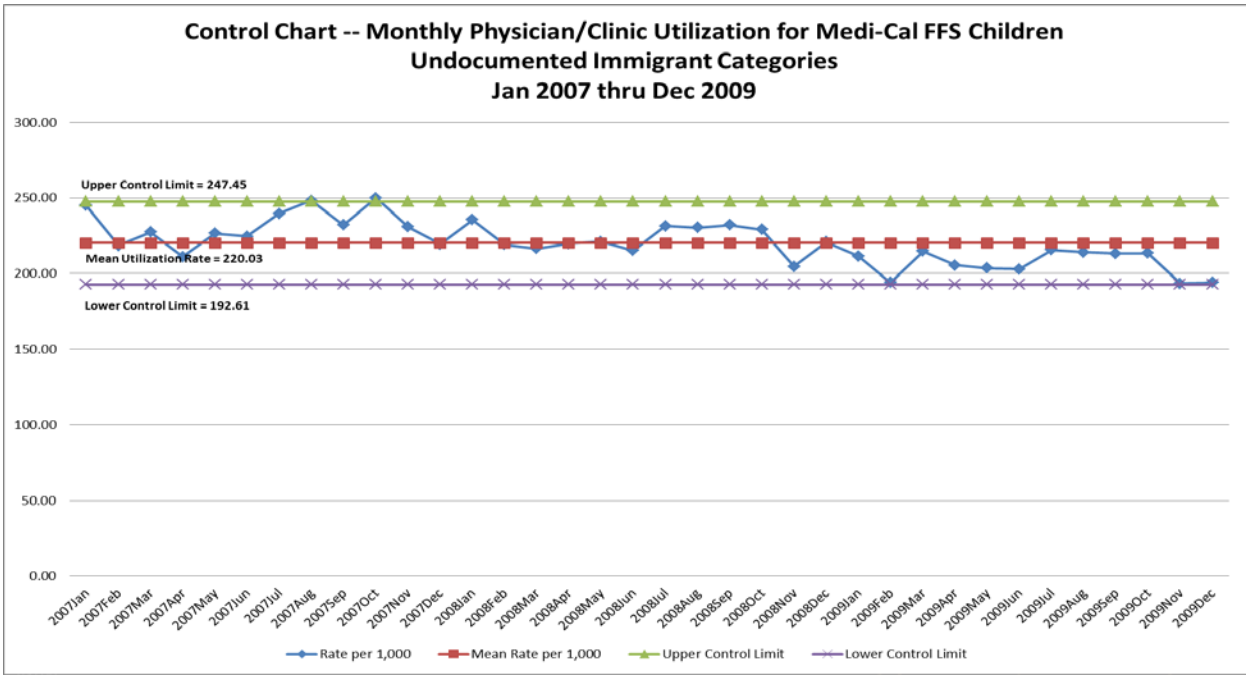
Physician/Clinic Utilization Among Medi-Cal FFS Children, 2007-2009



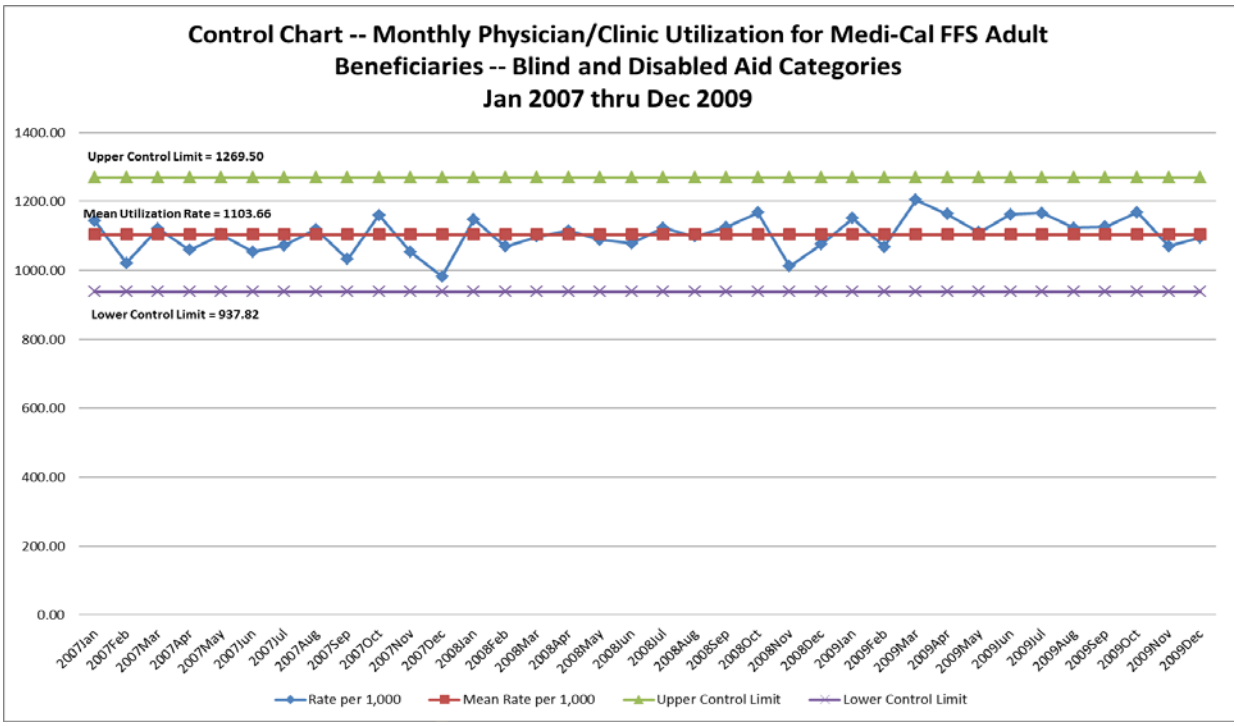

Control Chart -- Monthly Physician/Clinic Utilization for Medi-Cal FFS Children
Families Aid Categories
Jan 2007 thru Dec 2009
Upper Control Limit = 373.87
Mean Utilization Rate = 312.44
Lower Control Limit = 251.00
400.00
350.00
300.00
250.00
200.00
150.00
100.00
50.00
0.00
2007Jan 2007Feb 2007Mar 2007Apr 2007May 2007Jun 2007Jul 2007Aug 2007Sep 2007Oct 2007Nov 2007Dec 2008Jan 2008Feb 2008Mar 2008Apr 2008May 2008Jun 2008Jul 2008Aug 2008Sep 2008Oct 2008Nov 2008Dec 2009Jan 2009Feb 2009Mar 2009Apr 2009May 2009Jun 2009Jul 2009Aug 2009Sep 2009Oct 2009Nov 2009Dec
Rate per 1,000
Mean Rate per 1,000
Upper Control Limit
Lower Control Limit

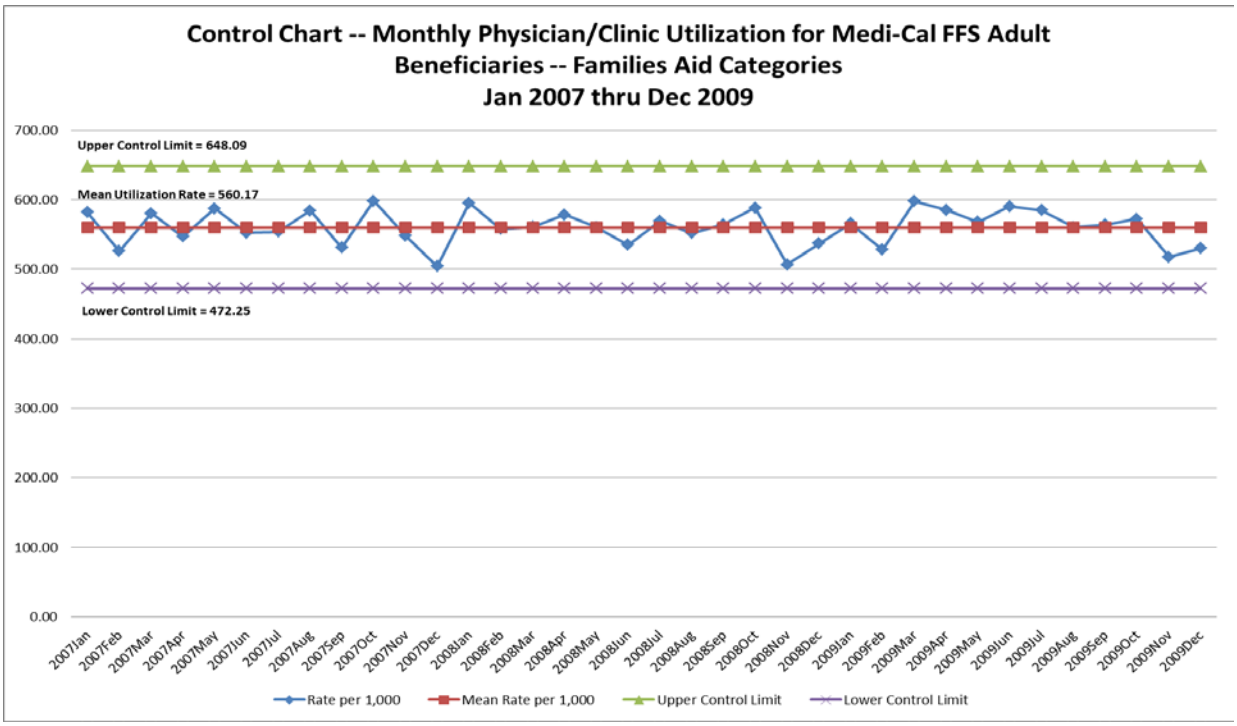

Control Chart -- Monthly Physician/Clinic Utilization for Medi-Cal FFS Children
Foster Care Aid Categories
Jan 2007 thru Dec 2009
Upper Control Limit = 323.86
Mean Utilization Rate = 273.69
Lower Control Limit = 223.53
350.00
300.00
250.00
200.00
150.00
100.00
50.00
0.00
2007Jan 2007Feb 2007Mar 2007Apr 2007May 2007Jun 2007Jul 2007Aug 2007Sep 2007Oct 2007Nov 2007Dec 2008Jan 2008Feb 2008Mar 2008Apr 2008May 2008Jun 2008Jul 2008Aug 2008Sep 2008Oct 2008Nov 2008Dec 2009Jan 2009Feb 2009Mar 2009Apr 2009May 2009Jun 2009Jul 2009Aug 2009Sep 2009Oct 2009Nov 2009Dec
Rate per 1,000
Mean Rate per 1,000
Upper Control Limit
Lower Control Limit

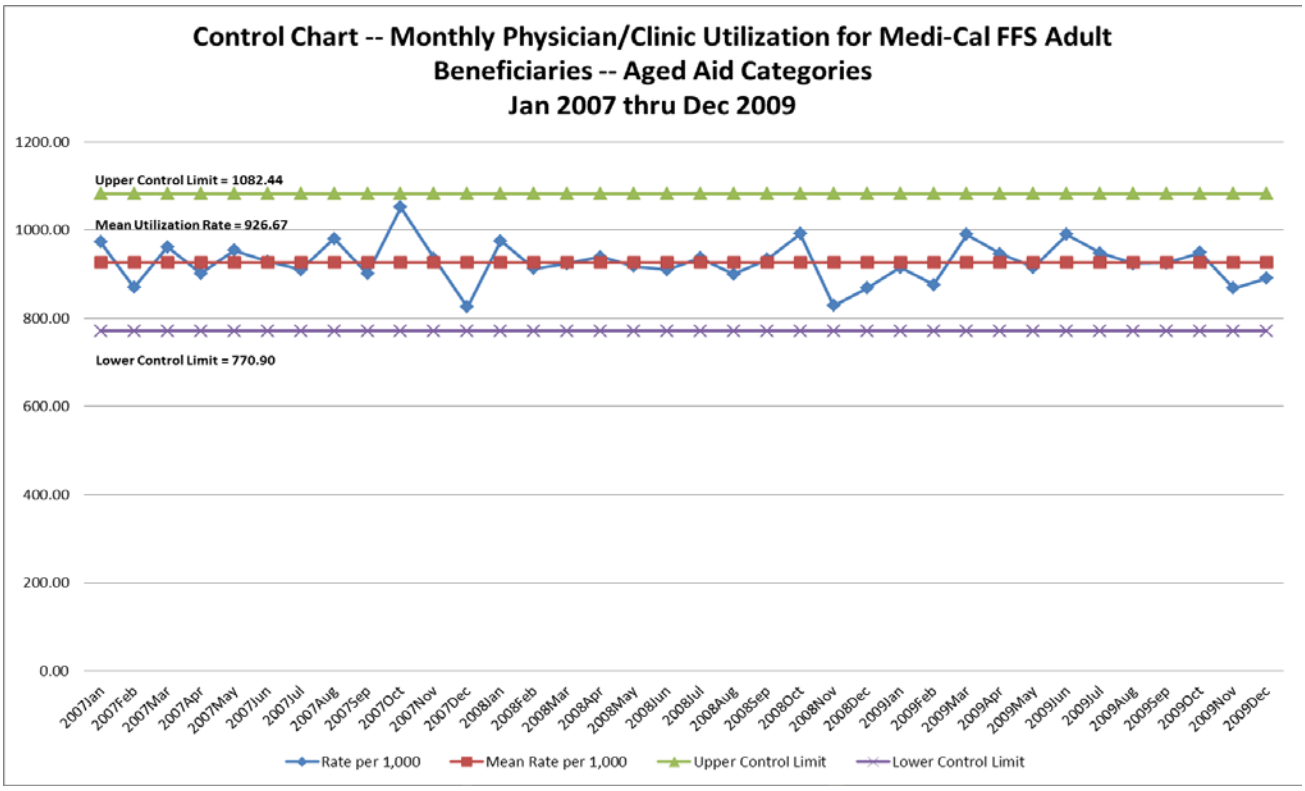


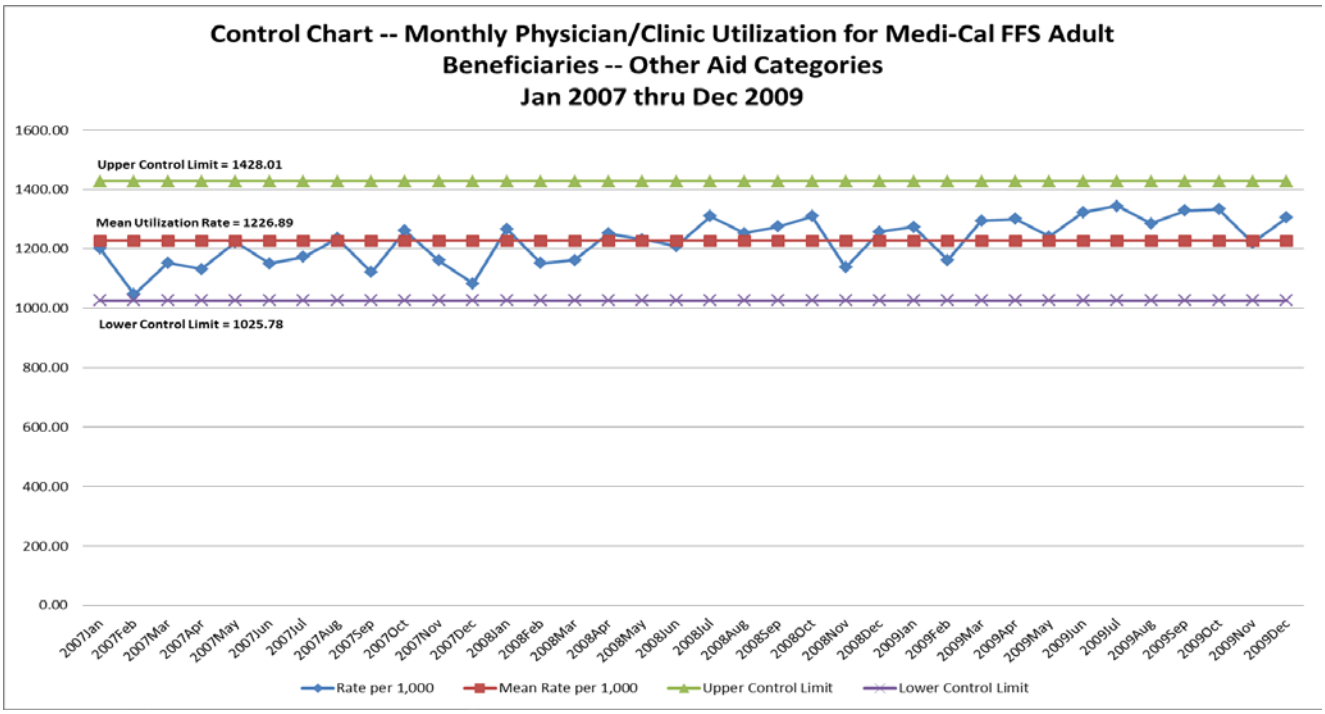


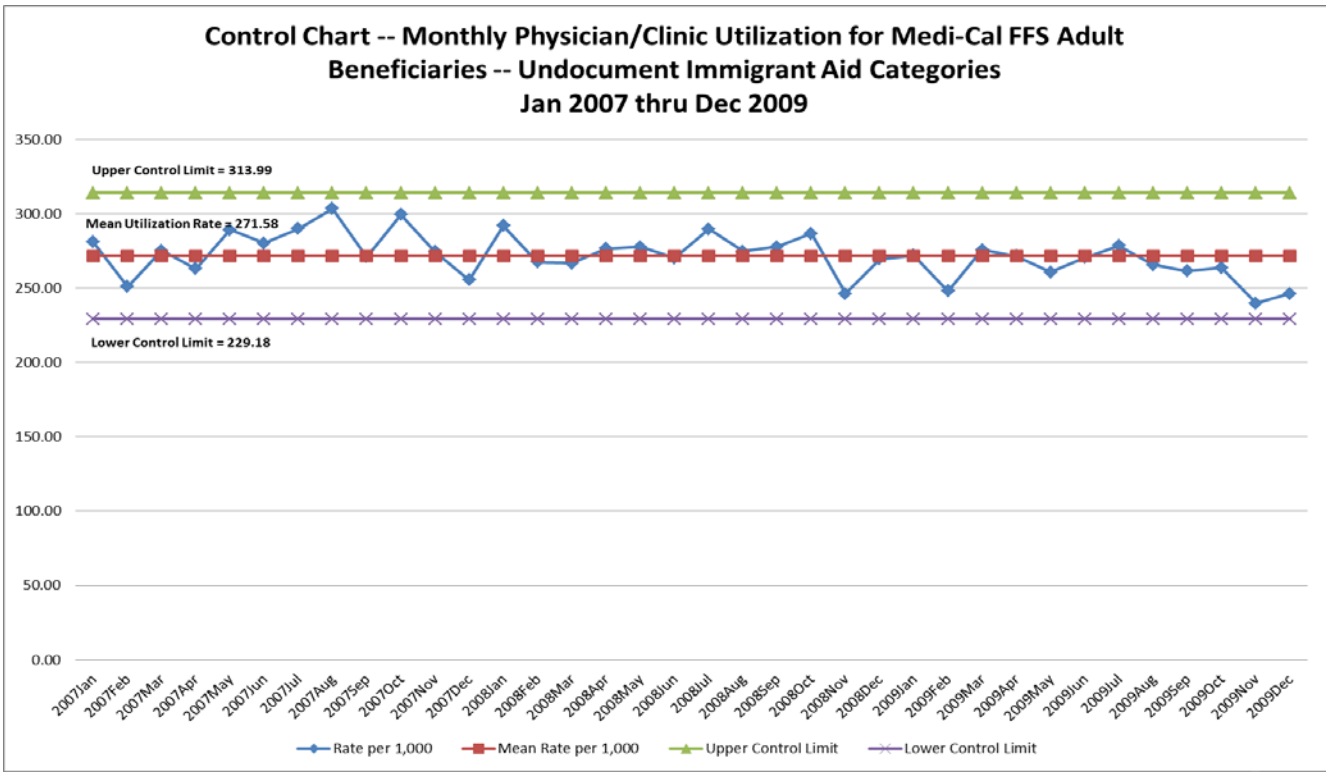
Physician/Clinic Utilization Among Medi-Cal FFS Adult Beneficiaries, 2007-2009


Control Chart -- Monthly Physician/Clinic Utilization for Medi-Cal FFS Adult Beneficiaries -- Blind and Disabled Aid Categories
Jan 2007 thru Dec 2009
Upper Control Limit = 1269.50
Mean Utilization Rate = 1103.66
Lower Control Limit = 937.82
1400.00
1200.00
1000.00
800.00
600.00
400.00
200.00
0.00
2007Jan 2007Feb 2007Mar 2007Apr 2007May 2007Jun 2007Jul 2007Aug 2007Sep 2007Oct 2007Nov 2007Dec 2008Jan 2008Feb 2008Mar 2008Apr 2008May 2008Jun 2008Jul 2008Aug 2008Sep 2008Oct 2008Nov 2008Dec 2009Jan 2009Feb 2009Mar 2009Apr 2009May 2009Jun 2009Jul 2009Aug 2009Sep 2009Oct 2009Nov 2009Dec
Rate per 1,000
Mean Rate per 1,000
Upper Control Limit
Lower Control Limit


Control Chart -- Monthly Physician/Clinic Utilization for Medi-Cal FFS Adult Beneficiaries -- Families Aid Categories
Jan 2007 thru Dec 2009
Upper Control Limit = 648.09
Mean Utilization Rate = 560.17
Lower Control Limit = 472.25
700.00
600.00
500.00
400.00
300.00
200.00
100.00
0.00
2007Jan 2007Feb 2007Mar 2007Apr 2007May 2007Jun 2007Jul 2007Aug 2007Sep 2007Oct 2007Nov 2007Dec 2008Jan 2008Feb 2008Mar 2008Apr 2008May 2008Jun 2008Jul 2008Aug 2008Sep 2008Oct 2008Nov 2008Dec 2009Jan 2009Feb 2009Mar 2009Apr 2009May 2009Jun 2009Jul 2009Aug 2009Sep 2009Oct 2009Nov 2009Dec
Rate per 1,000
Mean Rate per 1,000
Upper Control Limit
Lower Control Limit


Control Chart -- Monthly Physician/Clinic Utilization for Medi-Cal FFS Adult Beneficiaries -- Aged Aid Categories
Jan 2007 thru Dec 2009
Upper Control Limit = 1082.44
Mean Utilization Rate = 926.67
Lower Control Limit = 770.90
1200.00
1000.00
800.00
600.00
400.00
200.00
0.00
Rate per 1,000
Mean Rate per 1,000
Upper Control Limit
Lower Control Limit


Control Chart -- Monthly Physician/Clinic Utilization for Medi-Cal FFS Adult Beneficiaries -- Other Aid Categories
Jan 2007 thru Dec 2009
Upper Control Limit = 1428.01
Mean Utilization Rate = 1226.89
Lower Control Limit = 1025.78
1600.00
1400.00
1200.00
1000.00
800.00
600.00
400.00
200.00
0.00
Rate per 1,000
Mean Rate per 1,000
Upper Control Limit
Lower Control Limit



Source: Fiscal Intermediary's 35-File of Paid Claim records with dates from January 1, 2007 through December 31, 2009, and data from the MEDS Eligibility System MMEF File.

7.2 – Results of Comparisons to Standards

The healthcare decisions made by physicians account for nearly 90% of all healthcare spending. The first point of contact for most healthcare needs is in a clinic or physician's office. From this initial point of contact, numerous other services may be accessed such as prescription drugs, lab services, and referrals to specialty care. Receipt of regular ambulatory healthcare visits has been widely recognized as a fundamental measure of successful healthcare access. The receipt of high-quality primary care visits has shown to improve the overall health and well-being of the population, reducing illness complications, lowering mortality rates, and preventing hospitalizations. A healthcare encounter in a physician's office or other ambulatory care setting serves as an opportunity for patients to receive physical assessments that uncover early signs of health problems. For children, early detection of physical and developmental problems has a profound impact on their ability to participate fully in school and to lead a productive, healthy life.

Several medical and governmental agencies issue clinical guidelines for healthcare services provided to children and adults. Clinical guidelines set by the American Academy of Pediatrics (AAP) recommend that children have eight healthcare visits in their first year of life, three in their second year, and one a year thereafter. We analyze administrative claims data from the Medi-Cal program to see whether the number of provider visits, as recommended by the AAP, was achieved by the youngest of Medi-Cal beneficiaries. Provider types analyzed here include physicians in solo practice or affiliated with a physician group, community clinics, county, rural health clinics, Indian health clinics, federally qualified health centers, and hospital emergency departments.

Among Medi-Cal FFS infants 12 months and younger, the mean number of physician visits was 8.6. For Medi-Cal children age 2 who received any ambulatory care visits during the year, the mean number of visits was 6.5. For each of these age groups, the minimum number of ambulatory care visits as recommended by the AAP was achieved for most children in the Medi-Cal FFS program.

Table 21: Mean Number of Physician and Clinic Visits By Age Grouping and Aid Categories For Medi-Cal Beneficiaries Age 2 and Younger with 12-Months Continuous Enrollment, CY 2009

	Mean Number of Visits[1]	*Number Recommended by the American Academy of Pediatricians*[2]
Children Age 1 and Younger		
Medically Indigent -- Child	4.9	
Medically Indigent -- Adoption/Foster Care Children	21.3	
Medically Needy -- Families	7.7	
Public Assistance -- Adoption/Foster Care Children	9.0	
Public Assistance -- Blind Children	12.0	
Public Assistance -- Disabled Children	24.9	
Public Assistance -- Families	8.2	
Undocumented Immigrant Children	0.4	
All Children Age 1 and Younger	*8.6*	*8.0*
Children Age 2		
Medically Indigent -- Child	2.9	
Medically Indigent -- Adoption/Foster Care Children	4.1	
Medically Needy -- Families	6.4	
Public Assistance -- Adoption/Foster Care Children	5.9	
Public Assistance -- Disabled Children	17.5	
Public Assistance -- Families	5.7	
Undocumented Immigrant Children	1.9	
All Children Age 2	*6.5*	*3.0*

[1] Physician visits include visits to sole physician practitioners, physician groups, clinic visits, hospital outpatient ER visits, and hospital outpatient non-emergency visits.
[2] Based on clinical guidelines published by the American Academy of Pediatrics, *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents, Third Edition* (2008).

7.3 – Results of Comparisons to National Statistics

Many national clinical standards are incorporated into surveys which are collected nationally. Some of these surveys include the National Health Interview Survey (NHIS), the Medical Expenditure Panel Survey (MEPS), and the National Survey of Children's Health (NSCH). The results of these surveys are widely published and offer comparison data to those examined in the Medi-Cal program. Measurement of healthcare utilization of broad national interest is collected through these survey sources. For example, most of the surveys mentioned above collect data on the annual use of ambulatory care and preventive dental visits for both

children and adults. Where appropriate, we utilized these national standards as benchmarks and compared Medi-Cal realized access to the applicable national utilization standard.

In the tables below, we present findings from our analysis of physician and clinic visits for Medi-Cal beneficiaries with continuous enrollment in 2007, 2008, and 2009, and compare these rates to those reported from national surveys. Our findings present the proportion of the Medi-Cal population who received at least one physician or clinic visit during each calendar year studied.

National statistics indicate that, overall, 90% of children under the age of 18 receive at least one ambulatory care visits per year. In our analysis, approximately 90% of Medi-Cal children in the youngest age groups (those age 12 months or younger) had at least one physician or clinic visit during 2009. However, only half of all children age 5 and older ever received a physician or clinic visit during the year, despite their continuous enrollment in the program. Overall, 56.1% of Medi-Cal children age 0-20 received at least one physician or clinic visit during 2009.

We further examined the proportion of children receiving at least one physician or clinic visit by metropolitan vs. non-metropolitan area. It is believed that many children and families living in rural or non-metropolitan areas of the state use FQHCs or health clinics as their primary source of care. The designation of metropolitan vs. non-metropolitan was used to identify differences in patterns of utilization specific these geographic breakdowns. Our analysis found that, although a large proportion of children in the youngest age groups (less than 24 months old) had seen a physician in the past year, regardless of metropolitan designation, higher proportions of physician utilization was observed overall among children receiving care in non-metropolitan areas. These differences in utilization patterns may be attributed to the use of FQHCs and other clinics.

Table 22: Proportion of Medi-Cal FFS Children with a Physician and Clinic Visit during the Year, By Age Grouping For Medi-Cal Beneficiaries with 12-Months Continuous Enrollment, Statewide and by Metropolitan Area, 2009

	Proportion with at Least One Visit[1]	*National Average*[2]
Total Children Statewide	***56.1%***	***89.5%***
Age <1	92.3%	
1	89.3%	
2	82.7%	
3-4	74.9%	
5-9	54.4%	
10-14	47.4%	
15-17	51.8%	
18-20	50.4%	
Children in Metropolitan Areas	53.9%	
Age <1	91.6%	
1	88.3%	
2	81.3%	
3-4	73.1%	
5-9	52.4%	
10-14	45.4%	
15-17	49.9%	
18-20	49.1%	

	Proportion with at Least One Visit[1]	National Average[2]
Total Children Statewide	***56.1%***	***89.5%***
Children in Non Metropolitan Areas	79.3%	
Age <1	97.1%	
1	95.6%	
2	91.9%	
3-4	88.9%	
5-9	75.9%	
10-14	72.7%	
15-17	77.1%	
18-20	72.7%	

[1] Physician visits include visits to sole physician practitioners, physician groups, clinic visits, hospital outpatient ER visits, and hospital outpatient non-emergency visits.

[2] Source: Data from the National Health Interview Survey, as published in Health, United States, 2010, retrieved from www.cdc.gov/nchs/hus.htm

Children in the Undocumented Immigrant aid category have access to emergency and pregnancy-related Medi-Cal services only, which results in rates of clinical services utilization much lower than for other Medi-Cal subgroups. The proportion of children in the Undocumented Immigrant aid category who had at least one physician visit ranged from 26% to 35% in 2007 and 17% to 33% in 2009. When examining the overall proportion of children receiving at least one physician or clinic visit, excluding these Undocumented Immigrant children, percentages rose to 68.7% in 2007 and 65.6% in 2009. Among children receiving care in non-metropolitan areas, the percentages were much higher at 78.8% in 2007 and 78.4% in 2009. The proportion of Medi-Cal children who had at least one physician visit in the past 12 months is still well below the national average of 90% for US children, but in line with studies reporting ambulatory care services for low income and minority children. For example, in studies utilizing data from the National Survey of Children's Health, only 70% of Native American children, Asian and Pacific Islanders, and Latino children studied had a physician visits in the past year compared to 80% among children of other racial/ethnic groups.[viii] Data from the Medical Expenditure Panel Survey (MEPS) show that among low-income children (those living in households with incomes 200% below the Federal Poverty Level), only 63.7% had an office-based physician visit compared to 76.5% among children in middle- and high-income families.[ix] In addition, among children living at 100% below the Federal Poverty Level, annual physician visits ranged from 46.6% among poor African Americans to 63.1% among poor White children.[x]

In general, a larger proportion of adult beneficiaries (those ages 21 and older) had at least one physician or clinical services during the study years compared to children less than age 21. Among Medi-Cal adults, 82% had at least one physician or clinic visit during the study years. Ambulatory care utilization among Medi-Cal adults is comparable to data reported from the 2009 National Health Interview Survey indicating that 80.6% of US adults below 100% of poverty had at least one physician visit in the past year.

The percentage of adult beneficiaries receiving at least one physician or clinic service remained relatively stable from 2007 to 2009, with one exception. Among adults in the "Other" aid category, slight increases in the proportion having any physician or clinic visits was observed, from 80.2% in 2007 to 86.1% in 2009. This trend held true for adults receiving care in metropolitan areas of the state, as well as those receiving care in non-metropolitan areas.

Among Medi-Cal children, trends in the proportion receiving any ambulatory services were downward for most aid categories, and for children receiving care in metropolitan areas of the state. The most significant change year over year was associated with children in the undocumented eligibility category. During 2007 and 2008, roughly 28% of this population received at least one physician or clinic service. In 2009, the percentage receiving one physician or clinic service dropped to 17%. The downward trend in ambulatory care utilization among undocumented immigrant children is believed to be attributed, in part, to the decrease in teen birth rates statewide. Since documented immigrants receive Medi-Cal services related to emergency and pregnancy-related care only, it is believe that much of the ambulatory care service use by this group is for prenatal care and other pregnancy-related visits.

Table 23: National Ambulatory Care Statistics

Doctors' Office and Clinic Visits by US Children Age <19, FY2008/2009			*Doctors' Office, Emergency Department, and Home Visits by US Adults Age >19*	
	% with at Least One Visit			*% with at Least One Visit*
Children Age <19	89.5		Adults Age >19	84.6
Children Age <19 and Below 100% FPL	90.7		Adults Age >19 and Below 100% FPL	80.6

Source: Data from the National Health Interview Survey, as published in *Health, United States, 2010*, retrieved from www.cdc.gov/nchs/hus.htm

Table 24: Distribution of Physician and Clinic Visits by Age Grouping, Aid Categories and Metropolitan Designation, Medi-Cal FFS Beneficiaries, 2007 to 2009

Percent of Beneficiaries with 12-Month Continuous Enrollment and at least One Physician and Clinic Visits by Age Grouping and Aid Categories						
Statewide	CY 2007		CY 2008		CY 2009	
Adults	%	All	%	All	%	All
Aged	83.28%	37,811	82.61%	40,102	81.63%	41,077
Blind/Disabled	82.85%	287,509	82.73%	285,739	83.04%	282,950
Families	77.14%	58,367	77.47%	58,015	76.52%	57,420
Other	80.19%	10,750	88.10%	9,956	86.10%	10,696
Undocumented	30.00%	338,033	29.53%	346,317	28.80%	384,313
Total (Excluding Undocumented)	81.98%	394,444	82.08%	393,816	82.02%	392,148
Children						
Blind/Disabled	67.04%	66,212	66.83%	66,475	66.09%	65,928
Foster Care	62.16%	82,359	61.68%	81,776	57.70%	79,849
Families	73.33%	161,610	73.37%	163,116	69.91%	156,014
Other	64.24%	22,422	67.38%	19,417	61.64%	17,877
Undocumented	27.99%	143,415	27.78%	139,926	17.25%	139,809
Total (Excluding Undocumented)	68.70%	332,603	68.81%	330,784	65.61%	319,668
Metropolitan Area						
Adults						
Aged	83.29%	37,645	82.61%	40,102	81.64%	40,847
Blind/Disabled	82.64%	273,608	82.48%	285,739	82.83%	268,130
Families	75.60%	47,698	75.97%	58,015	74.64%	44,736
Other	80.09%	10,445	88.04%		85.95%	10,378
Undocumented	29.96%	335,780	29.51%	346,317	28.76%	381,329
Total (Excluding Undocumented)	81.72%	369,403	81.81%	367,876	81.78%	364,096
Children						
Blind/Disabled	66.39%	63,469	66.19%	63,721	65.43%	63,175
Foster Care	61.86%	79,640	61.46%	79,072	57.31%	77,081
Families	72.24%	136,658	72.30%	137,413	67.82%	127,416
Other	62.85%	20,489	65.62%	17,111	58.89%	15,069
Undocumented	28.00%	142,102	27.76%	138,571	17.21%	138,293
Total (Excluding Undocumented)	67.61%	300,256	67.72%	297,317	63.94%	282,741
Non-Metropolitan Area						
Adults						
Aged	80.72%	166	83.60%	189	80.00%	230
Blind/Disabled	87.05%	13,901	87.43%	14,389	86.87%	14,820
Families	84.04%	10,669	83.88%	11,043	83.17%	12,684
Other	83.61%	305	89.69%	320	90.88%	318
Undocumented	35.73%	2,253	32.75%	2,330	33.28%	2,984
Total (Excluding Undocumented)	85.68%	25,041	85.92%	25,940	85.18%	28,052
Children						
Blind/Disabled	82.06%	2,743	81.63%	2,754	81.26%	2,753
Foster Care	71.09%	2,719	68.23%	2,704	68.64%	2,768
Families	79.32%	24,952	79.11%	25,703	79.23%	28,598

Percent of Beneficiaries with 12-Month Continuous Enrollment and at least One Physician and Clinic Visits by Age Grouping and Aid Categories						
Statewide	CY 2007		CY 2008		CY 2009	
Other	79.00%	1,933	80.40%	2,306	76.39%	2,808
Undocumented	26.73%	1,313	29.59%	1,355	20.51%	1,516
Total (Excluding Undocumented)	78.84%	32,347	78.53%	33,467	78.37%	36,927

Sources: Fiscal Intermediary's 35-File of Paid Claim records with dates from January 1, 2007 through December 31, 2009, and data from the MEDS Eligibility System, MMEF File.

7.4 Conclusions

7.4-1 - Conclusions of Trend analysis

- Utilization rates for physician and clinics varied little over the three annual time periods for adults, except among those in the Blind/Disabled and "Other" aid categories where utilization for both groups significantly increased from 2007 to 2009. This increase in utilization was identified using summary statistical methods as well as through the use of control charts.

- Adults and children in the Medi-Cal FFS program enrolled in the undocumented immigrant aid codes experienced significant declines in physician and clinic visits from 2007 to 2009, which were identified in both summary statistics and through the use of control charts. This decline is hypothesized to be attributed to the state's declining birth rate, and the decreased need for prenatal care and physician visits for pregnancy-related health conditions.

- Overall, utilization rates among children were 50% less than rates among adults of similar disability status. However, children receiving care in non-metropolitan areas of the state had notably higher utilization rates than those in metropolitan areas.

- Overall trends and fluctuations in physician and clinic visit utilization were found to be within the expected ranges established by the control chart methodology. Control limits set by this analysis will serve as reference ranges for future data observations, and provide a method for identifying deviations in predicted utilization patterns.

7.4-2 - Conclusions of Comparisons to Standards

- Many major medical organizations recommend an annual physician visit that includes a physical examination. The proportion of Medi-Cal adults receiving an annual physician visit remained relatively unchanged from 2007 (81.9%) to 2009 (82.0%). Medi-Cal adult utilization of physician visits compares favorably with national health surveys of low income US adults, and was shown to be similar to the national average of 80.6% among low income survey respondents.

- Comparisons made to clinical standards set by the American Academy of Pediatrics showed that Medi-Cal children in the youngest age groups (age less than 24 months)

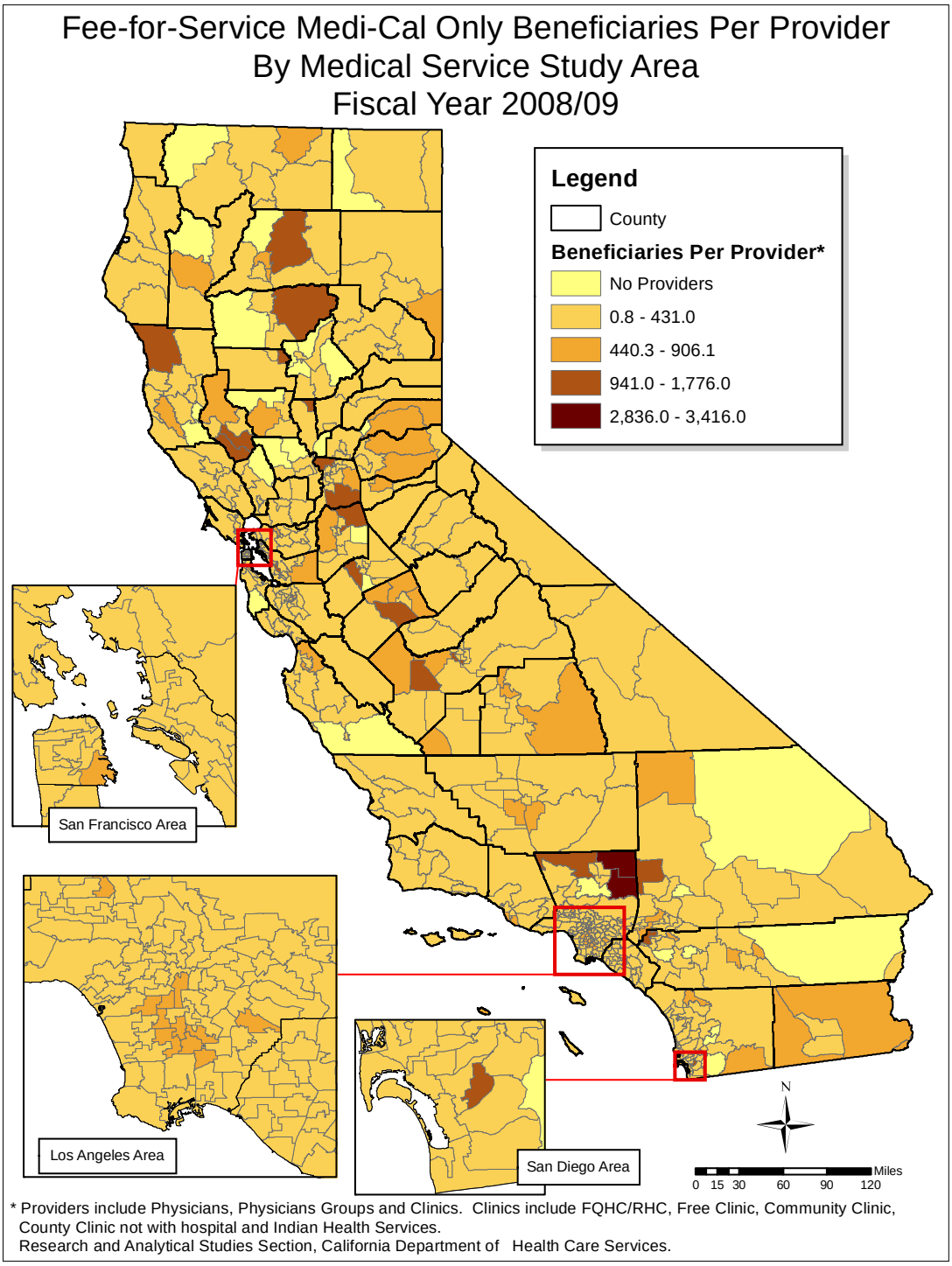
received the minimum recommended number of visits (8 visits for children less than age 1, and 3 visits for children age 2).

- While the majority of Medi-Cal FFS children age 24 months and younger received at least one physician visit during the year (83% to 92%), only half of the children age 5 and older received the recommended annual physician visit as prescribed by the American Academy of Pediatrics during calendar year 2009. Low rates of physician utilization were observed among Medi-Cal children, despite their continuous enrollment in the Medi-Cal program. When excluding children in undocumented aid categories from our analysis, the prevalence of physician or clinic visits among children in 2009 rose to 65.6%. These utilization rates are well below the national average of 90% for US children, but in line with studies examining ambulatory care utilization among low income and minority children.

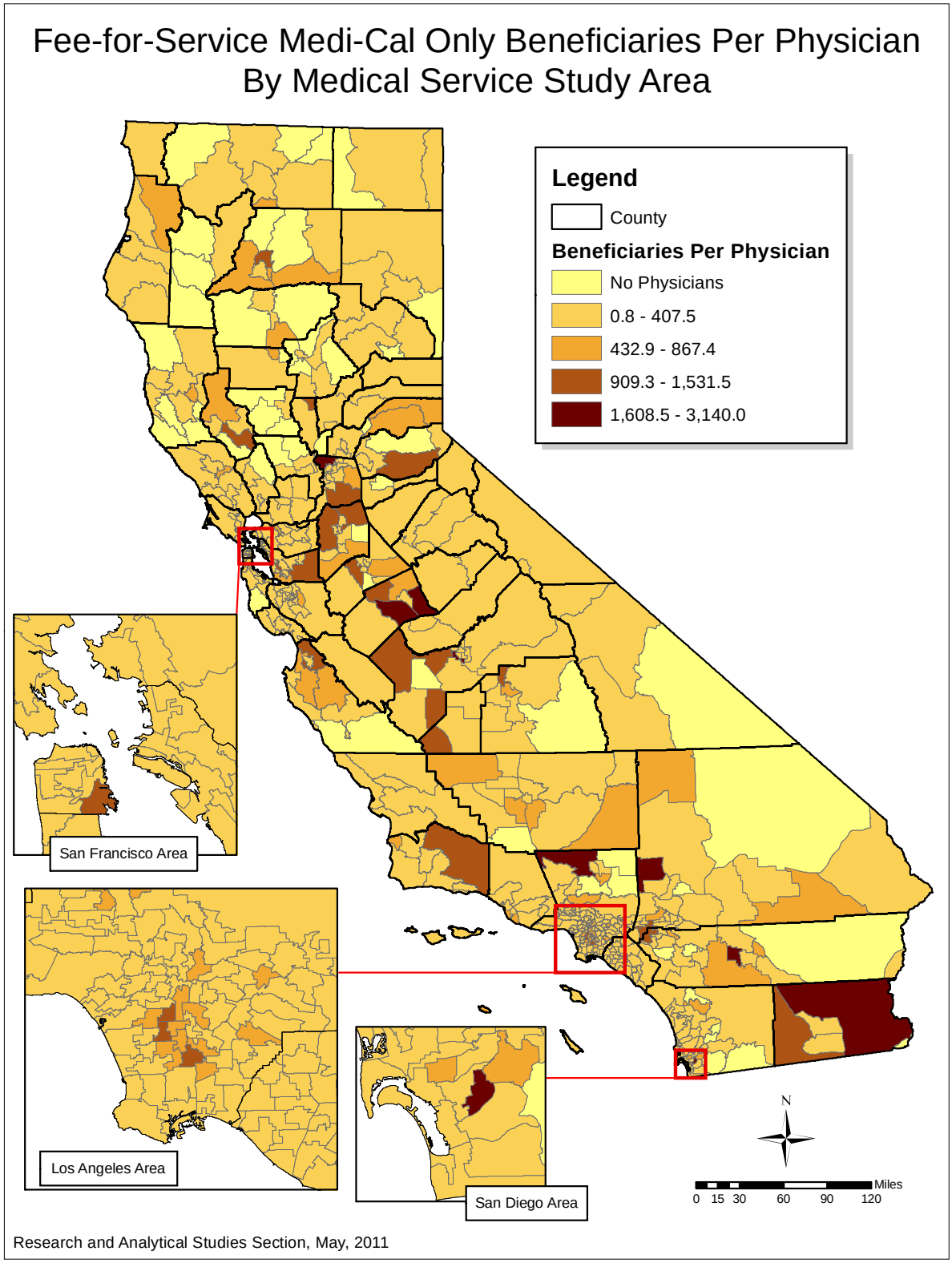
- Based on the above analysis—of children's utilization of physician and clinic visits—DHCS intends to withdraw its proposal to implement a 10% provider payment reduction for physician and clinic services provided to Medi-Cal eligibles ages 0-20.

Exhibits – Maps

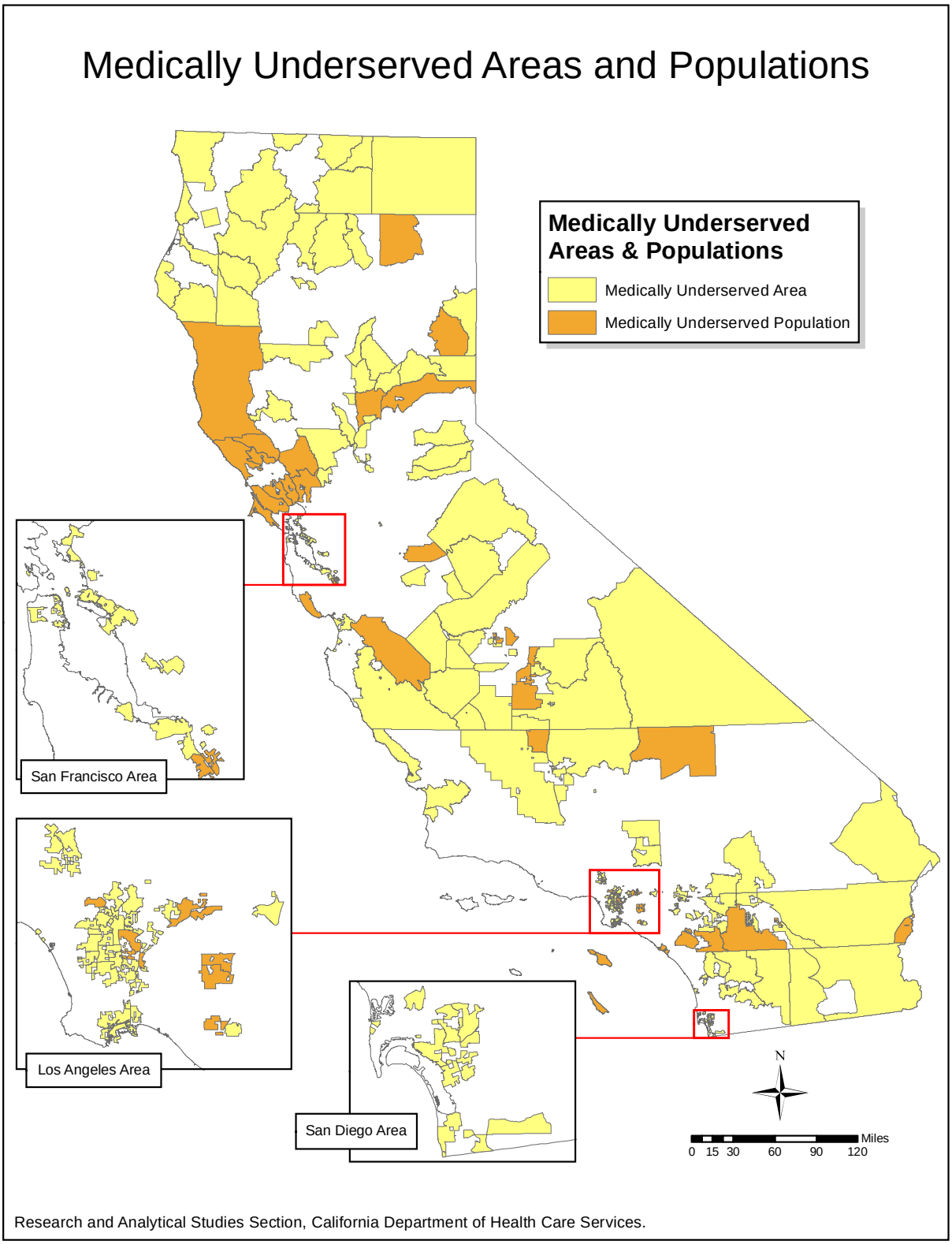
Map 1 - Ratio of Fee-for-Service Medi-Cal Only Beneficiaries to Providers by Medical Study Service Area



Map 2 - Fee for Service Medi-Cal Only Beneficiaries per Physician by MSSA



Map 3 - Medically Underserved Areas and Populations



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Appendix—A: Detail Description of Aid Code Categories Used In The Access Study

Detail Aid Category	Aid Code Category Used For Access Study	Aid Codes
BCCTP	Other	0L, 0M, 0N, 0P, 0R, 0T, 0U, 0V, 0W, 0X, 0Y
Inmates	Other	F1, F2, F3, F4, G1, G2, G3, G4
Hurricane Katrina Evacuees	Other	65
MI - Adoption or Foster Care	Foster Care	03, 04, 06, 45, 46, 4A, 4K, 4M, 5K
MI – Adult	Other	81, 86, 87
MI - Child	Other	82, 83, 5E, 7T, 8U, 8V, 8W
MI - LTC	Other	53
MN - Aged	Aged	14, 17, 1D, 1H, 1X, 1Y
MN - Blind	Blind/Disabled	24, 27, 2D, 2H
MN - Disabled	Blind/Disabled	64, 67, 6D, 6H, 6S, 6V, 6W, 6X, 6Y, 8G

Detail Aid Category	Aid Code Category Used For Access Study	Aid Codes
MN - Families	Families	34, 37, 39, 54, 59, 3D, 3N, 5X, 6J, 6R, 7J
Other	Other	01, 02, 08, 44, 47, 51, 52, 56, 57, 71, 72, 73, 76, 79, 80, 0A, 2A, 2V, 4V, 5V, 6G, 7A, 7F, 7G, 7H, 7M, 7N, 7P, 7R, 7V, 8E, 8P, 8R
PA - Adoption or Foster Care	Foster Care	40, 42, 43, 77, 78, 4C, 4F, 4G, 4H, 4L, 4T
PA - Aged	Aged	10, 16, 18, 1E
PA - Blind	Blind/Disabled	20, 26, 28, 2E, 6A
PA - Disabled	Blind/Disabled	36, 60, 66, 68, 6C, 6E, 6N, 6P
PA - Families	Families	30, 32, 33, 35, 38, 3A, 3C, 3E, 3G, 3H, 3L, 3M, 3P, 3R, 3U, 3W
Undocumented	Undocumented	07, 48, 49, 55, 58, 69, 70, 74, 75, 1U, 3T, 3V, 5F, 5G, 5J, 5N, 5R, 5T, 5W, 6U, 7C, 7K, 8N, 8T, C1, C2, C3, C4, C5, C6, C7, C8, C9, D1, D2, D3, D4, D5, D6,D7, D8, D9, 5H, 5M, 5Y

The list of all Medi-Cal aid codes with descriptions can be found at:
http://files.medi-cal.ca.gov/pubsdoco/publications/masters-mtp/part1/aidcodes_z01c00.doc

8. ENDNOTES

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