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Assistant Secretary for Planning and Evaluation
Office of Disability, Aging and Long-Term Care Policy



ANALYSIS OF THE CALIFORNIA IN-HOME SUPPORTIVE SERVICES (IHSS) PLUS WAIVER DEMONSTRATION PROGRAM

July 2008

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EXECUTIVE SUMMARY

In 2004, the Centers for Medicare and Medicaid Services (CMS) approved California's In-Home Supportive Services (IHSS) Plus program under the Section 1115 demonstration authority of the Social Security Act. California refers to this program as the IHSS Plus Waiver. Full Medicaid (referred to as Medi-Cal in California) benefits and IHSS Plus benefits are available to all eligible IHSS Plus recipients. The IHSS program began in the early 1970s and was originally funded primarily with state and county funds and some federal Title XX (later renamed Social Services Block Grant) funds. Beginning in 1993, most IHSS services were financed through the Personal Care Services Program (PCSP) optional benefit and California benefited from 50% federal financial participation to cover these costs. However, prior to the granting of the IHSS Plus waiver, some services provided to a minority of IHSS recipients were not eligible for Medicaid federal matching payments. The cost of these "Residual Program" services had to be borne entirely by the state, with county cost sharing.

The effect of the IHSS Plus Waiver is to reduce the state and county share of costs for eligible Residual Program services to the same rates as in the state's PCSP. About 26,000 persons were receiving all or a portion of their IHSS personal assistance in 2004 through elements of the Residual Program that were to be incorporated into the IHSS Plus Waiver. The components of the IHSS Plus Waiver (i.e., the services not previously eligible for federal matching payments) include:

- *Advance Pay*: IHSS recipients meeting severely impaired criteria have the option to receive Advance Pay (i.e., Medicaid funds are paid to recipients in advance of personal assistance service delivery). This allows recipients to assure timely payments to care providers (including any emergency back-up providers).
- *Parent and Spouse Providers*: IHSS Plus Waiver permits spouses of adults, and parents of minor children to be paid as IHSS providers for personal care, protective supervision, domestic and related services. Other family members as well as Non-Relative providers can provide similar services under California's regular IHSS (i.e., PCSP) program.
- *Restaurant Meal Vouchers*: IHSS Plus Waiver recipients have the option, under appropriate circumstances, to receive a Restaurant Meal voucher in lieu of in-home assistance for meal preparation and related tasks.

As a condition of granting the IHSS Plus Waiver, CMS required an evaluation. All "1115" research and demonstration waivers are subject to a "budget neutrality" requirement; that is, Medicaid costs under the waiver cannot exceed estimated costs in the absence of the waiver. Thus, the primary purpose of the evaluation was to determine the impact of the waiver on Medicaid service use patterns and associated costs. However, the Office of the Assistant Secretary for Planning and Evaluation also wished to know about availability of and preferences for Spouse and Parent providers

and whether IHSS recipients with Spouse or Parent providers (especially minor children with Parent providers) and differences in characteristics, such as medical diagnoses and severity of disability, among those receiving services from different provider types (e.g., Spouse or Parent, Other Relatives, and Non-Relatives).

Changes made to Medicaid law and policy through the Deficit Reduction Act of 2005 now make it possible California and other states to offer Medicaid coverage for personal care services provided by “legally responsible relatives” (i.e., spouses or parents/guardians of minor children) without an “1115” waiver. The results of the IHSS Plus evaluation indicate that allowing personal care services to be provided by such previously prohibited provider types is unlikely to increase -- and may even slightly decrease -- Medicaid costs.

The IHSS Plus Waiver was initiated in August 2004. This report documents IHSS Plus Waiver implementation and recipient Medicaid service use in calendar year 2005. Analyses compare recipients having a waiver-eligible provider (i.e., parents of children, spouses of adults) for any portion of 2005 with recipients in the regular IHSS program who received personal assistant services through Other Relatives and Non-Relative providers during the same period. Recipients are classified by these provider types on an “intention to treat” basis. Recipients changing between Spouse/Parent providers and non-waiver-eligible providers are considered throughout the analysis as being in the spouse/parent group. This is analogous to an experiment where an individual enrolls into the innovative care group and later changes into “usual” care, but for purposes of analysis, the recipient is included within the group to which they were originally assigned.

The following questions are examined:

- Do Waiver recipients differ from regular IHSS program recipients in race/ethnicity, living arrangement (e.g., household size, and availability of legally responsible relatives)?
- What are the functional limitations, task assistance needs, and chronic health conditions of individuals participating in each waiver component (e.g., Parent providers, Spouse providers, Advance Pay, Restaurant Meals voucher)? Do these differ from recipients in the regular program?
- Do Waiver and regular IHSS recipients differ in terms of continuity with their provider relationship, and Share of Cost?
- Are there differences between waiver and regular program recipients in the number of IHSS hours authorized?
- What are the Medicaid (aka Medi-Cal) expenditures incurred by waiver and regular program recipients? This includes all IHSS services; personal care from Medicaid home and community-based services (HCBS) waiver programs;

Medicaid hospital, emergency room (ER), nursing home, home health, and medical provider claims.

Taken together, these descriptive questions assess four fundamental policy issues: whether there was a change in the number and attributes of spouses and parents of minors that are paid providers under the IHSS program; whether hiring legally responsible relatives as personal assistance providers seems to be a recipient/family preference; whether Spouse and/or Parent providers performed, as well as the use of other providers in enabling IHSS recipients to remain at home, safely; and whether the employment of family providers has been budget neutral for Medicaid in terms of health care use/expenditures. These policy issues are addressed in the conclusions section of this summary.

Approximately 407,000 persons received IHSS services in 2005. Of these approximately 25,700 recipients had as paid providers either parents of minor children, or spouses of adults. These recipients were classified as being in the IHSS Plus Waiver. Restaurant Meals voucher and Advance Pay recipients combined to include 1,600 additional Waiver recipients. About 60% of all IHSS recipients in 2005 were age 65 or more. Minor children (age 3-17) accounted for about 4% of recipients. The remaining one-third was recipients age 18-64. The distribution of recipients by IHSS Plus Waiver and PCSP providers varied by recipient age group. Parents predominate (70%) as providers among recipients age 3-17. Other Relatives and Non-Relatives are the predominant source (75%-95%) of providers for adult IHSS recipients. About 5% of non-aged adults and 2.5% of the aged IHSS recipients had IHSS-paid Spouse providers. There were only minor differences in these distributions comparing IHSS recipients continuing in the program from 2004 and those entering the program in 2005.

Females are the absolute majority of IHSS recipients, as well as the majority of those cared for by Other Relatives and Non-Relatives. Males predominate as IHSS recipients age 3-17, and they account for the majority of those cared for by an IHSS-paid Spouse. The IHSS program has a broad mix of racial/ethnic groups, with non-White groups accounting for the majority of recipients across all age groups. Hispanic and Asian recipients are more likely to use relatives (parents, spouses, or other relatives) as paid IHSS providers than are White or Black recipients.

The disability/chronic illness profile of each age group is different, as is the distribution of recipients among the types of paid providers used. Because of this most of the discussion is presented by recipient age group.

Summary of Findings

Racial/Ethnic and Household Characteristics of IHSS Recipients

- Hispanics are the largest group (45%) of continuing recipients age 3-17. Whites are about 40% of continuing adult recipients, Hispanics about 22%. Blacks

account for about 20% of the non-aged adult recipients, Asians about 10%. These latter proportions reverse among recipients age 65 or over.

- The race/ethnic characteristics of persons entering IHSS in 2005 among minor children and non-aged adults are generally similar to those of the continuing recipients. Among recipients age 65 or more the proportion of Whites and Blacks is about 20% lower, and the proportion of Hispanic and Asian is 10%-20% higher among recipients entering the program in 2005.
- Hispanic IHSS recipients are more likely than any of the other race/ethnic groups to have paid Parent providers, whereas Black IHSS recipients are the least likely. (80% of Hispanic recipients age 3-17 and 20% of Hispanic recipients age 18-64 have paid Parent providers, compared to 60% of Black IHSS recipients age 3-17 and 9% of Black non-aged adult recipients.
- Black non-aged adult IHSS recipients are the least likely of the four race/ethnic groups to have Spouse (2%) providers.
- More than half the White and Black adult age IHSS recipients use Non-Relative IHSS providers. This contrasts with about one-third among Hispanic and Asian groups.
- The Advance Pay and Restaurant Meals voucher programs have a much different race/ethnicity distribution than the IHSS personal assistance program. Whites account for about two-thirds of each program, Hispanics and Blacks, each about 13%. Chinese account for about half of the Asian/Other recipients.
- Regardless of age or race/ethnicity, larger households are more likely to have an Other Relative provider and less likely to have Non-Relative providers. Among those 18-64 household size is positively related to having a paid Parent or Other Relative provider, and negatively related to having Non-Relative providers. Recipients age 65 or more in larger households are less likely to have Spouse and Non-Relative providers, and more likely to have Other Relatives as providers.
- The presence of a parent or spouse in the household reduces the odds of having non-relatives as paid IHSS providers. Among those age 18-64 a present spouse has a modest association with having Other Relatives as providers.

Functional Limitations and Chronic Health Conditions

- Children average 3.6 activities of daily living (ADLs: bathing and grooming, dressing, toileting, transferring, and eating) where human assistance is required. These rates of impairment are similar for both new and continuing IHSS recipients in 2005 and among all provider types.

- Adult IHSS recipients average about 2.5 ADL limitations requiring human assistance. These rates increase to an average of about 3.5 ADLs for recipients having a paid Spouse provider. There is little difference in average impairment levels among those with Other Relative and Non-Relative providers. Recipients entering IHSS in 2005 average about 0.5 fewer ADL limitations.
- Limitations in instrumental activities of daily living (IADLs: housework, laundry, shopping and errands, meal preparation and clean-up, mobility inside) requiring human assistance are pervasive, averaging more than four IADL limitations among adults, and three IADLs among children. These levels of impairment are similar across all provider types and between new and continuing IHSS recipients.
- More than 10% of children and 5% of adults require human assistance with breathing.
- Based on Medicaid claims, minor children in IHSS have an average of 3.5 chronic health conditions. This rate is 4.2 among those age 18-64, and 3.0 among those age 65+. The prevalence rates are slightly lower among recipients entering IHSS in 2005. Prevalence rates derived from claims data may under report the actual prevalence.
- Minor children recipients with paid Parent providers tend to have a slightly higher prevalence of chronic conditions than those with Other Relatives or Non-Relative providers. (e.g., 81% with at least one condition vs. 72% and 69% respectively).
- Among IHSS recipients age 18-64, there is a comparable prevalence of chronic conditions (e.g., 89% with at least one condition) among those with paid Spouse, Other Relative, and Non-Relative providers. Recipients in this age group with Parent providers tend to have somewhat fewer conditions (74% with at least one condition), but they are five times as likely to have mental retardation/developmental disabilities (6.1%) and one-third more likely to have central nervous system injuries/disorders (22%).
- IHSS recipients age 65 or older have similar prevalence of chronic conditions (e.g., 83% with at least one condition) regardless of paid provider type. Those with paid Spouse providers tend to have slightly higher prevalence of Endocrine and Metabolic disorders, Cerebral and Other Vascular system disorders, and Pulmonary System disorders; and slightly lower prevalence of other conditions.

Continuity of Provider Relationships and Share of Cost

- The factors associated with selection of a Parent, Spouse, or Other Relative or Non-Relative providers are, in part, a function of the family and other resources available. For those without parents, spouses or other relatives, the only paid provider option becomes a non-relative. This influence is most apparent among

minor children, where the vast majority of those with available parents have paid Parent providers; and among the few adults with parents or spouses.

- Cultural preferences may also contribute to provider selection. This is most evident in the greater propensity of Hispanics and Asians to have other relatives as paid IHSS providers.
- Fewer than 6% of IHSS recipients changed the type of provider they were using during 2005. Children were the most consistent (95% consistent), non-aged adults the least consistent (93% consistent).
- Change from having a spouse as a paid provider to another provider type was the most common change (9%). Changes between other relatives and non-relatives affected about 7% of non-aged recipients and 4% of the aged.
- Share of Cost requirements affected relatively few IHSS recipients in 2005: about 1% of recipients age 3-17 and 3% of those age 18 or older. Among adult recipients more of those entering the program in 2005 had a Share of Cost compared to the continuing recipients: 3.4% vs. 2.8% non-aged, 5.6% vs. 3.3% aged.
- Among minor children Share of Cost was more common when the provider was a Parent (1.5%). Among adults, Share of Cost was most common when the provider was a Spouse (10% non-aged, 11% aged).

Authorized Hours of Service

- A maximum of 283 hours of IHSS services can be authorized in a month. This is based on the number and degree of the recipient's limitations, with adjustments made for the living arrangement. Time that would otherwise be allocated for performance of household tasks is deducted when the recipient is living with others who can be expected to routinely perform (for their own benefit as well as for the IHSS recipient) tasks such as house cleaning, meal preparation, and shopping.
- Regardless of the IHSS recipients' age, those continuing in IHSS from 2004 have a higher number of authorized hours than those entering the program: this difference averages about 40 hours per month among minor children, 30 hours among non-aged adults, and 25 hours among the aged.
- Among recipients age 3-17, there is little difference in authorized hours comparing continuing recipients having Parent providers (an average of 112 hours/month) and those with Non-Relative providers (an average of 108 hours/month). Those with other relatives had the fewest average authorized hours (102 per month). These minor differences persist among those entering IHSS in 2005.

- Recipients age 18-64 continuing from 2004 with Parent providers have substantially more authorized hours (average of 135 hours/month) than those with any other provider type. Those with Non-Relatives (average of 89 hours/month) and those with Spouse (average of 86 hours/month) have a similar amount of hours authorized. These differences reduce among recipients entering IHSS in 2005, but those with Parent providers average about 20 hours more per month than those with other provider types.
- Aged recipients have a similar amount of authorized hours (about 84 hours per month) across all provider types. Average authorized hours reduce to about 60 hours per month among recipients entering IHSS in 2005, with little difference among provider types.

Average Monthly Total Medicaid Expenditures

- Across all age groups participating in IHSS, mean unadjusted Medicaid expenditures (excluding pharmacy payments) range from \$1,400 to \$1,700 per IHSS participation month. This is a cost inclusive of Medicaid-reimbursed personal assistance-related expenses, which averages about \$825 in 2005. The highest average total expenditures are among that age 18-64, the lowest among those age 65 or more. Lower expenditures among this latter group are explained, in part, by more of these recipients having access to Medicare -- their primary payer for hospital, physician, and other health care use.
- Among IHSS recipients age 3-17, those with Parent providers tend to have about \$900 lower adjusted monthly Medicaid expenditures (i.e., holding health status, functional ability and other factors constant) than those with Non-Relative providers. Comparisons between those with Other Relatives and Non-Relative providers were not statistically significant.
- Recipients age 18-64 with paid Spouse providers have adjusted mean monthly Medicaid expenditures about \$1,000 lower than do those with Non-Relative providers. There was no statistically significant difference between those with Parent providers and those with Non-Relative providers.
- Among IHSS recipients age 65 or more, those with Non-Relative providers have higher adjusted average monthly expenditures than those for either recipients with Spouse providers (\$780) or Other Relative providers (\$110).
- Expenditures of new as compared to continuing IHSS recipients showed minor differences in adjusted mean monthly expenditures: non-significant among children, slightly higher among those age 18-64, slightly lower among the aged.

Medicaid-Reimbursed Hospital Expenditures and Use

- Among all IHSS recipients' age groups the unadjusted average monthly hospital expenditures generally show the Waiver recipients (i.e., those adults with paid Spouse providers, minor children with paid Parent providers) to have within their age group either the lowest mean expenditures or expenditures approaching the lowest group.
- About 13% of the minor children and 25% of the IHSS adult recipients had at least one "any cause" hospital stay in 2005. Among minor children and the aged, comparisons (adjusting for recipient characteristics) of the likelihood of a hospital stay between those having waiver providers (i.e., Parent and Spouse providers respectively) and those with Non-Relative providers found no statistically significant differences.
- Among IHSS recipients age 18-64, those with Spouse providers were about 15% more likely to have hospital stays than those with Non-Relative providers (adjusting for recipient characteristics). Comparisons between those with Non-Relative and Parent providers found 25% lower adjusted odds of a hospital stay for those with Parent providers. Non-aged adults with Other Relative providers show about a 10% lower risk of hospital stays than those with Non-Relative providers.
- These findings of favorable or neutral outcomes comparing recipients with Waiver-related providers vs. those with Other Relative and Non-Relative providers were sustained using a more targeted comparison of hospital stays. These involved admissions having an Ambulatory Care Sensitive Condition (ACSC) -- conditions thought to be manageable with appropriate primary care. For IHSS recipients age 3-17 (adjusting for recipient characteristics), there were no statistically significant differences in the likelihood of an ACSC hospital stay comparing across all provider groups. For recipients age 18-64, a similar finding occurs comparing those with Spouse and Other Relative providers to those with Non-Relative providers. Those with Parent providers had lower adjusted odds for an ACSC hospital stay than those with Non-Relative providers. Among recipients age 65 or more, those with Spouse providers have reduced risk of an ACSC hospital stay. There were no statistically significant differences comparing those with Other Relative providers to those with Non-Relative providers.
- Consistently, whether testing "any cause" or ACSC hospital admissions, non-White adult age IHSS recipients tended to have an increased risk for admissions. Among minor children, the pattern was less consistent, and non-significant in the ACSC comparisons. New IHSS recipients, across all age groups and provider types, tended to have about half the odds of a hospital stay compared to recipients continuing from 2004.

Medicaid-Reimbursed Physician, Outpatient and Emergency Room Use

- About 17% of IHSS recipients, regardless of age group did not have any Medicaid claims for either physician services (including MDs, nurse practitioners, medical groups, surgi-centers, and rural clinics), or outpatient department (including hospital-based and other organized outpatient departments) use in 2005. Minor children recipients (85%) with Parent providers and adults with Spouse providers (94% non-aged adults 85% aged) have the highest rate of any use. (Service use estimates do not include uncompensated care or medical care encounters billed solely to non-Medicaid payment sources.)
- ER use is experienced by more than half of the IHSS recipients in each age group. Adjusting for recipient characteristics differences among provider groups for recipients age 3-17 become non-significant. Among adult age recipients (ages 18 and over), those with Spouse providers tend to have about 20% higher odds of ER use compared to those with Non-Relative providers. Recipients age 18-64 with Parent providers have reduced odds of ER use. Adult age recipients with Other Relative providers have lower risk of ER use. New IHSS recipients, in all age groups have about 50% lower odds of ER use. The cause of the difference is unknown, but the main point is that recipients entering IHSS after initiation of the waiver are seemingly healthier than the recipients who continued in the program from 2004.
- Inclusion of Medicaid ER use claims results in a 2%-3% increase, across all IHSS recipient subgroups, in the percentage of recipients having any medical care use.
- Adjusting for recipient characteristics: minor children with Parent providers and adult recipients with Spouse providers have a higher likelihood of any medical care use (including ER use) compared to those with Non-Relative providers. Comparisons between IHSS recipients with Other Relative and Non-Relative providers are not statistically different. Adults with Parent providers have a 20% lower odds of medical care use than do those with Non-Relatives as paid IHSS providers.
- The race/ethnicity of IHSS recipients, adjusting for health conditions and functional limitations, showed no statistically significant differences in the odds of medical care use (both including and excluding ER use) comparing Non-White to White race/ethnic groups among IHSS recipients age 3-17, and comparing Hispanics and Asians to Whites among recipients age 65+. Adult Black IHSS recipients, on the other hand, were less likely to use medical services than Whites. Non-aged adult Hispanic and Asian recipients tended to have a higher likelihood of medical care use than Whites of the same age.
- Medical care expenditures follow patterns consistent with service use. Within recipient age groups there is little difference in the average monthly expenditures

Home and Community-Based Services

- The use of Medicaid HCBS waiver or State Plan services (excluding IHSS) is proportionately low among IHSS recipients: fewer than 0.04% among IHSS recipients age 3-17, 4.2% among those age 18-64, and 17% among those age 65+. Average monthly expenditures for the users of these services tend to be highest among IHSS recipients age 18-64, particularly those with Parent providers (mean \$2300/month). This rate is about double that for recipients with Spouse and Other providers. There is little unadjusted difference among recipients with different provider types for those age 65+ (mean \$620), and too few minor children recipients to appropriately draw conclusions.
- IHSS average monthly expenditures are comparable among adult recipients regardless of whether they are older or younger than age 65, but are higher among recipients age 3-17. Children with Parent providers (\$520), and Adults with Spouse providers (\$350 non-aged-\$400 aged recipients) have the lowest unadjusted average monthly expenditures. The non-aged adult recipients with Parent providers had the highest average monthly expenditures (\$980). There are minor differences comparing monthly expenditures for recipients with Other Relative versus Non-Relative providers within each of the recipient age groups: age 3-17 \$870 vs. \$880, age 18-64 \$660 vs. \$740, age 65+ \$700 vs. \$730.
- Analyses combining IHSS and the other home care expenditures, and adjusting for recipient characteristics, found that IHSS Plus Waiver recipients (i.e., minor children whose parents are paid IHSS providers, and adults whose spouses are paid IHSS providers) had lower average monthly home care expenditures than recipients with Non-Relative providers. Differences averaged \$520 for minor children, \$340 for aged, and \$430 for non-aged adults.

Nursing Home Use

- The incidence of nursing home placement among IHSS recipients in 2005 was low: 0.26% among children, 2.25% among non-aged adult recipients, and 5.9% among those age 65+.

- Among recipients age 18-64, there is a persistent adjusted effect: IHSS recipients related to their providers have lower adjusted odds of nursing home use than persons with Non-Relative providers. Recipients with paid Parent providers tend to have a lower adjusted risk than recipients with either Spouse or Other Relative providers. There were no differences between new and continuing IHSS recipients in placement rates.
- Among recipients age 65 or older, the protective effect of relatives as providers is present only comparing recipients with Other Relatives to those with Non-Relative providers. Recipients with paid Spouse providers have a modest tendency toward a lower placement rate, but this did not reach statistical significance. Recipients joining IHSS in 2005 were less likely than continuing recipients to have a nursing home placement.

Conclusions

This section addresses four fundamental policy issues implicit in the IHSS Plus Waiver and its efforts to extend the use of spouses and parents as paid providers for personal care services.

IHSS Plus vs. the IHSS Residual Program Participation

The number of recipients cared for by Spouses and Parents of minors paid as IHSS providers remained relatively constant between 2004 (under the IHSS Residual Program) and 2005 (under the IHSS Plus Waiver); as did the total number of persons (about 1,600 recipients in 2005) participating in the Restaurant Meals voucher and Advance Pay waiver-eligible services. The new recipients, as a group, tended to be somewhat less impaired, to have lower health care expenditures, and to receive fewer IHSS authorized hours than the group of recipients who were in IHSS during the prior year, or longer. These attributes likely could be common to all cohorts of new recipients, and may not be unique to IHSS Plus Waiver program entrants. The race/ethnic and provider mix was somewhat different comparing the new and continuing program cohorts, showing a proportionate increase in Hispanic and Asian recipients.

Preferences in the Selection of Paid IHSS Providers and Outcomes

The selection of a Parent or Spouse as a paid provider, across all age groups, is partly a function of available family members, but differences in the proportion among race/ethnic groups “selecting” each of the various provider types suggests that cultural preferences may be an important selection factor. Wage and other possible influences on provider availability were not an in-depth focus of these analyses, but IHSS wage rates (which vary by county) did not have a consistent association with the selection of paid Parent or Spouse providers. To the contrary, higher wages were marginally associated with an increased use of Non-Relative providers, and Parents and Spouse

providers were more likely when wages were low (and presumably low wages may make it more difficult to attract Non-Relative providers).

Recipients Age 3-17

Minor children in IHSS generally have at least one parent in the home. Consequently, for most of these children, the choice of Parent/Non-Parent provider was possible and the choice made by families was for a Parent provider (70% overall and 80% when a parent was present in the home). Hispanics had the highest proportion selecting Parent providers (81%) and the least selecting Non-Relative providers (9%). Blacks (60%) were the least likely to have paid Parent provider, and comparable to Whites in the proportion selecting Non-Relative providers (20%). The decision of families to seek IHSS versus other service options was outside the scope of this study.

There were few differences by provider type in the number of ADL/IADL and cognitive limitations among minor children IHSS recipients. However, proportionately more minor children with paid Parent providers were dependent on human assistance with breathing (this includes assistance with self-administration of oxygen, and the cleaning of this equipment), and had more chronic health conditions (including mental retardation, seizure disorders, and paralysis). These conditions have been shown to be associated with nursing home use in minor children (Fries, Wodchis, Blaum, et al., 2005), and may be indicative of the Parent provider's willingness and/or greater ability to assume the demanding care responsibilities associated with these conditions. Contributing to this ability may be that parents are legally permitted to perform "skilled nursing" tasks that other providers, especially Non-Relatives, would not be permitted to perform. Investigation of the "cause" of this pattern is outside the scope of the current study.

Recipients Age 18-64

Spouse providers were rarely available as a choice to the non-aged adults participating in IHSS. Most IHSS recipients in this age group were either not married or their spouses were also IHSS recipients or otherwise not able physically/mentally to be paid caregivers. However, when spouses were available and able, the "preference" for them appears to be strong (90% among those with an available/able spouse). Parents were more readily available than spouses to non-elderly adults, and more recipients of this age group selected Parent paid providers. The availability of parents beyond those selected as paid providers is unknown in the IHSS data. There were discernable ethnic differences in the propensity to select Parent or Spouse providers. Hispanics were most likely to select Parent providers (26%), and the second most likely to select Spouse providers (9%). Asians were the most likely to select Spouse providers (11%), and second most likely to select Parent providers (18%). Blacks were the least likely to select either Spouse (2%) or Parent (10%) providers. More than half of the Blacks and Whites relied on Non-Relative providers. This contrasted with about a third among Hispanics and Asians.

In general, recipients with paid Parent or Spouse providers had more limitations in ADL and cognitive functioning, and a comparable number of chronic health conditions than recipients with other providers. However, those with paid Parent providers had higher rates of mental retardation/developmental disability, central nervous system injuries/disorders such as quadriplegia, paraplegia, other extensive paralysis or spinal cord disorders, and seizure disorder) -- all of which are conditions shown by Fries and associates (2005) to be associated with higher risk of nursing home placement.

Recipients Age 65 or More

Spouses were present among about 25% of this age group of IHSS recipients, but except for those paid as Spouse providers, the number able/available reduced to about 3%. When a recipient-provider was an Other Relative or a Non-Relative, almost half of the spouses present were also IHSS recipients. This pattern of both partners being on IHSS may be the consequence of the income and asset eligibility criteria used for Medicaid among IHSS recipients. Unlike the criteria used for nursing home recipients, IHSS recipients are not allowed to separate their couple assets when determining program Medicaid eligibility for one individual. Recipients with IHSS-paid Spouse providers tended to have more ADL, cognitive, and breathing assistance limitations, but there were no substantial differences in the number of health conditions. Race/ethnicity had a minor association with the presence of a paid Spouse provider (the percentages range from 1%-4%), but the more striking differences involved recipients with Other Relative and Non-Relative providers. More than half of the Asian (64%) and Hispanic (54%) recipients had an Other Relative as their paid provider, whereas more than half of the Whites (53%) and Blacks (56%) had Non-Relative providers.

Implications for Medicaid and IHSS Expenditures

For all recipient age groups, IHSS expenditures, adjusting impairment severity and service needs, are expected to be lower relative to those with Non-Relative providers when Parents, Spouses, and Other Relatives living in the household are paid IHSS providers. This cost difference arises because an IHSS algorithm adjusts the authorized time for housekeeping/meal preparation when there are relatives living in the household who might be expected to perform these tasks for themselves as well as for the recipient. This adjusted cost difference was observed for Parent providers to minor children, and for Spouse providers of adults. The cost differences for Parent provider (non-aged adults) and Other Relative providers were minor or non-significant. This could be because these providers were not living with the recipient or they may reflect limitations in the risk adjustment model.

Minor children with Parent providers, after adjusting for recipient functional and health conditions, have lower average monthly Medicaid expenditures than those with Non-Relative providers. These recipients also have lower adjusted use of IHSS and other home care service expenditures.

Adjusting for recipient characteristics, recipients age 18-64 with Spouse providers had lower average Medicaid monthly expenditures than those with Non-Relative providers. There were no statistically significant differences comparing recipients with Parent and Non-Relative providers. Among these adult IHSS recipients each of the paid relative provider groups had a significantly reduced likelihood of nursing home placement compared to those with Non-Relative providers. The Parent provider effect for those age 18-64 appears greatest. Those with Spouse providers tended to have higher risk of “any cause” hospital stays (but not those associated with ambulatory sensitive conditions), higher risk of ER use, but lower IHSS and home care expenditures than recipients with Non-Relative providers. Recipients with Parent providers compared to those with Non-Relative providers had lower adjusted use of hospitals, ERs, and home care.

Average monthly Medicaid expenditures among recipients age 65 or more, adjusting for recipient characteristics, were lower for those with Spouse providers and Other Relative compared to Non-Relative providers. This tendency for lower risk among those with family providers was also present with respect to ambulatory sensitive hospital stays; and those with Other Relative providers compared to those with Non-Relative providers had reduced risk of ER use, lower monthly expenditures for IHSS and other home care. The protective effect of relatives as paid providers was also present, but this association was with the Other Relative provider category as compared to Non-Relative providers.

In short, these analyses found no financial disadvantage and some advantages to Medicaid from allowing spouses, parents (and other relatives) to be paid IHSS providers. This argues in favor of honoring the recipient’s and family’s preference for such providers. Whether the availability of spouse, parent, and other relatives can be expanded beyond its current proportion among all race/ethnic groups in IHSS is unknown, but changes in the race/ethnic mix of recipients evident in the new cohort of enrollees may affect this. The proportion of recipients who are Hispanic or Asian seems to be growing. These groups presently have the highest proportionate use of Spouse, Parent, and Other Relative providers.

These effects of selecting Parent, Spouse, and Other Relatives as paid providers are present within a program where the rate of Medicaid nursing home stays among IHSS recipients with Non-Relative providers seems to be low. This suggests that IHSS in general is doing a good job of enabling recipients to remain in the community regardless of the provider type selected. Not examined in this analysis were the factors (such as hospital stays, avoidable changes in health or functional status) associated with entry into and exit from IHSS; or the duration of participation in IHSS and the cost/use comparisons over time.

BACKGROUND AND PURPOSE

California's In-Home Supportive Services (IHSS) program provides personal assistance services (PAS) for low-income people with physical, sensory, memory, or cognitive disabilities. Services available include assistance with activities of daily living (ADLs) (e.g., bathing, dressing, eating, bladder/bowel requirements) and instrumental activities of daily living (IADLs) (e.g., shopping, meal preparation, house cleaning). In calendar year 2005, IHSS served about 385,000 aged, blind, and disabled adults or children per month, or about 408,000 persons annually. IHSS is financed through a combination of federal, state, and county funds. To qualify for IHSS, an individual must be either over age 65, or disabled; and either eligible for (including current recipients) of Supplemental Security Income/State Supplementary Payment (SSI/SSP)¹ or meeting all the eligibility criteria for SSI/SSP except for income limits (DSS, 2000).² All components of IHSS operate as an entitlement program, meaning that IHSS is available to all persons who meet the income and benefit eligibility criteria. In principle there is no waiting list for admittance into the program and no cap on the overall growth of the program. The types and amount of services provided are determined by county social workers who conduct eligibility assessments and authorize services according to state and federal policies.

From 1973 to 1992, IHSS was supported entirely by state and county funds. Starting in 1993 the state converted its program to Medicaid (aka Medi-Cal)³ State Plan personal care services and began receiving Medicaid funds for the services meeting federal reimbursement criteria. State (33%) and county (17%) funds finance the 50% federal match of the program expenditures. Services in the former program not qualifying for Medicaid were retained within IHSS in what came to be known as the "Residual" Program. These services continued to be paid solely using state and county funds. Included in the Residual Program were those IHSS recipients receiving paid care from legally responsible relatives (i.e., parents of minor children or spouses), persons authorized to receive "Advance Pay," and recipients who received Restaurant Meals vouchers in lieu of hours of attendant care for in-home meal preparation. Advance Pay enabled recipients to pay their consumer-hired PAS workers in full and on time, rather than having to submit timesheets through the county and on to the state for payment.

In 2004, California submitted a Social Security Act section 1115 waiver request to the Centers for Medicare and Medicaid Services (CMS). This is known as the IHSS Plus

¹ The SSI is a federally funded income support program (Social Security Act, Title XVI) for the aged, blind, and disabled. The SSP is a state program that supplements the SSI income level. SSI/SSP benefits in California (as in most states) are administered by the Social Security Administration (SSA). Eligibility for both programs is determined by SSA using federal criteria for income and assets. Benefits are in the form of cash assistance (CDSS, 2003, *SSI Eligibility*).

² About 2.2% of IHSS recipients did not meet income limits for at least one month in 2005, and paid a "share of cost" for services in those months where their income exceed Medicaid eligibility levels.

³ Medicaid is a federal program (Social Security Act, Title XIX) that provides health and long-term care coverage for low-income families and aged, blind, or disabled individuals. Medi-Cal is the term California uses for Medicaid.

Waiver. It was approved and began implementation in August 2004. The Waiver enables federal financing participation for services brought into IHSS Plus from California's IHSS Residual Program. The effect of this is to reduce the state and county share of costs in the State Plan program. About 26,000 persons were receiving all or a portion of their IHSS personal care assistance through those elements of the Residual Program in 2004 that were to be incorporated into the IHSS Plus Waiver. Not all Residual Program services are included in the Waiver. The following are the components of the IHSS Plus Waiver:

- *Advance Pay*: IHSS recipients meeting severely impaired criteria have the option to receive Advance Pay (i.e., Medicaid funds are paid to recipients in advance of PAS delivery). This allows recipients to assure timely payments to care providers (including any emergency back-up providers).
- *Parent and Spouse Providers*: IHSS Plus Waiver permits spouses of adults, and parents of minor children to be paid as IHSS providers for personal care, protective supervision, domestic and related services. Other family members as well as Non-Relative providers can provide similar services under California's regular IHSS (i.e., Personal Care Services Program (PCSP)) program.
- *Restaurant Meal Vouchers*: IHSS Plus Waiver recipients have the option, under appropriate circumstances, to receive a Restaurant Meal voucher in lieu of in-home assistance for meal preparation and related tasks.

This report documents IHSS Plus Waiver implementation and recipient Medicaid service use in calendar year 2005. Analyses compare recipients in the IHSS Plus Waiver program with recipients in the IHSS State Plan (aka PCSP). Waiver recipients are minor children whose parent is a paid IHSS provider, or those whose spouse is a paid IHSS provider. Recipients are classified by these provider types on an "intention to treat" basis. Namely, recipients having either an IHSS Parent or Spouse provider for any portion of 2005 are considered to be in the Waiver for the calendar, even if they had another relative or a non-relative as a paid provider for a portion of the year. Likewise, those not having a paid Parent/Spouse provider during the calendar year are considered to be in the regular IHSS program or PCSP. This is analogous to an experiment where an individual enrolls into the innovative care group and later changes into "usual" care, but for purposes of analysis, the recipient is included within the group to which they were originally assigned.

Study outcomes include recipient state Medicaid expenditures and service use, such as hospital and emergency room (ER) use, and nursing home placement.⁴ This work supports the California's evaluation of the IHSS Plus Waiver and complements

⁴ Community care facility placement, and mortality risk were initially considered as potential programs as well. However, the indicator of placements in the IHSS recipient termination status field was found to be unreliable. Mortality similarly is not fully documented on IHSS records as death often occurs after a hospital admission and may not be recorded in the IHSS record. An attempt was made to obtain Medicaid eligibility records that have this information, but these were not made available to project.

other consumer-directed services research conducted under the aegis of the federal Office of Disability, Aging and Long-Term Care Policy (DALTCP). DALTCP is a unit of the Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Human and Health Services. The analyses consider the consequences of allowing “legally responsible” family members (i.e., parents/legal guardians of minor children and spouses) of Medicaid beneficiaries to be paid as personal care attendants. Such payments are permitted when the financing mechanism is a 1915(c) home and community-based services (HCBS) waiver, and section 1915(j) provisions applicable to the State Plan.

RESEARCH QUESTIONS

Many state Medicaid program administrators are interested in having the flexibility within their Medicaid State Plan personal care programs to authorize paying family members to provide care to recipients. A number of factors contribute to this. For example, traditional providers, such as licensed home care agencies, are experiencing direct care worker shortages (Stone, 2000; GAO, 2001). Within both agency and independent provider situations, there are also concerns about absenteeism, frequent schedule changes, and high turnover of attendants (Harmuth & Dyson, 2002; Salsberg, Wing, Langelier, et al., 2002; Stone, 2001). Perhaps most germane is the recognition that for many severely disabled individuals, home care is not a cost-effective substitute for facility care unless paid home care is provided as a supplement to unpaid family care. The evidence on which program administrators and recipient advocates base their arguments in favor of permitting legally responsible family members to become paid workers is, other than in the Cash and Counseling Demonstration, largely anecdotal.⁵ Thus, further examination of these issues may be helpful for policy makers.

This analysis is interested in understanding who the IHSS Plus Waiver provisions serve, and in evaluating program and recipient outcomes. Outcomes are represented by IHSS, Medicaid service use and expenditures by IHSS recipients. The following questions are examined:⁶

- Do IHSS Plus Waiver recipients (e.g., Parent, Spouse providers, Advance Pay, Restaurant Meals voucher) differ from regular IHSS program recipients in race/ethnicity, living arrangement (e.g., household size, and availability of legally responsible relatives)?
- What are the functional limitations, task assistance needs, and chronic health conditions of recipients in each IHSS Plus Waiver component? Do these differ from recipients in the regular program?
- Do IHSS Plus Waiver and regular IHSS recipients differ in terms of continuity with their provider relationship, and Share of Cost?
- Adjusting for disability levels, are there differences within age group between IHSS Plus Waiver and non-Waiver recipients in the number of authorized hours?

⁵ The federally funded Cash and Counseling Demonstration has reported positive experience from the Florida program which allows payments to parents of minors in the consumer-directed program for children with developmental disabilities. Reports from the demonstration are available at <http://www.cashandcounseling.org>.

⁶ Qualitative interviews explored a number of issues with both waiver and non-waiver recipients and their families (Newcomer & Scherzer, 2006). Among these were the other caregiving arrangements that had been tried; why they elected (or did not elect) to participate as a paid Parent/Spouse provider; or to accept or not accept the benefits of Advance Pay or Restaurant Meal vouchers; and whether being a paid Parent or Spouse provider affected Medicaid, SSI, or other program eligibility.

- Adjusting for disability and other attributes, what are the Medicaid (aka Medi-Cal) program use and expenditures incurred by waiver program and non-waiver recipients? This includes all IHSS services; HCBS waiver programs; Medicaid hospital, ER, nursing home, home health, and medical provider claims.

METHODS

Because IHSS (including the IHSS Plus Waiver and Residual Program) is an ongoing statewide program, an experimental design in the implementation and evaluation of the waiver was not feasible. Instead, a quasi-experimental design was used. This design relies on statistical controls to adjust for measured differences between the waiver and non-waiver recipients. This work identifies the circumstances and characteristics associated with the types of providers (e.g., Parent, Spouse, Relative, Non-Relative) used by IHSS recipients, and compares service use/expenditures and other outcomes among provider types adjusting for recipient attributes.

Comparisons of waiver and non-waiver IHSS recipients are organized within age categories, controlling for other characteristics, such as disability severity. Children under age 18 who have Parents as paid caregivers are compared with children whose paid caregivers are Other Relatives or Non-Relatives. Similarly, adults aged 18-64 who have spouses as paid caregivers and elders aged 65 or older whose paid attendants are their spouses are compared with married and unmarried adults in the same age cohort with Non-Spouse providers. Advance Pay and Restaurant Meals vouchers have small recipient enrollments. Analyses of these options are descriptive.

Data Sources⁷

The project uses administrative data from three California departments: Health Care Services, Social Services, and Developmental Services. These were linked using a combination of each data set's assigned identification number, a Medicaid eligibility number, and a unique project assigned identifier. To assure the confidentiality of the individual recipients the records available to the project included only the project's unique identification number. Recipient and provider name, phone number, address, and Social Security number were all removed from these records:⁸

- **Case Management Information and Payrolling System (CMIPS).** This data set is compiled and maintained by the Department of Social Services (DSS). It contains information on all IHSS recipients (including age, gender, race/ethnicity, living arrangement, physical and cognitive status, and hours of authorized IHSS

⁷ The initial planning for this project had hoped to include information from community care licensing (CCL). CCL is a division within DSS responsible for licensing supportive housing. Such data would have allowed us to identify any months (either before or subsequent to IHSS receipt) in which the study's IHSS recipients lived in licensed residential care facilities and/or adult care facilities. This phase of the project was precluded by the recipient confidentiality terms of the Data Sharing Agreements negotiated between the University of California and the study's three collaborating state departments.

⁸ These procedures assure autonomy of recipients and comply with the protection of human subjects protections procedures approved by the Committee on Human Research, University of California, San Francisco (approval #H945-28245), and the California State Committee on the Protection of Human Subjects (approval #06-02-03).

services), provider characteristics (age, gender, race/ethnicity, relationship to recipient, and hours of paid personal care service), and for 2004 the IHSS payments for Residual Program services. IHSS 2005 expenditures are obtained from Medicaid claims.

- **Medi-Cal Claims Data.** These data are compiled and maintained by the California Department of Health Care Services as part of the Medi-Cal service payment system. Claims provide diagnoses, Medicaid-reimbursed health care use (i.e., physician, ER, hospital, home health, personal care, nursing home), and HCBS use (including both State Plan PCSP and waivers).
- **Department of Developmental Services (DDS) Data.** Three data sets are available for the persons served by programs in DDS: the Client Master File (CMF), the Client Development Evaluation Report, and the Purchase of Services System (POS). The CMF contains demographic and address information on all persons served by DDS. This file was used to link DDS data with the CMIPS core data set. The other data files were not used in the present analysis.⁹

Sample

The study sample was selected from IHSS recipient listings in 2005. It included anyone in the program as of January 1 of that year, or who entered the IHSS program sometime during the calendar year. The inclusion rules assured that we obtained all waiver recipients in each of the target age categories as well as recipients in Advance Pay and Restaurant Meals vouchers. Analyses involving Medicaid claims-records (such as to include medical diagnoses or to compare health outcomes) reduced the sample to persons participating in Medicaid through fee for services. Those enrolled in Medicaid managed care programs were excluded as Medicaid claims are not submitted for managed care covered services. Appendix A provides an elaboration of the steps used to select, screen, and qualify IHSS recipients into the study sample.

Recipient Characteristics Measures

Recipient Characteristics measures were obtained largely from CMIPS. These files are compiled monthly and include recipient eligibility and assessment files, provider eligibility, and payment files. Recipient assessment data in CMIPS are generally updated every two years or after a substantial change in status. IHSS Plus Waiver

⁹ CDER provides developmental, mental health, and medical diagnostic information; and information on hearing, vision, behavioral medication, health care equipment, behavior risk assessment, legal information, motor domain assessment, independent living domain assessment, social skills domain assessment, emotional needs assessment, cognitive domain assessment, and communication domain assessment. POS data identifies provider fiscal information for both state general funds and Medicaid DDS waiver funded service use and expenditure. These later data are also available in Medi-Cal claims files. To assure consistency in the source of Medicaid expenditures, we limited our attention to the claims files.

recipients receive annual assessments. To obtain reasonable comparability between waiver and non-waiver recipients we averaged each recipient's assessment measures drawn from each IHSS participation month in 2005. These items can vary from month to month with changes in status or periodic reassessments. If the individual was not a recipient in January, then the first assessment in 2005 was used as the starting assessment. Following is a description of the measures drawn from CMIPS for this analysis.¹⁰

- Recipient Age. Used to classify recipients into the target age cohorts.
- Recipient Gender.
- Recipient Race/Ethnicity. There are 16 race/ethnicity categories used in CMIPS, we consolidated these into four groups: White, Hispanic, African-American, Asian/and all Others for the analysis.¹¹
- Recipient Household Size and Living Arrangement. There are several measures potentially available for these items. One is a count of persons in the household, excluding non-IHSS recipients <age 14. A second is a measure indicating for those under 18, if a parent is present and whether the parent is able and available to be a care provider. There is a similar measure relative to spouses, but this measure was found to be unreliable and was not used.¹²
- Provider Relationship. This information is obtained from the provider eligibility files. Three types of provider relationships are used to classify the IHSS recipient into a waiver and non-waiver status: Parent/Spouse, Other Relative, Non-Relatives. (See the sampling discussion for the decision rules used when there were changes in providers, and multiple providers in a month or year.)
- Recipient Income and Share of Cost. Recipient income was not used in the analysis as all study subjects were Medicaid eligible. Fewer than 4% among all provider groups had any IHSS "Share of Cost" payment requirements.
- Eligible Months. Number of months eligible for IHSS in 2005 is used as the denominator to standardize IHSS authorized hours, and total IHSS and Medicaid expenditures into averages per IHSS participation months in 2005.
- Authorized IHSS Hours. This measure is represented in the analysis by the monthly authorized hours in a calendar year, averaged over the number of active

¹⁰ Provider attributes such as race/ethnicity, age, and gender are available in CMIPS, but other than relationship to the recipient, these data were not used in the analysis.

¹¹ Appendix B, Table B-1 shows the distribution of the study samples' race/ethnicity groups, by recipient age group and provider type by new recipients in 2005 and those continuing from 2004.

¹² Measures of living arrangement, such as housing type, having a live-in provider, and various shared housing arrangements were incompletely coded in assessments and correlated with household size. Consequently, only household size was used.

IHSS participation months in the year. More precise time varying measurement was not used because of data limitations. Authorized hours can change with a change in recipient status or living arrangement, but the items in the assessment files are commonly not updated until the next assessment -- which may be more than a year away.¹³

- Recipient Cognitive Limitations. For consistency in classifying recipients across all age groups and payer sources, recipient cognitive limitations are limited to three items available in CMIPS: Cognition is defined by: Memory, Orientation, and Judgment. Each scored 1 independent; 2 able to perform, but needs verbal assistance such as reminders, guidance, or encouragement; 5 cannot perform without human assistance.
- Recipient Limitations in ADLs. ADLs include bathing and grooming; dressing; transferring; bowel, bladder and menstrual; eating. Each task is scored on a five point scale: 1 and 2 as per above, 3 Can perform with some human direct physical assistance from the provider, 4 Can perform with a lot of human assistance, 5 cannot perform without human assistance.¹⁴
- Recipient Breathing problems (which includes assistance with self-administration of oxygen and the cleaning of this equipment) are scored in CMIPS as 1 independent, 5 cannot perform without human assistance, 6 Paramedical Services needed. The measure used in the analysis is the presence/absence of a Breathing item with a score of five or more.

Health Conditions and Diagnoses were compiled from Medicaid claims to supplement the CMIPS recipient characteristics.¹⁵ These records include up to two diagnoses, coded using the International Classification of Disease or ICD-9-CM (CDC, 2007), for each individual service claim. Analyses using claims and other administrative data have adopted a variety of approaches for identifying and adjusting for patient

¹³ Within CMIPS there is a calculated unmet need, defined to be the difference in total need hours and authorized hours. This measure was not used because it is confounded by ceilings on the maximum number of authorized hours (283 hours/month) used by IHSS, and non-transparent adjustments made for household composition or unmeasured changes in status. An alternative unmet need measure derived from the difference between authorized hours and paid hours was considered. This measure proved to be problematic as the distribution of hours per week is not determinable from the monthly payment data. Consequently, there may be unmet hours in particular days or weeks that are masked by accumulated monthly billings.

¹⁴ IADLs included in CMIPS are housework, laundry, shopping and errands, meal preparation and clean-up, mobility inside one's home. Each task is scored on a five point scale: 1 and 2 as per above, 3 Can perform with some human direct physical assistance from the provider, 4 Can perform with a lot of human assistance, 5 Cannot perform without human assistance. This measure is not included in the analysis because of the absence of variance. Across all provider groups, 85% or more of the recipients have four or more limitations with a score of three or higher.

¹⁵ The project considered using the CDER and the POS file -- both from DDS. Together, these provide recipient assessment information and service use data. However, given the proportionately small number of IHSS recipients in these data sets, and the incomparability of the assessment measures with those in CMIPS, the redundancy with salient POS items with those in Medicaid claims, the decision was made to limit age and provider analysis to the uniform common data available from CMIPS and Medicaid claims.

diagnoses. Important areas of conceptual consensus are that the diagnostic categories be: (a) clinically meaningful and related to well-specified disease or medical conditions; (b) the categories predict medical expenditures or other specified outcomes of interest (e.g., mortality); and (c) have sufficient prevalence to permit stable estimates. Two of the most prominent approaches are used in this analysis, one for recipient characteristics (described below), the other as a health care outcome indicator (described in the Outcome Measures section).

The CMS hierarchical condition categories (HCC) are used as health condition predictor variables in our analysis.¹⁶ HCC classification uses both inpatient and outpatient data. The HCC provides a standardized protocol for combining over 15,000 ICD-9 categories into 189 condition categories or CCs (Pope, Ellis, Ash, et al., 2000). Most CCs describe a broad set of similar diseases, generally organized into 23 body systems, but CCs 185-189 are assigned by beneficiary utilization of selected types of durable medical equipment. The CCs can be organized into hierarchies, designed so that a person is coded only for the most severe manifestation among the related diseases defining the CC. Within the same HCC a person is classified once. This avoids the problem of duplicative counting of related conditions. For unrelated diseases (i.e., diseases in other CCs), the number of HCC's accumulate.

HCCs are assigned using *any* mention of the eligible diagnosis from any of five sources.¹⁷ Information or the frequency of mentions are not differentially weighted among these sources (Pope, et al., 2004):

- Principal hospital inpatient;
- Secondary hospital inpatient;
- Hospital outpatient;
- Physician claims-record; and
- Clinically-trained non-physicians (e.g., psychologist, podiatrist, nurse practitioner).

¹⁶ The CMS-HCC model was developed for Medicare using claims data to provide risk adjustment for Medicare capitation payment rates (Pope, Kautter, Ellis, et al., 2004). This method has been extensively tested for predictive validity among aged and disabled persons; and with both community and institution-based populations.

¹⁷ Diagnoses from other claims records (including home health providers, durable medical equipment providers, skilled nursing homes, ambulatory surgery centers, hospice, clinical laboratories, radiology/imaging) are excluded. The basis for these exclusions are practical. This is due to poor predictive power found in the development of the HCC model, and concern about the reliability of the diagnoses from non-physicians, or confusion arising from the coding of “rule-out” diagnoses that sometimes appears on laboratory or imaging records.

Additional information required for the identification of a qualifying diagnosis is a date on the eligible record establishing that the diagnosis was made (or was present) during the relevant reporting period.¹⁸

Outcome Measures

Medicaid claims-records are also used to identify the occurrence of selected events (e.g., ER, hospital stay, nursing home placement) and to compile expenditures. These are used as the program evaluation's primary outcome measures. As shown below, a number of specific services were identified in the claims data. A further refinement involves the convention of identifying hospital stays where an ambulatory care sensitive condition (ACSC) is a primary or secondary diagnosis. Hospitalizations with one of these diagnoses are said to be indicative of a potentially "avoidable" hospital stay, and indicative of the quality or performance of primary health care (Billings, Zeitel, Lukomnik, et al., 1993). While there is some overlap in ACSC classifications for children and adults, there are separate standardized algorithms for each of these age groups (AHRQ, 2007a, 2007b).¹⁹

¹⁸ Applications of HCCs for prospective payment protocols require that the diagnoses be obtained from the baseline (i.e., prior) year. These classifications are used as the basis for reimbursement in the subsequent year. This model evolved from multiple studies over two decades (e.g., Ash, Porell, Gruenberg, et al., 1989; Ellis, Pope, Iezzoni, et al., 1996). Clinical applications of HCC or other condition groups, such as for assignment of members/patients into special clinics or care management panels, have found improved prediction of service use and expenditures if concurrent diagnoses are incorporated into the classification (Dudley, Medlin, Hammann, et al., 2003). Because of this and evidence that using a single year to identify diagnoses for an individual may lead to an under counting of conditions and a bias toward classifying beneficiaries who have higher cost (e.g., those with hospital stays or frequent or specialty physician visits) (Newcomer, Clay, Luxenberg, Miller, 1999), we have elected to use concurrent year claims in HCC assignment. Even with this adjustment there is still a concern that chronic condition prevalence and service use are under reported in the IHSS recipient population. This occurs for several reasons. First, Medicaid reimbursed service use is reliably reported only for those in fee for service. Services covered under managed care capitation agreements (such as hospitals, skilled nursing facilities, physicians, and other health care providers) do not usually generate a billing or reimbursement claim. Managed care enrollees are omitted from any analysis involving diagnostic classifications or counts of conditions. Secondly, recipients dually eligible for Medicare or other payers such as the Veterans Administration may have services exclusively or substantially paid for by these sources. In such circumstances, there will be no or fewer Medicaid claims and diagnoses reported. A third factor is that Medicaid claims have fields for recording only two diagnoses. When a patient has (or their service claim involves) more than two conditions, then the number of diagnoses will be under reported on the claim. This may result in some conditions not being recorded on the claims records. These factors are not thought to be differentially distributed within recipient age groups or their provider types.

¹⁹ Table D-4 and Table D-5 in Appendix D show the conditions used to identify ACSC outcomes.

Following is a brief description of the claims-based items compiled for 2005. Both expenditures and service use rates are adjusted by the number of IHSS eligibility days in the study year.²⁰

- Member of managed care Medi-Cal in 2005. This measured is used to omit cases from analyses involving claims-based items.
- Total Medi-Cal Expenditures 2005, adjusted for IHSS eligible months in period. We limited these data to non-pharmacy-related expenditures.
- Medicaid expenditures use HCBS waivers in combination with State Plan optional personal care benefit in 2005.
- IHSS expenditures (separate from the above) in 2005.
- Hospital use in 2005; total hospital Medicaid expenditures; repeated for ACSC admissions.
- Nursing home use in 2005; total Medicaid expenditures, and use.
- Home health use in 2005; total Medicaid expenditures.
- Medical provider and other outpatient services in 2005; total Medicaid expenditures.
- ER use in 2005.

County Characteristics

County characteristics are included in the analyses, primarily because of a concern about some variation in IHSS practice among the counties. The IHSS program is administered by county governments and IHSS program social workers in the counties are responsible for conducting program recipient assessments. Assessments are conducted at the time of program application and at least every two years for the regular IHSS recipients (annually for those in the IHSS Plus Waiver). They are also supposed to be conducted when there is a major change in status, there may be practice variation in

²⁰ The original work plan also included the generation of Medicaid claims data for 2004. This information was compiled, but as the analyses reported are largely focused on comparisons of IHSS continuing from 2004 and new IHSS recipients in 2005, we have limited the presentation of data to 2005, differentiating new recipients. Payments via other state programs, and non-state sources are not represented. For example, expenses reimbursed by Medicare will under report total use and expenditures as some claims are reimbursed solely by this non-Medicaid source or for which Medicaid payment is limited to co-payments and deductibles. These limitations primary concern the expenditures for recipients who are dually eligible for Medicare and Medicaid. Service events, such as a hospital stay, usually have at least a Medicaid co-payment, and can be identified. Data on Medi-Cal eligible months in the period was not available to the project, but we do have months of IHSS eligibility.

this. Additionally, variation can occur in how social workers evaluate (or score) the level of the recipient's limitations. A computer-based algorithm is applied against the assessments to determine the number of IHSS authorized hours. The algorithm adjusts hours based on household size and the availability of household members to provide domestic services. Other potential sources of program variation among counties include the mix of long-term care services available to those with personal care assistance needs, and the county's discretion (within a cap set by the state) in setting the hourly rate paid to IHSS workers, and whether (and to whom) they offer health care benefits to IHSS workers. Counties share 17% of the cost of the IHSS program (34% of the pre-waiver Residual Program expenditures), and vary substantially with each other on wage rates. Within a county, the hourly rate paid for IHSS services by independent providers is relatively uniform. The combination of alternative service supply, IHSS wage rates, and per capita income (a proxy for cost of living), may influence the relative supply of IHSS workers. These factors may contribute to differences in whom recipients "select" as their IHSS provider.²¹

The following describes the measures compiled and used for county-level adjustments:

- IHSS provider wage rates. These data are available on individual IHSS provider payment records. These were used to compile modal wage rates by county, information used in analyses of provider "choice."
- Per capita income was used to adjust for the cost of living in the county.

Analysis Plan

The analytic interest is in understanding who the IHSS Plus Waiver provisions serve, and in evaluating program and recipient outcomes. Analyses are stratified by three age subgroups of IHSS recipients. Within these age groups comparisons are among those with Parent, Spouse, Other Relatives, and Non-Relative as paid caregivers. Comparisons also include recipients in IHSS during 2004 who continued in the program in 2005 and those recipients newly enrolling in the IHSS in 2005. Outcomes are represented by IHSS and Medicaid health, nursing home, and community service use and expenditures. Utilization and expenditures are standardized by average monthly expenditures (based on the recipient's exposure months in the

²¹ Residential care facilities for the elderly (RCFEs), adult residential facilities (ARFs), community care facilities (CCFs) beds are licensed by the DSS to provide room, board, and some levels of IADL and ADL support (ARFs service non-aged adults, CCFs serve the developmentally disabled, both those under and over age 18); nursing home beds, and state developmental centers (hospital-like settings for the developmentally disabled) and intermediate care facilities-DD and ICF-DD-H beds (freestanding nursing homes that specialize in custodial care for persons with developmental disabilities) are licensed by the Department of Health Care Services. These facilities in a county were initially considered as competing alternatives to IHSS use, but these services were found to be more associated with selection into IHSS, than IHSS use once in the program. Consequently, these measures were dropped from the analyses predicting provider type or health outcomes.

calendar year). The Behavioral model (Aday & Anderson, 1974) was used to conceptually organize the selection of predictor and control measures.

$Y = f$ (**Predisposing**: recipient age, gender, race/ethnicity; **Enabling**: household size, provider relationship, authorized IHSS hours; **Need**: cognitive status, ADL limitations; breathing limitations; chronic conditions; **Service Supply**: Per capita income.)

Where Y is separately

Total Medicaid Expenditures, hospital days/stays, nursing home days/stays, ER visits; IHSS expenditures; other Medi-Cal paid home care/personal care long-term care; "avoidable" hospital stays.

FINDINGS

The analysis seeks to both understand who the IHSS Plus Waiver provisions serve, and to compare program and recipient outcomes among recipient age groups and provider types. Outcomes are represented by Medicaid service use and expenditures by IHSS recipients. This section is organized by the research questions outlined in the Introduction.

Waiver and Non-Waiver Program Recipients

IHSS Plus Waiver recipients include individuals age 3-17 who have a parent as a paid IHSS provider, those age 18 and over who have a spouse as a paid provider, and recipients in either the Advance Pay or Restaurant Meals voucher programs. Table 1 shows the number of IHSS recipients by age, provider type (including Advance Pay and or Restaurant Meals voucher payments, and those having a Share of Cost requirement. Separate tabulations are shown for IHSS recipients who continued into 2005, and those recipients entering IHSS in 2005. Those age 65 and over account for almost 60% of IHSS recipients in 2005. Those age 3-17 in contrast account for just over 4%. The remaining one-third are non-aged adults. The type of provider varies substantially across IHSS recipient age groups. Parents, who are allowed to be paid providers for minor children under the IHSS Plus Waiver, account for more than 70% of the providers for those age 3-17. Parents, who can be paid providers under the regular IHSS program for adult-aged IHSS recipients, are much less prominent caregiver resources: for recipients age 18-64 (15%), and essentially non-existent among recipients age 65+.

Reliance on Other Relatives (i.e., adult children, siblings, and relatives other than spouses) increases exponentially (as measured across age cohorts) with the age of the recipient. The proportion grows from 13% among minor children to more than half of all paid providers for those age 65+. The proportion of Non-Relative providers is relatively similar to that of Other Relatives among minor children recipients, and about 45% of the providers among adult age IHSS recipients. Spouses are the third major group of providers. Spouses can be paid as providers under the IHSS Plus Waiver, but their proportion is relatively small among recipients age 18-64 and 65+, and too few for analysis among those under age 18.

These patterns are generally stable comparing the adult recipients continuing from 2004 with those joining the program in 2005. Among minor children, there was a modest decrease in Parent and a modest increase in Non-Relative providers among the new recipients in 2005.

Share of Cost is included in the table as an indicator of the extent to which the program may have widen or narrowed its income screening between 2004 and 2005, a period in which county and state costs for program entry were reduced by 50% for the “waiver” programs. Share of Cost means that the recipient is required to make cash

payments to financially qualify for IHSS participation. Relatively few recipients, usually less than 3% were required to make such payments in 2005. The rate is lowest among minor children, and somewhat higher among those 65+; and for those with a spouse paid as an IHSS provider. Within this low range, slightly more of the adult recipients entering the program had a Share of Cost than was true of continuing recipients. Whether this is typical in comparisons of new versus continuing recipients, a reflection of fewer restrictions on entry, or tighter eligibility processes in 2005 is not known.

The remaining IHSS Plus Waiver programs are those of Advance Pay and Restaurant Meals voucher. Participation rates are low. Fewer than 1,700 recipients statewide (about 0.5%) used one or the other of these programs during 2005. Adults age 18-64 were the main users (with fewer than 500 recipients) of the Advance Pay program. Those age 65+ (about 600 recipients) accounted for 60% of Restaurant Meals voucher users. Participation was higher among continuing versus new recipients. Participation in these programs can vary from month to month, but among those participating, most recipients received these benefits for three-quarters of the year or more.

Consistency in Provider Relationships

Classification into Provider Type as used throughout the report was done using the principle of "intention to treat." For example, ever having a spouse paid as an IHSS provider in 2005 defined one in this group. Similarly, ever having a Parent provider (but no Spouse provider), or an Other Relative (i.e., but no Spouse or Parent) for at least one month defined one in these respective groups. Non-relatives had no family members as providers during the year. In other words, a recipient was defined as being in the highest order of provider type they experienced in the year, with legally responsible providers ranking highest, descending in order through Other Relatives and Non-Relatives. Those consistently without a defined provider relationship were classified as having Non-Relative providers. The intention to treat approach is supported by the cumulative monthly consistency in provider relationships shown in Table 2. Fewer than 6% of the recipients changed provider types during the year. Children were the most consistent, non-aged adults the least consistent. Among specific provider types, Spouses as paid providers were the most likely to vary during the year. Non-relatives were somewhat comparable to Other Relative in the rate of inconsistency or change between provider types.

Who are the IHSS Recipients?

This section summarizes the racial/ethnicity, living arrangements, task abilities, and health conditions of IHSS recipients in 2005. This information descriptively addresses two questions:

- Do non-waiver recipients differ from IHSS Plus Waiver recipients in terms of race/ethnicity living, arrangement (e.g., household size, type of housing unit), and availability of legally responsible relatives?
- What are the functional limitations, and chronic health conditions of individuals participating in each IHSS Plus Waiver component? Do these differ from those of non-waiver recipients?

Race/Ethnicity

As seen in Table 3, Whites are the most prevalent recipients overall. This prevalence is lower among those age 65 or more -- especially among those entering the program. Hispanics are the next most prevalent group of adults and the largest group of children recipients. The proportion of Hispanics increases almost 10% between continuing versus entering IHSS recipients in 2005. Blacks (about 17% overall, 11% among those age 65+) are the third most prevalent group. There are proportionately fewer Blacks among new recipients than among continuing recipients. The most striking changes are evident among Asians.²² These groups collectively account for about 10% of recipients. However, among those age 65+ Chinese (10%), Filipino (5%), and Vietnamese (4%) combine for almost 20% of all recipients; and as a group, Asian and Pacific Islanders are second to Whites in prevalence of participation. They are basically equal in number to Whites among new recipients in 2005. Within column comparisons show that race/ethnicity group distributions vary by age of recipient and the use of a family member versus a Non-Relative as their paid providers. These patterns are relatively stable when comparing continuing to new IHSS recipients.

Within row comparisons, Table 4, show the propensity of race/ethnicity groups to use one type of provider over another. For example among continuing recipients age 3-17 more than 80% of the Hispanic IHSS recipients have Parent provider. This contrasts with just over two-thirds of Whites and Asian recipients, and 60% of Black recipients having Parent providers. For the new IHSS recipients, the percentage having Parent providers drops about 10% among all race/ethnic groups. The differences narrow somewhat among other recipient age groups, but two patterns are evident. Hispanic and Asian recipients are more likely to have Spouse and/or Parent providers than the other groups. Asians are the most likely of all the groups to use Other Relative providers. In contrast, more than half of the White and Black recipients have Non-Relative providers. These patterns are consistent among recipients age 18-64 as well as those 65+. Comparing continuing with new recipients, there is a reduction across all age and race/ethnic groups in the percentage having Parent providers and an increase in the percentage with Other Relative providers.

The Advance Pay and Restaurant Meals voucher programs have a much different race/ethnic distribution than IHSS generally: Meals program, Whites (64.3%), Hispanic

²² Most prevalent are Chinese, Filipinos, and Vietnamese. Table B-1 in Appendix B, shows the distribution of expanded race/ethnicity categories for continuing and entering recipients in 2005.

(13.7%), Black (10.2%), Asian/Other (11.8%); Advance Pay, Whites (68.5%), Hispanics (13.7%), Black (14.3%), Asian/Other (3.5%).

Household Size and Living Arrangements

Table 5a, Table 5b and Table 5c show the distribution by age and provider type for selected living arrangements. Gender of the recipient is also shown here because of its association with provider type. Except among children, females are the most common recipients: 59% among non-aged adults, and 69% among the aged. However, when considered by provider type, females are less likely to have Spouse or Parent providers than males, and much more likely to have Other Relatives and Non-Relatives as their provider. This pattern is present for both new and continuing IHSS recipients.

Gender differences widen by age group, however women age 18-64 are more likely to have Other Relatives than Non-Relative providers. This pattern persists but narrows among those over the age of 65. These shifts may be associated with changing racial/ethnic mix in the population evident among the age cohorts.

Household size also ranges widely, but somewhat in association with recipient age. More than two-thirds of the children live in households of four or more persons. This pattern holds across all family-related provider types and among both new and continuing recipients. Among recipients age 18-64, two and three person households predominate (about 50%) with those living with a spouse or parent, but substantial proportions of the remaining recipients live in households of more than three persons. Those having Other Relative and Non-Relative providers tend to be in smaller households, with almost 40% of those having Non-Relative providers living alone. Recipients age 65+ generally live in smaller households, with two person household predominating for those with a Spouse or Other Relative. Almost half of the recipients having Non-Relative providers live alone. For both adult age groups, the preceding patterns are consistent comparing new and continuing recipients.

Houses and apartments predominate as the type of residence, but as with household size, the distribution varies by age of recipient. Apartments gain prominence as recipients get older (and household sizes tend to be smaller). There are minor differences within age group and provider type between new and continuing recipients. One interesting pattern is that mobile homes and other forms of housing (e.g., residential hotels and boarding homes) combine for 5%-8% of all units seem to be increasing among new recipients in all age groups, but they continue to be used more frequently by those age 18-64. Whether this is a function of geography is not known.

Another living arrangement characteristic of interest is the status of spouses and parents as potential personal assistance providers. Among the adult recipients, the prevailing pattern (70%-80%) is for there to be no spouse present. However, even when there is a spouse present they are not always considered by the IHSS social worker as "available and/or able" to be PAS providers. Particularly notable is the proportion of spouses who are themselves IHSS recipients. Among those age 65+,

21%-23% of IHSS recipients have a spouse who is also a recipient. This is almost 80% (70% among new recipients) of the aged households with a spouse present. Among recipients age 18-64, the percentage of households with a spouse present (about 10% for those without spouse as paid providers) is lower than among the aged, but the number and proportion who are also IHSS recipients account for about one-third of the households with a spouse. These patterns may be influenced by Medicaid eligibility. Medicaid rules do not readily allow separation of a couple's assets when they live together in community settings. The proportion of spouses who are IHSS recipients is somewhat lower among new recipients than those continuing. Except in situations where spouses are the paid providers, IHSS social workers have determined that fewer than 5% (much fewer among those age 65+) are able and available as PAS providers.

Within the CMIPS assessment, the role of parents is more completely enumerated and differentiated for minor children than for adult recipient groups. Among children, more than 80% of the parents available are said to be providing some or all IHSS-related services. Seventy percent are paid as IHSS providers. This pattern holds for both new and continuing groups. The information available for parents of adult IHSS recipients is much more limited. Except for those paid as IHSS providers (e.g., non-aged adults 16.6% are paid providers among continuing recipients, 9% among new recipients), the number of parents available is not well documented. The factors contributing to the decline in the proportion of parents as paid providers between continuing and new recipients are not readily apparent in the CMIPS data. However, some of this difference may be associated with an increase in the proportion of recipients with Other Relative providers. These provider choices are not affected by the incentives in the IHSS Plus Waiver to pay legally responsible relatives.

Functional and Other Limitations of IHSS Recipients

The IHSS program authorizes PAS based on consideration of four broad areas of assistance need. These include cognitive limitations (i.e., memory, orientation, judgment), assistance in ADLs (i.e., bathing and grooming; dressing; transferring; bowel, bladder and menstrual care; eating), IADLs (i.e., housework, laundry, shopping and errands, meal preparation and clean-up, mobility inside), and problems in breathing. Each of these areas is evaluated and scored on a 1-5 (some on six) point scale.²³

1. Independent -- able to perform functions without human assistance though recipient may have difficulty; and completion of the task with or without a device poses no risk to safety of the recipient.
2. Able to perform, but needs verbal assistance such as reminding, guidance, or encouragement.

²³ Laundry is scored as 1, 4 or 5; shopping and errands as 1, 3 or 5; eating as 1, 5 or 6; breathing as 1, 5 or 6; memory, orientation and judgment as 1, 2 or 5. Meal preparation and eating both include a six point score.

3. Can perform but needs some human help (e.g., direct physical assistance from the provider).
4. Can perform with a lot of human assistance.
5. Cannot perform function at all without human assistance.
6. Paramedical services needed.

The number of limitations were compiled for each recipient during every month of their IHSS participation in 2005 and averaged over these participation months. An average of score of 3.0 or more indicates a task in which individuals were determined to have task assistance needs requiring at least direct physical assistance from a provider in 2005. Table 6, shows the group mean of the number of tasks that received an assessment score of three or more. The results are organized by age group and provider type; and by new and continuing IHSS recipients. ADL assistance dependence in three or more areas predominates for all recipient age groups, with at least one-third of recipients having task assistance needs in four or more areas. Children as a group, have somewhat more recipients with higher numbers of task assistance needs, averaging 3.6 such limitations compared to averages of two+ among the other age groups. IADL limitations are even more pervasive, with more than 95% of the aged and non-aged IHSS recipients needing direct physical assistance in four or more tasks. The proportion among children is somewhat lower, with two-thirds having this level of assistance needs. Cognitive limitations as represented in this compilation are also indicative of the level of impairment requiring human assistance. Levels of assistance that require only “reminding, guidance, and supervision-level” are not included in this scoring. Rates of cognitive limitations at this level of need are higher within the adult recipients than among children. Children on the other hand are more commonly characterized (about 15%) with severe breathing limitations (i.e., require human assistance to use self-administered oxygen or the cleaning of this equipment. This rate is about double those of the other age groups).²⁴

The main interest in these analyses is whether there are differences among provider subgroups in each recipient age cohort. Among children, there are essentially no differences in the mean number of cognitive, ADL, or IADL limitations. This is generally true, as well, comparing new versus continuing recipients. The most notable difference is in the percentage of recipients with severe breathing limitations. This rate is lower among the entering recipients than among those continuing, but it is relatively consistent among the provider subgroups. Parents continue to be the predominant providers for this condition, but the percentage of recipients needing this level of care is more uniformly distributed among the other providers. Non-Relative providers proportionately serve more such recipients among the new recipients than either of the other provider groups. A striking difference is in the number of authorized IHSS service hours. On average the continuing recipients are receiving about 40 more hours per

²⁴ Table B-2 in Appendix B provides the frequency distribution of the functional task limitations of IHSS recipients in 2005.

month than new recipients. This difference is constant among provider types. Some of this seeming disparity may be an artifact of the CMIPS data system, where authorized hours are adjusted with changes in functional conditions and living arrangements, but where revisions in the recorded assessment data may lag by a number of months. In other words, continuing recipients may be somewhat more functional limitations than new recipients, with this difference being reflected in authorized hours rather than in the number of functional limitations recorded in the data set.

Recipients age 18-64 and those 65+ have several patterns in common. First, Spouse providers tend to have proportionately more impaired recipients than the other provider types, and to be comparable to each other going across the age groups. These patterns are reflected in the mean number of cognitive and ADL limitations, and in the percentage of recipients with severe breathing limitations. Other Relatives and non-relatives, tend to have proportionately similar levels of impairment in their recipients across these aged and non-aged adult groups, and comparing new with continuing recipients. Parents (represented only among non-aged adults) tend to have recipients with cognitive and ADL impairment levels somewhat in between those of recipients with Spouse and the other providers. Paradoxically, Parent providers receive the highest average number of authorized IHSS service hours. Perhaps this occurs because of higher acuity needs of recipients known to the social workers that are not well represented in the CMIPS measures. Spouses receive hours comparable to those of non-relatives. Other Relatives have fewer authorized hours, with some of this difference possibly reflective of the household size and the downward adjustments made with IHSS hours when there are parents, spouses, or other non-disabled individuals residing in the household who are able to do routine household chores. Finally, the pattern of systematic differences in authorized hours comparing continuing with new recipients is also present among adult recipients. This difference tends to be in the range of 20-30 hours, rather than 40 hours observed with minor children recipients.

Table 7 shows the distribution of physical and cognitive limitations by age for recipients in the Restaurant Meals voucher and Advance Pay programs. Those receiving Restaurant Meals vouchers generally have at least three limitations in IADL. At the same time fewer than one-third have three or more ADL limitations for which human assistance is necessary. About half have one or fewer such limitations. Very few recipients have cognitive or breathing problems. Similar patterns hold for IADL, cognition, and breathing limitations among recipients in Advance Pay. This group, however, is predominated by high levels of ADL limitations. More than 90% of recipients in each group have at least four ADLs for which human assistance is necessary. The difference in frailty mix between these two programs is consistent with their target recipients.

County Characteristics

Two measures are used to represent county differences in the analysis. One of these is the modal hourly wage rate paid for IHSS services. For purposes of the

analysis we have grouped these into categories into wage categories that also happen to be broadly indicative of geographic regions. The groupings are less than \$7.50/hour (17.8% of IHSS recipients statewide), \$7.50 (44.5%), \$8-\$8.50 (15.6%), \$9.50-\$9.75 (14.4%), \$10-\$10.50 (7.7%). The distribution of the wage rates is shown in Table 8. Los Angeles and Fresno Counties, which have the same modal wage rate, are combined as the reference category, allowing the vector of dummy coded price ranges to be interpreted as both a comparison to these counties and the statewide median wage rate (the average is about \$8.06). The second county measure is personal income per 1,000 county population. This has been represented in the analysis in units per \$1,000.²⁵

Health Conditions Among IHSS Recipients

Table 9 shows the number of HCC's, counted after aggregation into body systems.²⁶ The prevalence distribution is relatively consistent within IHSS recipient age groups comparing new and continuing IHSS recipients. Those age 18-64 tend to have more conditions than the other age groups. Because of the relative prevalence consistency within age group we have combined the IHSS recipient entry cohorts in the HCC prevalence descriptive tables presented later.

The IHSS recipients included in the analyses of health conditions are limited to those enrolled in fee for service Medicaid for all their Medicaid participation months in 2005. This decision, resulting in the exclusion of those enrolled in Medicaid managed care for any portion of 2005 (n=56,152), was necessitated by the under reporting of Medicaid encounters by managed care members.²⁷ Managed care enrollees represented about 13.9% of the IHSS recipients in 2005. The managed care members excluded varied by recipient age: minor children 28.8%, non-aged adults 17.8%, aged 10.4%.²⁸

²⁵ See Appendix B, Table B-4 for a listing of personal income per capita by county.

²⁶ A full listing of HCCs by age and IHSS provider is included in Appendix D.

²⁷ This difference is illustrated in Table B-3, Appendix B. These show claims records among recipients in and not in managed care in 2005. For inpatient care, physician, durable medical equipment, medical transportation, and most ancillary services, those *in* managed care have one-third or fewer the number of vendor service claims compared to those *not* in managed care. While some of this difference may be related to case mix, similar differentials are not present in services (including IHSS and HCBS waivers) billed directly to Medicaid and not included in managed care capitation agreements.

²⁸ Appendix C provides an analysis of IHSS recipient and county factors associated with provider use, and whether managed care participation is associated with provider selection, after adjusting for recipient attributes. Managed care membership was used in the estimated models to assess whether enrollment in these Medicaid plans might be biased relative to the various provider types. Among minor children there was generally no significant difference in membership among those with each type of provider. The exception was a marginally significant difference with those having Non-Relative providers being less likely to be in managed care. For recipients age 18-64, managed care members were more likely among those with Parent and Spouse providers, and less likely among those with Other Relatives and Non-Relative providers. For recipients age 65+, managed care members were more likely among Spouse and Other Relative providers, and less likely among Non-Relatives. Recipients with greater propensity toward managed care participation may have a bias toward fewer chronic health conditions and lower Medicaid expenditures. Analyses within age group, adjusting for other risk factors may help minimize this differential effect, but it cannot fully eliminate any systematic bias if healthier (or sicker) persons enroll in managed care.

IHSS Recipients Age 3-17. Parents predominate as IHSS providers for minor children recipients. As shown in Table 10a, there is also a tendency for parents to be providers of recipients with more health problems. Recipients with paid parents as providers have an average of 3.62 chronic conditions. This compares to an average of 2.98 among “Other Relative” providers, and 2.58 among “Non-Relative” providers. Prevalence differences are present across most of the specific HCC categories. Ear, nose, throat, and mouth disorders were the most pervasive, affecting about 45% of all recipients. Central nervous system disorders (including seizures and convulsions, and spinal cord injuries) were the next most prevalent, affecting about 30% of the recipients. Musculoskeletal and connective tissues; lung problems (including asthma and other conditions); gastrointestinal system; cerebrovascular disease (particularly cerebral palsy and other paralytic syndromes), and Mental retardation/developmental disabilities each affected between 15%-25% of this age group. Neoplasms; cardio-vascular; kidney/other genitourinary system; mental health disorders; and endocrine, nutritional and metabolic disorders each affect close to 10% of recipients. Infections and parasitic disease; fractures, other injuries and poisoning, and dermatological disorders (e.g., decubitus ulcers, other local skin infections) affected about 10%-15% of the recipients. The general pattern was that the prevalence of conditions tended to be higher among Parent providers and lowest among Non-Relative providers.

IHSS Recipients Age 18-64. Non-relatives predominate as the IHSS providers for non-aged adults with disabilities, followed in descending order by Other Relatives, Parents. Spouses, eligible to be paid under the IHSS Plus Waiver, are the smallest provider group. As shown in Table 10b, the prevalence of HCC conditions tends to be lowest among recipients with Parent providers (average 2.75 conditions), and relatively similar among those with the other types of providers (averages of 4.49, 4.55, and 4.39 among those with Spouse, Other Relative, and Non-Relative providers respectively).

Musculoskeletal and connective tissue disorders are the most prevalent of the HCC's among both Non-Relatives, Other Relative providers, and Spouses. Various cardiovascular; endocrine, nutritional and metabolic; gastrointestinal; and pulmonary disorders affect 25%-40% recipients with Non-Parent providers. Recipients with Parent providers have about half the prevalence of these conditions. Genitourinary systems disorders; ear, nose, and throat; and cerebral and other vascular problems each affected about 15%-20% of the recipients with Non-Parent providers. Most conditions follow similar patterns, with Parent providers having notably lower problem prevalence. Only among recipients with mental retardation/developmental disability, and central nervous system injuries/disorders (e.g., quadriplegia, paraplegia, other extensive paralysis or spinal cord disorders, and seizure disorders) do parents care for a higher problem prevalence than the other provider groups. Spouse providers tend to have prevalence rates a few percentage points below those of other relatives and non-relatives. These latter provider groups have relatively similar condition prevalence among most conditions. Acute conditions such as infections, fractures and injuries tend to be relatively similar among recipients. Treatment complications affect about 50%-60% of the recipients in each provider group.

IHSS Recipients Age 65 or More. Relatives (excluding spouses and parents) are IHSS providers for just over half of the aged recipients, closely followed by non-relatives. Spouses account for just over 2%. Recipients with paid Spouse providers have an average of 3.18 chronic conditions as measured from Medicaid claims. This compares to an average of 2.82 conditions among those with Other Relative providers and 3.03 among those with Non-Relative providers. Cardiovascular system disorders (e.g., coronary atherosclerosis and congestive heart failure) are the most prevalent group of conditions across all provider types in this recipient age group see Table 10c. Proportionate differences in disease prevalence between provider groups are generally low (<2%). When differences exist, prevalence tends to be slightly higher among those with Spouse providers than the others. Musculoskeletal and connective tissue disorders, are the one exception: non-relatives care for proportionately more recipients (35%) with this disease burden. Prevalence among those with Other Relatives (32%) and Spouse providers (30%) was marginally lower. Recipients with Spouse providers have condition prevalence rates 3%-5% higher than those among other provider groups in the other high prevalence condition groups: endocrine, nutritional and metabolic disorders; pulmonary; cerebral and other vascular system; renal and other genitourinary system disorders; and treatment complications. Infectious disease, and injuries, all have similar prevalence among the three provider groups.

Implications for Modeling Recipient Outcomes

The preceding sections presented information about the living arrangements, functional limitations, and chronic health conditions of IHSS recipients and how these were distributed by age and provider type. Comparisons were also made between those entering the IHSS program in 2005 versus those continuing from 2004. Several conclusions can be drawn from these analyses relative to the recipient and other attributes that need to be adjusted in comparing recipient outcomes by provider type.²⁹

²⁹ Appendix C extends the descriptive findings using logistic regression to adjust for recipient differences within a provider group. Separate analyses were conducted by recipient age group to assess the adjusted association of recipients and the “selection” of provider type. These analyses also evaluated the relative value of using IHSS wage rate as a proxy for county IHSS policy. Conclusions coming from these analyses were that the comparison of provider effects on recipient outcomes could be accommodated by using models which compare effects associated with provider type rather than using separate models by provider type of those using predicted provider types as covariates. IHSS modal wage rates were used with all comparisons being made to Los Angeles and Fresno Counties which reflect 45% of all IHSS recipients statewide and the statewide median IHSS wage rate. Among minor children, the comparison of recipients in counties across all modal IHSS wage levels found few statistically significant provider choice differences from the reference counties. The exception was that in counties with modal hourly wages of \$10 or more, the likelihood of a parent being a paid provider reduced relative to the likelihood of recipients in the reference counties. No differences were found for the other provider groups. Recipients age 18-64 offer a somewhat similar pattern. Parents in counties with modal IHSS wages above \$9 per hour were less likely to be paid providers, and there was a modest tendency for Non-Relatives to assume the provider role. The choice of Spouse provider was positive across wage rate levels, suggesting that choice of spouses was not related to IHSS wage rates. Among aged recipients, the prior pattern for Spouse providers holds, except in the highest wage rate counties, which do not differ from the reference counties. Across all but the highest wage rates, counties show a tendency toward more Other Relative providers and somewhat less likelihood of Non-Relative providers than in the reference counties.

First, it is apparent that the factors associated with Parent, Spouse, and others providers are, in part, a function of the family and other resources available. For example, among those without parents, spouses or other relatives, the options reduce to using non-relatives. This influence is most apparent among minor children, where the vast majority of those with available parents have paid Parent providers; and among the few adults with spouses. Additionally, there are preferences and other influences that are not measured by CMIPS assessments. Typically, a two-stage model would be used to estimate the “predicted” provider type in the first stage, and estimate the predicted outcomes associated with the provider type in the second stage. Ideally such a process adjusts for “selection” effects on provider choice, with the outcome of these models compared against the observed outcomes of waiver vs. non-waiver recipients. However, the absence of complete information in CMIPS about the availability of relatives (including legally responsible relatives) and recipient-provider preferences severely limits the applicability of such two-stage models here. Given the data limitations constraining the estimation of such models, the outcomes analysis reported in the subsequent sections uses observed provider type as one of the predictors of service use and expenditure outcomes. Provider type will be based on the notion of “intention to treat” described in the Methods section. If a legally responsible relative is ever used in the study year, this provider type is the presumed preference regardless of changes in provider type made during the year. Similar assumptions are made contrasting other relatives with non-relatives.

A third conclusion is suggested by the differences among race/ethnicity groups in their association with provider type. These differences are present across all age groups after adjustments for physical and cognitive limitations, household size, and IHSS wage effects. This suggests the appropriateness of using race/ethnicity as a proxy for cultural preferences or predispositions to assume caregiving roles.

Per capita income, one of several county-level measures tested, represents the cost of living in the counties, and has a significant, if modest association with provider type. This measure is retained in the outcome models.

Finally, the differences among some of the provider types in the association with managed care membership may have an effect on comparisons in analyses of Medicaid expenditures and health care events. Medicaid claims-records are generally not available for those in managed care because monthly payments are made to the health plan based on member characteristics, not on reimbursement for the use of specific services. Groups with a greater propensity toward managed care participation may have fewer chronic health conditions and lower Medicaid expenditures, but this cannot be determined with the data available. Analyses within age group, adjusting for other risk factors will help minimize this differential reporting, but it cannot fully eliminate any systematic difference if healthier (or sicker) persons enroll in managed care compared to those in fee for service. For this reason, the analyses when using health conditions as a control variable exclude recipients who are in Medicaid managed care. Payment for community care services, including IHSS, is not included in the managed care capitation payments. Consequently, analysis of this outcome is done both including

adjustments for medical conditions (obtained from claims data and limited to those in fee for service), and all IHSS recipients without adjustment for medical conditions.

Health Care Expenditures and Use

This section shifts the analysis from a description of IHSS program recipients to the consideration of the quality of care and other outcomes given the “choice” of provider types. The data sources used for this comparison are the IHSS assessments and Medicaid claims data. In combination these data sources enable us to investigate the following question:

Adjusting for disability and other attributes, what are the Medicaid program expenditures and health care events incurred by IHSS Plus Waiver program and non-waiver recipients? Are there differences by age group?

Included in these comparisons are all IHSS services, as well as personal care from Medicaid HCBS waiver programs. These services are available to eligible Medicaid recipients, and are unaffected by whether the recipient is enrolled in Medicaid managed care. Additionally, we examine Medicaid-reimbursed hospital, ER, nursing home, home health, and medical provider claims. These services generally do not generate a claims-record for persons in Medicaid managed care, so the sample size for analyses involving these services reduce to beneficiaries receiving health care reimbursed through fee for service claims. For hospital, nursing home, and ER use, the compilation of claims starts with encounters occurring within or subsequent to the first month of IHSS eligibility in 2005. Expenditures and utilization for all remaining months in 2005 are compiled as the basis for calculating mean monthly expenditures for these services. The compilation of chronic health conditions from Medicaid claims, includes all claims in 2005, regardless of months of IHSS participation. This was done under the assumption that chronic conditions are pre-existing in 2005, and with recognition that the inclusion of all claims reduced some of the under reporting of conditions that occurs if only prior year claims are used in identifying diagnoses.

Both unadjusted descriptive and multivariate analyses of expenditures and health care events are reported. The measures of primary interest in the multivariate models are the coefficients for IHSS provider types. All models adjust for recipient gender, race/ethnicity; household size; cognitive, ADL, and breathing limitations; the number of chronic health conditions. Household size and recipient limitations are the basis of IHSS benefit eligibility. Total Authorized IHSS Hours are also included as potentially reflecting changes in functional limitations or living arrangement that may not be reflected on the baseline IHSS assessments. Authorized hours are reduced as the availability of informal care increases, so that higher hours (up to the cap of 283 hours) corresponds to an increasing reliance on paid IHSS assistance. Complementing the recipient characteristics is one county indicator: per capita income, an adjustment for prevailing cost of living. The models also include a dummy variable representing whether the individual was a new IHSS recipient in 2005 or continuing from 2004. This

tests whether new recipients had different expenses and utilization than continuing recipients, after adjusting for recipient characteristics.³⁰

Monthly Medicaid Expenditures

Across all age groups participating in IHSS, mean unadjusted Medicaid expenditures (excluding pharmacy payments) range from \$1,400 to \$1,700 per IHSS participation month. This is a cost inclusive of Medicaid-reimbursed personal assistance-related expenses, which averaged about \$825 in 2005. The highest average total expenditures are among those ages 18-64, the lowest among those ages 65 or more. Lower expenditures among this latter group are explained, in part, by more of these recipients having access to Medicare -- their primary payer for hospital, physician, and other health care use.

As shown in Table 11, mean unadjusted monthly expenditures for all age groups vary substantially by the number of an IHSS recipient's exposure months in 2005. Expenditures shown in this table are accumulated for every month after IHSS eligibility in 2005. For recipients continuing from 2004, all would be eligible in January 2005. The new recipients could have entered in any month starting with January. Approximately 4,000 recipients entered the program each month, with an approximately equal number leaving. Persons with fewer than three months in the year tend to have average monthly expenditures that are about three times higher than the average monthly expenditures for those in the IHSS program for a full year. The causes for the difference across exposure months are beyond the scope of this analysis, but they likely are associated with changes in health status immediately preceding program entry or that contribute to leaving the program.

Provider Type and Medicaid Expenditures. Table 12 arrays the mean expenditures data by age and IHSS provider groups. These unadjusted results show a tendency for recipients of Spouse providers to have lower mean monthly expenditures than those receiving care from other providers. There are relatively few unadjusted differences in mean expenditures comparing recipients of Other Relatives and Non-Relatives providers. Expenditures among new recipients tend to be lower than for those of continuing IHSS recipients.

A set of ordinary least squares regression models, Table 13, were used to provide a comparison of adjusted provider effects on expenditures. Each column presents a model for a particular IHSS recipient age group. The comparisons of interest in the

³⁰ A series of equations that included interactions between provider type and the number of chronic conditions were evaluated. These items did not sufficiently improve the fit of the model to be retained in the analyses presented. Additionally, the ordinary least squares analyses were replicated using logarithm transformations of the expenditures measures instead of raw expenditures data. These models generally had higher R² values, but as the results testing whether the coefficients on the Parent and Spouse provider measures were significantly different from Non-Relative providers were consistent (in terms of the direction of the sign) with those in the non-transformed models we have elected to report only models with the non-transformed data. These models have the advantage of being in dollar units, and more readily understandable than the percentage comparisons possible using the logarithm transformations.

analysis are those of provider type. The reference category for the provider types is Non-Relatives. The coefficients, multiplied by 1,000, convert the effect into the metric of dollar units and facilitate interpretation of the differences among the recipient-provider groups in terms of average monthly dollar expenditures.³¹ While the models do not fit the data particularly well, the purpose is to test the adjusted predicted expenditure differences between providers. The individual covariates for these comparisons tend to have high levels of statistical significance, even for small difference in the predicted mean monthly expenditures. This is due, in part, to the large sample size.³²

Among these age 3-17, Parent providers tend to have about \$920 lower adjusted Medicaid expenditures than Non-Relatives. Other Relatives seem to have slightly lower adjusted expenditures than non-relatives, but this difference is not statistically or practically significant. Recipients age 18-64 with Spouse IHSS providers have predicted mean monthly Medicaid expenditures (holding everything else constant) about \$1,000 lower than do those with Non-Relative providers. This estimate is somewhat larger than the difference in the unadjusted comparisons. Recipients with Other Relative providers have mean expenditures about \$170 lower than Non-Relatives. There was no statistically significant difference between those with Parent providers and Non-Relatives. Among recipients age 65 or more, those with Non-Relative providers have predicted average monthly month expenditures that are higher than those for either recipients with Spouse providers (\$780), or Other Relatives (\$110).

Expenditures comparing new with continuing IHSS recipients showed only minor differences in adjusted mean monthly expenditures: non-significant among children recipients, slightly higher among those 18-64, slightly lower among the aged.

Medicaid Hospital Expenditures and Use

This section begins an examination of some of the component services that contribute to the total Medicaid expenditures. We begin with hospital use, often a contributor to high expenditures. Hospital use may also serve as an indicator for problems in medical care and quality of home care. Table 14 shows unadjusted mean expenditures for hospital care (among those having a hospital stay) organized by age and provider group; and by continuing and recipients enrolling in IHSS during 2005. The highest mean monthly hospital expenditures (incurred after IHSS enrollment) are among those ages 3-17. For all age groups, but especially for those age 65 or more, it is important to recognize that these figures may be biased downward relative to total “all-

³¹ The association of provider type with expenditures was evaluated as both a main effect, and as the interaction of provider type and the number of the recipient’s health conditions. The interaction models did not improve the model and were not retained.

³² Additional models were estimated to test the stability of the provider findings. These included models limited to those with 12-month participation, and those with fewer than 12 months. The former had higher R^2 values, the latter, lower R^2 values. This is consistent with the higher variability in this latter group. In spite of these differences in model fit, the effect of provider type remained relatively constant. There were no changes in statistical significance or direction of effect, nor in substantively meaningful magnitude. Analyses were also conducted using the logarithm of expenditures. These models produce findings consistent with the non-transformed models. They are available on request.

payer” expenditures as the Medicaid results do not include reimbursements from other payers (e.g., private insurance, Medicare, Veterans Administration (VA), out of pocket).³³ Among all recipients age groups the unadjusted average monthly Medicaid hospital expenditures generally show the IHSS Plus Waiver recipients (i.e., spouses of adults, parents of minor children) to have either the lowest mean expenditures or to have expenditures approaching the lowest group. IHSS recipients entering the program in 2005 tend to have higher mean monthly expenditures than recipients continuing from 2004. This may be, in part, a function of the fewer IHSS participation days among new recipient. As seen later, new recipients have lower incidences of hospital stays. Further as shown in the “Mean Total \$” rows in Table 14, there is little difference within age group in the average of hospital expenditures incurred over the observed months by hospital users in each recipient-provider group. In general, these expenses are indicative of short stays, but as evident from the standard deviations, some recipients accumulated ten’s of thousands of dollars in hospital costs.

Any Cause Hospital Stays. The next several tables refine the hospital expenditure analyses to assess whether there are differences between provider groups in the likelihood of having hospital stays. Hospital use may be indicative of differences in recipient case mix and/or of the quality of IHSS and the condition management assistance received. Table 15 shows the unadjusted probability of an “any cause” hospital stay in 2005. These incidents occurred after IHSS enrollment (or in the same month as IHSS enrollment). The unadjusted likelihood of a hospital stay is relatively comparable among the adult recipients, with rates about double those for minor children. IHSS recipients across the provider types generally have similar rates, although recipients of Spouse providers are more likely to have stays.

Table 16 extends the analysis of hospital use by adjusting for recipient case mix differences. These logistic regression models compare the difference in odds (expressed as an odds ratio) of an “any cause” hospital stay during 2005 between each of the provider groups. These comparisons are based on consideration of the main effect of provider type. (Interactions between provider type and the number of health conditions, as a group, did not statistically improve the model and were not retained in the analysis.) With the modeled adjustments the differences between recipients having IHSS Plus Waiver-permitted providers (i.e., parent and spouse respectively) and those with Non-Relative providers generally become statistically non-significant. This finding holds among all but the non-aged adults who have Spouse providers. These recipients are about 15% more likely to have hospital stays than those with non-relatives. Recipient outcome comparisons between those with Non-Relative providers and Parents (of those 18-64), as with the unadjusted results, show substantially lower odds of a hospital stay for those with Parent providers. This difference is reduced to about 25%, rather than 50% in the unadjusted results. Non-aged adults with Other Relatives as providers show about a 10% lower risk of hospital stays than those with Non-

³³ For example, it is likely that Medicare will be the primary payer for health care expenditures by the aged and those non-aged disabled adults eligible for Medicare due to their disability. Similarly, the VA is the primary payer for medical care among qualified veterans if they elect to use VA facilities.

Relatives -- an advantage not evident in the unadjusted results. Such comparisons are non-significant or very minor among the aged and children recipients.

Another finding of interest in this table is that adults in non-White race/ethnic groups tend to have higher odds of hospital stays than Whites. This effect is examined further in subsequent analyses of access to physician services. Also of note is the lower likelihood of hospital use among new IHSS recipients than continuing recipients. This is consistent with the likelihood that a hospital stay in a year increases over time for IHSS recipients if they become more disabled.

Ambulatory Care Sensitive Hospital Admissions. Hospital stays for which the primary admission diagnosis is an ACSC are thought to be indicative of the quality or performance of primary health care (AHRQ, 2007a, 2007b). Better care would be suggested by low rates of these potentially “avoidable” hospital stays. The unadjusted prevalence of ACSC hospital admissions in 2005 is shown in Table 17. Comparing unadjusted “any cause” hospital stays (i.e., Table 15) with the unadjusted ACSC stays shows almost an eight-fold decrease among children and more than 3x decrease among adults using the more restricted ACSC criteria. Differences between provider groups narrow substantially when only ACSC outcomes are considered. Recipients with Spouse IHSS providers continue to have the highest unadjusted hospitalization rate.

Table 18 shows the predicted odds of ACSC hospitalization adjusting for recipient characteristics. Holding other factors constant, there were no statistically significant differences comparing the recipient outcomes of provider groups among children. This finding is consistent with the “any cause” hospital stay comparisons. Among recipients age 18-64, a similar finding also occurs when comparing Spouse and Other Relative providers to Non-Relatives. On the other hand, recipients in this age group with Parent providers have lower adjusted odds for an ACSC hospital stay than Non-Relatives. Finally, among recipients age 65 or more, there is significant difference in the spouse/non-relative comparison. Recipients of Spouse providers have reduced risk of an ACSC hospital stay. There are no statistically significant differences comparing those with Other Relatives to those with Non-Relative providers. (Interaction tests involving provider type with the number of health conditions were non-significant and are not included in the final models.)

Consistent with the “any cause” hospital stays, non-White adult age recipients tend to have increased risk for ACSC admissions. Whether this is a function of differences in access to care, or problems in culturally appropriate care is not known. Among minors, new IHSS recipients have no differences from continuing recipient in ACSC admission. For adults, new recipients have about half the risk of ACSC admission than recipients continuing from 2004.

Medicaid Physician and Outpatient Department Use

Differences in hospital use described in the preceding section are more evident comparing White to non-White IHSS recipients than in comparisons among recipient-

provider groups. In this section, we examine the use of physician and outpatient departments as a potential influence on hospital use. Access to medical care is necessary to assure appropriate health care and condition management, but measurement of the levels of use are confounded by the inter-relationship between health status and need for care. For example, individuals with declining health status or with acute problems are more likely to seek care than those not experiencing such problems. Unraveling the cause-effect pattern is beyond the scope of this analysis, but statistics have been compiled to first descriptively compare any use between recipients by age and provider group and among race/ethnic groups, and then to compare use adjusting for health status and other characteristics.

Table 19 shows an important contrast among IHSS recipients. About 20% do not have any claims with vendor codes for either physician services (including MDs, nurse practitioners, medical groups, surgi-centers, and rural clinics), or outpatient department (including hospital-based and other organized outpatient departments) use in 2005. These rates differ somewhat among IHSS recipient age groups, and between provider types. Table 20 recalculates access to medical care, to add any Medicaid claims for ER use. These combined rates reflect about a 2%-3% increase in the percentage of recipients having access to Medicaid medical care. None of these estimates include medical care encounters that are billed solely to non-Medicaid sources without requiring a Medicaid co-payment or other Medicaid claims-based record of the encounter. Minor children recipients as a group have lower unadjusted rates of access to medical care than either of the other recipient age groups.

Table 21 extends the analysis of Medicaid-reimbursed medical care by using logistic regression to adjust for health status and other recipient attributes. As shown in this table, Parent providers of minor children, and Spouse providers of adult IHSS recipients have a higher likelihood of any medical care use compared to those with Non-Relative providers after adjusting for health and functional status. Comparisons between IHSS recipients with other relatives and non-relatives are not statistically different. Adults with Parent providers have a lower likelihood of medical care use than do those with non-relatives as paid IHSS providers.³⁴

The differences in hospital use comparing non-White race/ethnic groups to Whites (Table 16) are not broadly “explained” by differences in medical care use. After adjusting for health conditions and functional limitations, there are no statistically significant differences in the likelihood of medical care use comparing non-White to White race/ethnic groups among IHSS recipients age 3-17 and comparing Hispanic and Asians to White among recipients age 65+. Adult African-American IHSS recipients, on the other hand, were less likely to use medical services than Whites. Non-aged adult Hispanic and Asian recipients tended to have a higher likelihood of medical care use than Whites of the same age.

³⁴ Similar analyses were conducted using logistic regression models comparing medical care use, excluding the use of ERs. The results relative to IHSS provider groups and in comparisons of non-White race/ethnic groups were similar to the results in Table 21. They are available in Appendix D, Table D-1.

Emergency Room Use

The preceding results, show relatively comparable access to medical care across race/ethnic groups, and between recipients in the IHSS provider groups. However, claims data are not sufficient for determining the quality, timeliness, or appropriateness of this care. Here we separately examine the use of ERs. ERs can serve as alternatives for those without access to physicians or clinics, and/or as an indicator of crisis that may be suggestive of difficulty managing the needs of the personal assistant care recipient.

As seen in Table 22, ER use is a relatively common experience among IHSS recipients of all ages: experienced by more than half of the recipients in each age group. There is some variability among the provider types, with minor children of Parent providers, and adults with Spouse providers having the highest unadjusted rates. Extending this analysis, using the logistic regressions shown in Table 23, the risk adjusted differences among provider groups for recipients age 3-17 become non-significant. Among recipients age 18-64 and those 65 or more, the differences observed in the unadjusted results persist. Spouse providers in both age groups tend to have about 20% higher odds of ER use compared to Non-Relatives. Recipients with Parent providers (non-aged recipients only), in contrast have reduce odds of ER use. Other Relatives in both recipient age groups similarly have lower risk of use. New IHSS recipients, in all age groups similarly have reduced likelihood of ER use.

Looking at race/ethnicity, patterns similar to ACSC hospital use persist with non-Whites (other than Asians) ages 18 and over tending to have higher rates of ER use than Whites. Whether this is in response to problems accessing medical care, or responses to emergent conditions cannot be determined with the available data. As one might expect, this rate increases with more chronic health conditions, and the presence of severe breathing problems.

Medical Care Expenditures

The final analysis of medical care use examines expenditures made for physician services, outpatient departments, and the aggregation of these services into combined medical care services. Unadjusted monthly Medical care service expenditures averaged over the recipients' IHSS eligibility months in 2005 are shown in Table 24. This table has three panels, one with data for all recipients, one for recipients continuing from 2004, and those newly entering IHSS in 2005. The table combines both physician services and those of outpatient departments.³⁵

Within recipient age groups there is little difference in the average monthly expenditures for physician and outpatient department services among the provider groups. Average monthly Medicaid expenditures tend to be highest for children, lowest for those 65 or older. Combining the sources of medical care, the mean monthly

³⁵ Separate tables showing unadjusted results for physician service use and outpatient department use can be found in Appendix D.

expenses for IHSS from recipients age 3-17 continuing from 2004, range from a \$140-\$180 across all provider groups; the ranges are respectively \$105-\$170 among those age 18-64, and \$40-\$50 among those age 65 or more. The lower expenditures among adults, and the aged in particular, are likely due to Medicare or another source being a primary payer on these services. Expenditures for those who enter the IHSS program are marginally higher than for continuing recipients. This may be associated with instability in service needs that predated enrollment in IHSS. However, the underlying causes cannot be determined from the study's single year of data.

Table 25 uses ordinary least squares regression to adjust for recipient characteristics in evaluating recipient mean expenditure differences among provider and race/ethnicity groups. Expenditures are inclusive of all physician and outpatient department claims during the calendar year for those continuing as an IHSS recipient from 2004, and after the date of IHSS eligibility in 2005 for new recipients. Expenditures are in dollar units divided by 1,000.³⁶ The predicted difference in recipient expenditure levels associated with the provider group measures is generally modest. For minor children there are no statistically significant differences between the estimated expenditures for Parent or Other Relative providers and Non-Relatives. Among non-aged adult recipients, those with either Spouse or Other Relative providers have about \$14 lower average monthly expenditures than Non-Relatives. Expenditures for those with Parent providers are not statistically different from those of Non-Relatives. Among recipients aged 65+, there are no adjusted differences between recipients with IHSS-paid Spouse or Other Relative providers and Non-Relative providers.

Returning to the issue of equality of medical care access by race/ethnic groups, the coefficients for the race/ethnicity groups regressed on medical care expenditures are generally not statistically different from those of Whites. The most important differences are that Black Adults have lower average monthly expenditures than Whites. This difference, as in the earlier analysis, may be explained by lower use medical care use by Black. New enrollees into IHSS in 2005 tend to have higher average adjusted monthly expenses than continuing recipients. Whether this is a function of ongoing problems or only those associated with the reasons for entering the program have not been determined.

Home and Community-Based Service Use and Expenditures

IHSS recipients may have access to Medicaid funded home care services in addition to IHSS. These can include several Medicaid HCBS waiver (e.g., AIDS waiver, Multi-Purpose Senior Services Program (MSSP), and developmental disabilities).³⁷ The first panel of Table 26, shows the use of these waiver services (i.e., excluding IHSS). It is proportionately low: fewer than 0.04% among IHSS recipients age 3-17, 4.2% age 18-64, 17% age 65+. Among the users of the waivers, mean monthly expenditures tend to be somewhat higher than the comparable IHSS expenditures. Average monthly waiver

³⁶ Separate models were also run using interaction main effects, but these did not significantly change the model goodness of fit and have not been used.

³⁷ State, county and federal programs not represented in the Medicaid claims system are not included here.

expenditures tend to be highest among recipients age 18-64, particularly those with Parent providers. There is little unadjusted difference among the provider subgroups for waiver beneficiaries age 65+, and too few minor children recipients to appropriately draw conclusions.

The second panel shows Medicaid expenditures associated with IHSS use. This service is used by most of the study recipients in 2005. Average monthly expenditures are relatively comparable among adult recipient groups, and generally higher among recipients age 3-17. Parents among children, and spouses among the adults have the lowest unadjusted average monthly expenditures. This likely reflects the effects of the IHSS needs assessment protocol and service authorization algorithm that assigns no or few housekeeping and meals preparation task assistance hours when non-disabled family members also reside in the household. This algorithm applies whether or not non-disabled household members are paid IHSS providers. However, spouses of adult IHSS recipients and parents of minor children who are paid IHSS providers are usually considered "non-disabled." When spouses and parents of minor children reside in the home of an IHSS recipient but do not become paid providers, this is often because they have health/disabilities that impair their caregiving ability. Indeed, especially in the case of the elderly, spouses are often also IHSS recipients. There are minor differences comparing Other Relative versus Non-Relative providers within each recipient age group. The third panel combines IHSS and spending for other community-based waiver reimbursed care. Average monthly expenditures are essentially unaffected by this, suggesting that the funding sources largely complement each other, rather than substantially augmenting the hours of care. The pattern of provider differences within age groups remains the same.

Ordinary least squares regression were used to adjust the within age group comparisons for recipient characteristics in assessing whether recipient expenditures differ among provider types.³⁸ Table 27 shows models that combine all the home care expenditures for all recipients and all exposure months in 2005.³⁹ The coefficients need to be multiplied by 1,000 to convert them to the original dollar metric. For all age groups, the IHSS Plus Waiver-permitted providers (i.e., parents for children, spouses for adults) have coefficients with negative signs, indicative of lower average monthly home care expenditures than recipients with Non-Relative providers -- a finding expected given the above described algorithm used to allocate total authorized IHSS hours.

Recipients ages 3-17 with Parent providers have average monthly home care expenditures about \$500 less than those having Non-Relative providers. There is no

³⁸ Variations on these analyses include separate sets of models for IHSS expenditures, non-IHSS expenditures, and combined expenditures. Each set of models was estimated using only recipients having 12 months of participation in 2005, only those having fewer than 12 months, and then all recipients regardless of the number of participation months in the year. Models limited to persons with 12 months of participation had the largest proportion of explained variance, those with fewer than 12 months the least, but all models yielded similar findings with respect to provider affects, and the comparison between new and continuing and IHSS recipients. Non-IHSS recipient models for minor children were estimated due to the small recipient counts.

³⁹ These results are similar to models estimating only IHSS and only other home care waiver service expenditures, see Appendix F.

difference between Other Relative and Non-Relative groups. Among adults IHSS recipients, those with Spouse providers have lower average estimated expenses (\$430 less for the non-aged, \$340 less for the aged) than those with Non-Relative providers. This is a difference of about 6-10 provider hours per week -- a level comparable to the unadjusted results. The high unadjusted expenses evident for Parent providers (non-aged recipients only) reduce markedly after adjusting for recipient characteristics. The OLS estimates show these expenses to be about \$30 less per month than those of non-relatives holding everything else constant. The last contrast is between Relatives and Non-Relative providers. Here too there is a shift once adjustments are made for case mix. For both adult age groups of recipients these expenditure comparisons are either not statistically significant or so low as to be trivial between. Children and non-aged adults entering the IHSS program in 2005, have on average, lower monthly home care expenditures, holding other things constant, than those continuing from 2004. Among the aged, average monthly expenditures among new recipients tend to be about \$50 higher than for continuing recipients.

Home Health Care Expenditures

In addition to unskilled home care, IHSS recipients may receive home health care (a home-based service either provided by a nurse or other licensed professional and/or under their supervision). Generally, this service is for a limited duration, such as following a hospital stay, or as an adjunct to outpatient physical therapy. Among the adult IHSS recipients, home health care utilization follows this expected pattern. There were relatively few such recipients in 2005 (0.3% of the aged, 3.6% non-aged adults). Home health care services are used by somewhat more minor children (8%), and with substantially higher average monthly expenditures (more than \$5,000 across all provider groups) than adult recipients. Some of the difference in expenditures between adults and children may be that Medicaid is the primary payer for services to children, while large percentages of these costs may be covered by Medicare or other payers among adults. As shown in Table 28, within both children and aged recipient groups, there was little difference in average monthly Medicaid expenditures between provider groups. Among non-aged adults this pattern changed. Parent providers had substantially higher (about \$700 higher) average monthly Medicaid unadjusted expenditures than recipients having non-Parent IHSS providers. Analyses incorporating Medicare expenditures, may alter these findings, but such data were not available to this project.

Differences among provider types in home health care expenditures, adjusting for recipient characteristics, were evaluated using ordinary least squares regression. Each model (not shown) used the same measures as in the earlier OLS regression. Among children and aged IHSS recipients none of the coefficients for provider type or its interaction with the number of health conditions were statistically significant in comparison to non-relatives. Among recipients age 18-64, only Other Relatives differed (\$240 lower) from non-relatives. Adult recipients entering IHSS in 2005, tended to have marginally higher average monthly Medicaid-reimbursed home health expenditures

among users than continuing recipients (about \$940 for non-aged adults, \$780 for those age 65+).

Medicaid-Paid Nursing Home Use and Expenditures

The occurrence of nursing home use is derived from Medicaid-reimbursement claims. We have limited the use of claims to those occurring during or following the period in which the individual was a recipient in the IHSS program. Only nursing home stays occurring in 2005 are counted.⁴⁰ The claims (both payments and stays) available do not include skilled care placements or days covered entirely by payers such as Medicare, the VA, or private funds. A consequence of these limitations is that these data may under report short-term, skilled care days/stays; and under count total expenditures if service use was paid by these sources. Medicaid-paid co-payments are included in tabulations of Medicaid-paid nursing home stays and days. Within these biases the preponderance of nursing home claims are those involving IHSS recipients age 65 or more. The incidence of Medicaid-paid nursing home placement among IHSS recipients is low: about 0.26% among children, 2.25% among non-aged adult recipients, and 5.9% among those age 65+. As shown in Table 29 there are some differences in the unadjusted probabilities of nursing home use by IHSS recipient age and provider group. As a group, those with Other Relative providers tend to have among the lowest likelihood of placements. Adults with Spouse providers tend to be among those with a higher likelihood of placement.

These patterns are somewhat effected after adjusting for recipient characteristics, as shown in logistic regression equations in Table 30.⁴¹ Among recipients age 18-64, there is a persistent adjusted effect: IHSS recipients related to their providers have a lower adjusted odds of nursing home use than persons with Non-Relative providers. Further, recipients with paid Parent providers tend to have a lower adjusted risk than recipients with either Spouse or Other Relative providers. Among recipients age 65 or more, the protective effect of relatives as providers is present only comparing Other Relatives to Non-Relatives. Spouses have a modest tendency toward a lower placement rate, but this does not reach statistical significance. In short, the IHSS program, including its waiver-permitted providers, is at least as successful in aiding families and individuals remain in the community as are recipients with Non-Relative providers. New IHSS recipients age 65+ are also less likely than continuing recipients to have a nursing home placement.

⁴⁰ Persons in managed care have been included in these analyses, as Medicaid claims for non-skilled nursing home care are available. Custodial nursing home care is not included under managed care capitation payments. Tables showing the likelihood of nursing home place among IHSS recipients, excluding those in managed care are in Appendix F, Table F-1. The exclusion of the managed care recipients, results in minor changes in the percentages, approximately 0.05% among minor children, and 0.2% among adult recipients.

⁴¹ Provider by health condition interaction terms were tested in earlier models, but were not statistically significant. Estimates involving recipients age 3-17 are omitted from Table 30, as there were too few cases to estimate reliable models. Appendix F, Table F-2 shows the logistic regression results for models excluding managed care recipients. These results are very similar to those shown in Table 30.

Nursing home use has a direct effect on Medicaid costs. One consequence of this is seen in the nursing home expenditures for 2005 shown in Table 31. These expenditures reflect the accumulated costs for any nursing home stay in 2005, restricted to stays occurring after entry into (and, if applicable, exit from) IHSS. Most of these expenses seem to be for non-skilled care as the average monthly rate among nursing home users approximates the 2005 Medicaid daily nursing reimbursement rate of \$115. Comparisons between continuing and new recipients show generally similar average daily expenses. In both age groups, IHSS recipients tend to have relatively similar average monthly expenditures across provider types. Recipients (non-aged adult only) with Parent providers, the one exception, have the highest average daily expenditures, but this may be an artifact of sample size. Parents are the smallest subgroup and their mean values are perhaps affected upward by the wide standard deviation in these data.

Analysis of expenses associated with the transition from IHSS to nursing home care, the transitions from nursing homes into IHSS, and the total Medicaid expenditures incurred by nursing home recipients are beyond the scope of this analysis; as is an analysis of the duration of nursing home placements.

CONCLUSIONS

California has paid legally responsible relatives as IHSS providers for years under a state and county financed component of IHSS known as the Residual Program. Many of the Residual Program elements were assumed into the IHSS Plus Waiver, implemented in 2005. This waiver allows Medicaid participation in jointly financing the PAS provided by parents of minor children and spouses of adults. It also allows for Advance Pay and Restaurant Meal voucher payments to qualified IHSS applicants.

The analyses presented in this report were organized around five broad questions pertaining to implementation of the IHSS Plus Waiver:

- Do IHSS Plus Waiver recipients (e.g., Parent providers, Spouse providers, Advance Pay, Restaurant Meals voucher) differ from regular IHSS program recipients in race/ethnicity, living arrangement (e.g., household size, and availability of legally responsible relatives)?
- What are the functional limitations, task assistance needs, and chronic health conditions of recipients in each IHSS Plus Waiver component? Do these differ from recipients in the regular program?
- Do IHSS Plus Waiver and regular IHSS recipients differ in terms of continuity with their provider relationship, and Share of Cost?
- Adjusting for disability levels, are there differences within age group between IHSS Plus Waiver and non-Waiver recipients in the number of authorized hours?
- Adjusting for disability and other attributes, what are the Medicaid (aka Medi-Cal) program use and expenditures incurred by waiver program and non-waiver recipients? This includes all IHSS services; HCBS waiver programs; Medicaid hospital, ER, nursing home, home health, and medical provider claims.

Taken together, these descriptive questions assess four fundamental policy issues: whether there was a change in the number and attributes of spouses and parents of minors that are paid providers under the IHSS program; whether hiring legally responsible relatives as personal assistance providers seems to be a recipient/family preference; whether Spouse and/or Parent providers performed as well as the use of other providers in enabling IHSS recipients to remain at home, safely; and whether the employment of family providers has been budget neutral for Medicaid in terms of health care use/expenditures.

IHSS recipients fall into three distinct age groups: minor children, non-elderly adults, and elderly adults. Elderly adults are the majority (60%). Minor children represent a small minority (about 4%), but still a sizable number of recipients. As the disability/chronic illness profile of each age group is different, as is the distribution of

recipients among the types of paid providers used, most of the discussion is organized by recipient age group.

IHSS Plus vs. the Residual Program Participation

The number of recipients cared for by spouses and parents of minors paid as IHSS providers remained relatively constant between 2004 (under the IHSS Residual Program) and 2005 (under the IHSS Plus Waiver); as did the number of persons (about 1,600 recipients combined in 2005) participating in the Restaurant Meal voucher and Advance Pay waiver-eligible services. The new recipients, as a group, tended to be somewhat less impaired, to have lower health care expenditures, and to receive fewer IHSS authorized hours than the group of recipients who were in IHSS for the prior year or longer. These attributes likely could be common to all cohorts of new recipients, and may not be unique to IHSS Plus Waiver program entrants. The race/ethnic and provider mix is somewhat different comparing the new and continuing program cohorts, showing a proportionate increase in Hispanic and Asian recipients. A single year comparison is not sufficient to document a trend in these characteristics.

Preferences in the Selection of Paid IHSS Providers and Outcomes

The selection of a parent or spouse as a paid provider, across all age groups, is partly a function of available family members, but differences in the proportion among race/ethnic groups “selecting” each of the various provider types suggests that cultural preferences may be an important selection factor. Wage and other possible influences on provider availability were not a focus of these analyses, but IHSS wage rates (which vary by county) did not have a consistent association with the selection of paid Parent or Spouse providers. To the contrary, higher wages were marginally associated with an increased use of Non-Relative providers, and Parents and Spouses were more likely to be paid providers when wages were low (and presumably it may be more difficult to attract Non-Relative providers). These patterns could be regional effects, rather than associated with wages.

Recipients Age 3-17

Minor children in IHSS generally have at least one parent in the home. Consequently, for most of these children, the choice of Parent/Non-Parent provider was possible and the choice made by families was for a Parent provider (70% overall and 80% when a parent was present in the home). Hispanics had the highest proportion selecting Parent providers (81%) and the least selecting Non-Relatives (9%). Blacks were the least likely to have paid Parent providers (60%), and comparable with Whites in the proportion selecting Non-Relatives (20%). The decision of families to seek IHSS versus other service options was outside the scope of this study.

There were few differences by provider type in the number of ADL/IADL and cognitive limitations among minor children IHSS recipients. However, proportionately more minor children with paid Parent providers were dependent on human assistance with breathing (this includes assistance with self-administration of oxygen, and the cleaning of this equipment), and had more chronic health conditions (including mental retardation, seizure disorders, and paralysis). These conditions have been shown to be associated with nursing home use in minor children (Fries, Wodchis, Blaum, et al., 2005), and may be indicative of the Parent provider's willingness and or greater ability to assume the demanding care responsibility associated with these conditions. Contributing to this ability may be that parents are legally permitted to perform "skilled nursing" tasks that would not be permitted by other providers. Investigation of the "cause" of this pattern is outside the scope of the current study.

Recipients Age 18-64

Spouse providers were rarely available as a choice to the non-aged adults participating in IHSS. Most IHSS recipients in this age group were either not married or their spouses were also IHSS recipients or otherwise not able physically/mentally to be paid caregivers. However, when spouses were available and able, the "preference" for them appears to be strong (90% among those with an available/able spouse). Parents were more readily available than spouses to non-elderly adults, and more recipients of this age group selected parents as paid providers. The availability of parents beyond those selected as paid providers is unknown in the IHSS data. There were discernable ethnic differences in the propensity to select Parent or Spouse providers. Hispanics were most likely to select Parent providers (26%) and the second most likely to select Spouse providers (9%). Asians were the most likely to select Spouse providers (11%) and second most likely to select Parent providers (18%). Blacks were the least likely to have either a spouse (2%) or parent (10%) as a paid provider. More than half of the Blacks and Whites relied on Non-Relative providers. This contrasted with about a third among Hispanics and Asians.

In general, recipients with paid Parent or Spouse providers had more limitations in ADL and cognitive functioning, and a comparable number of chronic health conditions, than recipients with other providers. However, those with paid Parent providers had higher rates of mental retardation/developmental disability, central nervous system injuries/disorders (such as quadriplegia, paraplegia, other extensive paralysis or spinal cord disorders), and seizure disorder -- conditions shown by Fries and associates (2005) to have higher risk of nursing home placement.

Recipients Age 65 or More

Spouses were present among about 25% of this age group of IHSS recipients, but except for those paid as Spouse providers, the number able/available reduced to about 3%. When a recipient's provider was an Other Relative or a Non-Relative, almost half of the spouses present were also IHSS recipients. Recipients with IHSS-paid Spouse providers tended to have more ADL, cognitive, and breathing assistance limitations, but

there were no substantial differences in the number of health conditions. Race/ethnicity had a minor association with the presence of a paid Spouse provider (the percentages range from 1%-4%), but the more striking differences involved recipients with Other Relative and Non-Relative providers. More than half of the Asian (64%) and Hispanic (54%) recipients had an Other Relative as their paid provider, whereas more than half of the Whites (53%) and Blacks (56%) had Non-Relative providers.

Implications for Medicaid and IHSS Expenditures

For all recipient age groups, IHSS expenditures, adjusting impairment severity and service needs, are expected to be lower relative to those with Non-Relative providers when Parents, Spouses, and Other Relatives living in the household are paid IHSS providers. This cost difference arises because an IHSS algorithm adjusts the authorized time for housekeeping/meal preparation when there are relatives living in the household who might be expected to perform these tasks for themselves as well as for the recipient. This adjusted cost difference was observed for Parent providers to minor children, and for Spouse providers of adults. The cost differences for Parent provider (non-aged adults) and Other Relative providers were minor or non-significant. This could be because these providers were not living with the recipient or they may reflect limitations in the risk adjustment model.

Minor children with Parent IHSS-paid providers, adjusting for recipient functional and health conditions, have lower average monthly Medicaid expenditures, and lower IHSS and other home care expenditures than recipients with Non-Relative providers.

Adjusting for recipient characteristics, recipients age 18-64 with Spouse providers had lower average Medicaid monthly expenditures than those with Non-Relative providers. There were no statistically significant differences comparing recipients with Parent and Non-Relative providers. Among these adult IHSS recipients each of the paid relative provider groups had a significantly reduced likelihood of nursing home placement compared to those with Non-Relative providers. The Parent provider effect for those age 18-64 appears greatest. Those with Spouse providers tended to have higher risk of “any cause” hospital stays (but not those associated with ambulatory sensitive conditions), higher risk of ER use, but lower IHSS and home care expenditures than recipients with Non-Relative providers. Recipients with Parent providers compared to those with Non-Relative providers had lower adjusted use of hospitals, ERs, and home care.

Average monthly Medicaid expenditures among recipients age 65 or more, adjusting for recipient characteristics, were lower for those with paid Spouse providers and Other Relative providers compared to those with Non-Relative providers. This tendency for lower risk among those with family providers (both legally responsible and otherwise) was also present with respect to ambulatory sensitive hospital stays; and those with Other Relative providers compared to those with Non-Relative providers had reduced risk of ER use, lower monthly expenditures for IHSS and other home care.

In short, these analyses found no financial disadvantage and some advantages to Medicaid from allowing spouses, parents (and other relatives) to be paid IHSS providers. This argues in favor of honoring the recipient's and family's preference for such providers. Whether the availability of spouse, parent, and other relatives can be expanded beyond its current proportion among all race/ethnic groups in IHSS is unknown, but changes in the race/ethnic mix of recipients evident in the new cohort of enrollees may affect this. The proportion of recipients who are Hispanic or Asian seems to be growing. These groups presently have the highest proportionate use of Spouse, Parent, and Other Relative providers.

These effects of selecting Parent, Spouse, and Other Relatives as paid providers are present within a program where the rate of Medicaid nursing home stays among IHSS recipients with Non-Relative providers seems to be low. This suggests that IHSS in general is doing a good job of enabling recipients to remain in the community regardless of the provider type selected. Not examined in this analysis were the factors (such as hospital stays, avoidable changes in health or functional status) associated with entry into and exit from IHSS; or the duration of participation in IHSS and the cost/use comparisons over time.

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TABLE 1: Share of Cost, Advance Pay, Meals Allowance Participation by IHSS Recipient Age, Provider Relationship, & Program Entry Status^a										
Eligible IHSS Recipients	Spouse		Parent		Other Relative		Non-Relative		Total	
	n	%	n	%	n	%	n	%	n	%
Age 3-17 from 2004	na	na	9,798	72.6	1,701	12.6	2,006	14.9	13,505	100.0
Share of Cost	na	na	143	1.5	8	0.5	4	0.2	155	1.1
Mean Months if Yes	na	na	8.1		9.0		7.5		8.1	
Advance Pay	na	na	34	0.3	12	0.7	7	0.3	53	0.4
Mean Months if Yes	na	na	9.5		8.3		12.0		9.5	
Meals Allowance	na	na	2	0.02	1	0.06	-	-	3	0.02
Mean Months if Yes	na	na	10.5		12.0		-	-	11.0	
Age 3-17, new in 2005	na	na	1,780	64.7	389	14.1	583	21.2	2,752	100.0
Share of Cost	na	na	10	0.6	1	0.3	3	0.5	14	0.5
Mean Months if Yes	na	na	6.1		1.0		3.3		5.1	
Advance Pay	na	na	1	0.06	1	0.3	-	-	2	0.07
Mean Months if Yes	na	na	9.0		3.0		-	-	6.0	
Meals Allowance	na	na	-	-	-	-	-	-	-	-
Mean Months if Yes	na	na	-	-	-	-	-	-	-	-
Age 18-64 from 2004	7,121	5.6	21,008	16.7	39,932	31.7	58,057	46.0	126,118	100.0
Share of Cost	741	10.4	392	1.9	879	2.2	1,567	2.7	3,579	2.8
Mean Months if Yes	8.9		9.7		8.9		8.9		9.0	
Advance Pay	27	0.4	138	0.7	37	0.1	272	0.5	474	0.4
Mean Months if Yes	10.6		10.7		9.9		10.4		10.4	
Meals Allowance	6	0.08	13	0.06	47	0.1	278	0.5	344	0.3
Mean Months if Yes	7.8		10.2		9.7		9.9		9.8	
Age 18-64 new 2005	1,597	6.0	2,484	9.4	9,475	35.8	12,917	48.8	26,473	100.0
Share of Cost	148	9.3	45	1.8	281	3.0	439	3.4	913	3.4
Mean Months if Yes	4.8		5.9		5.3		4.6		4.9	
Advance Pay	1	0.06	3	0.1	1	0.01	7	0.05	12	0.05
Mean Months if Yes	12.0		3.7		4.0		5.7		5.6	
Meals Allowance	1	0.06	1	0.04	3	0.03	33	0.3	38	0.14
Mean Months if Yes	2.0		7.0		9.0		4.7		5.1	
Age 65+ from 2004	4,373	2.2	na	na	103,990	52.4	90,160	45.4	198,523	100.0
Share of Cost	507	11.6	na	na	3,061	2.9	2,970	3.3	6,538	3.3
Mean Months if Yes	8.7		na	na	9.0		8.6		8.8	
Advance Pay	7	0.16	na	na	25	0.02	66	0.07	98	0.05
Mean Months if Yes	8.6		na	na	10.8		8.7		9.2	
Meals Allowance	3	0.07	na	na	113	0.11	434	0.5	550	0.3
Mean Months if Yes	6.7		na	na	9.5		9.9		9.8	
Age 65+ new 2005	1,016	2.9	na	na	19,506	55.2	14,811	41.9	35,333	100.0
Share of Cost	94	9.3	na	na	974	5.0	923	6.2	1,991	5.6
Mean Months if Yes	5.4		na	na	5.5		4.4		5.0	
Advance Pay	-	-	na	na	2	0.01	4	0.03	6	0.02
Mean Months if Yes	-	-	na	na	1.0		3.3		2.5	
Meals Allowance	-	-	na	na	23	0.12	36	0.24	59	0.17
Mean Months if Yes	-	-	na	na	4.8		4.6		4.7	
Total	14,107		35,070		174,993		178,543		402,704	

SOURCE: California Department of Social Services, unpublished CMIPS data for 2004 and 2005. "na" is not applicable.

a. Classification into Provider Type was done using the principle of "intention to treat." Ever having a Spouse provider for one month or in 2005 defined one in this group. Similarly, ever having a Parent provider (but no Spouse provider), or an Other Relative (i.e., but no Spouse or Parent) for at least one month defined one in these respective groups. Non-Relatives had no family members as providers during the year.

Provider Relationship	Age 3-17			Age 18-64			Age 65+		
	All	Inconsistent		All	Inconsistent		All	Inconsistent	
	n	n	%	n	n	%	n	n	%
2005									
Spouse	na	na	na	8,718	821	9.4	5,389	501	9.3
Parent	11,578	481	4.2	23,492	1,763	7.5	na	na	na
Other Relative	2,090	98	4.7	49,407	3,601	7.3	123,496	4,671	3.8
Non-Relative ^a	2,589	124	4.8	70,974	4,135	5.8	104,971	6,776	6.5
Total Inconsistent Relationships		703	4.3		10,320	6.8		11,948	5.1
Total All (Consistent, & Inconsistent) Relationships	16,257			152,591			233,856		

SOURCE: California Department of Social Services, unpublished CMIPS data for 2004 and 2005.

	Spouse		Parent		Other Relative		Non-Relative		Total	
	n	%	n	%	n	%	n	%	n	%
Continuing Recipients Age 3-17			9,798		1,701		2,006		13,505	
1 White	na	na	2,546	26.0	468	27.5	769	38.3	3,783	28.0
2 Hispanic	na	na	4,951	50.5	568	33.4	568	28.3	6,087	45.1
3 Black	na	na	1,422	14.5	455	26.7	489	24.4	2,366	17.5
4 Asian & Others	na	na	879	9.0	210	12.3	180	9.0	1,269	9.4
New Recipients Age 3-17			1,780		389		583		2,752	
1 White	na	na	489	27.5	83	21.3	225	38.6	797	29.0
2 Hispanic	na	na	824	46.3	127	32.6	182	31.2	1,133	41.2
3 Black	na	na	273	15.3	125	32.1	111	19.0	509	18.5
4 Asian & Others	na	na	194	10.9	54	13.9	65	11.1	313	11.4
Continuing Recipients Age 18-64	7,121		21,008		39,932		58,057		126,118	
1 White	2,434	34.2	8,612	41.0	14,803	37.1	28,183	48.5	54,032	42.8
2 Hispanic	2,616	36.7	6,967	33.2	8,759	21.9	8,899	15.3	27,241	21.6
3 Black	687	9.6	3,183	15.2	10,771	27.0	17,701	30.5	32,342	25.6
4 Asian & Others	1,384	19.4	2,246	10.7	5,599	14.0	3,274	5.6	12,503	9.9
New Recipients Age 18-64	1,597		2,484		9,475		12,917		26,473	
1 White	500	31.3	941	37.9	3,371	35.6	6,556	50.8	11,368	42.9
2 Hispanic	636	39.8	785	31.6	2,259	23.8	1,966	15.2	5,646	21.3
3 Black	166	10.4	501	20.2	2,637	27.8	3,614	28.0	6,918	26.1
4 Asian & Others	295	18.5	257	10.3	1,208	12.7	781	6.0	2,541	9.6
Continuing Recipients Age 65+	4,373				103,990		90,160		198,523	
1 White	911	20.8	na	na	36,448	35.0	41,568	46.1	78,927	39.8
2 Hispanic	1813	41.5	na	na	24,800	23.8	19,275	21.4	45,888	23.1
3 Black	201	4.6	na	na	9,472	9.1	12,288	13.6	21,961	11.1
4 Asian & Others	1448	33.1	na	na	33,270	32.0	17,029	18.9	51,747	26.1
New Recipients Age 65+	1,016				19,506		14,811		35,333	
1 White	194	19.1	na	na	5,182	26.6	6,259	42.3	11,635	32.9
2 Hispanic	435	42.8	na	na	5,538	28.4	3,466	23.4	9,439	26.7
3 Black	63	6.2	na	na	1,652	8.5	1,480	10.0	3,195	9.0
4 Asian & Others	324	31.9	na	na	7,134	36.6	3,606	24.3	11,064	31.3

SOURCE: California Department of Social Services, unpublished CMIPS data for 2005. "na" means that these provider types were not included in the analysis.

TABLE 4: Race/Ethnicity Distribution Among IHSS Provider Groups, 2005									
	Spouse		Parent		Other Relative		Non-Relative		Total
	n	%	n	%	n	%	n	%	n
Continuing Recipients Age 3-17			9,798		1,701		2,006		13,505
1 White	na	na	2,546	67.3	468	12.4	769	20.3	3,783
2 Hispanic	na	na	4,951	81.3	568	9.3	568	9.3	6,087
3 Black	na	na	1,422	60.1	455	19.2	489	20.7	2,366
4 Asian & Others	na	na	879	69.3	210	16.5	180	14.2	1,269
New Recipients Age 3-17			1,780		389		583		2,752
1 White	na	na	489	61.4	83	10.4	225	28.2	797
2 Hispanic	na	na	824	72.7	127	11.2	182	16.1	1,133
3 Black	na	na	273	53.6	125	24.6	111	21.8	509
4 Asian & Others	na	na	194	62.0	54	17.3	65	20.8	313
Continuing Recipients Age 18-64	7,121		21,008		39,932		58,057		126,118
1 White	2,434	4.5	8,612	15.9	14,803	27.4	28,183	52.2	54,032
2 Hispanic	2,616	9.6	6,967	25.6	8,759	32.2	8,899	32.7	27,241
3 Black	687	2.1	3,183	9.8	10,771	33.3	17,701	54.7	32,342
4 Asian & Others	1,384	11.1	2,246	18.0	5,599	44.8	3,274	26.2	12,503
New Recipients Age 18-64	1,597		2,484		9,475		12,917		26,473
1 White	500	4.4	941	8.3	3,371	29.7	6,556	57.7	11,368
2 Hispanic	636	11.3	785	13.9	2,259	40.0	1,966	34.8	5,646
3 Black	166	2.4	501	7.2	2,637	38.1	3,614	52.2	6,918
4 Asian & Others	295	11.6	257	10.1	1,208	47.5	781	30.7	2,541
Continuing Recipients Age 65+	4,373				103,990		90,160		198,523
1 White	911	1.2	na	na	36,448	46.2	41,568	52.7	78,927
2 Hispanic	1813	4.0	na	na	24,800	54.0	19,275	42.0	45,888
3 Black	201	0.9	na	na	9,472	43.1	12,288	56.0	21,961
4 Asian & Others	1448	2.8	na	na	33,270	64.3	17,029	32.9	51,747
New Recipients Age 65+	1,016				19,506		14,811		35,333
1 White	194	1.7	na	na	5,182	44.5	6,259	53.8	11,635
2 Hispanic	435	4.6	na	na	5,538	58.7	3,466	36.7	9,439
3 Black	63	2.0	na	na	1,652	51.7	1,480	46.3	3,195
4 Asian & Others	324	2.9	na	na	7,134	64.5	3,606	32.6	11,064

SOURCE: California Department of Social Services, unpublished CMIPS data for 2005. "na" means that these provider types were not included in the analysis.

TABLE 5a: Selected Household Characteristics of IHSS Recipients, Age 3-17								
IHSS Recipients	Parent		Other Relative		Non-Relative		Total	
	n	%	n	%	n	%	n	%
Continuing from 2004	9,798		1,701		2,006		13,505	
Female	3,808	38.9	647	38.0	784	39.1	5,239	38.8
Household Size								
1	15	0.2	8	0.5	16	0.8	39	0.3
2	1051	10.7	192	11.3	274	13.7	1517	11.2
3	2157	22.0	364	21.4	470	23.4	2991	22.2
4	2502	25.5	428	25.2	544	27.1	3474	25.7
5+	4073	41.6	709	41.7	702	35.0	5484	40.6
Parent Present^a								
No Parent Present	396	4.0	520	30.6	377	18.8	1293	9.6
Provides All Services	8138	83.1	251	14.8	578	28.8	8967	66.4
Provides Some Services	1129	11.5	481	28.3	517	25.8	2127	15.7
Provides No Services	113	1.2	313	18.4	304	15.2	730	5.4
Parent IHSS Recipient	22	0.2	136	8.0	230	11.5	388	2.9
Housing								
House	5493	56.1	1144	67.3	1339	66.7	7976	59.1
Apartment	3861	39.4	492	28.9	594	29.6	4947	36.6
Mobile Home	316	3.2	47	2.8	53	2.6	416	3.1
Hotel/Other	128	1.3	18	1.1	20	1.0	166	1.2
Entering IHSS in 2005	1,780		389		583		2,752	
Female	705	39.6	150	38.6	212	36.4	1067	38.8
Household Size								
1	2	0.1	0	0.0	3	0.5	5	0.2
2	179	10.1	35	9.0	71	12.2	285	10.4
3	330	18.5	82	21.1	158	27.1	570	20.7
4	499	28.0	93	23.9	158	27.1	750	27.3
5+	770	43.3	179	46.0	193	33.1	1142	41.5
Parent Present^a								
No Parent Present	0	0.0	108	27.8	107	18.4	341	12.4
Provides All Services	1426	80.1	49	12.6	190	32.6	1665	60.5
Provides Some Services	203	11.4	121	31.1	150	25.7	474	17.2
Provides No Services	145	8.1	70	18.0	92	15.8	181	6.6
Parent IHSS Recipient	6	0.3	41	10.5	44	7.5	91	3.3
Housing								
House	966	54.3	229	58.9	376	64.5	1571	57.1
Apartment	715	40.2	144	37.0	179	30.7	1038	37.7
Mobile Home	64	3.6	9	2.3	18	3.1	91	3.3
Hotel/Other	35	2.0	7	1.8	10	1.7	52	1.9
SOURCE: California Department of Social Services, unpublished CMIPS data for 2005.								
a. May not total to 100% due to missing values, "na" not applicable, "unk" unknown.								

TABLE 5b: Selected Household Characteristics of IHSS Recipients, Age 18-64										
IHSS Recipients	Spouse		Parent		Other Relative		Non-Relative		Total	
	n	%	n	%	n	%	n	%	n	%
Continuing from 2004	7121		21008		39932		58057		126118	
Female	2407	33.8	9494	45.2	27676	69.3	34944	60.2	74521	59.1
Household size										
1	120	1.7	1336	6.4	7548	18.9	22800	39.3	31804	25.2
2	2596	36.5	5418	25.8	13093	32.8	20877	36.0	41984	33.3
3	1598	22.4	6457	30.7	7916	19.8	7347	12.7	23318	18.5
4	1253	17.6	3792	18.1	4817	12.1	3548	6.1	13410	10.6
5+	1554	21.8	4005	19.1	6558	16.4	3485	6.0	15602	12.4
Spouse Present^a										
No Spouse	na		19298	91.9	31009	77.7	52607	90.6	102914	81.6
Spouse Able/Available	6145	86.3	73	0.3	1431	3.6	1221	2.1	8870	7.0
Spouse Availability Limited	400	5.6	75	0.4	786	2.0	558	1.0	1819	1.4
Spouse Not Able	537	7.5	17	0.1	1179	3.0	703	1.2	2436	1.9
Spouse is IHSS Recipient	22	0.3	54	0.3	5291	13.3	2633	4.5	8000	6.3
Parent Present^a										
No Parent Present	unk		na		unk		unk		unk	
Provides Some services	16	0.2	1448	6.9	94	0.2	193	0.3	1751	1.4
Provides No Services			32	0.2	27	0.1	48	0.1	107	0.1
Parent is IHSS Recipient	1	0.0	11	0.1	115	0.3	94	0.2	221	0.2
Housing										
House	3810	53.5	14401	68.6	19095	47.8	22210	38.3	59516	47.2
Apartment	2687	37.7	5565	26.5	18896	47.3	31070	53.5	58218	46.2
Mobile Home	484	6.8	830	4.0	1427	3.6	3498	6.0	6239	4.9
Hotel/Other	140	2.0	212	1.0	514	1.3	1279	2.2	2145	1.7
Entering IHSS in 2005	1597		2484		9475		12917		26473	
Female	506	31.7	1022	41.1	6386	67.4	7273	56.3	15187	57.4
Household size										
1	31	1.9	172	6.9	1653	17.4	4989	38.6	6845	25.9
2	557	34.9	534	21.5	2748	29.0	4118	31.9	7957	30.1
3	342	21.4	704	28.3	1950	20.6	1851	14.3	4847	18.3
4	259	16.2	492	19.8	1293	13.6	933	7.2	2977	11.2
5+	408	25.5	582	23.4	1831	19.3	1026	7.9	3847	14.5
Spouse Present^a										
No Spouse	na	na	2303	92.7	7273	76.8	11723	90.8	21299	80.5
Spouse Able/Available	1441	90.2	19	0.8	465	4.9	417	3.2	2342	8.8
Spouse Availability Limited	52	3.3	7	0.3	229	2.4	112	0.9	400	1.5
Spouse Not Able	88	5.5	4	0.2	335	3.5	197	1.5	624	2.1
Spouse is IHSS Recipient	7	0.4	5	0.2	1143	12.1	430	3.3	1585	6.0
Parent Present^a										
No Parent Present	unk		na		unk		unk		unk	
Provides Some Services	8	0.5	145	5.8	13	0.1	22	0.2	188	0.7
Parent is IHSS Recipient	1	0.1	1	0.0	12	0.1	8	0.1	22	0.1
Housing										
House	845	52.9	1613	64.9	4356	46.0	4776	37.0	11590	43.8
Apartment	596	37.3	713	28.7	4589	48.4	6679	51.7	12577	47.5
Mobile Home	119	7.5	116	4.7	367	3.9	936	7.2	1538	5.8
Hotel/Other	37	2.3	42	1.7	163	1.7	526	4.1	768	2.9
SOURCE: California Department of Social Services, unpublished CMIPS data for 2005										
a. May not total to 100% due to missing items, "na" not applicable, "unk" unknown.										

TABLE 5c: Selected Household Characteristics of IHSS Recipients, Age 65+								
IHSS Recipients	Parent		Other Relative		Non-Relative		Total	
	n	%	n	%	n	%	n	%
Continuing from 2004	4373		103990		90160		198523	
Female	836	19.1	74883	72.0	64223	71.2	139942	70.5
Household size								
1	85	1.9	20271	19.5	41840	46.4	62196	31.3
2	2343	53.6	34892	33.6	31463	34.9	68698	34.6
3	722	16.5	17182	16.5	7387	8.2	25291	12.7
4	465	10.6	11006	10.6	3840	4.3	15311	7.7
5+	758	17.3	20639	19.8	5630	6.2	27027	13.6
Spouse Present^a								
No Spouse Present	na		70564	67.9	69419	77.0	139983	70.5
Spouse Able/Available	3881	88.7	1801	1.7	1053	1.2	6735	3.4
Spouse Availability limited	156	3.6	300	0.3	225	0.2	681	0.3
Spouse Not able	286	6.5	2962	2.8	1831	2.0	5079	2.6
Spouse is IHSS Recipient	45	1.0	28317	27.2	17602	19.5	45964	23.2
Parent Present^a								
Parent Present	unk		unk		unk		unk	
Provides Some services			2	<0.00	3	<0.00	5	<0.00
Parent is IHSS Recipient			35	0.03	22	0.02	57	0.05
Housing								
House	2288	52.3	53719	51.7	30116	33.4	86123	43.4
Apartment	1731	39.6	45445	43.7	54323	60.3	101499	51.1
Mobile Home	283	6.5	3123	3.0	4343	4.8	7749	3.9
Hotel/Other	71	1.6	1703	1.6	1378	1.5	3152	1.6
# Entering in 2005	1016		19506		14811		35333	
Female	174	17.1	13605	69.7	9855	66.5	23634	66.9
Household size								
1	14	1.4	3161	16.2	6596	44.5	9771	27.7
2	533	52.5	5658	29.0	4735	32.0	10926	30.9
3	171	16.8	3534	18.1	1447	9.8	5152	14.6
4	94	9.2	2440	12.5	794	5.4	3328	9.4
5+	204	20.1	4713	24.2	1239	8.4	6156	17.4
Spouse Present^a								
No Spouse Present	na		13073	67.0	11398	77.0	24471	69.3
Spouse Able/Available	933	91.8	561	2.9	430	2.9	1924	5.4
Spouse Availability limited	19	1.9	86	0.4	73	0.5	178	0.5
Spouse Not able	8	0.8	698	3.6	457	3.1	1163	3.0
Spouse is IHSS Recipient	10	1.0	5067	26.0	2441	16.5	7518	21.3
Parent Present^a								
Parent Present	unk		unk		unk		unk	
Provides Some services	2	0.2	7	0.04	9	0.06	18	0.05
Parent is IHSS Recipient	1	0.1	12	0.06	3	0.02	16	0.05
Housing								
House	510	50.2	11013	56.5	5541	37.4	17064	48.3
Apartment	422	41.5	7348	37.7	7871	53.1	15641	44.3
Mobile Home	61	6.0	757	3.9	1051	7.1	1869	5.3
Hotel/Other	23	2.3	388	2.0	348	2.3	759	2.1
SOURCE: California Department of Social Services, unpublished CMIPS data for 2005.								
a. May not total to 100% due to missing values, "na" not applicable, "unk" unknown.								

TABLE 6: Physical & Cognitive Limitations Among New & Continuing IHSS Recipients, 2005					
	Spouse	Parent	Other Relative	Non-Relative	Total
	n	n	n	n	n
Continuing Recipients Age 3-17		9,798	1,701	2,006	13,505
Average Total Authorized IHSS Hours		112.3	102.3	107.8	110.4
Mean Number Cognitive Limitations ^a		0.6	0.5	0.6	0.6
Mean Number ADL Limitations ^b		3.6	3.5	3.6	3.6
Mean Number IADL Limitations ^c		3.1	3.4	3.3	3.2
% with Breathing Limitation ^d		16.2	14.8	12.3	15.4
New Recipients Age 3-17		1,780	389	583	2,752
Average Total Authorized IHSS Hours		70.1	61.4	69.2	68.7
Mean Number Cognitive Limitations ^a		0.4	0.4	0.4	0.4
Mean Number ADL Limitations ^b		3.3	3.0	3.2	3.2
Mean Number IADL Limitations ^c		2.9	3.3	3.0	3.0
% with Breathing Limitation ^d		9.3	9.3	11.5	9.8
Continuing Recipients Age 18-64	7,121	21,008	39,932	58,057	126,118
Average Total Authorized IHSS Hours	86.3	134.6	79.6	89.2	93.6
Mean Number Cognitive Limitations ^a	0.1	0.7	0.1	0.1	0.2
Mean Number ADL Limitations ^b	3.7	3.1	2.5	2.3	2.6
Mean Number IADL Limitations ^c	4.6	4.3	4.3	4.3	4.3
% with Breathing Limitation ^d	11.1	7.2	6.6	7.5	7.4
New Recipients Age 18-64	1,597	2,484	9,475	12,917	26,473
Average Total Authorized IHSS Hours	61.4	79.3	57.4	57.2	59.6
Mean Number Cognitive Limitations ^a	0.04	0.3	0.05	0.04	0.1
Mean Number ADL Limitations ^b	3.5	2.4	2.1	1.8	2.1
Mean Number IADL Limitations ^c	4.4	4.2	4.3	4.1	4.2
% with Breathing Limitation ^d	8.1	4.0	4.5	5.1	5.0
Continuing Recipients Age 65+	4,373		103,990	90,160	198,523
Average Total Authorized IHSS Hours	83.4		82.5	85.8	84.0
Mean Number Cognitive Limitations ^a	0.1		0.1	0.1	0.1
Mean Number ADL Limitations ^b	3.9		2.8	2.5	2.7
Mean Number IADL Limitations ^c	4.6		4.5	4.4	4.5
% with Breathing Limitation ^d	11.0		6.2	6.2	6.3
New Recipients Age 65+	1,016		19,506	14,811	35,333
Average Total Authorized IHSS Hours	58.6		61.2	58.9	60.2
Mean Number Cognitive Limitations ^a	0.1		0.1	0.05	0.1
Mean Number ADL Limitations ^b	3.6		2.4	1.9	2.2
Mean Number IADL Limitations ^c	4.4		4.4	4.2	4.3
% with Breathing Limitation ^d	10.0		4.5	4.5	4.6

SOURCE: California Department of Social Services, unpublished CMIPS data for 2005

a. Number of tasks cannot perform memory, orientation, or judgment tasks without human assistance.
b. Number of tasks cannot perform ADLs (i.e., bathing and grooming; dressing; transferring; bowel, bladder and menstrual care; eating) without human assistance.
c. Number of tasks cannot perform IADLs (i.e., housework, laundry, shopping and errands, meal preparation and clean-up, mobility inside) without human assistance.
d. Cannot breathe without human assistance.

**TABLE 7: Limitations Among Meals Allowance & Advance Pay
IHSS Waiver Recipients, 2005**

Age Group	Meals Allowance			Advance Pay		
	3-17	18-64	65+	3-17	18-64	65+
IHSS Plus Recipients	N=3	N=382	N=609	N=55	N=486	N=104
ADL Limitations^a						
% 3 or more	66.7	27.2	31.4	96.4	97.9	100.0
IADL Limitations^b						
% 3 or more	100.0	95.5	98.7	72.7	100.0	100.0
Cognitive Limitations^c						
% 0	66.7	98.4	98.9	54.5	83.7	83.7
% 2 or more	33.3	1.3	0.8	36.4	14.0	13.5
Breathing Problems^d						
% 0	100.0	94.8	94.3	69.1	78.0	75.0

SOURCE: California Department of Social Services, unpublished CMIPS data for 2005

- a. Number of tasks cannot perform assistance in ADLs (i.e., bathing and grooming; dressing; transferring; bowel, bladder and menstrual care; eating) without human assistance.
- b. Number of tasks cannot perform IADLs (i.e., housework, laundry, shopping and errands, meal preparation and clean-up, mobility inside) without at least direct physical human assistance.
- c. Number of tasks cannot perform memory, orientation, or judgment tasks without human assistance.
- d. Cannot breathe without human assistance.

TABLE 8: Modal Hourly IHSS Wage Rate, by County, 2003			
County	Hourly Wage Rate	County	Hourly Wage Rate
ALAMEDA	9.50	ORANGE	8.00
ALPINE	7.11	PLACER	6.75
AMADOR	6.95	PLUMAS	7.11
BUTTE	7.11	RIVERSIDE	7.11
CALAVERAS	6.75	SACRAMENTO	9.50
COLUSA	6.75	SAN BENITO	6.75
CONTRA COSTA	9.50	SAN BERNARDINO	8.50
DEL NORTE	6.75	SAN DIEGO	8.50
EL DORADO	6.75	SAN FRANCISCO	10.10
FRESNO	7.50	SAN JOAQUIN	8.50
GLENN	7.11	SAN LUIS OBISPO	6.95
HUMBOLDT	6.75	SAN MATEO	9.50
IMPERIAL	6.75	SANTA BARBARA	7.11
INYO	6.75	SANTA CLARA	10.50
KERN	6.75	SANTA CRUZ	9.50
KINGS	6.75	SHASTA	6.75
LAKE	6.75	SIERRA	7.11
LASSEN	6.75	SISKIYOU	6.75
LOS ANGELES	7.50	SOLANO	9.50
MADERA	6.75	SONOMA	9.50
MARIN	9.75	STANISLAUS	6.95
MARIPOSA	6.75	SUTTER	6.75
MENDOCINO	7.11	TEHAMA	6.75
MERCED	6.95	TRINITY	6.75
MODOC	6.75	TULARE	6.75
MONO	7.11	TUOLUMNE	6.75
MONTEREY	9.50	VENTURA	7.11
NAPA	8.50	YOLO	9.60
NEVADA	7.11	YUBA	6.75
SOURCE: Derived from unpublished CMIPS recorded payments to IHSS recipients in 2003			

TABLE 9: Number of Chronic Health Conditions by Medicaid Recipient Age Comparing New and Continuing IHSS Recipient, 2005			
IHSS Recipient Age Group	# IHSS Recipients, 2005	Mean # HCC's	Standard Deviation
Total Recipients, 2005	346,552	3.41	2.82
3-17	11,583	3.37	2.97
18-64	125,502	4.21	3.25
65 or more	209,467	2.93	2.40
Recipients Continuing from 2004	293,459	3.35	2.77
3-17	9,914	3.43	2.96
18-64	104,786	4.09	3.20
65 or more	178,759	2.91	2.36
New IHSS Recipients 2005	53,093	3.71	3.09
3-17	1,669	3.01	3.05
18-64	20,716	4.78	3.44
65 or more	30,708	3.03	2.60
SOURCE: California Department of Health Care Services, Medicaid claims for 2005. HCC refers to Hierarchical Condition Classifications (Pope, Ellis, Ash, et al., 2000). Recipient counts are limited to IHSS recipients not enrolled in Medicaid managed care at anytime in 2005, but includes any claims in 2005 regardless of the IHSS eligibility period.			

TABLE 10a: Summary of Health Conditions Among IHSS Recipients Age 3-17 by Provider Group, 2005						
	Parent		Other Relative		Non-Relative	
	Number	%	Number	%	Number	%
Total Recipients	8,293	100.0	1,455	100.0	1,835	100.0
Recipients w/ Any HCC^a	6,740	81.3	1,055	72.5	1,261	68.7
Collapsed HCC Groupings						
Infectious and Parasitic Disease	1,055	12.7	156	10.7	171	9.3
Neoplasms	334	4.0	38	2.6	43	2.3
Endocrine, Nutritional & Metabolic Disorders	706	8.5	105	7.2	101	5.5
Liver & Gallbladder Disease	80	1.0	10	0.7	7	0.4
Gastro-Intestinal Disease	1,583	19.1	218	15.0	216	11.8
Musculoskeletal/Connective Tissue	1,937	23.4	246	16.9	295	16.1
Disease of the Blood & Blood Forming Organs	273	3.3	42	2.9	50	2.7
Mental Disorders	859	10.4	140	9.6	131	7.1
Mental Retardation/Developmental Disability	1,464	17.7	216	14.8	250	13.6
Central Nervous System Injuries/Disorders	2,575	31.1	384	26.4	411	22.4
Respiratory System Disease/Disorders	360	4.3	41	2.8	57	3.1
Cardiovascular System	664	8.0	79	5.4	77	4.2
Cerebral & Other Vascular System	1,302	15.7	200	13.7	203	11.1
Pulmonary System	2,143	25.8	319	21.9	361	19.7
Eyes & Vision Disorders	1,360	16.4	168	11.5	195	10.6
Ear, Nose, & Throat Disorders	3,856	46.5	565	38.8	621	33.8
Renal System	85	1.0	11	0.8	10	0.5
Other Genitourinary System	924	11.1	142	9.8	136	7.4
Pregnancy/Child Birth Complications	143	1.7	19	1.3	14	0.8
Dermatological Disorders	1,218	14.7	186	12.8	190	10.4
Fractures, Other Injuries, & Poisoning	1,146	13.8	169	11.6	238	13.0
Treatment Complications, Ill-Defined Conditions	3,621	43.7	534	36.7	584	31.8
Miscellaneous	2,318	28.0	345	23.7	367	20.0
SOURCE: California Department of Health Care Services, Medicaid claims, 2005. Counts apply to IHSS recipients not in Medicaid Managed for any month in calendar year 2005.						
a. HCC refers to Hierarchical Condition Classifications (Pope, Ellis, Ash, et al., 2000).						

TABLE 10b: Summary of Health Conditions Among IHSS Recipients Age 18-64 by Provider Group, 2005								
	Spouse		Parent		Other Relative		Non-Relative	
	Number	%	Number	%	Number	%	Number	%
Total Recipients	6,721	100.0	18,749	100.0	40,603	100.0	59,429	100.0
Recipients w/ Any HCC^a	6,003	89.3	13,789	73.5	36,362	89.6	52,197	87.8
Collapsed HCC Groupings								
Infectious and Parasitic Disease	791	11.8	1,655	8.8	4,511	11.1	8,006	13.5
Neoplasms	865	12.9	981	5.2	5,604	13.8	7,643	12.9
Endocrine, Nutritional & Metabolic Disorders	2,284	34.0	2,559	13.6	13,697	33.7	16,587	27.9
Liver & Gallbladder Disease	494	7.4	539	2.9	2,594	6.4	4,133	7.0
Gastro-Intestinal Disease	1,633	24.3	2,479	13.2	9,740	24.0	13,378	22.5
Musculoskeletal/Connective Tissue	2,814	41.9	3,888	20.7	19,406	47.8	27,639	46.5
Disease of the Blood & Blood Forming Organs	533	7.9	759	4.0	3,060	7.5	4,071	6.9
Mental Disorders	741	11.0	1,967	10.5	5,112	12.6	9,425	15.9
Mental Retardation/Developmental Disability	19	0.3	1,143	6.1	385	0.9	650	1.1
Central Nervous System Injuries/Disorders	1,080	16.1	4,025	21.5	5,386	13.3	9,627	16.2
Respiratory System Disease/Disorders	279	4.2	489	2.6	1,419	3.5	2,093	3.5
Cardiovascular System	2,548	37.9	2,321	12.4	16,984	41.8	19,959	33.6
Cerebral & Other Vascular System	1,258	18.7	1,762	9.4	6,200	15.3	8,212	13.8
Pulmonary System	1,739	25.9	2,804	15.0	10,869	26.8	15,659	26.3
Eyes and Vision Disorders	1,123	16.7	1,468	7.8	7,991	19.7	8,825	14.8
Ear, Nose, & Throat Disorders	1,355	20.2	3,899	20.8	8,664	21.3	12,019	20.2
Renal System	809	12.0	576	3.1	2,813	6.9	2,980	5.0
Other Genitourinary System	1,363	20.3	2,507	13.4	8,490	20.9	11,768	19.8
Pregnancy/Child Birth Complications	45	0.7	147	0.8	194	0.5	449	0.8
Dermatological Disorders	1,159	17.2	2,682	14.3	7,330	18.1	12,025	20.2
Fractures, Other Injuries, & Poisoning	1,356	20.2	2,549	13.6	7,599	18.7	13,695	23.0
Treatment Complications, Ill-Defined Conditions	3,778	56.2	6,277	33.5	22,972	56.6	32,156	54.1
Miscellaneous	2,129	31.7	4,120	22.0	13,819	34.0	20,151	33.9
SOURCE: California Department of Health Care Services, Medicaid claims, 2005. Counts apply to IHSS recipients not in Medicaid Managed for any month in calendar year 2005.								
a. HCC refers to Hierarchical Condition Classifications (Pope, Ellis, Ash, et al., 2000).								

TABLE 10c: Summary of Health Conditions Among IHSS Recipients Age 65+ by Provider Group, 2005						
	Spouse		Other Relative		Non-Relative	
	Number	%	Number	%	Number	%
Total Recipients	4,656	100.0	109,260	100.0	95,551	100.0
Recipients w/ Any HCC^a	3,847	82.6	91,221	83.5	80,167	83.9
Collapsed HCC Groupings						
Infectious and Parasitic Disease	330	7.1	6,263	5.7	6,593	6.9
Neoplasms	611	13.1	11,898	10.9	12,085	12.6
Endocrine, Nutritional & Metabolic Disorders	1,047	22.5	18,517	16.9	15,975	16.7
Liver & Gallbladder Disease	167	3.6	2,848	2.6	2,347	2.5
Gastro-Intestinal Disease	812	17.4	16,924	15.5	16,041	16.8
Musculoskeletal/Connective Tissue	1,246	26.8	34,101	31.2	32,979	34.5
Disease of the Blood & Blood Forming Organs	270	5.8	5,311	4.9	4,893	5.1
Mental Disorders	286	6.1	6,369	5.8	6,359	6.7
Mental Retardation/Developmental Disability	1	0.0	32	0.0	32	0.0
Central Nervous System Injuries/Disorders	251	5.4	3,604	3.3	3,566	3.7
Respiratory System Disease/Disorders	149	3.2	1,821	1.7	1,658	1.7
Cardiovascular System	1,842	39.6	41,481	38.0	36,234	37.9
Cerebral & Other Vascular System	927	19.9	14,141	12.9	13,436	14.1
Pulmonary System	936	20.1	18,348	16.8	16,283	17.0
Eyes and Vision Disorders	662	14.2	18,109	16.6	16,198	17.0
Ear, Nose, & Throat Disorders	354	7.6	8,407	7.7	7,630	8.0
Renal System	414	8.9	4,064	3.7	3,045	3.2
Other Genitourinary System	630	13.5	10,967	10.0	10,573	11.1
Pregnancy/Child Birth Complications	4	0.1	66	0.1	58	0.1
Dermatological Disorders	435	9.3	10,408	9.5	12,443	13.0
Fractures, Other Injuries, & Poisoning	532	11.4	12,159	11.1	12,411	13.0
Treatment Complications, Ill-Defined Conditions	2,115	45.4	45,290	41.5	41,474	43.4
Miscellaneous	769	16.5	17,424	15.9	17,536	18.4
SOURCE: California Department of Health Care Services, Medicaid claims, 2005. Counts apply to IHSS recipients not in Medicaid Managed for any month in calendar year 2005.						
a. HCC refers to Hierarchical Condition Classifications (Pope, Ellis, Ash, et al., 2000).						

TABLE 11: Mean Medicaid Expenditures ^a for IHSS Recipients by Observation Months and Age, 2005													
# Months	Variable	All Ages			Age 3-17			Age 18-64			Age 65 or More		
		N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
1	Mean Total \$	7470	6429	21286	161	4952	22513	2737	6130	23623	4572	6660	19708
	Average \$/month		6429	21286		4952	22513		6130	23623		6660	19708
2	Mean Total \$	8143	7450	30155	156	5837	19420	2898	7912	24204	5089	7237	33315
	Average \$/month		3725	15078		2918	9710		3956	12102		3618	16657
3	Mean Total \$	8200	8519	33349	177	10462	40166	2943	9847	47735	5080	7682	20437
	Average \$/month		2840	11116		3487	13389		3283	15912		2561	6812
4	Mean Total \$	7924	9002	24208	187	9838	68754	2923	10424	28450	4864	8115	17077
	Average \$/month		2251	6052		2459	17189		2606	7112		2029	4269
5	Mean Total \$	8306	9799	26326	202	7215	19105	3088	11552	35135	5016	8824	19237
	Average \$/month		1960	5265		1443	3821		2310	7027		1765	3847
6	Mean Total \$	7792	10660	26714	215	7862	17845	2901	12913	36594	4676	9391	18409
	Average \$/month		1777	4452		1310	2974		2152	6099		1565	3068
7	Mean Total \$	8132	11137	25274	213	13057	51298	2958	13326	32396	4961	9749	17438
	Average \$/month		1591	3611		1865	7328		1904	4628		1393	2491
8	Mean Total \$	7964	11876	27485	211	11094	29938	2982	14251	39098	4771	10426	16145
	Average \$/month		1485	3436		1387	3742		1781	4887		1303	2018
9	Mean Total \$	8354	12747	30990	249	15776	41906	3139	15247	45601	4966	11016	14363
	Average \$/month		1416	3443		1753	4656		1694	5067		1224	1596
10	Mean Total \$	10274	13081	23861	322	13644	32412	4046	14329	24634	5906	12196	22713
	Average \$/month		1308	2386		1364	3241		1433	2463		1220	2271
11	Mean Total \$	12809	14854	28848	450	14279	30923	4905	17383	37615	7454	13224	20849
	Average \$/month		1350	2623		1298	2811		1580	3420		1202	1895
12	Mean Total \$	245976	12808	16164	8459	14592	32210	88293	14366	21113	149224	11785	10269
	Average \$/month		1067	1347		1216	2684		1197	1759		982	856
Grand Average	Total \$/month	341394	12248	20017	11002	13802	33328	123813	13841	25951	206579	11211	14024
			1405	4872		1394	5030		1570	5522		1306	4425

SOURCE: California Department of Health Care Services, Medicaid claims, 2005

- a. Services included in the compilation of expenditures include personal assistance/home care, home health, inpatient hospital and nursing home care, physicians, clinics, outpatient departments, ancillary providers, physical/occupational/speech therapy, durable medical equipment, vision and hearing services, and mental health services. Excluded are payments for pharmacy products, and expenditure by Medicare, VA, out of pocket, or other payers.

TABLE 12: Mean Medicaid Expenditures^a by IHSS Recipient Age and Provider Type, 2005

Variable	All Ages			Age 3-17			Age 18-64			Age 65 or More		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
Total 2005	341,394			11,002			123,813			206,579		
Grand Total^b		12248	20017		13802	33328		13841	25951		11211	14024
Mean \$/month		1405	4872		1394	5030		1570	5522		1306	4425
Spouse	10,438			na			6282			4156		
Mean Total \$		7206	20109		na			8249	20883		5628	18771
Mean \$/month		954	3789		na			1075	4113		770	3232
Parent	26,410			7,785			18,625			na		
Mean Total \$		15089	28332		12313	33843		16250	25592		na	
Mean \$/month		1491	5010		1260	5400		1588	4835		na	
Other Relative	150,124			1,449			40,304			108,371		
Mean Total \$		11757	18246		18875	31935		13282	24991		11095	14605
Mean \$/month		1321	5031		1759	3196		1482	5534		1256	4850
Non-Relative	154,422			1768			58,602			94,052		
Mean Total \$		12581	19853		16198	31579		14060	27074		11591	13003
Mean \$/month		1502	4752		1686	4519		1679	5837		1388	3927
Continuing	290,000			9,529			103,608			176,863		
Grand Total^b		13275	20282		14878	34672		14883	26079		12247	14443
Mean \$/month		1433	4904		1444	5250		1548	5361		1366	4593
Spouse	8,749			na			5,301			3,448		
Mean Total \$		7482	20921		na	na		8448	21493		5996	19922
Mean \$/month		919	3879		na	na		1017	4173		769	3372
Parent	23,660			6,883			16,777			na		
Mean Total \$		15894	29049		13201	35325		16998	25961		na	na
Mean \$/month		1515	5183		1311	5652		1598	4975		na	na
Other Relative	125,782			1,223			32,973			91,586		
Mean Total \$		12785	18178		20224	30634		14318	24154		12134	15140
Mean \$/month		1363	5308		1798	2748		1480	5709		1315	5182
Non-Relative	131,809			1,423			48,557			81,829		
Mean Total \$		13657	20134		18392	34044		15238	27665		12637	13258
Mean \$/month		1520	4490		1781	4823		1635	5357		1447	3877
New Recipients	51,394			1,473			20,205			29,716		
Grand Total^b		6456	17349		6839	21529		8503	24603		5045	9011
Mean \$/month		1243	4687		1071	3253		1684	6280		952	3231
Spouse	1,689			na			981			708		
Mean Total \$		5775	15149		na	na		7174	17190		3835	11482
Mean \$/month		1134	3284		na	na		1392	3757		777	2441
Parent	2,750			902			1,848			na		
Mean Total \$		8170	19877		5535	17660		9457	20757		na	na
Mean \$/month		1288	3152		868	2785		1493	3298		na	na

TABLE 12 (continued)												
Variable	All Ages			Age 3-17			Age 18-64			Age 65 or More		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
Other Relative	24,342			226			7,331			16,785		
Mean Total \$		6448	17669		11576	37456		8625	27985		5428	9407
Mean \$/month		1105	3230		1547	4968		1489	4664		932	2282
Non-Relative	22,613			345			10,045			12,223		
Mean Total \$		6307	16806		7147	15150		8368	23188		4590	8234
Mean \$/month		1395	6053		1292	2920		1890	7746		991	4228

SOURCE: California Department of Health Care Services, Medicaid claims, 2005

a. Services included in the compilation of expenditures include personal assistance/home care, home health, inpatient hospital and nursing home care, physicians, clinics, outpatient departments, ancillary providers, physical/occupational/speech therapy, durable medical equipment, vision and hearing services, and mental health services. Excluded are payments for pharmacy products, and expenditure by Medicare, VA, out of pocket, or other payers.

TABLE 13: Adjusted Mean Monthly Medicaid Expenditures by IHSS Recipient Age, 2005^a						
Predictors	Age 3-17^g n=11,002		Age 18-64 n=123,813		Age 65+ n=206,579	
	B	Pr > t 	B	Pr > t 	B	Pr > t
Intercept	-1.056	**	-1.219	****	-0.346	****
Recipient Characteristics^b						
Female Recipient	0.114		-0.325	****	-0.073	***
Hispanic	-0.080		-0.022		-0.098	****
Black ^a	-0.015		0.094	*	-0.046	
Asian/Other	-0.056		-0.058		-0.012	
3+ Cognitive Limitations ^c	-0.617	****	-0.745	****	-0.155	*
3+ ADL Limitations ^d	0.023		0.243	****	0.189	****
Breathing Limitations ^e	1.681	****	0.840	****	0.151	***
Household size (1-5+) ^f	0.087		0.095	***	0.049	****
Number Health Conditions ^g	0.360	****	0.345	****	0.171	****
IHSS Providers^h						
Spouse Provider	na		-0.979	****	-0.773	****
Parent Provider	-0.920	****	-0.012		na	
Relative Provider	-0.049		-0.172	****	-0.103	****
Total Authorized Hours	0.008	****	0.011	****	0.011	****
County Characteristics						
Per Capita Income	0.018	**	0.008	****	0.007	****
New IHSS Recipient	-0.019		0.270	****	-0.152	****
Model Goodness of Fit						
Adjusted R ²	.087	****	.057	****	.0268	****

* p<0.05, ** p<0.01, *** p<0.001, **** p<0.0001

- Sample includes all eligible IHSS recipients, excluding those in managed care for one month or more in 2005. The Medicaid Expenditures used as the basis for this analysis include reimbursement for personal assistance/home care, home health, inpatient hospital and nursing home care, physicians, clinics, outpatient departments, ancillary providers, physical/occupational/speech therapy, durable medical equipment, vision and hearing services, and mental health services. Not included are pharmacy-related reimbursements, and expenditures by Medicare, the VA, out of pocket, or other payers.
- Reference is White. Race/ethnicity Asian/Other by descending number, Chinese, Filipino, Vietnamese, Korean, Laotian, Cambodian, Asian Indian, American Indian or Alaskan Native, Japanese, Samoan, and all others.
- Cognition is defined by: memory, orientation, and judgment. Each scored 1 independent; 2 able to perform, but needs verbal assistance such as reminders, guidance, or encouragement; 5 cannot perform without human assistance. Scores three and four not used. The measure is a dummy variable yes = have three cognitive measures each with a score five.
- ADLs refers to activities of daily living (i.e., bathing and grooming; dressing; transferring; bowel, bladder and menstrual; eating). Each task is scored on a four or five point scale: 1 and 2 as per above, 3 Can perform with some human direct physical assistance from the provider, 4 Can perform with a lot of human assistance, 5 cannot perform without human assistance. The measure is a dummy variable yes = have three or more ADLs each with an score of three or more indicating the need for human assistance.
- Breathing is scored 1 independent, 5 cannot perform without human assistance, 6 paramedical services needed. The measure is the presence/absence of a breathing item with a score of five or more.
- Number of persons in household, including other IHSS recipients, excludes non-IHSS children <age 14.
- Refers to HCC, summing the number of each of 23 subgroups of this classification schema.
- Reference is Non-Relative provider, "na" means the provider type was not included in the model.

TABLE 14: Mean Monthly Medicaid Inpatient Expenditures by IHSS Recipient Age and Provider Type, 2005

Recipients	All Ages			Age 3-17			Age 18-64			Age 65 or More		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
All Recipients	87508			1439			28881			57188		
Grand Total		7,182	29717		22543	47847		12708	41465		4005	19850
Mean \$/month		1,101	7728		2466	7540		1928	9611		649	6536
Spouse	3403			na			1923			1480		
Mean Total \$		8065	28046		na	na		10717	28631		4619	26889
Mean \$/month		1184	5008		na	na		1618	5711		620	3842
Parent	3745			1118			2627			na		
Mean Total \$		16375	45401		22454	46229		13787	44803		na	na
Mean \$/month		2049	10189		2408	7557		1896	11120		na	na
Other Relative	38236			166			9468			28602		
Mean Total \$		6766	28507		20237	48727		12553	40746		4771	22517
Mean \$/month		1023	8588		2125	5783		1798	9812		761	8140
Non-Relative	42124			155			14863			27106		
Mean Total \$		6671	29021		25652	57590		12873	42685		3162	15985
Mean \$/month		1081	6766		3249	8946		2056	9594		533	4400
Continuing	77671			1314			24625			51732		
Total		6986	29267		22577	47924		12369	40732		4028	20232
Mean \$/month		991	7547		2368	7571		1681	9213		627	6576
Spouse	2908			na			1657			1251		
Mean Total \$		8102	29014		na	na		10640	29334		4740	28247
Mean \$/month		1097	5037		na	na		1480	5699		591	3941
Parent	3401			1034			2367			na		
Mean Total \$		16215	46229		22705	47164		13379	45535		na	na
Mean \$/month		1959	10522		2361	7727		1784	11530		na	na
Other Relative	33737			146			7945			25646		
Mean Total \$		6639	27429		18534	39280		12289	37449		4821	23077
Mean \$/month		970	8884		1833	3848		1653	10017		753	8512
Non-Relative	37625			134			12656			24835		
Mean Total \$		6377	28761		25989	60698		12456	42978		3174	16159
Mean \$/month		914	5895		3002	9237		1705	8548		499	3800
New in 2005	9837			125			4256			5456		
Total		8724	33015		22190	47229		14669	45427		3779	15776
Mean \$/month		1972	8985		3502	7149		3355	11545		859	6136
Spouse	495			na			266			229		
Mean Total \$		7848	21516		na	na		11199	23824		3956	17748
Mean \$/month		1692	4809		na	na		2477	5717		779	3251
Parent	344			84			260			na		
Mean Total \$		17957	36226		19367	32655		17501	37355		na	na
Mean \$/month		2932	5908		2994	5010		2911	6179		na	na

TABLE 14 (continued)												
Variable	All Ages			Age 3-17			Age 18-64			Age 65 or More		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
Other Relative	4499			20			1523			2956		
Mean Total \$		7713	35553		32665	93057		13929	54816		4341	16888
Mean \$/month		1425	5907		4255	13113		2550	8630		826	3546
Non-Relative	4499			21			2207			2271		
Mean Total \$		9127	30998		23507	32131		15264	40891		3030	13936
Mean \$/month		2477	11654		4819	6772		4068	14008		910	8547
<p>SOURCE: Derived from California Department of Health Care Services, Medicaid claims with vendor codes of either 50 (county hospital -- acute inpatient) or 60 (community hospital -- acute inpatient) indicating hospital inpatient claims. Expenditures shown under count expenditures in the IHSS recipient population as the figures shown exclude persons in managed care for portions of 2005. "na" means that expenditures were not compiled for this provider type.</p>												

TABLE 15: Unadjusted Probability of Medicaid-Paid "Any Cause" Hospital Days, 2005				
Provider Type	Any Inpatient Days			
	No	Yes	Total	% Yes
Recipients Age 3-17				
Parent	6,667	1,118	7,785	14.3%
Other Relative	1,283	166	1,449	11.5%
Non-Relative	1,613	155	1,768	8.8%
Total	9,563	1,439	11,002	13.1%
Recipients Age 18-64				
Spouse	4,359	1,923	6,282	30.6%
Parent	15,998	2,627	18,625	14.1%
Other Relative	30,836	9,468	40,304	23.5%
Non-Relative	43,739	14,863	58,602	25.4%
Total	94,932	28,881	123,813	23.3%
Recipients Age 65+				
Spouse	2,676	1,480	4,156	35.6%
Other Relative	79,769	28,602	108,371	26.4%
Non-Relative	66,946	27,106	94,052	28.8%
Total	149,391	57,188	206,579	27.7%
SOURCE: Derived from California Department of Health Care Services, Medicaid claims with vendor codes of either 50 or 60 indicating hospital inpatient claims. Events shown under count actual use as they exclude persons in managed care for portions of the period, and stays paid fully by non-Medicaid sources.				

TABLE 16: Adjusted “Any Cause” Hospital Use by IHSS Recipient Age & Provider Type, 2005^a						
Predictors	Age 3-17 n=11,002		Age 18-64 n=123,813		Age 65 or More n=206,579	
	Odds Ratio	95% CI	Odds Ratio	95% CI	Odds Ratio	95% CI
Recipient Characteristics						
Female Recipient	0.92	0.80-1.05	0.79	0.77-0.82	0.84	0.82-0.86
Hispanic ^b	0.83	0.70-0.98	1.29	1.24-1.34	1.22	1.19-1.26
Black ^b	1.32	1.07-1.64	1.37	1.32-1.42	1.32	1.27-1.37
Asian/Other ^b	0.89	0.67-1.16	0.76	0.72-0.81	1.16	1.25-1.20
Household size (1-5+)	1.03	0.97-1.10	0.99	0.98-1.00	1.03	1.02-1.04
3+ Cognitive Limitations ^c	0.60	0.50-0.73	0.42	0.38-0.46	0.67	0.62-0.72
3+ ADL Limitations ^d	0.92	0.76-1.11	1.15	1.11-1.20	1.17	1.13-1.20
Breathing Limitations ^e	1.43	1.22-1.68	1.78	1.69-1.88	1.82	1.74-1.91
Number Health Conditions ^f	1.62	1.58-1.66	1.40	1.40-1.41	1.69	1.68-1.70
IHSS Providers^g						
Spouse	na		1.15	1.08-1.23	1.01	0.93-1.09
Parent	1.09	0.88-1.34	0.73	0.69-0.77	na	
Other Relative	1.12	0.85-1.46	0.91	0.88-0.94	0.97	0.95-0.99
Total Authorized Hours	1.00	1.00-1.00	1.00	1.00-1.00	1.01	1.00-1.01
County Characteristics						
Per Capita Income	1.00	0.99-1.01	1.00	1.00-1.01	0.99	0.99-0.99
New IHSS Recipient	0.56	0.44-0.70	0.67	0.64-0.70	0.43	0.42-0.45
Model Goodness of Fit						
-2Log Likelihood	6132		108700		186851	
Maximum Rescaled R ²	0.364		0.284		0.348	
SOURCE: Derived from California Department of Health Care Services, Medicaid claims with vendor codes of either 50 or 60 indicating hospital inpatient claims. Events shown under count actual use as they exclude stays paid fully by non-Medicaid sources.						
<p>a. Sample includes all eligible IHSS recipients, excluding those in managed care for one month or more in 2005.</p> <p>b. Reference is White.</p> <p>c. Cognition is defined by: memory, orientation, and judgment. Each scored 1 independent; 2 able to perform, but needs verbal assistance such as reminders, guidance, or encouragement; 5 cannot perform without human assistance. Scores three and four not used. The measure is a dummy variable yes = have three cognitive measures each with a score five.</p> <p>d. ADLs refers to activities of daily living (i.e., bathing and grooming; dressing; transferring; bowel, bladder and menstrual; eating). Each task is scored on a four or five point scale: 1 and 2 as per above, 3 Can perform with some human direct physical assistance from the provider, 4 Can perform with a lot of human assistance, 5 cannot perform without human assistance. The measure is a dummy variable yes = have three or more ADLs each with a score of three or more indicating the need for human assistance.</p> <p>e. Breathing is scored 1 independent, 5 cannot perform without human assistance, 6 paramedical services needed. The measure is the presence/absence of a breathing item with a score of five or more.</p> <p>f. Unduplicated count of health conditions grouped into 23 subcategories using HCC.</p> <p>g. Reference is Non-Relative provider, “na” means the provider type was not included in the model.</p>						

TABLE 17: Unadjusted Probability of Medicaid-Paid Ambulatory Care Sensitive Condition-Related Hospital Days, 2005				
Provider Type	Any ACSC Inpatient Days			
	No	Yes	Total	% Yes
Recipients Age 3-17				
Parent	7,657	128	7,785	1.6%
Other Relative	1,430	19	1,449	1.3%
Non-Relative	1,744	24	1,768	1.4%
Total	10,831	171	11,002	1.6%
Recipients Age 18-64				
Spouse	5,752	530	6,282	8.4%
Parent	18,016	609	18,625	3.3%
Other Relative	37,500	2,804	40,304	7.0%
Non-Relative	54,499	4,103	58,602	7.0%
Total	115,767	8,046	123,813	6.5%
Recipients Age 65+				
Spouse	3,705	451	4,156	10.9%
Other Relative	99,487	8,884	108,371	8.2%
Non-Relative	85,880	8,172	94,052	8.7%
Total	189,072	17,507	206,579	8.5%
SOURCE: Derived from California Department of Health Care Services, Medicaid claims with vendor codes of either 50 or 60 indicating hospital inpatient claims. Events shown under count actual use as they exclude persons in managed care for portions of the period, and stays paid fully by non-Medicaid sources. ACSC refers to a set of conditions indicative of a potentially “avoidable” hospital stay. Separate standardized algorithms are used for children and adult age groups (AHRQ, 2007a, 2007b).				

TABLE 18: Adjusted Ambulatory Care Sensitive Condition Hospital Use by IHSS Recipient Age and Provider Type, 2005^a

Predictors	Age 3-17 n=11,002		Age 18-64 n=123,813		Age 65 or More n=206,579	
	OR	95% CI	OR	95% CI	OR	95% CI
Recipient Characteristics						
Female Recipient	1.10	0.80-1.51	0.79	0.75-0.83	0.86	0.83-0.90
Hispanic ^b	0.98	0.65-1.47	1.35	1.27-1.44	1.31	1.26-1.37
Black ^b	1.56	0.94-2.56	1.68	1.59-1.78	1.38	1.30-1.45
Asian/Other ^b	1.43	0.75-2.72	0.92	0.83-1.02	1.23	1.17-1.29
Household size (1-5+)	0.85	0.73-0.98	1.02	1.00-1.04	1.06	1.05-1.08
3+ Cognitive Limitations ^c	0.48	0.30-0.79	0.48	0.41-0.56	0.75	0.67-0.84
3+ ADL Limitations ^d	0.68	0.44-1.04	1.10	1.03-1.16	1.20	1.15-1.25
Breathing Limitations ^e	1.31	0.92-1.88	2.62	2.44-2.80	2.60	2.48-2.74
Number Health Conditions ^f	1.48	1.41-1.55	1.32	1.31-1.33	1.36	1.36-1.37
IHSS Providers^g						
Spouse	na	na	1.02	0.92 -1.14	0.86	0.78-0.97
Parent	0.77	0.48-1.23	0.65	0.59-0.71	na	na
Other Relative	0.78	0.42-1.47	1.01	0.95-1.06	0.96	0.93-1.00
Total Authorized Hours	1.00	1.00-1.00	1.00	1.00-1.00	1.00	1.00-1.00
County Characteristics						
Per Capita Income	0.99	0.96-1.02	1.00	0.99-1.00	0.99	0.99-0.99
New IHSS Recipient	0.61	0.34-1.08	0.62	0.58-0.66	0.47	0.44-0.50
Model Goodness of Fit						
-2Log Likelihood	1413		50844		104751	
Maximum Rescaled R ²	0.212		0.178		0.161	

SOURCE: Derived from California Department of Health Care Services, Medicaid claims (vender codes 50 or 60) indicating hospital inpatient claims. Events exclude stays paid fully by non-Medicaid sources. OR refers to odds ratio, CI refers to confidence interval.

- a. Sample includes all eligible IHSS recipients, excluding those in managed care for one month or more in 2005.
- b. Reference is White.
- c. Cognition is defined by: memory, orientation, and judgment. Each scored 1 independent; 2 able to perform, but needs verbal assistance such as reminders, guidance, or encouragement; 5 cannot perform without human assistance. Scores three and four not used. The measure is a dummy variable yes = have three cognitive measures each with a score five.
- d. ADLs refers to activities of daily living (i.e., bathing and grooming; dressing; transferring; bowel, bladder and menstrual; eating). Each task is scored on a four or five point scale: 1 and 2 as per above, 3 Can perform with some human direct physical assistance from the provider, 4 Can perform with a lot of human assistance, 5 cannot perform without human assistance. The measure is a dummy variable yes = have three or more ADLs each with an score of three or more indicating the need for human assistance.
- e. Breathing is scored 1 independent, 5 cannot perform without human assistance, 6 paramedical services needed. The measure is the presence/absence of a breathing item with a score of five or more.
- f. Unduplicated count of health conditions grouped into 23 subcategories using HCC.
- g. Reference is Non-Relative provider, "na" means the provider type was not included in the model.

TABLE 19: Unadjusted Probability of Medicaid-Paid Medical Care Use, 2005				
Provider Type	Any Use			
	No	Yes	Total	% Yes
Recipients Age 3-17				
Parent	1,201	6,584	7,785	84.6
Other Relative	434	1,015	1,449	70.0
Non-Relative	597	1,171	1,768	66.2
Total	2,232	8,770	11,002	79.7
Recipients Age 18-64				
Spouse	351	5,931	6,282	94.4
Parent	5,013	13,612	18,625	73.1
Other Relative	4,549	35,755	40,304	88.7
Non-Relative	7,579	51,023	58,602	87.1
Total	17,492	106,321	123,813	85.9
Recipients Age 65+				
Spouse	458	3,698	4,156	89.0
Other Relative	20,755	87,616	108,371	80.8
Non-Relative	16,919	77,133	94,052	82.0
Total	38,132	168,447	206,579	81.5
SOURCE: Derived from the California Department of Health Care Services, Medicaid claims. "Yes" means that a vendor group 5 (physicians, and physician groups, nurse practitioner, surgi-centers, rural health clinics) or a vendor group 6 (hospital outpatient departments, organized outpatient clinics) claim was present. Sample includes all eligible IHSS recipients, excluding those in managed care for one month or more in 2005.				

TABLE 20: Unadjusted Probability of Medicaid-Paid Medical Care Use, Including Emergency Rooms, by IHSS Recipients, 2005				
Provider Type	Any Use			
	No	Yes	Total	% Yes
Recipients Age 3-17				
Parent	1,045	6,740	7,785	86.6
Other Relative	395	1,054	1,449	72.7
Non-Relative	534	1,234	1,768	69.8
Total	1,974	9,028	11,002	82.1
Recipients Age 18-64				
Spouse	294	5,988	6,282	95.3
Parent	4,756	13,869	18,625	74.5
Other Relative	4,328	35,976	40,304	89.3
Non-Relative	7,081	51,521	58,602	87.9
Total	16,459	107,354	123,813	86.7
Recipients Age 65+				
Spouse	364	3,792	4,156	91.2
Other Relative	18,906	89,465	108,371	82.6
Non-Relative	15,256	78,796	94,052	83.8
Total	34,526	172,053	206,579	83.3
SOURCE: Derived from the California Department of Health Care Services, Medicaid claims. "Yes" means that a vendor group 5 (physicians, and physician groups, nurse practitioner, surgi-centers, rural health clinics) or a vendor group 6 (hospital outpatient departments, organized outpatient clinics) claim, or an ER claim was present. Sample includes all eligible IHSS recipients, excluding those in managed care for one month or more in 2005.				

TABLE 21: Adjusted Medicaid-Paid Medical Care Use, Including Emergency Rooms, by IHSS Recipients,^a 2005

Predictors	Age 3-17 n=11,002		Age 18-64 n=123,813		Age 65 or More n=206,579	
	Odds Ratio	95% CI	Odds Ratio	95% CI	Odds Ratio	95% CI
Recipient Characteristics						
Female Recipient	0.98	0.82-1.18	0.93	0.88-0.98	0.94	0.90-0.97
Hispanic ^b	1.12	0.90-1.40	1.13	1.05-1.22	0.96	0.92-1.01
Black	1.00	0.77-1.29	0.93	0.87-0.99	0.76	0.72-0.80
Asian/Other	1.20	0.88-1.64	1.22	1.10-1.35	1.00	0.96-1.05
Household size (1-5)	1.03	0.94-1.12	0.98	0.95-1.00	1.04	1.02-1.05
3+ Cognitive Limitations ^c	0.72	0.57-0.92	0.76	0.69-0.85	0.84	0.76-0.94
3+ ADL Limitations ^d	1.05	0.82-1.35	0.95	0.89-1.02	0.99	0.95-1.03
Breathing Limitations ^e	0.95	0.72-1.26	1.03	0.92-1.16	0.99	0.92-1.07
Number Health Conditions ^f	19.9	17.0-23.4	10.6	10.2-11.0	7.44	7.27-7.61
IHSS Providers^g						
Spouse	na	na	2.19	1.86-2.59	1.69	1.46-1.96
Parent	1.54	1.23-1.92	0.83	0.78-0.90	na	na
Other Relative	0.94	0.72-1.26	1.05	0.98-1.12	1.03	1.00-1.07
Total Authorized Hours	1.00	1.00-1.00	1.00	1.00-1.00	1.00	1.00-1.00
County Characteristics						
Per Capita Income	0.99	0.98-1.00	0.99	0.99-0.99	1.00	1.00-1.00
New IHSS Recipient	0.18	0.14-0.23	0.07	0.06-0.08	0.05	0.05-0.05
Model Goodness of Fit						
-2Log Likelihood	3302		35258		87211	
Maximum Rescaled R ²	0.776		0.723		0.642	
<p>SOURCE: Unpublished tables derived from California Department of Health Care Services, Medicaid claims. Events shown under count actual use as they exclude stays paid for fully by non-Medicaid sources. "na" not applicable</p> <p>a. Sample includes all eligible IHSS recipients, excluding those in managed care for one month or more in 2005. Any ER user counts were as follows: age 3-17, age 18-64, age 65+.</p> <p>b. Reference is White.</p> <p>c. Cognition is defined by: memory, orientation, and judgment. Each scored 1 independent; 2 able to perform, but needs verbal assistance such as reminders, guidance, or encouragement; 3 cannot perform without human assistance. Scores three and four not used. The measure is a dummy variable yes = have three cognitive measures each with a score five.</p> <p>d. ADLs refers to activities of daily living (i.e., bathing and grooming; dressing; transferring; bowel, bladder and menstrual; eating). Each task is scored on a four or five point scale: 1 and 2 as per above, 3 Can perform with some human direct physical assistance from the provider, 4 Can perform with a lot of human assistance, 5 cannot perform without human assistance. The measure is a dummy variable yes = have three or more ADLs each with an score of three or more indicating the need for human assistance.</p> <p>e. Breathing is scored 1 independent, 5 cannot perform without human assistance, 6 paramedical services needed. The measure is the presence/absence of a breathing item with a score of 5 or more.</p> <p>f. Unduplicated count of health conditions grouped into 23 subcategories using HCC.</p> <p>g. Reference is Non-Relative provider, "na" means the provider type was not included in the model.</p>						

TABLE 22: Unadjusted Probability of Medicaid-Paid Emergency Room Visits by IHSS Recipients, 2005				
Provider Type	Any ER Use			
	No	Yes	Total	% Yes
Recipients Age 3-17				
Parent	3,073	4,712	7,785	60.5%
Other Relative	737	712	1,449	49.1%
Non Relative	965	803	1,768	45.4%
Total	4,775	6,227	11,002	56.6%
Recipients Age 18-64				
Spouse	1,968	4,314	6,282	68.7%
Parent	10,308	8,317	18,625	44.7%
Other Relative	16,762	23,542	40,304	58.4%
Non Relative	22,389	36,213	58,602	61.8%
Total	51,427	72,386	123,813	58.5%
Recipients Age 65+				
Spouse	1,474	2,682	4,156	64.5%
Other Relative	53,957	54,414	108,371	50.2%
Non Relative	43,282	50,770	94,052	54.0%
Total	98,713	107,866	206,579	52.2%
SOURCE: Derived from California Department of Health Care Services, Medicaid claims, 2005				

TABLE 23: Adjusted Medicaid-Paid Emergency Room Visits by IHSS Recipients,^a 2005						
Predictors	Age 3-17 n=11,002		Age 18-64 n=123,813		Age 65 or More n=206,579	
	Odds Ratio	95% CI	Odds Ratio	95% CI	Odds Ratio	95% CI
Recipient Characteristics						
Female Recipient	0.96	0.87-1.06	0.84	0.82-0.87	0.89	0.87-0.91
Hispanic ^b	0.98	0.87-1.11	1.22	1.17-1.26	1.16	1.13-1.20
Black	1.26	1.08-1.47	1.41	1.36-1.46	1.20	1.16-1.25
Asian/Other	0.87	0.72-1.05	0.72	0.69-0.76	0.96	0.93-0.98
Household size (1-5)	0.98	0.94-1.03	0.99	0.98-1.00	1.04	1.03-1.05
3+ Cognitive Limitations ^c	0.74	0.64-0.86	0.56	0.52-0.60	0.66	0.62-0.72
3+ ADL Limitations ^c	1.07	0.93-1.22	1.10	1.06-1.14	1.11	1.08-1.14
Breathing Limitations ^e	1.70	1.46-1.97	1.86	1.75-1.98	2.00	1.91-2.10
Number Health Conditions ^f	1.88	1.84-1.93	1.72	1.71-1.73	2.01	1.99-2.02
IHSS Providers^g						
Spouse	na	na	1.20	1.12-1.29	1.27	1.17-1.38
Parent	1.10	0.96-1.25	0.83	0.80-0.87	na	na
Other Relative	0.99	0.83-1.18	0.80	0.77-0.83	0.95	0.93-0.97
Total Authorized Hours	1.00	1.00-1.00	1.00	1.00-1.00	1.01	1.01-1.01
County Characteristics						
Per Capita Income	0.99	0.99-1.00	0.99	0.99-1.00	0.99	0.99-1.00
New IHSS Recipient	0.45	0.38-0.52	0.45	0.43-0.46	0.35	0.34-0.36
Model Goodness of Fit						
-2Log Likelihood	10220		120103		205914	
Maximum Rescaled R ²	0.477		0.432		0.429	
SOURCE: Unpublished tables derived from California Department of Health Care Services, Medicaid claims. Events shown under count actual use as they exclude stays paid for fully by non-Medicaid sources. "na" not applicable						
<p>a. Sample includes all eligible IHSS recipients, excluding those in managed care for one month or more in 2005.</p> <p>b. Reference is White.</p> <p>c. Cognition is defined by: memory, orientation, and judgment. Each scored 1 independent; 2 able to perform, but needs verbal assistance such as reminders, guidance, or encouragement; 5 cannot perform without human assistance. Scores three and four not used. The measure is a dummy variable yes = have three cognitive measures each with a score five.</p> <p>d. ADLs refers to activities of daily living (i.e., bathing and grooming; dressing; transferring; bowel, bladder and menstrual; eating). Each task is scored on a four or five point scale: 1 and 2 as per above, 3 Can perform with some human direct physical assistance from the provider, 4 Can perform with a lot of human assistance, 5 cannot perform without human assistance. The measure is a dummy variable yes = have three or more ADLs each with an score of three or more indicating the need for human assistance.</p> <p>e. Breathing is scored 1 independent, 5 cannot perform without human assistance, 6 paramedical services needed. The measure is the presence/absence of a breathing item with a score of five or more.</p> <p>f. Unduplicated count of health conditions grouped into 23 subcategories using HCC.</p> <p>g. Reference is Non-Relative provider, "na" means the provider type was not included in the model.</p>						

TABLE 24: Mean Combined Medicaid-Paid Physician and Outpatient Department Expenditures by IHSS Recipients,^a 2005

Variable	All Ages			Age 3-17			Age 18-64			Age 65 or More		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
All Recipients	8,770			106,321			168,447			8,770		
Grand Total		1741	8061		1483	3975		408	1519		1741	8061
Mean \$ /months		177	780		178	573		45	203		177	780
Spouse	na			5,931			3,698			na		
Period Mean Total \$		na	na		1641	4095		540	1916		na	na
Mean \$/month		na	na		192	533		62	270		na	na
Parent	6,584			13,612			na			6,584		
Period Mean Total \$		1860	9123		1089	5400		na	na		1860	9123
Mean \$/month		184	864		117	550		na	na		184	864
Other Relative	1,015			35,755			87,616			1,015		
Period Mean Total \$		1454	2978		1591	3898		398	1466		1454	2978
Mean \$/month		145	342		183	555		44	207		145	342
Non-Relative	1,171			51,023			77,133			1,171		
Period Mean Total \$		1316	3272		1493	3534		414	1555		1316	3272
Mean \$/month		166	503		189	594		46	195		166	503
Continuing Recipients	7,765			90,277			150,437			7,765		
Grand Total		1799	8480		1477	3963		409	1537		1799	8480
Mean \$ /months		172	798		158	524		42	187		172	798
Spouse	na			5,028			3,114			na		
Period Mean Total \$		na	na		1581	3931		531	1962		na	na
Mean \$/month		na	na		166	483		52	183		na	na
Parent	5,905			12,474			na			5,905		
Period Mean Total \$		1920	9569		1062	5521		na	na		1920	9569
Mean \$/month		181	895		106	527		na	na		181	895
Other Relative	885			29,769			77,540			885		
Period Mean Total \$		1459	2733		1589	3805		394	1459		1459	2733
Mean \$/month		138	273		165	513		40	183		138	273
Non-Relative	975			43,006			69,783			975		
Period Mean Total \$		1380	3326		1508	3500		420	1599		1380	3326
Mean \$/month		147	387		167	533		43	192		147	387
New Recipients	1,005			16,044			18,010			1,005		
Grand Total		1287	3334		1515	4037		405	1353		1287	3334
Mean \$ /months		218	619		292	786		75	303		218	619
Spouse	na			903			584			na		
Period Mean Total \$		na	na		1976	4898		586	1649		na	na
Mean \$/month		na	na		342	735		116	530		na	na
Parent	679			1,138			na			679		
Period Mean Total \$		1345	3220		1385	3812		na	na		1345	3220
Mean \$/month		211	523		244	747		na	na		211	523

TABLE 24 (continued)												
Variable	All Ages			Age 3-17			Age 18-64			Age 65 or More		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
Other Relative	130			5,986			10,076			130		
Period Mean Total \$		1422	4302		1602	4333		426	1524		1422	4302
Mean \$/month		196	636		276	722		75	335		196	636
Non-Relative	196			8,017			7,350			196		
Period Mean Total \$		998	2974		1416	3714		361	1042		998	2974
Mean \$/month		260	869		304	840		72	220		260	869
<p>SOURCE: Derived from the California Department of Health Care Services, Medicaid claims. Vendor group 5 (physicians, and physician groups, nurse practitioner, surgi-centers, rural health clinics), and 6 (hospital outpatient departments, organized outpatient clinics) are combined.</p> <p>a. Sample includes all eligible IHSS recipients, excluding those in managed care for one month or more in 2005. The number of care recipients does not equal the number of eligible recipients due to the absence of vendor group 5 and 6 claims. "na" not applicable.</p>												

TABLE 25: Adjusted Mean Medicaid-Paid Medical Care Expenditures by IHSS Recipients, 2005^a

Predictors	Age 3-17 ^g n=8,770		Age 18-64 n=106,318		Age 65+ n=168,442	
	B	Pr > t	B	Pr > t	B	Pr > t
Intercept	-0.115	*	-0.193	****	-0.026	****
Recipient Characteristics						
Female Recipient	-0.007		-0.027	****	-0.011	****
Hispanic ^b	-0.039		0.006		-0.002	
Black ^b	-0.009		0.020	****	0.008	****
Asian/Other ^b	-0.028		0.004		-0.002	
3+ Cognitive Limitations ^c	-0.022		-0.014		-0.000	
3+ ADL Limitations ^d	-0.045	*	0.013	***	0.004	**
Breathing Limitations ^e	0.225		0.013	*	-0.007	**
Household size (1-5+) ^f	0.001		0.009	****	0.002	****
Number Health Conditions ^g	0.075	****	0.062	****	0.019	****
IHSS Providers^h						
Spouse Provider			-0.014		0.003	
Parent Provider	-0.015		0.002			
Relative Provider	-0.040		-0.014	***	0.001	
Total Authorized Hours	0.000		0.000		0.000	
County Characteristics						
Per Capita Income	0.001		0.001	****	0.000	*
New IHSS Recipient	0.034		0.070	****	0.017	****
Model Goodness of Fit						
Adjusted R ²	.067	****	.112	****	.048	****

* p<.05, ** p<0.01, *** p<0.001, **** p<0.0001

SOURCE: Derived from the California Department of Health Care Services, Medicaid claims. Vendor group 5 (physicians, and physician groups, nurse practitioner, surgi-centers, rural health clinics), and 6 (hospital outpatient departments, organized outpatient clinics) are combined. Expenditures are divided by 1,000.

- a. Sample includes all eligible IHSS recipients, excluding those in managed care for one month or more in 2005. The number of care recipients may not equal the number of eligible recipients due to missing expenditure values or negative claims amounts.
- b. Reference is White.
- c. Cognition is defined by: memory, orientation, and judgment. Each scored 1 independent; 2 able to perform, but needs verbal assistance such as reminders, guidance, or encouragement; 5 cannot perform without human assistance. Scores three and four not used. The measure is a dummy variable yes = have three cognitive measures each with a score five.
- d. ADLs refers to activities of daily living (i.e., bathing and grooming; dressing; transferring; bowel, bladder and menstrual; eating). Each task is scored on a four or five point scale: 1 and 2 as per above, 3 Can perform with some human direct physical assistance from the provider, 4 Can perform with a lot of human assistance, 5 cannot perform without human assistance. The measure is a dummy variable yes = have three or more ADLs each with an score of three or more indicating the need for human assistance.
- e. Breathing is scored 1 independent, 5 cannot perform without human assistance, 6 paramedical services needed. The measure is the presence/absence of a breathing item with a score of five or more.
- f. Number of persons in household, including other IHSS recipients, excludes non-IHSS children <age 14.
- g. Refers to HCC, collapsed into 23 subgroups, count is unduplicated number of these groupings.
- h. Reference is Non-Relative provider, "na" means the provider type was not included in the model.

TABLE 26: Mean Monthly Medicaid-Paid Home and Community-Based Care Expenditures by IHSS Recipients, 2005^a

Variable	All Ages			Age 3-17			Age 18-64			Age 65 or More		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
Community-Based Care												
Grand Total	49	5786	8807	5192	12108	28274	34954	6605	5407	49	5786	8807
Average \$/month		556	900		1149	2677		620	565		556	900
Spouse												
Period Mean Total \$	na	na	na	200	12065	22573	601	6766	11390	na	na	na
Average \$/month		na	na		1133	2025		639	983		na	na
Parent												
Period Mean Total \$	29	3940	4238	719	26201	43946	na	na	na	29	3940	4238
Average \$/month		373	408		2292	3710		na	na		373	408
Other Relative												
Period Mean Total \$	10	9450	11803	1708	8366	17624	15899	6766	4607	10	9450	11803
Average \$/month		981	1486		793	1619		634	515		981	1486
Non-Relative												
Period Mean Total \$	10	7478	13761	2565	10653	27644	18454	6452	5730	10	7478	13761
Average \$/month		661	1130		1068	2851		608	586		661	1130
IHSS												
Grand Total	3964	8509	7202	114743	8127	6774	198656	7639	5329	3964	8509	7202
Average \$/month		776	624		747	570		715	456		776	624
Spouse												
Period Mean Total \$	na	na	na	1128	4410	5766	756	3734	4509	na	na	na
Average \$/month		na	na		402	509		356	422		na	na
Parent												
Period Mean Total \$	1109	5780	5500	18352	11132	8400	na	na	na	1109	5780	5500
Average \$/month		519	520		980	701		na	na		519	520
Other Relative												
Period Mean Total \$	1415	9628	7428	39710	7105	5509	107004	7470	5087	1415	9628	7428
Average \$/month		869	621		663	462		702	436		869	621
Non-Relative												
Period Mean Total \$	1440	9510	7575	55553	7939	6713	90896	7871	5587	1440	9510	7575
Average \$/month		881	643		738	570		733	476		881	643
Any Unskilled Home Care												
Grand Total	3983	8539	7327	115070	8650	9759	199622	8759	6580	3983	8539	7327
Average \$/month		779	639		797	865		820	575		779	639
Spouse												
Period Mean Total \$	na	na	na	1279	5776	11452	1208	5703	9330	na	na	na
Average \$/month		na	na		532	1024		541	818		na	na
Parent												
Period Mean Total \$	1127	5789	5553	18381	12140	13726	na	na	na	1127	5789	5553
Average \$/month		521	522		1068	1157		na	na		521	522

TABLE 26 (continued)												
Variable	All Ages			Age 3-17			Age 18-64			Age 65 or More		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
Other Relative												
Period Mean Total \$	1415	9695	7579	39731	7461	7056	107109	8468	6086	1415	9695	7579
Average \$/month		876	647		697	610		795	534		876	647
Non-Relative												
Period Mean Total \$	1441	9556	7742	55679	8412	9529	91305	9140	7050	1441	9556	7742
Average \$/month		885	656		786	885		852	614		885	656
SOURCE: Derived from California Department of Health Care Services, Medicaid claims, 2005, vendor codes 71 (HCBS), 73 (AIDS waiver), 81 (MSSP), and 89 (IHSS).												
a. Number of home care recipients does not equal the number of eligible recipients, as those in hospitals, nursing homes, or community facilities, or who may have no paid providers in a month do not receive IHSS payments.												

TABLE 27: Adjusted Mean Monthly Medicaid-Paid Home and Community-Based Care Expenditures by IHSS Recipients, 2005 ^a						
Predictors	Age 3-17 ^g n=3,983		Age 18-64 n=115,070		Age 65+ n=199,622	
	B	Pr > t	B	Pr > t	B	Pr > t
Intercept	-0.075		-0.246	****	-0.104	****
Recipient Characteristics^b						
Female Recipient	0.019		-0.030	****	0.001	
Hispanic	0.021		-0.000		-0.087	****
Black ^a	0.016		-0.009		-0.072	****
Asian/Other	0.032		0.003	**	-0.032	****
3+ Cognitive Limitations ^c	-0.209	****	-0.472	****	-0.288	****
3+ ADL Limitations ^d	0.089	****	0.058	****	0.062	****
Breathing Limitations ^e	0.061	**	0.272	****	-0.028	****
Household size (1-5+) ^f	-0.012		0.003	*	-0.007	****
Number Health Conditions ^g	0.005	*	-0.001	*	0.001	***
IHSS Providers^h						
Spouse Provider	na		-0.430	****	-0.341	****
Parent Provider	-0.520	****	-0.030	****	na	
Relative Provider	0.027		0.003		-0.007	****
Total Authorized Hours	0.006	****	0.009	****	0.009	****
County Characteristics						
Per Capita Income	0.009	****	0.009	****	0.009	****
New IHSS Recipient	-0.022		-0.022	****	0.048	****
Model Goodness of Fit						
Adjusted R ²	.570	****	.412	****	.547	****

* p<.05, ** p<0.01, *** p<0.001, **** p<0.0001

SOURCE: Medicaid claims-records maintained by the California Department of Health Care Services. Expenditures were compiled using vendor codes 71 (HCBS waiver), 73 (AIDS waiver services), 81 (MSSP waiver services), and 89 (IHSS). The number of home care recipients may not equal the number of eligible recipients, as those in hospitals, nursing homes, or community facilities do not receive IHSS payments.

a. Sample includes all eligible IHSS recipients, excluding those in managed care for one month or more in 2005. Number of home care recipients does not equal the number of eligible recipients, as those in hospitals, nursing homes, or community facilities, or who may have no paid providers in a month do not receive IHSS payments.

b. Reference is White.

c. Cognition is defined by: memory, orientation, and judgment. Each scored 1 independent; 2 able to perform, but needs verbal assistance such as reminders, guidance, or encouragement; 5 cannot perform without human assistance. Scores three and four not used. The measure is a dummy variable yes = have three cognitive measures each with a score five.

d. ADLs refers to activities of daily living (i.e., bathing and grooming; dressing; transferring; bowel, bladder and menstrual; eating). Each task is scored on a four or five point scale: 1 and 2 as per above, 3 Can perform with some human direct physical assistance from the provider, 4 Can perform with a lot of human assistance, 5 cannot perform without human assistance. The measure is a dummy variable yes = have three or more ADLs each with an score of three or more indicating the need for human assistance.

e. Breathing is scored 1 independent, 5 cannot perform without human assistance, 6 Paramedical Services needed. The measure is the presence/absence of a breathing item with a score of five or more.

f. Number of persons in household, including other IHSS recipients, excludes non-IHSS children <age 14.

g. Refers to HCC, collapsed into 23 subgroups, count is unduplicated number of these groupings.

h. Reference is Non-Relative provider, "na" means the provider type was not included in the model.

TABLE 28: Mean Monthly Medicaid-Paid Home Health Care Expenditures by IHSS Recipients, 2005^a									
	Age 3-17			Age 18-64			Age 65 or More		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
Home Health Care									
Grand Total	882	52075	49281	4492	2613	11376	526	1200	3398
Average \$ /months		4970	6161		283	1017		151	387
Spouse	na	na	na						
Period Mean Total \$	na	na	na	280	1244	1590	30	1222	1349
Average \$/month	na	na	na		160	273		176	185
Parent							na	na	na
Period Mean Total \$	642	52571	49723	552	9359	25834	na	na	na
Average \$/month		5069	6682		890	2275	na	na	na
Other Relative									
Period Mean Total \$	109	55393	49214	1392	1527	7112	302	1159	3661
Average \$/month		4925	4283		163	616		141	362
Non-Relative									
Period Mean Total \$	131	46887	47101	2268	1807	7081	194	1259	3199
Average \$/month		4523	4644		224	668		163	443

SOURCE: Unpublished tables derived from California Department of Health Care Services, Medicaid claims using vendor code 44 (home health agency), 2005. "na" not applicable.

a. Number of home health care recipients may not equal the number of eligible recipients, as those in hospitals, nursing homes, or community facilities do not receive IHSS payments.

TABLE 29: Unadjusted Probability of Medicaid-Paid Nursing Home Stays by IHSS Recipients, 2005				
Provider Type	Any Nursing Home Stays			
	No	Yes	Total	% Yes
Recipients Age 3-17				
Parent	10,458	31	10,489	0.30%
Other Relative	2,077	3	2,080	0.14%
Non-Relative	2,473	5	2,478	0.20%
Total	15,008	39	15,047	0.26%
Recipients Age 18-64				
Spouse	7,097	179	7,276	2.46%
Parent	23,043	271	23,314	1.16%
Other Relative	48,041	991	49,032	2.02%
Non-Relative	67,757	1,911	69,668	2.74%
Total	145,938	3,352	149,290	2.25%
Recipients Age 65+				
Spouse	4,253	318	4,571	6.96%
Other Relative	116,693	5,771	122,464	4.71%
Non-Relative	95,745	7,375	103,120	7.15%
Total	216,691	13,464	230,155	5.85%

SOURCE: Derived from Medicaid claims maintained by the California Department of Health Care Services. Nursing home use identified by vendor codes 47 ICF-DD), and 80 (nursing facility).

TABLE 30: Adjusted Medicaid-Paid Nursing Home Use by Adult IHSS Recipients, 2005^a				
Predictors	Age 18-64 n=149,290		Age 65 or More n=230,155	
	Odds Ratio	95% CI	Odds Ratio	95% CI
Recipient Characteristics				
Female Recipient	0.89	0.83-0.95	0.98	0.94-1.02
Hispanic ^b	0.95	0.86-1.04	0.96	0.92-1.01
Black ^b	0.94	0.86-1.02	1.17	1.11-1.23
Asian/Other ^b	0.78	0.67-0.89	0.80	0.76-0.84
Household size (1-5)	0.96	0.93-0.98	0.95	0.93-0.96
3+ Cognitive Limitations ^c	0.34	0.28-0.42	0.95	0.86-1.05
3+ ADL Limitations ^d	1.52	1.40-1.66	1.35	1.29-1.41
Breathing Limitations ^e	1.16	1.03-1.30	1.16	1.08-1.23
IHSS Providers^f				
Spouse	0.82	0.70-0.97	0.98	0.86-1.10
Parent	0.44	0.38-0.50	na	
Other Relative	0.83	0.77-0.90	0.70	0.68-0.73
Total Authorized Hours	1.00	1.00-1.00	1.00	1.00-1.00
County Characteristics				
Per Capita Income	1.02	1.01-1.02	1.00	1.00-1.00
New IHSS Recipients	1.09	0.99-1.20	0.87	0.82-0.92
Managed Care=yes	0.29	0.25-0.34	0.34	0.31-0.37
Model Goodness of Fit				
-2Log Likelihood	30885		98977	
Maximum Rescaled R ²	0.041		0.043	
<p>SOURCE: Derived from Medicaid claims maintained by the California Department of Health Care Services. Nursing home use was identified using vendor codes 47 ICF-DD), and 80 (nursing facility). The number of nursing home users age 3-17 (n=34) not included as the group was too small for reliable logistic models. Nursing home users age 18-64 or age 65+ may not equal the number of actual users, if the use was paid solely from non-Medicaid sources.</p> <p>a. Sample includes all eligible IHSS recipients, excluding those in managed care for one month or more in 2005.</p> <p>b. Reference is White.</p> <p>c. Cognition is defined by: memory, orientation, and judgment. Each scored 1 independent; 2 able to perform, but needs verbal assistance such as reminders, guidance, or encouragement; 3 cannot perform without human assistance. Scores three and four not used. The measure is a dummy variable yes = have three cognitive measures each with a score five.</p> <p>d. ADLs refers to activities of daily living (i.e., bathing and grooming; dressing; transferring; bowel, bladder and menstrual; eating). Each task is scored on a four or five point scale: 1 and 2 as per above, 3 Can perform with some human direct physical assistance from the provider, 4 Can perform with a lot of human assistance, 5 cannot perform without human assistance. The measure is a dummy variable yes = have three or more ADLs each with an score of three or more indicating the need for human assistance.</p> <p>e. Breathing is scored 1 independent, 5 cannot perform without human assistance, 6 paramedical services needed. The measure is the presence/absence of a breathing item with a score of five or more.</p> <p>f. Reference is Non-Relative provider, "na" means the provider type was not included in the model.</p>				

TABLE 31: Mean Monthly Medicaid-Paid Nursing Home Expenditures by IHSS Recipients, 2005

Recipients	All Ages			Age 3-17			Age 18-64			Age 65 or More		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
All Recipients	16855			39			3352			13464		
Grand Total		12287	15963		46041	66074		12313	17314		12183	15124
Mean \$ /months		3661	8777		19649	50432		3268	7496		3713	8631
Spouse	497			na			179			318		
Period Mean Total \$		10372	15958		na	na		10877	16319		10088	15770
Mean \$/month		2924	7724		na	na		3049	9282		2853	6705
Parent	302			31			271			na		
Period Mean Total \$		19504	33318		45108	69752		16575	24759		na	na
Mean \$/month		5628	19777		20782	54946		3895	8438		na	na
Other Relative	6765			3			991			5771		
Period Mean Total \$		11945	15184		26480	12769		11890	15827		11947	15070
Mean \$/month		3255	7870		4195	2505		2778	6151		3337	8129
Non-Relative	9291			5			1911			7375		
Period Mean Total \$		12405	15585		63558	65007		12063	16784		12458	15130
Mean \$/month		3932	8857		21897	36348		3453	7788		4044	9062
Continuing	14861			36			2811			12014		
Grand Total		12786	16438		49071	67906		12962	18068		12637	15507
Mean \$ /months		3755	9005		21178	52250		3288	7694		3812	8805
Spouse	425			na			156			269		
Period Mean Total \$		10884	16790		na	na		11239	17027		10679	16680
Mean \$/month		3057	8201		na	na		3219	9888		2964	7059
Parent	267			29			238			na		
Period Mean Total \$		20865	34634		47927	71304		17568	25399		na	na
Mean \$/month		5962	20889		22182	56597		3986	8671		na	na
Other Relative	6004			3			837			5164		
Period Mean Total \$		12374	15538		26480	12769		12478	16365		12349	15400
Mean \$/month		3367	7995		4195	2505		2852	6345		3450	8231
Non-Relative	8165			4			1580			6581		
Period Mean Total \$		12924	16065		74305	69747		12695	17612		12942	15533
Mean \$/month		4005	9084		26636	40147		3421	7935		4131	9280
New in 2005	1994			3			541			1450		
Grand Total		8568	11163		9684	10268		8943	12166		8426	10771
Mean \$ /months		2962	6807		1302	1484		3162	6374		2891	6968
Spouse	72			na			23			49		
Period Mean Total \$		7349	9203		na	na		8420	10237		6846	8743
Mean \$/month		2133	3803		na	na		1895	2593		2245	4274
Parent	35			2			33			na		
Period Mean Total \$		9117	17813		4240	5750		9412	18291		na	na
Mean \$/month		3079	6429		483	622		3236	6592		na	na

TABLE 31 (continued)												
Variable	All Ages			Age 3-17			Age 18-64			Age 65 or More		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
Other Relative	761			0			154			607		
Period Mean Total \$		8560	11491					8696	12052		8526	11354
Mean \$/month		2377	6745					2377	4964		2377	7130
Non-Relative	1126			1			331			794		
Period Mean Total \$		8635	10794		20572	--		9048	11634		8447	10425
Mean \$/month		3406	6979		2939	--		3607	7057		3323	6953

SOURCE: Derived from California Department of Health Care Services, Medicaid claims with vendor codes of 47 (ICF-DD) or 80 (nursing facility) indicating nursing home inpatient claims.