University of California
San Francisco

Impact of California's Medi-Cal Long Term Care Reimbursement Act

On Access, Quality and Costs

by

Charlene Harrington, Ph.D., RN

Janis O'Meara, M.P.A.

Eric Collier, Ph.D., RN

Taewoon Kang, Ph.D.

Caroline Stephens, M.S., RN

Jamie Chang, M.A.

April 2, 2008

Department of Social & Behavioral Sciences
University of California San Francisco
3333 California Street Suite 455
San Francisco, CA 94118

This report was supported by funds from the California HealthCare Foundation, Grant No. 07-1047. The report represents the views of the authors and not those of the funding agency.

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Executive Summary

Serious quality of care problems in nursing homes across the nation have been a persistent concern. California nursing homes, like those many other states, have struggled with low staffing levels, high staff turnover rates, and many complaints and deficiencies. Medicaid reimbursement rates have been identified as an important factor affecting the access, quality, and costs of nursing home care. To address the problems in California, the legislature passed and the Governor signed the Medi-Cal Long Term Care Reimbursement Act of 2004 (AB 1629), which changed the state's nursing home reimbursement methodology to a facility-specific, cost-based system and increased the rates. The new system was financed by a combination of quality assurance fees paid by nursing homes and by federal and state Medi-Cal funds. It was hoped that the legislation would: improve access to homes for Medi-Cal recipients, assure high quality resident care, increase nursing staffing levels, foster improved compliance with state and federal regulations, and encourage nursing home administrative efficiencies.

Using federal and state data from public sources, this evaluation examined the initial impact of the Reimbursement Act (2004) for freestanding nursing homes that accepted Medi-Cal residents and had complete data for the period between 2001 and 2006. To assess the impact of the new rate system, three types of outcomes were evaluated: (1) access to nursing home services (i.e., Medi-Cal admissions, days of care, length of stay, and number of facilities providing Medi-Cal services); (2) quality of nursing home care (measured by complaints, deficiencies, citations, and direct care staffing levels, skill mix and turnover rates); and, (3) nursing home profits/income margins, revenues and expenditures by cost center (i.e., spending patterns for direct care, indirect care, property taxes, capital costs and administrative operations).

Separate analyses were conducted for three types of nursing homes: (1) nursing facilities (N=892), (2) subacute care facilities (N =47), and (3) Multi-Level Retirement Communities (MLRCs) (N= 55). A series of subgroup analyses were conducted using the sample of nursing facilities (N=892) to assess differences in outcomes based on facility characteristics (e.g.,

ownership type, chain membership, size or number of beds, Medi-Cal payment levels, and geographic peer groups). Trends over the 2001 to 2006 period were examined but the emphasis was placed on changes in the 2004 to 2006 period after the rate changes were implemented

Study Findings

Revenues. After enactment of the new statute, the actual nursing facility Medi-Cal revenues per day increased from about $124 per day in 2004 to $152 per day in 2006. The revenues for subacute care facilities increased from about $178 in 2004 to $222 in 2006. Among MLRC facilities, average revenues per day increased from $110 to $148 between 2004 and 2006. During that period, revenues from Medi-Cal increased by $590 million and funding from all sources increased by about $1.1 billion for all types of California nursing homes.

Access. Although the number of total admissions and discharges increased following the enactment of AB1629, the total number of days of care and the average length of stay (LOS) decreased in both nursing and in subacute care facilities. For MLRC facilities, admissions and discharges decreased, while total days of care and average LOS increased.

Contrary to expectations, the total number of Medi-Cal days in nursing facilities decreased by 2 percent after the enactment of the reimbursement legislation, but the proportion of Medi-Cal days remained steady at 69 percent of the total days of care. In contrast, Medicare days increased (and self-pay days decreased) in both nursing and subacute facilities during the 2004-2006 period. The new Medi-Cal rate system did not substantially improve nursing home access for Med-Cal recipients in any of the three types of facilities. The casemix of residents in nursing facilities and subacute facilities increased by 7-8 percent between 2004 and 2006, indicating greater access for residents with higher acuity levels. This increase, however, was more likely attributable to increases in the number of Medicare days rather than to increases in admissions of more acutely ill Medi-Cal recipients.

Quality. Improvements in quality were expected along with higher levels of direct care staffing and reductions in staff turnover rates. Our analyses, however, shows that the new

reimbursement rate system did not substantially improve quality as measured by complaints, deficiencies, staffing levels, turnover rates and wage levels between 2004 and 2006..

Staffing. Among nursing facilities, total direct care nurse staffing hours increased by 3 percent, and RN hours per resident day (hprd) increased by 1.5 percent between 2004 and 2006. These levels remained well below the thresholds recommended by experts. Total average nurse staffing hours increased slightly from 3.3 hprd to 3.4 between 2004 and 2006 and were only 83 percent of the 4.1 hprd level recommended by experts. In 2006, the average RN staffing level in California facilities was only 0.26 hprd, about one-third of the 0.75 hprd recommended by experts.

In contrast to nursing facilities and on average, subacute care facilities increased their total and RN staffing levels by 7.5 and 15 percent respectively between 2004 and 2006. RN staffing levels were only 75 percent of the level recommended by experts, even though these facilities had higher resident casemix (acuity) levels than the average nursing homes. Among the MLRCs, staffing levels of RNs remained stable at 0.28 hprd and total nurse staffing level was 3.6 hprd in 2006.

Lastly and surprisingly, 16 percent or 144 nursing facilities in California (and 1 subacute care facility) did not meet the state's minimum staffing standard of 3.2 hprd in 2006. Thus, California nursing homes have low staffing levels, and average staffing levels only slightly improved after the state adopted the new reimbursement system.

Nursing Turnover Rates. Nursing turnover rates have been shown to be a function of workload and the wages paid by nursing facilities, and high rates of turnover are associated with poorer quality. Contrary to expectations, turnover rates of nursing staff grew slightly worse after adoption of the new rate payment system and remained high at 68 percent in 2006, meaning that nearly seven out of every ten nursing home staff members left employment during the year. Among subacute care facilities, nursing turnover rates declined by 20 percent between 2004 and 2006, but the rate was still elevated (63 percent). Among MLRC facilities, staff turnover rates

were 68 percent in 2006, with a 34 percent increase between 2004 and 2006. The new Medi-Cal reimbursement rate did not substantially reduce staff turnover rates to a safe level.

Wages and Benefits. Congruent with expectations, after the enactment of AB 1629, average hourly wages for nursing assistants increased by 7 percent in both nursing and subacute care facilities between 2004 and 2006. When wages for nursing assistants were adjusted for inflation (using the 2001 California Consumer Price index [CPI]), however, real wages decreased by about 0.5 percent. In both types of facilities, CPI-adjusted wages for licensed nurses grew by 1.8 percent in nursing facilities and declined by 0.2 percent in subacute facilities. Spending on benefits for all staff in nursing facilities fell by about 1.8 percent per hour between 2004 and 2006. The low wages and benefits appear to be related to the continued high turnover and the low staffing levels in the 2004-2006 period.

Substantiated Complaints and Deficiencies. Among nursing facilities, substantiated complaints increased by 38 percent, while total deficiencies and citations increased by 6 percent. Approximately 88 percent of nursing facilities failed to comply with federal regulations during the annual inspections, and 22 percent had violations that caused harm and jeopardy to residents and one percent of facilities provided substandard care. Among subacute facilities, quality problems also worsened between 2004 and 2006 as total deficiencies and substantiated complaints increased by 21 and 76 percent respectively. Nearly 93 percent of subacute facilities were out of compliance with federal regulatory requirements in 2006 and 34 percent had serious violations that caused harm or jeopardy. Finally for MLRC facilities, total deficiencies decreased by about 10 percent and the average number of complaints increased slightly between 2004 and 2006. Overall, the large number of facilities that continued to provide poor quality of care and that caused harm and jeopardy to residents is a serious concern.

Costs. With increased revenues, spending on direct care services was expected to increase. Average direct care expenditures in nursing facilities grew by 13 percent between 2004 and 2006, attributable, in part, to nominal wage increases (6.6 - 9 percent) and a modest increase in total staffing levels (3 percent). The level of direct care spending, as a portion of total

spending in nursing facilities, however, actually decreased by 3.7 percent (to 53 percent) after the new reimbursement system was implemented. Between 2004 and 2006, direct care expenditures among subacute and MLRC facilities care grew by 21 and 12 percent respectively and accounted for 62 and 56 percent of all expenditures.

Both nursing facilities and subacute facilities reduced spending on capital and other indirect costs (e.g., housekeeping, dietary and other expenses) as a portion of total spending between 2004 and 2006. In contrast, spending on administrative expenses grew among all types of facilities. Administrative expenses include pass-through expenditures for the quality assurance fee (QAF), license fees, training costs, and liability insurance costs (MLRC facilities are exempt from the QAF). After the introduction of the new rate system, administrative expenses in nursing, subacute care, and MLRC facilities grew by 37, 28, and 14 percent respectively and increases in administrative wages accounted for a substantial portion of this growth. Among both nursing facilities and subacute care facilities, CPI-adjusted administrative wages increased by approximately 12 percent in nursing facilities and 3 percent in subacute facilities between 2004 and 2006. The administrative cost center accounted for 19-22 percent of total expenditures among nursing facilities and subacute facilities in 2006.

Overall, the new Medi-Cal reimbursement rate had a positive effect on operating margins and all types of facilities reported improved net income margins on health care revenues. For nursing facilities, the average margin was 2.54 percent in 2006 compared with 0.03 percent in 2004 (a 747 percent increase). Nursing facilities that were part of a chain, those that had higher percentages of Medi-Cal revenues, and facilities that were located in five of the seven geographical regions (representing 832 of 892 facilities) had the greatest increases in operating margins. Among subacute care facilities, average operating margins were 1.0 percent in 2006, having increased from 0.5 percent in 2004. Exempt facilities also showed positive income margins. Thus, the new reimbursement rate increased net operating margins.

Variation by Facility Characteristics. Facilities that were nonprofit, small in size, and that had a high percent of Medi-Cal days, and facilities in the area with the highest Medi-Cal per

diem rate all had an increase in Medi-Cal days of care following the increase in Medi-Cal reimbursement rates. Large facilities and for-profit facilities (with lower RN and total hours per resident day than nonprofits) increased their RN hours and their total nursing hours per resident day between 2004 and 2006. Facility characteristics did not predict changes in deficiencies, but for-profit nursing homes had higher rates of substantiated complaints.

Total revenues were higher in chain facilities, large and very large facilities, and facilities with low percentages of Medi-Cal revenues between 2004 and 2006. Revenues varied by geographical peer groups because reimbursement rates varied. Facilities with high Medi-Cal revenues had higher administrative expenses than those with low Medi-Cal revenues. Chains and facilities with low Medi-Cal revenues increased their direct care expenditures and expenditures varied by geographic peer group. Nonprofit facilities paid higher wages for nursing assistants and had higher increases in wages between 2004 and 2006.

Chains had higher increases in net operating margin. Facilities with the highest percent of revenues from Medi-Cal had the lowest operating margins in 2006 and the greatest growth in operating margins between 2004 and 2006. Net operating margins varied significantly by geographical peer groups.

Summary. Although both Medi-Cal and total revenues in all types of facilities increased by $590 million and $1.1 billion respectively (between 2004 and 2006), nursing facilities in California did not show significant improvements in access to nursing home services as measured by increases in Medi-Cal days of care. Although there was a small increase in staffing levels, nurse staffing levels were significantly lower that those recommended by experts and many nursing homes failed to comply with the minimum state staffing standard. Nursing staff turnover rates grew worse in nursing facilities and rates were unacceptably high in all types of facilities. Quality of care after the implementation of the new reimbursement rate system actually appeared to decline because the number of deficiencies and citations, including those that caused harm and jeopardy, and complaints about poor quality of care increased. Expenditures for direct care increased somewhat but administrative expenditures increased at a higher rate. Nursing

assistant wages failed to keep pace with inflation between 2004 and 2006 and licensed nursing inflation-adjusted wage increases were minimal, while staff benefits declined. Overall, the new reimbursement rate increased the net income margins in all types of nursing facilities.

Discussion and Recommendations. This study examined the initial impact of the reimbursement rates. Three barriers may have caused nursing homes to be reluctant to increase staffing and wages and benefits. First, the lag in the payment of the Medi-Cal rates was between 18 and 24 months because of the methodology used by the state to set rates. This lag appeared to impede the goal of increasing staffing levels and wages and benefits. Using more current cost reports (to cut the lag time between payment) or implementing a quarterly or six-month cost reporting system that allows the state to adjust rates more frequently would be helpful. Second, the 90th percentile ceiling on the direct and indirect cost centers may be a barrier to higher staffing levels in higher staffed facilities. This ceiling could be removed so facilities can staff at the levels recommended by experts. Third, there is uncertainty about whether the Medi-Cal reimbursement rates will be maintained over time, which may have discouraged facilities from making meaningful investments to increase staffing levels, wages and benefits.

Although the findings are only for the initial period, there is no evidence that the new Medi-Cal reimbursement incentives are sufficient to encourage increases in nursing staffing and wages and benefits, which are necessary to improve the quality of nursing home care and reduce staff turnover rates. Without attaching more specific minimum requirements for staffing levels and penalties for poor quality of care, the new payment system appears unlikely to achieve its goals.

The state should adopt a zero-tolerance standard for facilities that fail to meet the 3.2 hours per resident day standard. Until facilities meet the mandatory state staffing standard, these facilities could be excluded from any new reimbursement rate increases and the state could imposed a hold on new admissions until these facilities comply with state's minimum staffing law.

The legislature could enact higher staffing standards for RNs, licensed nurses, and total direct care for each type of facility to assure that facilities provide appropriate care to residents. Such standards could be gradually increased during the next four years to meet the staffing thresholds recommended by experts (to 4.1 total hours per resident day (hrpd), including 0.75 hprd for RNs and 1.3 hprd for licensed nurses).

The legislature could enact requirements to assure that nursing facilities use the Medi-Cal reimbursement rates to provide living wages and benefits for nursing staff at levels that attract and retain the workforce and reduce turnover rates.

The legislature could prevent rate increases and apply financial penalties to facilities that fail to comply with minimum federal standards, especially those facilities that have caused harm or jeopardy to residents. Facilities that have a history of serious quality problems should be prevented from admitting new residents until they comply with federal regulations.

Finally, the legislature could place more restrictive caps on administrative spending, excluding the Quality Assurance Fee, and on profit margins, which may encourage facilities to spend a greater proportion of the Medi-Cal rates on resident care.

Overall, the legislature should consider enacting changes in Medi-Cal Long Term Care Reimbursement Act (AB, 1629) to encourage substantial improvements in the quality of nursing home care in California.

Impact of California's Medi-Cal Long Term Care Reimbursement Act On Access, Quality and Costs

INTRODUCTION

California, like many other states, has long had serious quality of care problems in nursing homes with low staffing levels, high turnover rates, and many complaints and deficiencies (Harrington, Carrillo, and LaCava, 2006). Many nursing homes, especially those with reputations for high quality, have refused to take Medi-Cal patients (Mor, Zinn, Angelelli, Teno & Miller, 2004). Medicaid reimbursement rates have been identified as an important factor affecting the access, quality, and costs of nursing home care (Grabowski & Angelelli, 2004; Grabowski, Angelelli, & Mor, 2004; Grabowski, Feng, Intrator, & Mor, 2004; Holahan & Cohen, 1987). The problems in California with access and quality have been, in part, related to the state's low Medi-Cal reimbursement rates, which were based on a flat prospective reimbursement system.

To address these problems, California enacted legislation in 2004 to implement a facility-specific, cost-based Medi-Cal reimbursement system for nursing homes (AB 1629, 2004). The reimbursement system became effective on August 1, 2005 and was originally scheduled to sunset after Fiscal Year (FY) 2007-2008, but was extended by the state legislature in 2007 to sunset FY 2008-2009 (See Appendix A Welfare and Institutions Code: 14126.033, 2006).

The rate included a "pass-through" component for the new quality assurance fee (QAF), license fees, training costs, and liability insurance costs. In addition, the rate allowed a profit component as a percentage of the direct care costs. The new payment system was envisioned as a policy solution to encourage increases in staffing levels, higher wages and benefits, and improve quality of care. This legislation included a substantial rate increase and made California one of only three states in the United States with this type of cost-based reimbursement system.

The impact of the legislation is being closely watched by policy makers in California and across the nation, as well as by stakeholder groups including the Nursing Home Association,

union officials, and consumer advocates. If the legislation is successful as a market-driven approach to improve access, quality, and reimbursement, other states may be interested in adopting the method. If the legislation results in little change, then policy makers may need to consider legislative amendments to realize their intended goals.

Research Questions:

The following research questions were addressed:

1. What has been the effect of the legislation on access for Medi-Cal residents (i.e., admissions, days of care, and the number of nursing homes accepting Medi-Cal residents)?

2. What has been the impact of the legislation on nursing home quality in terms of complaints, federal and state deficiencies and state citations, staffing levels, and types of nursing staff (i.e., skill mix of registered nurses [RNs], licensed practical nurses [LPNs], nursing assistants, and turnover rates)?

3. What has been the impact of the legislation on nursing home revenues, expenditures (spending patterns by cost center for direct and indirect care, capital and administration costs), and profits (including the impact on the wages and benefits of nursing home administrators and staff)?

4. Are there differences in the impact of the legislation based on facility characteristics (i.e., type of ownership, chains, size, and percent Medicaid reimbursement)? The analyses examined whether certain types of nursing facilities responded to, or were impacted by, the reimbursement changes.

This study examined nursing facility data from the calendar years of 2001 through 2006, with a particular emphasis on changes in the 2004 to 2006 period. Because the new reimbursement rates began in August 2005 and the new payments were delayed until May 2006, the impact was not expected until the 2006 calendar year. Since different rates were established for different types of facilities, the study separately examined three types of free-standing nursing

homes: (1) nursing facilities; (2) sub-acute nursing facilities; and (3) multi-level retirement communities.

Legislation/Regulation Summary

With the enactment and implementation of AB 1629 (2004), the California legislature intended to: effectively ensure "individual access to appropriate long-term care (LTC) services", promote "quality resident care", advance "decent wages and benefits for nursing home workers", support "provider compliance with all applicable state and federal requirements", and encourage "administrative efficiency" (California Department of Health Services [DHS], Bulletin 343, 2005; California State Auditor, 2007).

The Reimbursement Act (2004) created a mechanism in the Welfare and Institutions Code (Section 14126.021) to establish an individualized, facility-specific, rate reimbursement system (including a profit component) for free-standing nursing homes (See Appendix A). Prior to enactment of the new payment system, per diem rates per resident day ranged from $107-$139, depending on the location and size of a facility.

The new reimbursement system applies to free-standing nursing homes including: (1) skilled nursing facilities certified for Medicare and Medi-Cal, (2) Intermediate Care Facilities for the Developmentally Disabled (ICF/DD), (3) ICFs for Developmentally Disabled-Habilitative (ICF-DD-H), (4) ICFs for Developmentally Disabled-Nursing (ICF-DD-N), (5) swing beds, (6) subacute care nursing facilities, including those that provide pediatric services, and (7) nursing facilities classified as multi-level retirement communities (MLRC). The reimbursement schema imposed by AB 1629 excludes facilities that are a "distinct part" nursing facilities of general acute care hospitals, as well as those nursing homes that are owned by the state of California or other public entities.

To institute facility-specific rates, DHS established seven geographically-based peer groups that are described in Appendix B. This system replaced per diem rates that were based on the number of beds in each nursing home and three broad geographic regions (i.e., Bay Area, Los Angeles County, and other areas). The new peer groups include both rural and urban centers. Each cost category and all per diem payments are subject to maximal levels, or a reimbursement ceiling, based on peer group costs. Importantly, the new rate system prevents nursing homes from shifting costs from one cost center to any other (AB 1629, 2004). Initial reimbursement rates for new nursing facilities, or under new ownership, are set at the weighted average for the specific geographic peer group. In addition, separate rates were established for facilities that provide subacute care. There are two subacute rates: one for residents who require mechanical ventilation and one for residents who are not ventilator dependent.

The Medi-Cal facility-specific cost-based system uses the following five cost centers: (1) direct care labor costs, (2) indirect care labor and non-labor costs, (3) administrative, (4) capital, and (5) direct pass-through costs for liability insurance and other costs (see Appendix C for definitions of these cost centers). Direct care and indirect labor costs are reimbursed up to a ceiling that is equivalent to the 90th percentile of allowable Medi-Cal costs for each peer group. Other non-labor indirect costs are reimbursed up to a maximum of the 75th percentile for the peer group. Administrative cost reimbursements are limited to the 50th percentile of all Medi-Cal per diem costs. Reimbursement of capital costs are based on the estimated current value of capital assets and any major capital improvements, and is based on a "Fair Rental Value System" (FRVS) that is tied to the age of each nursing facility rather than direct reimbursement for depreciation, amortization, interest, rent, or lease payments.

Reimbursable "direct pass-through costs" are allowed for: property tax, facility license fees, insurance costs, quality assurance fees (QAF), any new costs associated with new state

and/or federal mandates. The legislation also permits facilities to pass through costs associated with caregiver training, which applies specifically to the formal training of students to become caregivers. The cost for caregiver training and liability insurance are both subject to adjustment, based on the California Consumer Price Index for All-Urban Consumers, and are reported separately from the facility Medi-Cal cost report. Facility license fees are applied prospectively and are not adjusted for inflation. Property tax reimbursement rates are updated at a rate of 2 percent annually.

In addition to using cost report data from the Office of Statewide Health Planning and Development (OSHPD), the California Department of Health Services (DHS) uses data reported on supplemental cost report schedules to determine reimbursement levels. These supplemental schedules capture costs for the following categories: professional liability insurance, medical records, licensing fees, caregiver training, and costs associated with support services including maintenance, housekeeping, laundry/linen, and in-service nursing education.

Facility-specific rate increases are set to begin on August 1st of each year and are based on the following aggregate rate caps: (a) 8% for the 2005-2006 rate year, when compared to 2004-2005 rates; (b) 5% for 2006-2007, based on 2005-2006 rates; and (c) 5.5% for 2007-2008 when compared to 2006-2007 rate year. The legislature amended the law, as part of the Governor's 2007 May Revision, to provide for a 5.5 percent rate cap in the 2008-2009 rate year (See Appendix A for the Welfare and Institutions Code). The average Medi-Cal reimbursement rate was increased from $123.70 in 2004 to $133.69 in 2005 and $152.01 in 2006. During 2005-2006, for example, the average subacute per diem rate was about $400 for non-ventilator dependent residents and $429 for residents who needed ventilator support.

The DHS made several decisions regarding the implementation of the new reimbursement rates. First, the rates were established using financial data from two years prior to the rate change.

Using the California Consumer Price Index (CPI), non-labor costs and a schedule for labor costs were adjusted for increases using 2001 as the base year. Therefore, the new rates may not be as accurate as if they were based on the more current data. Moreover, facilities had an 18 to 24 month lag before they received reimbursement for their actual costs because of costs reports that were used by the state for setting rates.

Second, payment of the annual reimbursement rates for nursing facilities in 2005 was delayed until the fall of 2005, but AB 1629 provided $212 million for a large cost-of-living increase for FY 04-05 that was paid retroactively in Fall 2005. The payment of the new facility specific reimbursement rates was delayed until April or May of 2006. Therefore, the new facility specific reimbursement system was not expected to have an impact on nursing facilities in fiscal year 2004-2005 and the first impact began on rates in fiscal year 2005-2006.

As required by the Reimbursement Act (2004), California DHS also imposed a quality assurance fee (QAF) that varies depending on whether a nursing facility provides more (or less than) 100,000 resident days of care per year. The QAF is intended to provide a "revenue stream that would enhance federal financial participation in the Medi-Cal program, increase reimbursements to facilities, and support quality improvement efforts in facilities" (California State Auditor, 2007). In 2004-2005, the QAF fee was limited to no more than 3 percent of the annual aggregate net revenue (minus Medicare revenue) for each nursing facility: This is equivalent to $3.66 per resident day for nursing facilities with less than 100,000 resident days annually and $3.17 per resident day for nursing facilities with more than 100,000 days per year. For 2005-2006 and subsequent years, the fee was set at no more than 6 percent of net revenue ($7.13 and $6.33 per resident day respectively for nursing facilities with less than or more than 100,000 resident days). Some facilities are exempt from the QAF, including publicly owned facilities, distinct part nursing facilities, and multi-level retirement communities (MLRCs). The

MLRCs are, however, received the new reimbursement rates for Medi-Cal residents based on the cost-center and pass-through cost methodologies described above.

It should be noted that on July 1, 2007, the California DHS was divided into the California Department of Public Health and the Department of Health Care Services (which administers Medi-Cal). The California Department of Health Services continues to administer the Medi-Cal program and the nursing home rate setting system, while the new Department of Public Health is responsible for the state Licensing and Certification Program; the agency that monitors the quality of nursing home care and provides regulatory oversight for the state and also on behalf of CMS.

BACKGROUND AND CONCEPTUAL FRAMEWORK

Reimbursement Rates and Methods. The Medicaid program plays a vital role in paying for the care of 68 percent of the nation's 1.6 million nursing home residents (Levit, Smith, Cowan, Lazenby, & Martin, 2002). Medicaid reimbursement for this population has long been a matter of concern, particularly with regards to its inadequacy to cover the costs of needed care. A number of studies investigating the impact of Medicaid payment methods have observed that nursing facilities respond to different payment methods by adjusting admission patterns, staffing levels, types of services, and care costs (Cohen & Dubay, 1990; Grabowski, 2001a,b; Norton, 1992; Reschovsky, 1996; Street, Quadagno, Parham & McDonald, 2003; Wodchis, Hirth & Fries 2007).

In recent years, some states have attempted to increase their reimbursement in an effort to ensure more adequate payment for needed care. Prior to changing its reimbursement rates in 2005, California had average per diem rates of $113.73 in 2002, making it 26th in the nation in terms of state rates (Grabowski, Feng, Intrator & Mor, 2004). Taking into account that California Medi-Cal paid separately for drugs and therapy that some states include in their Medicaid facility rate, California's rates would have compared more favorably to the rates in other states.

Higher Medicaid rates to nursing homes have been associated with higher nursing home quality (Grabowski & Angelelli, 2004; Grabowski, Angelelli & Mor, 2004; Grabowski, Feng, Intrator & Mor, 2004). One study showed, however, that a Medicaid financial incentive package in Florida in 2000-01 did not result in higher staffing (Hyer, Slack, & Johnson, 2008). Although higher Medicaid rates should have benefits for improving quality, this may depend on the rate setting methods and the state requirements associated with the Medicaid rates.

Access. Substantial research indicates access to nursing home care for Medicaid recipients is delayed, when compared to private-paying individuals, with longer delays for Medicaid recipients who are functionally more dependent (Ettner, 1993; Feder & Scanlon, 1980; Friedman, 1982; Greenless, Marshall, & Yett, 1982; USGAO, 1990; Reschovsky, 1996; Swan, Harrington, Studer, DeWitt & Pickard, 2000). Medicaid use of nursing facilities is known to be restricted (or hampered) by the segmented market that arises because Medicaid programs pay, on average, only 70-80 percent of Medicare and self-pay reimbursement rates (Swan et al. 2000).

Research findings suggest that lower payment rates are associated with reduced access to nursing home care for Medicaid recipients (Gertler, 1992). Evidence also indicates that nursing facility operators prefer to admit Medicare and self-pay residents instead of Medicaid recipients, whose care is reimbursed at relatively lower levels. Medicaid-funded residents also tend to be concentrated in facilities that provide poorer quality care (Harrington-Meyer, 2001; Mor et al., 2004).

Moreover, studies show that facilities with higher proportions of Medicaid residents tend to have fewer nurses as well as lower quality care (Donoghue, 2006; Grabowski, 2001a,b; Harrington, et al., 1998; Harrington, Swan & Carrillo, 2007; Mor, Zinn, Angelelli, Teno & Miller, 2004; Nyman, 1988). Street and colleagues (2003) showed that as the gap between Medicaid reimbursement and rates of other payers grew, for-profit facilities admitted fewer Medicaid

residents while non-profit nursing facilities increased their percentage of Medicaid admissions. A longitudinal analysis of California data (1995-2000) found that while the number of statewide Medicaid nursing home residents, expenditures, and the percent of Medicaid days of care remained stable, Medicaid market segmentation persisted with program participants distributed unevenly among facilities (Kitchener, Swan, & Harrington, 2006).

Reimbursement systems that account for facility costs, including adjustments to account for resident case mix, are important steps to assure improved access to nursing facilities for Medi-Cal recipients. A recent study, for example, found that adoption of case-mix adjusted Medicaid payment systems increased access to nursing home care for higher acuity Medicaid residents (Feng, Grabowski, Intrator & Mor, 2006). With higher Medicaid rates, facilities should have an incentive to accept residents with higher acuity. In addition, the new California reimbursement system, with its higher Medi-Cal rates, should give nursing facilities incentives to accept more Medi-Cal patient admissions and to provide more days of care.

Quality. This study used four measures of quality to evaluate the effects of the new reimbursement system: (1) staffing levels and types; (2) staff turnover rates; (3) deficiencies and citations; and (1) complaints.

First, one of the most important measures of quality of care in nursing facilities is the level of staffing provided (Cohen & Spector, 1996; Institute of Medicine (IOM), 2001; Schnelle, Simmons, Harrington, Cadogan et al., 2004). There is wide variation among nursing facilities in the amount and type of nursing service they provide to residents (Zinn, 1993; IOM, 1996, 2001; Harrington et al., 1998; Harrington & Swan, 2003; Harrington, Zimmerman, Karon, Robinson & Beutel, 2000). Several studies have found that higher Medicaid reimbursement rates encourage facilities to provide more nursing care (Aaronson et al., 1994; Cohen & Dubay, 1990; Cohen & Spector, 1996; Harrington, Swan & Carrillo, 2007; Grabowski, 2001a,b; Zinn, 1993). In a study

of nursing facilities, Feng and colleagues (2008) found that higher Medicaid payments were associated with increases in total staffing levels, but also with reduced RN staffing levels, showing no improvement in staffing mix and effect on quality.

The influence of higher staffing levels, typically measured as hours of care per resident day (hprd), and other staffing characteristics in the nation's long-term care (LTC) facilities have been repeatedly associated with an array of better outcomes, including fewer adverse events and lower costs of care for residents, and these findings have been summarized in a systematic review and several noteworthy IOM publications (Bostick, Rantz, Flesner, & Riggs, 2006; Institute of Medicine, 1986, 1996, 2001, 2003). Substantial evidence exists within the peer reviewed literature that higher staffing levels and/or more favorable registered nurse/licensed practical nurse (RN/LPN) skill mix ratios are associated with a range of quality outcomes, including: improved functional ability, reduced mortality, fewer deficiencies in the first year after admission to a LTC facility (Bliesmer, Smayling, Kane, & Shannon, 1998; Braun, 1991; Cohen & Spector, 1996); earlier discharges from nursing facilities (Braun, 1991); fewer pressure ulcers (Aaronson et al., 1994); fewer catheterized residents resulting in fewer urinary tract infections (UTIs) and less use of antibiotics (Cherry, 1991); fewer deficiencies (Dellefield, 2006; Harrington et al., 2000); decreased weight loss and acute care hospitalizations (Horn, Buerhaus, Bergstrom & Smout, 2005); increased likelihood of recovery and stabilization (Decker, 2006); decreased hospitalizations (Decker, 2008), and an increased likelihood of residents being discharged to the community (Jette, Warren & Wirtalla, 2004).

A number of states have established mandatory minimum staffing standards for all nursing facilities. California established a minimum staffing level of 3.2 hours per resident day (hprd) of total nursing care in 2000 (Harrington, 2005; Harrington & O'Meara, 2006). However, the California minimum hour standard is substantially below the level recommended by experts (i.e.,

total direct care staffing of 4.1 hprd and RN staffing of 0.75 hprd) to prevent harm and ensure the safety of residents (Schnelle et al., 2004; USCMS, 2001). As previously discussed, the type of nursing and nursing skill mix are also important because studies have found that facilities with higher levels of RN staffing have significantly better quality outcomes (USCMS, 2001). Staffing levels should increase over time after the new reimbursement system is implemented.

Second, nursing staff turnover in nursing facilities is another important indicator of quality (Bostick et al., 2006) and of staff satisfaction, which in turn may affect the continuity and stability of resident care (Harrington & Swan, 2003; USCMS, 2001). High turnover rates may be directly related to poor staff morale, shortages of staff, and poor quality of care (U.S. CMS, 2001). Although some recent literature indicates that turnover and quality may not be linearly related and that in fact some level of turnover may not be problematic (Castle & Engberg, 2007; Castle, Engberg & Men 2007); generally speaking, however, higher turnover rates have been associated with worse outcomes, including substantially increased rates of infectious disease and acute care hospitalizations, both of which can lead to higher (and potentially-avoidable) expenditures for the Medicare and Medicaid programs (Zimmerman, Gruber-Baldini, Hebel, Sloane & Magaziner, 2002). Evidence also suggests that for all caregivers, lower staffing levels, lower quality, for-profit ownership, and larger sized nursing homes (i.e., more beds) are associated with higher turnover rates (Castle & Engberg, 2006). Staff turnover has also been found to be a negative predictor of RN and nursing assistant staffing levels (Harrington & Swan, 2003; Kash, Castle, Naufal & Hawes, 2006). In addition, very low or very high levels of nursing assistant and LPN turnover and moderate to high levels of RN turnover have been associated with lower quality care (e.g., restraint use, urinary catheterization, contractures, pressure sores, psychoactive drug use, and survey deficiencies) (Castle & Engberg, 2005).

Reducing turnover and stabilizing the LTC workforce not only has quality of care implications for nursing facilities, but also considerable cost repercussions for the LTC industry. For example, the National Commission on Nursing Workforce for Long-Term Care has reported that costs associated with nursing assistant turnover are about $4 billion dollars per year nationally, or approximately $250,000 per facility (Seaver, 2004). In an early study, Caudill and Patrick (1991) estimated that the cost to nursing facilities to replace a single nursing assistant or RN staff member was $2,200 and $7,000, respectively. Both the Hartford panel and a study by Straker and Atchley (1999), however, noted that relatively minor increases in the value of benefits and salary can substantially stabilize the LTC workforce. California has had high turnover rates and a history of wide variation in rates across the state. It is expected that higher Medi-Cal reimbursement rates will result in lower staff turnover rates, which should also be associated with improved quality of care.

Third, deficiencies are given to nursing facilities for violations of federal quality regulations established by the Centers for Medicare and Medicaid Services (CMS) and state citations (fines) are given for violations of state regulations. State licensing and certification agencies are responsible for conducting periodic surveys to determine if nursing homes are compliant with federal and/or state quality regulations and to determine whether facilities are eligible (or remain eligible) to be certified to receive payments from the Medicare and/or Medicaid programs. State survey agencies, using CMS guidelines, rate deficiencies on the basis of their scope and severity and the most serious quality violations may be given citations (fines). A high number of deficiencies, for example, have been linked to lower staffing levels and for-profit, or proprietary status, both of which have been frequently associated with lower quality of care (Akinci & Krolokowski, 2005; Moseley & Jones, 2003; O'Neill, Harrington, Kitchener & Saliba, 2003). Reimbursement rates are related to nursing home quality as measured by deficiencies and

with higher state Medicaid rates resulting in reductions in deficiencies (Grabowski, 2001 a, b; Zhang & Wan 2007). Deficiencies and citations are the evaluations by states about poor quality and are used in this study for comparison purposes (Harrington, Mullan & Carrillo, 2004).

Fourth, complaints by residents, family members, advocates, ombudsman, and others about poor nursing home quality may be filed with the state licensing and certification agency. When complaints to state licensing and certification agencies are investigated and substantiated (confirmed), the states may issue deficiencies for violations of quality requirements (Stevenson, 2005). Consumer complaint investigations are essential to nursing home quality assurance. Evidence suggests that nursing home complaints appear to offer a real-time signal of quality concerns from the consumer's perspective, correspond strongly with existing quality measures, and reveal a nursing home's quality trajectory between survey visits (Stevenson, 2006). Consumer complaints, therefore, are important indicators of nursing home quality (Stevenson, 2006; Harrington, Mullan & Carrillo, 2004).

Financial Performance. Financial indicators used in this study include: (1) health care revenues; (2) expenditures per resident day on direct care services, indirect care, administration, and capital; (3) wage and benefit levels for nursing personnel; and (4) measures of profitability.

Direct care expenditures per resident day indicate how much is spent for the different services and activities for an average resident on a daily basis. One recent study indicates that higher administrative expense ratios had a negative impact on both staffing levels and staff turnover rates (Kash, Castle & Phillips, 2007).

Wages and benefits are important factors related to the quality of care in nursing facilities. The wages of nursing assistants are near the poverty level (Muntaner, Li, Xue, Thompson, Chung & O'Campo, 2006), generally below a living wage, and many of these workers do not have benefits. Wages may be low because facility owners, or managers, have decided to keep them low

to maximize profits or because the facility is having financial problems. They may be kept low in facilities with a high percentage of Medi-Cal residents because Medi-Cal reimbursement rates have typically been lower than those for all other payers. Regardless of the reason, however, low wages can result in staff shortages and higher turnover rates (Harrington & Swan, 2003). As previously discussed, relatively minor increases in the value of benefits and salary can substantially stabilize the LTC workforce (Harrington et al., 2000; Straker & Atchley, 1999). Higher benefit levels are related to higher staffing levels (Kash, et al., 2007). As such, it was critical for this study to evaluate the effects of the new reimbursement methodology on wages and benefits paid to nursing home staff.

Profitability (the difference between facility revenues and expenditures), net income, or operating margins convey information about the financial stability of an organization and are important to all nursing facilities (Kitchener, O'Neill & Harrington, 2005). If these measures carry a positive sign, they indicate that a facility made a profit and it may be financially stable. If the numbers are negative, the facility is operating at a loss and it may be financially unstable, and this could lead to quality of care problems. Facilities with very high profits may be earning (excessive) profits at the expense of good quality resident care (O'Neill et al., 2003). Higher profit ratios have been associated with lower staffing levels, but were not related to turnover rates in a recent study (Kash et al., 2007). The overall performance of individual facilities is obviously important to the survival of a facility. Profitability and financial stability measures should improve after the implementation of the new reimbursement system.

Variations by Facility Characteristics. Nursing facilities may respond differently to, or be differentially affected by, the changes in California's Medi-Cal reimbursement rates. We examined the impact of the new rate-setting system by comparing: (1) for-profit versus non-profit nursing facilities; (2) chain versus non-chain organizations; (3) very large, large, medium, and

small nursing facilities; and (4) facilities with high, medium, and low percentages of Medi-Cal revenues. Previous studies have shown that facility characteristics account for major differences in access, quality and costs (Harrington, Woolhandler, Mullan, Carrillo & Himmelstein, 2001).

Different types of facilities are expected to have different responses to the rate changes. For example, facilities that are more dependent on Medi-Cal revenues may be more cautious in making changes and may be waiting to evaluate the impact of the rates after the first year of the new system. Alternatively, some facilities may seek to benefit from the Medi-Cal increases in revenues, which may, in turn, result in increased staffing levels, lower turnover rates, and improved quality outcomes. Non-profit facilities may be more willing to accept Medi-Cal residents when they receive higher rates, whereas for-profit facilities may increase staffing levels and reduce staff turnover so that their staffing levels and rates become comparable to their non-profit counterparts. Likewise, for-profit chains may increase staffing and reduce turnover rates. Facilities receiving higher rates for the capital cost center should increase spending on capital projects, but this may vary by ownership, by percent Medi-Cal revenues, or by geographic location. Finally, there may also be differences in the impact of the new rates by geographical regions because rates vary by geographical peer groups.

METHODS

This study used secondary data from public use data files to examine the impact of AB 1629 (2004) on three types of outcomes: (1) access to nursing home services (i.e., Medi-Cal days of care and the number of facilities providing care to Medi-Cal recipients); (2) quality of care (measured by complaints, federal and state deficiencies and citations, staffing levels, types of staffing and turnover rates); and (3) nursing home revenues and expenditures (i.e., spending patterns by cost center for direct care, indirect care, capital, and administration costs and profits).

In addition, we examined variations in outcomes by facility characteristics (i.e., ownership, chains, size, Medi-Cal payment levels, and geographic region).

For this analysis, the nursing home population, facilities that accept Medi-Cal and have complete financial data for the period between 2001 and 2006, was divided into the following three primary groups and analyzed separately: (1) freestanding non-subacute nursing facilities; (2) subacute care facilities; and, (3) nursing facilities in multi-level retirement communities (MLRCs). Subacute care facilities have dedicated subacute units, but they may also have regular nursing facility units. The MLRCs were analyzed separately because these facilities were not subject to the new QAF and they are a special type of facility not available to all individuals. The MLRCs were all non-subacute facilities (except one facility which was excluded from our analyses because it was unique).

Hospital-based facilities and government-owned nursing facilities were also excluded from the analysis because they are subject to different reimbursement rates and reporting methodologies. The intermediate care facilities for the developmentally disabled (ICF-DD), intermediate care facilities for mental diseases (IMDs), and other intermediate care facilities were excluded because of their unique features and different regulatory requirements. In addition, 29 free-standing nursing facilities were excluded from the study because they closed during the 2001-2006 period. Among facilities that had closed, nine ceased operations in 2004, two closed in 2005, and two facilities closed in 2006. Another 70 facilities were excluded because they lacked data for some portion of the six year time period that was evaluated in this study.

One thousand ninety three (1,093) freestanding nursing facilities with data for the six years were identified for this study. The 94 facilities that did not accept Medi-Cal residents in 2006 were excluded from the study. Four other facilities were excluded because they had missing or erroneous financial data reported. After these exclusions, data from 995 facilities were available

for analysis. These included 892 non-subacute nursing facilities, 47 subacute facilities, and 55 non-subacute nursing facilities in MLRCs (one exempt subacute facility was not included in the analyses). Data from each of the three subgroups were analyzed separately.

Sources of Data. Multiple sources of secondary data were used for this study including: (1) Medi-Cal rate data; (2) Office of Statewide Health Planning and Development (OSHPD) annual cost reports; (3) deficiency and complaint data from the federal government's Automated Survey Processing Environment (ASPEN) and citation data from the state's Electronic Licensing Management System (ELMS); and (4) casemix (acuity) data from the Centers for Medicare and Medicaid Services (CMS). We did not have access to the supplemental cost reports collected by DHS and we were therefore unable to report specific revenues related to pass-through costs including those for training and liability insurance.

For access, the number of resident admissions and days of care for Medicare residents, Medi-Cal residents, private payers, and direct out-of-pocket payments by residents were examined using OSHPD uniform cost report data. With the new reimbursement system it was expected that the number of Medi-Cal admissions and Medi-Cal days of care would increase in comparison to both private payers and Medicare resident days. The number of facilities that provided services to Medi-Cal residents were examined to see if this hypothesis was supported.

For quality measures related to staffing characteristics, we evaluated OSHPD variables that are commonly examined in the research literature, including staffing levels by types of nurses and turnover rates. We also examined casemix and acuity levels from the CMS Resource Utilization Group (RUG) scores to determine if nursing homes admitted more acutely ill residents after the new reimbursement system was introduced. For details on staffing standards and definitions and casemix acuity measures, see Appendix D. For quality outcome measures, federal deficiencies and complaint data were evaluated using information from the California Licensing and Certification

Program known as ASPEN. Citation data were from the Electronic Licensing Management System (ELMS) data from Licensing and Certification. For definitions and classifications of deficiencies, citations and complaints, see Appendix E.

For the cost analyses, revenue and expenditure data from the OHSPD annual cost reports and the California Department of Health (CA DHS) rate data were examined. For information on the state's reimbursement rates for the seven geographic regions, see Appendix B. Standard definitions of financial measures, defined by DHS and OHSPD, were used to evaluate data for total revenues and expenditures by cost centers. This included analyses of changes in wages and benefits levels, as well as data on profitability measures. For details of definitions and cost center categories, see Appendix C. For a description of days of care and admission measures, see Appendix F.

One issue that can influence the financial analyses findings is the variation in facility reporting periods. For example, all fiscal year data reported by nursing facilities with an end date in calendar year 2006 is considered 2006 data; however, some facilities may not have a full calendar year of data for 2006. Of the 892 nursing facilities, 689 reported in December of 2006 with a full year of data, but 132 facilities reported between February and June of 2006 and 71 facilities reported between July and November of 2006. Facilities with earlier reporting dates, would be expected to have made fewer changes than nursing homes (in our dataset with a full year of data for 2006) that had had an opportunity to benefit from the new reimbursement rates for an entire year. We did not disaggregate the data to account for this potential difference.

DATA ANALYSES

For all research questions, the changes over time from 2001 through 2006 were analyzed with an emphasis on the period immediately before enactment of the legislation (calendar year 2004) and the period after adoption of the new reimbursement system (calendar year 2006).

Analyses by Type of Facility. The most recent data from the state was collected for each data set and the data were cleaned (examining, adjusting and/or removing outliers as appropriate) for the three types of facilities: non-subacute nursing facilities, subacute care facilities, and exempt facilities (i.e., MLRCs). A complete dataset was developed with each variable for each facility for the period between 2001 and 2006.

For the first three research questions, basic descriptive statistics were used to test for significant differences using two time periods (with alpha at the .05 level for hypotheses testing). Annual data were analyzed for each outcome variable including: access, quality of care, staffing, wages and benefits, turnover rates, revenues, expenditures, and profit measures. The study identified any changes over time in all of these measures. Paired t-tests were used to test the null hypothesis that the mean difference between the two time periods was zero (i.e., 2001 vs. 2006 and 2004 vs. 2006). Data from these analyses and significant differences at the .001, .01, and the .05 levels are reported in Tables 1 through 14.

Analyses of Facility Characteristics. In addition to basic descriptive data analysis and to evaluate the last research question, separate analyses were undertaken to examine each of the outcomes by subgroups of facility characteristics including: (1) for-profit versus non-profit facilities; (2) chains versus non-chains; (3) nursing facility size, (4) percent Medi-Cal revenues; and (5) geographical areas. Chain facilities are those that report being a part of an organization with two or more facilities. Facilities were grouped into four categories based on the number of beds: small (59 beds or less), medium (60-99 beds), large (100 to149 beds), and very large (150 or more beds). Medi-Cal revenues in nursing homes were classified into three categories based on the percent of Medi-Cal revenues they received (i.e., high, medium, or low) by dividing the facilities into thirds based on their 2006 Medi-Cal revenue levels. Facilities that received 49.04 percent (or less) of their revenues from the Medi-Cal program were classified as having a low

level of Medi-Cal revenues. Facilities that received 66.27 percent or more of their revenue from Medi-Cal were high, and the remainder was classified as medium. A few facilities changed their characteristics over the 2001 to 2006 time period and were omitted from the analysis as follows: 3 facilities from the ownership analysis and 14 from the size analysis. The seven geographical peer groups were also evaluated for differences in outcome measures.

Since the number of the facilities in both the subacute care and the exempt categories (i.e., MLRCs) were small (i.e., N= 47 and N = 55), our subgroup analyses by type of facility characteristics were restricted to the non-subacute and non-exempt nursing facilities in the dataset (N=892). For these analyses, the five characteristics were examined using 12 types of variables to test for significant differences between the types of facilities and to test for changes between 2004 and 2006. The variables evaluated in this analyses included: the number of Medi-Cal days, registered nursing hours per resident day, total nursing hours per resident day, nursing assistant hourly wages and hours of care, nursing turnover, total citations and deficiencies, substantiated complaints, average total revenues per day, average administrative expenses per day, average direct care expenses per day, average total expenses per day and net health care operating margin. Only significant findings are reported (see Appendix G for comparisons: Tables 15-42).

A repeated measures analysis was used to test for differences between the variables (to compare results for each facility characteristic), using each of the 12 groups of variables, for 2004 and 2006. Examinations were made both on whether there were differences in the findings for each of the five types of facility characteristics and whether there were differences between the findings for the two comparison years. The most important test was whether the effect of within-facilities changes was different from the between-facility changes over time. Significant differences at the .001, .01, and the .05 levels are shown (Tables 15-41 in Appendix G).

FINDINGS

OVERALL FACILITY REVENUES

After enactment of the new statute, the average Medi-Cal revenues per day for nursing facility increased from about $124 per day in 2004 to $152 per day in 2006. The average Medi-Cal revenues per day in subacute care facilities increased from about $178 in 2004 to $222 in 2006. Among MLRC facilities, average revenues per day grew from $110 to $148 between 2004 and 2006. During that period, revenues from Medi-Cal increased by $590 million and funding from all sources increased by $1.1 billion for all types of California nursing homes.

NURSING FACILITIES

The first series of analyses, presents descriptive data on the 892 nursing facilities that were non-subacute and not exempt from the QAF imposed by the Reimbursement Act (see Tables 1-7). This is followed by analyses of subacute faculties (Tables 9-14) and a discussion (without tables) of the MLRC facilities.

Access to Nursing Facility Care

Nursing Facility Admissions, Discharges, Occupancy Rates and Length of Stay. Table 1 shows that total admissions in nursing facilities significantly increased by 17 percent from 201,002 admissions (in 2001) to 235,985 (in 2006). The total admissions increased by 7.8 percent between 2004 and 2006. The total discharges increased by 19.5 percent between 2001 and 2006 and increased by 9.9 percent between 2004 and 2006. The discharges were greater than the admissions because the average length of stay (LOS) declined from 143 days in 2001, to 134 days in 2004, and decreased further to 124 days in 2006 (equivalent to an 8 percent decline in LOS between 2004 and 2006). Occupancy rates have remained stable at about 89 percent since 2002.

Table 1. California Nursing Facility Days, Admissions & Discharges, 2001-2006 (Non-Subacute and Non-Exempt Facilities, N=892)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-06		Percent Change 2004-06	
Total Admissions	201,002	208,559	213,168	218,933	221,259	235,985	17.40%	***	7.79%	***
Avg. Admissions	225	234	239	245	248	265	17.40%	***	7.79%	***
Admission Rate/1000	5.84	5.94	5.97	6.04	6.02	6.34	8.71%	***	5.06%	**
Total Discharges	200,635	207,163	213,275	218,104	220,632	239,790	19.52%	***	9.94%	**
Avg. Discharges	225	232	239	245	247	269	19.52%	***	9.94%	**
Avg. Occupancy Rate	87.7	88.5	88.9	88.8	89.0	88.7	1.05%	**	-0.15%	
Avg. Length of Stay per Admission	143	140	137	134	129	124	-13.70%		-8.09%	
Total Days	28,778,978	29,191,112	29,171,320	29,432,372	28,498,919	29,159,344	1.32%	*	-0.93%	*
Total Medi-Cal Days	20,119,092	20,400,838	20,480,656	20,626,866	19,930,845	20,185,697	0.33%	ns	-2.14%	***
Percent of Days - Medi-Cal	68.8	68.9	69.3	69.1	69.2	68.7	-0.02%	ns	-0.46%	ns
Percent of Days - Medicare	6.9	7.9	9.1	9.9	10.7	11.5	65.74%	***	15.77%	***
Percent of Days- Other Payers	5.9	6.3	6.4	6.8	6.9	7.2	21.81%	***	5.55%	ns
Percent of Days- Self Pay	18.4	16.8	15.2	14.2	13.2	12.6	-31.56%	***	-11.37%	***

Paired t-test on means ***p<.001 **p<.01 *p<.05 (The means are not shown for some measures)
ns = not significant

Nursing Facility Days of Care. The new Medi-Cal reimbursement rate did not encourage nursing facilities to accept more Medi-Cal residents, as had been expected. Total days of care and total Medi-Cal days of care declined slightly between 2004 and 2006 as shown in Table 1, although the proportion of Medi-Cal days to total days of care remained steady during the period. The major change during the period was the increase in the percentage of resident days covered by Medicare, which increased from 7 percent in 2001 to 10 percent in 2004 and increased further to almost 12 percent by 2006. The percent of days paid directly by individuals (i.e., self-pay) declined by 11.4 percent between 2004 and 2006.

Quality of Care

Nursing Facility Staffing Levels. Total nurse staffing levels increased in California from 3.17 hours per resident day (hprd) in 2001 to 3.4 hprd in 2006, representing a 7 percent increase (Table 2). With the new Medi-Cal reimbursement rates, total staffing and professional staff were

expected to increase; however, total nurse staffing hours increased by only a modest amount (3 percent) between 2004 and 2006. The RN hours decreased by 8 percent between 2001 and 2006 but did increase slightly by 1.4 percent between 2004 and 2006. The largest percentage increase was in licensed vocational nurse hours, which increased by 20 percent between 2001 and 2006 and by 9 percent between 2004 and 2006. Overall, the staffing levels increased by only a small amount and remained well below the recommended levels of .75 hprd for RNs and 4.1 for total hours of care per resident day (US CMS, 2001).

Table 2. California Nursing Facility Staffing Levels, Turnover, and Casemix, 2001-2006 (Non-SubAcute and Non-Exempt Facilities N= 892)

	2001	2002	2003	2004	2005	2006	% Change 2001-06		% Change 2004-06	
Staffing Levels in Hours										
Nursing Assistant HPRD	2.24	2.32	2.33	2.34	2.38	2.37	5.9%	***	1.4%	***
Licensed Vocational Nurses HPRD	0.55	0.57	0.58	0.61	0.63	0.66	19.8%	***	9.3%	***
Registered Nurses HPRD	0.28	0.27	0.26	0.25	0.25	0.26	-8.2%	***	1.4%	ns
Total Nursing Staff HPRD	3.17	3.25	3.28	3.30	3.36	3.40	7.0%	***	3.0%	***
Facilities – Staffing [a]										
Staffing Less than 3.2 hprd	490	368	321	282	237	144	-70.6%	***	-48.9%	***
Staffing 3.2-4.09 hprd	381	492	545	583	625	709	85.6%		21.6%	
Staffing 4.1 hprd or higher	21	32	26	27	30	39	85.7%		44.4%	
% Turnover Rates										
Nursing Assistant Turnover	90.19	76.01	80.34	67.73	63.55	66.88	-25.8%	***	-1.3%	ns
Nursing Turnover	87.21	73.32	79.02	66.77	63.33	67.70	-22.4%	***	1.4%	ns
Resident Casemix/Acuity Categories										
% Rehabilitation needs	18.1	18.3	19.1	20.6	22.6	24	32.6%	***	16.5%	***
% Extensive, special, or complex nursing care	37.5	37.4	37.3	36.5	36	35.5	-5.3%	***	-2.7%	**
% Impaired cognition	10.8	10.6	10	9.6	9	8.7	-19.4%	***	-9.4%	***
% Behavioral problems	1.4	1.3	1.3	1.2	1.1	1.1	-21.4%	ns	-8.3%	ns
% Reduced physical functions	32.3	32.5	32.3	32.0	31.3	30.7	-5.0%	***	-4.1%	***
Average Casemix Index	1.05	1.05	1.07	1.10	1.14	1.18	12.5%	***	7.1%	***

Paired t-test on means ***p<.001 **p<.01 *p<.05 (The means are not shown for some measures)
a-Chi-square Test ns =not significant

Table 2 also shows the number of nursing facilities that met California's minimum state mandatory staffing standard of 3.2 hours per resident day that was implemented in 2000. After enactment of the 3.2 standard and as expected, this number declined from 490 facilities in 2001 to 282 facilities in 2004 and declined further to 144 facilities in 2006. It should be noted that these are just the nursing facilities that averaged below a level of 3.2 hprd for the entire year. It is unclear how 144 facilities remained out of compliance with the mandatory state staffing standards that were implemented in 2000. The number of facilities that met the staffing levels recommended by experts (i.e., 4.1 hprd or higher) increased from 21 to 39 facilities between 2001 and 2006. With the new Medi-Cal reimbursement rates, all nursing facilities should meet the state minimum standard and ideally, more facilities should have met the 4.1 hprd or a higher level of total staffing by 2006.

Nursing Facility Staff Turnover Rates. Nursing turnover rates declined from 90 percent in 2001 to about 67 percent in 2006 (Table 2). The new Medi-Cal reimbursement rate was expected to stabilize the LTC workforce by lowering staff turnover rates, which should improve quality. Staff turnover rates, however, actually increased by 1.4 percent for all nursing personnel between 2004 and 2006. Persistently elevated turnover rates compromise continuity of care and can jeopardize the quality of resident care.

Nursing Facility Resident Casemix. The average casemix, or acuity level, of residents in nursing facilities increased by 12.5 percent between 2001 and 2006 (Table 2) and also showed an increase between 2004 and 2006 of 7 percent. The casemix was 1.18 in 2006, which is similar to the national average casemix levels. The growth in the casemix index for residents is consistent with an increase in Medicare short-stay residents during the study period. These residents traditionally have higher casemix/acuity levels than the long-stay nursing home residents. The higher Medi-Cal reimbursement rates were expected to give facilities the opportunity to provide

greater access to residents with higher casemix/acuity rates. Because of the effects of increasing numbers of Medicare residents, however, it is not clear whether the Medi-Cal reimbursement rates encouraged the admission of Medi-Cal residents with higher casemix/acuity or if the observed increase in acuity was simply an effect of growth in the number of Medicare resident days.

Nursing Facility Deficiencies, Citations, and Complaints. Table 3 shows that nursing facilities received a total of 15,730 state citations and federal deficiencies in 2006, an increase of 5.8 percent between 2004 and 2006. The total and average number of state citations for violations of state regulations declined 29 percent, while the average number of federal deficiencies increased by 27 percent during the 2001 to 2006 period. Although the increased Medi-Cal reimbursement rates were expected to improve quality of care as measured by reduced numbers of deficiencies, this was not the case. During 2006, the number of deficiencies ranged from zero to sixty-nine, while the number of citations per nursing facility ranged from zero to nine.

Table 3 shows that 66 percent of facilities were found to be out of compliance with federal regulations during their annual inspection in 2006 (defined as having deficiencies with the potential to cause harm or jeopardy), 21.6 percent had serious non-compliance problems (deficiencies that caused actual harm or jeopardy), and 0.8 percent provided substandard care (these nursing homes should have been given notice of pending decertification from the Medicare and Medi-Cal programs if problems were not remedied). The percent of facilities with serious federal noncompliance problems increased by 125 percent between 2004 and 2006, while the number of facilities that provided substandard care increased by 33 percent between 2004 and 2006. Of the total nursing facilities, only 12 percent were in full compliance in 2006 and 88 percent were out of compliance with federal regulations in spite of the reimbursement rate increases.

Table 3. California Nursing Facility Deficiencies, Citations and Complaints, 2001-2006 (Non-SubAcute and Non-Exempt Facilities N= 892)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-2006		Percent Change 2004-06	
Total Citations	513	527	457	341	266	363	-29.24%	***	6.45%	ns
Avg. Citations	0.58	0.59	0.51	0.38	0.30	0.41	-29.24%	***	6.45%	ns
Total Federal Deficiencies	12,114	11,061	11,305	14,531	15,738	15,367	26.85%	***	5.75%	*
Avg. Deficiencies	13.58	12.40	12.67	16.29	17.64	17.23	26.85%	***	5.75%	*
Total Citations and Deficiencies	12,627	11,588	11,762	14,872	16,004	15,730	24.57%	***	5.77%	*
Avg. Total Citations and Deficiencies	14.16	12.99	13.19	16.67	17.94	17.63	24.57%	***	5.77%	*
% Federal Compliance or Substantial Compliance[a]	21.8%	25.0%	19.6%	16.7%	13.3%	11.8%	-45.87%	***	-29.34%	***
% Federal Noncompliance	62.6%	59.5%	72.1%	73.1%	72.5%	65.9%	5.27%		-9.85%	
% Federal Serious Noncompliance	14.9%	14.9%	8.0%	9.6%	13.8%	21.6%	44.97%		125%	
% Substandard Care	0.6%	0.6%	0.4%	0.6%	0.4%	0.8%	33.33%		33.33%	
Total Complaints	6,176	8,285	7,934	7,618	8,873	10,543	70.65%	***	38.40%	***
Substantiated Complaints	2,431	2,377	2,200	1,381	1,710	1,949	-19.83%	***	41.13%	***

Paired t-test on means ***p<.001 **p<.01 *p<.05 (The means are not shown for some measures)
a- Chi-square test. ns = not significant.

Table 3 also shows that the total number of complaints increased by 71% between 2001 and 2006. Although the increased Medi-Cal reimbursement rates were expected to reduce the numbers of complaints, the total number of complaints increased by 38 percent between 2004 and 2006 (rising to 10,543 complaints in 2006). The number of complaints per facility in 2006 ranged from zero to thirty-eight. The 38 percent increase in complaints from 2004 to 2006 is a strong indicator that care was actually getting worse during this period despite the intent of the new reimbursement system. Substantiated complaints increased by 41 percent from 2004 to 2006.

Nursing Facility Revenues and Expenditures

Revenues. Table 4 demonstrates that nursing facility total health care revenues from all payers (minus contractual deductions) increased from $4.1 to $5.8 billion between 2001 and 2006

Table 4. California Nursing Facility Revenues, 2001-2006
(Non-SubAcute and Non-Exempt Facilities, N= 892)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-06		Percent Change 2004-06	
Total Medi-Cal Revenue[a]	2,262,616,366	2,355,828,669	2,418,605,575	2,517,760,263	2,646,470,024	3,014,615,414	33.2%	***	19.7%	***
Total Medicare Revenue.[a]	797,122,303	955,161,578	1,059,526,081	1,240,739,646	1,377,005,550	1,568,139,783	96.7%	***	26.4%	***
Total Self Pay Revenue.[a]	681,845,526	668,268,860	640,146,196	619,173,879	602,159,021	623,412,836	-8.60%	***	0.7%	
Total Other Revenue[a]	379,962,539	412,922,703	432,104,957	470,098,116	491,905,229	590,055,807	55.3%	***	25.5%	***
Total Health Care Revenue[a]	4,121,546,734	4,392,181,810	4,550,382,809	4,847,771,904	5,117,539,824	5,796,223,840	40.6%	***	19.6%	***
Avg. Medi-Cal Revenue/Day	$113.14	$116.38	$119.15	$123.70	$133.69	$152.02	34.4%	***	22.9%	***
Avg. Medicare Revenue/ Day	406.63	432.29	407.61	434.21	453.20	472.86	16.3%	***	8.9%	*
Avg. Self Pay Revenue/ Day	138.81	148.14	155.53	161.15	172.11	180.00	29.7%	***	11.7%	***
Avg. Other Revenue/Day	254.97	207.10	213.24	212.59	220.66	252.99	-0.8%	ns	19.0%	***
Avg. Total Revenue/Day	143.60	150.87	156.48	165.53	180.31	198.67	38.3%	***	20.0%	***
CA CPI Adj. Revenue Total Rev/Day to 2001 $	143.60	$149.19	$150.64	$155.85	163.51	$174.53	21.5%		12.0%	
Avg. Percent Revenue Medi-Cal	57.1	56.1	55.7	54.6	54.5	55.3	-3.5%	***	0%	*
Avg. Percent Revenue Medicare	17.7	19.9	21.5	23.6	25.0	24.9	38.9%	***	8.7%	***
Avg. Percent Revenue Self Pay	17.6	16.2	14.8	13.7	12.4	11.4	-29.4%	***	-14.3%	***
Avg. Percent Revenue Other	7.6	7.8	8.0	8.1	8.1	8.3	9.2%	*	2.5%	ns

[a] Health Care Revenues from Payers After Contractual Deductions Paired t-test on means ***p<.001 **p<.01 *p<.05
(The means are not shown for some measures)
ns = not significant

(41 percent increase). Total Medi-Cal health care revenues minus deductions also increased from $2.2 to 3 billion (33 percent) between 2001 and 2006. As expected, total Medi-Cal revenues

increased by $496 million (20 percent) between 2004 and 2006 after the implementation of the new Medi-Cal reimbursement rate. Medicare revenues increased by 97 percent during the 2001-2006 period and by 26 percent for the time period between 2004 and 2006. In addition, revenues from private insurers and other payers also increased by 26 percent between 2004 and 2006. Overall, total revenues increased by $948 million, or 20 percent between 2004 and 2006

Table 4 shows that between 2001 and 2006 total revenues per resident day increased by 38 percent from approximately $144 to $199 per day, while Medi-Cal per diem revenue increased by 34 percent. Medi-Cal revenues per day increased from $124 to $152 per day between 2004 and 2006 (23 percent), which was 2 times higher than the rate of increase in Medicare revenues during the same period. When the level of Medi-Cal revenue was adjusted for inflation, using 2001 as the base value, the increase was 12 percent between 2004 and 2006 and 22 percent between 2001 and 2006. Despite the increase in Medi-Cal revenues, the Medi-Cal daily revenues (i.e., $152 per resident) were only 32 percent of the average per diem Medicare rate ($473 per day) for nursing facilities in 2006. Table 4 also shows that Medi-Cal revenues represented 55 percent of total revenues in 2006. Medicare increased (by 39 percent) from 18 percent of average facility revenues in 2001 to 25 percent in 2006. The percent of Medicare revenues, as a fraction of total revenues per day, increased by 8.9 percent between 2004 and 2006; in contrast, "out-of-pocket" (i.e., self-pay) revenues declined as a percent of the total revenues from 2004 and 2006.

Nursing Facility Expenditures. Table 5 shows the trends in average nursing facility expenditures per day. Total expenditures per resident day increased from $142 in 2001 to $193 per day in 2006 (36 percent). The total average expenditures increased by 17 percent between 2004 and 2006, or by about 9 percent when adjusted for inflation. During the period from 2004 to

Table 5. California Nursing Facility Average Expenditures, 2001-2006
(Non-Subacute and Non-Exempt Facilities, N= 892)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-06		Percent Change 2004-06	
Average Administration Expenses per Day	25.78	28.01	30.31	31.59	36.25	43.20	67.58%	***	36.75%	***
Average Capital Expenses per Day	13.23	13.35	13.25	13.62	14.24	15.44	16.73%	***	13.34%	***
Average Direct Care Expenses per Day	75.80	81.54	85.47	90.56	95.49	102.14	34.75%	***	12.79%	***
Average Other Care Expenses per Day	26.13	26.84	27.21	28.11	29.05	30.92	18.34%	***	9.98%	***
Average Property Taxes	0.75	0.80	0.81	0.84	0.88	0.92	23.29%	***	9.29%	***
Average Total Expenses per Day	141.68	150.53	157.05	164.73	175.71	192.62	35.96%	***	16.93%	***
CA CPI Adjusted Total Expenses per Day in 2001 $	141.68	148.19	151.19	155.10	159.34	169.21	19.43%		9.1%	
Average Percent Administration Expenses	18.17	18.59	19.22	19.01	20.55	22.44	23.54%	***	18.04%	***
Average Percent Capital Expenses	9.29	8.90	8.52	8.35	8.16	8.07	-13.19%	***	-3.45%	***
Average Percent Direct Care Expense	53.14	53.78	54.02	54.63	53.94	52.60	-1.01%	***	-3.71%	***
Average Percent Other Care Expenses	18.86	18.21	17.71	17.48	16.94	16.40	-13.06%	***	-6.22%	***
Average Percent Property Taxes	0.54	0.54	0.52	0.52	0.52	0.49	-9.08%	***	-5.91%	***

Paired t-test on means ***p<.001 **p<.01 *p<.05 (The means are not shown for some measures)

2006, administrative expenditures per day (including the new QAF) increased by 36.8 percent, capital expenditures by 13.3 percent, direct care expenditures by 12.8 percent, other care expenditures grew by 10 percent (i.e., maintenance, housekeeping & dietary expenses), and property taxes increased by 9.3 percent.

Overall, administrative expenditures had the highest growth rate (from $31.59 to $43.20 per day) between 2004 and 2006. Facilities were expected to have somewhat higher administrative expenditures because this cost center includes the new QAF ($6.73 per resident day in 2005-06). When $6.73 was subtracted from total administrative expenditures per day in 2006, the growth in administrative expenditures was 15.4 percent (instead of 36.8 percent) between 2004

and 2006, which is still higher than other cost center increases after adoption of the new Medi-Cal rate system. The cost center also includes pass through rates for license fees, training, and liability costs which could not be separated out from other administrative costs using cost report data.

Administrative expenditures increased from 19 percent to 22 percent of per day expenditures between 2004 and 2006. Capital expenditures declined from 9.3 percent to 8 percent of total expenditures between 2001 and 2006, and declined by 3.5 percent between 2004 and 2006. Direct care expenditures were 52.6 percent of total expenditures and other care expenditures accounted for 16.4 percent of total expenditures in 2006. Although direct care expenditures were expected to increase as a percentage of the total expenditures, expenditures for this important cost center actually declined by 3.7 percent between 2004 and 2006. Other care expenditures declined by 6 percent between 2004 and 2006 as a proportion of total expenditures.

Nursing Facility Wages and Benefits. Table 6 shows the trends in wages and benefit payments in California nursing facilities. Wages for nursing assistants increased from $9.93 in 2001 to $11.32 in 2006, representing a 14 percent increase. With the new Medi-Cal reimbursement rates, as expected, nursing assistant wages increased slightly by 71 cents per hour (6.6 percent), from $10.61 to $11.32 per hour between 2004 and 2006. However, when nursing assistant wages were adjusted for inflation, real wages grew by only 0.1 percent between 2001 and 2006 and decreased by 0.5 percent between 2004 and 2006. In contrast, nursing facility administrator wages increased by 11.3 percent and licensed nurse wages increased by 9 percent between 2004 and 2006. When adjusted for inflation, administrative wages grew by 12.3 percent between 2004 and 2006, while wages for licensed staff only increased by about 2 percent. Spending on benefits for employees showed a steady increase from $3.38 to $4.58 per hour between 2001 and 2004 (33 percent), but there was a surprising decline in benefits per hour (-1.8 percent) between 2004 and 2006 after enactment of the new reimbursement system.

Table 6. California Nursing Facility Wages and Benefits, 2001-2006
(Non-SubAcute and Non-Exempt Facilities N= 892)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-06		Percent Change 2004-06	
Administrative Wages/Hour	$31.43	$33.60	$35.60	$37.75	$39.86	$42.01	33.69%	***	11.29%	***
Nursing Assistant Wages/Hour	$9.93	$10.31	$10.48	$10.61	$10.84	$11.32	13.92%	***	6.62%	***
Licensed Nurse Wages/Hour	$20.80	$21.99	$22.81	$23.79	$24.79	$25.95	24.75%	***	9.08%	***
Benefits per Hour	$3.38	$3.79	$4.31	$4.58	$4.58	$4.50	33.14%	***	-1.79%	**
CA CPI adjusted in 2001 $ for Administrative wages	$31.43	$33.08	$34.27	$35.54	$36.15	$39.90	26.95%		12.3%	
CA CPI adjusted in 2001 $ for Licensed Nurse Wages	$20.80	$21.65	$21.96	$22.40	$22.48	$22.81	9.66%		1.8%	
CA CPI adjusted in 2001 $ for nursing assistant wages	$9.93	$10.15	$10.09	$9.99	$9.83	$9.94	0.1%		-0.5%	

Paired t-test on means ***p<.001 **p<.01 *p<.05

Nursing Facility Net Income. Nursing facilities became more profitable on average after the new reimbursement rates were introduced. Table 7 shows the trends in net income for California nursing facilities. The average nursing facility had a net income of $248,047 in 2006, which in nominal dollars represents an increase of 129 percent over 2001. The average net income of California nursing facilities increased by 233 percent between 2004 and 2006 following adoption of the new Medi-Cal reimbursement system.

Table 7. California Nursing Facility Net Income, 2001-2006
(Non-Subacute and Non-Exempt Facilities, N= 892)

	2001	2002	2003	2004	2005	2006	% Change 2001-06		% Change 2004-06	
Total Health Care Revenues [a]	$4,118,527,375	$4,358,654,069	$4,542,034,717	$4,843,934,145	$5,112,716,650	$5,790,304,723	40.6%		19.5%	
CA CPI Adjusted in 2001 $	$4,118,527,375	$4,290,815,095	$4,372,658,993	$4,560,663,142	$4,636,262,769	$5,086,621,857	23.5%		11.5%	
Total Health Care Expenditures	$4,021,873,665	$4,332,198,356	$4,528,512,147	$4,777,414,844	$4,946,248,220	$5,569,046,581	38.5%		16.6%	
CA CPI Adjusted in 2001 $	$4,021,873,665	$4,264,771,144	$4,359,640,689	$4,498,033,858	$4,485,307,525	$4,892,252,725	21.6%		8.8%	
Avg. Net Income from Health Care Operations [b]	$108,356	$63,291	$15,160	$74,573	$186,624	$248,047	128.9%	***	232.6%	***
Avg. Health Care Operating Margin (percent)	1.36	0.18	-0.24	0.30	2.22	2.54	86.8%	**	746.7%	***

[a] Total health revenues include those from payers and other health care revenues
[b] Net income from health care operations only. Paired t-test on means. ***p<.001 **p<.01 *p<.05 (The means are not shown for some measures)

Table 7 also shows the average operating margins of nursing facilities, which increased from 0.30 percent in 2004 to 2.54 percent in 2006 (by 747 percent between 2004 and 2006).

Despite the overall improvement in operating margins, there were wide differences in the financial solvency of nursing facilities in 2006. Overall, 274 facilities (31 percent) reported margins of zero or less and of those, 60 facilities had margins that were lower than a negative 10 percent.

The remaining 618 facilities reported positive net operating margins. Of those with positive profit margins, 359 facilities had margins above 5 percent, 101 had margins that exceeded 10 percent, and 77 facilities reported net positive operating margins above 14 percent (no table shown). Thus, 20 percent (178 facilities) had high profit margins.

The data were also examined for closure patterns of nursing facilities. Of the total number of nursing facilities providing non-subacute care, four closed after 2004, compared with 25 facilities that closed in the 2001-2004 period. The reasons for the closures are unknown, but could be related to poor quality of care, financial problems, or other reasons. Thus we might conclude that the new reimbursement rates may have slowed the rate of facility closures.

SUBACUTE FACILITIES

California had 48 nursing facilities that received the new Medi-Cal reimbursement rates for subacute resident care, and this included facilities that cared for residents who were ventilator and non-ventilator dependent. This analysis was restricted to 47 of these facilities because the remaining facility was exempt from the QAF. For the purposes of these analyses, any nursing facility that had at least one subacute care unit was classified as a subacute facility, even though some of these facilities may also have had regular nursing facility units.

Access to Care

Subacute Facility Resident Days of Care, Admissions, and Discharges. Table 8 reveals that the total number of resident admissions to subacute care nursing facilities was 17,901 in 2006, having declined slightly between 2001 and 2006 and more sharply (by 11.8 percent) between 2004 and 2006. Moreover, the rate of admissions per 1,000 members of the population declined by 14 percent between 2004 and 2006. Congruent with admission patterns, the total discharges from subacute nursing facilities also declined by 11.9 percent between 2004 and 2006. The occupancy rates of subacute facilities declined slightly over the 2001-2006 period and remained at about 88 percent in 2005 and 2006. The length of stay of residents, however, increased (by 4 percent between 2001 and 2006 and by 17 percent between 2004 and 2006).

Table 8. California Subacute Nursing Facility Days, Admissions, & Discharges, 2001-2006 (Non-Exempt Facilities, N= 47)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-06		Percent Change 2004-06	
Total Admissions	18,001	18,935	19,931	20,306	19,792	17,901	-0.56%	ns	-11.84%	ns
Ave Admissions	383	403	424	432	421	381	-0.56%	ns	-11.84%	ns
Admission Rate/1000	0.52	0.54	0.56	0.56	0.54	0.48	-7.92%	ns	-14.08%	ns
Total Discharges	18,196	18,591	20,206	20,276	19,705	17,856	-1.87%	ns	-11.94%	ns
Avg. Discharges	387	396	430	431	419	380	-1.87%	ns	-11.94%	ns
Avg. Occupancy Rate	86.92	87.76	88.21	87.17	88.69	87.91	1.14%	ns	0.85%	ns
Avg. Length of Stay per Admission	114.2	110.4	107.8	101.7	106.7	118.7	3.94%		16.72%	
Total Days	2,056,499	2,090,330	2,148,156	2,065,825	2,111,103	2,125,674	3.36%	ns	2.90%	ns
Total Medi-Cal Days	1,495,520	1,528,272	1,593,217	1,524,730	1,551,730	1,572,492	5.15%	ns	3.13%	ns
Percent Days Medi-Cal	72.4	73.3	74.0	74.0	74.0	74.4	2.84%	ns	0.53%	ns
Percent Days Medicare	7.0	7.8	8.1	8.6	9.3	9.8	39.70%	***	13.67%	*
Percent Days Other Payers	9.0	9.6	9.5	10.0	10.1	9.8	8.72%	ns	-1.87%	ns
Percent Days Self Pay	11.6	9.4	8.4	7.4	6.6	6.0	-48.30%	***	-18.67%	*

Paired t-test on means ***p<.001 **p<.01 *p<.05 (The means are not shown for some measures)
ns = not significant

Days of Care. The total days of care and Medi-Cal days of care in subacute nursing facilities increased by about 3 percent between 2004 and 2006 following enactment of the new reimbursement system (Table 8). This suggests that access to such facilities increased slightly; however, the percent of total days provided by subacute facilities to Medi-Cal residents has remained steady at 74 percent of total days between 2003 and 2006. In contrast and between 2004 and 2006, Medicare days increased as a percentage of total days by 14 percent and individual self-pay days declined by 18 percent.

Quality

Subacute Facility Staffing Levels. Table 9 indicates that the total nursing hours per resident day in subacute care facilities increased by 22 percent during the 2001 to 2006 period, and by 7.5 percent between 2004 and 2006. Although the average total staffing levels (4.37 hprd) in subacute facilities met or exceeded the 4.1 the level recommended by experts, 45 percent of subacute facilities had staffing levels below this recommended level in 2006. Encouragingly, the hours of RN staffing increased by 15 percent (to 0.56 hprd) between 2004 and 2006. Licensed vocational nursing hours increased by 24 percent between 2004 and 2006, while nursing assistant hours declined slightly. The average hours for licensed staff increased, as expected, after the new reimbursement rates were implemented. The average total hours of nursing care per resident day met the recommended standard (i.e., 4.1 hprd), but RN hours were 25 percent below the .75 hprd level recommended by experts (US CMS, 2001).

Table 9 reveals that the number of subacute facilities that met the minimum state staffing law of 3.2 hours per resident day increased. The number that failed to meet the standard declined from 14 facilities in 2001 to 4 facilities in 2004 and declined to 1 facility in 2006. Again, it is unclear how these facilities continued to remain out of compliance with state statutes that were implemented in FY 2000.

Table 9. California Subacute Nursing Facility Staffing, Turnover, and Casemix, 2001-2006 (Non-Exempt Facilities, N= 47)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-06		Percent Change 2004-06	
Staffing Levels in Hours										
Nursing Assistant HPRD	2.29	2.37	2.35	2.48	2.50	2.47	7.61%	**	-0.60%	ns
Licensed Vocational Nurses HPRD	0.71	0.82	0.90	1.00	1.15	1.24	73.22%	***	23.83%	**
Registered Nurses HPRD	0.46	0.46	0.44	0.48	0.55	0.56	20.28%	ns	14.98%	*
Total Nursing Staff HPRD	3.57	3.75	3.80	4.07	4.30	4.37	22.33%	***	7.48%	*
Facilities – Staffing[a] (Chi-square Test)										
Staffing Less than 3.2 hprd	14	7	9	4	3	1	-92.86%	***	-75.00%	*
Staffing 3.2-4.09 hprd	28	30	26	28	24	20	-28.57%		-28.57%	
Staffing 4.1 hprd or higher	5	10	12	15	20	26	420.00%		73.33%	
% Turnover Rates										
Nursing Assistant Turnover	78.34	67.88	86.21	75.09	72.60	58.50	-25.32%	**	-22.09%	ns
Nursing Turnover	79.38	68.87	87.87	79.20	70.10	63.32	-20.22%	*	-20.04%	ns
Casemix Categories										
Percent Rehabilitation Needs	27.3	27.9	27.3	27.9	29.6	32.1	17.58%	*	15.05%	*
Percent Extensive, Special, or Complex Nursing Care Needs	47.4	48.0	50.3	49.4	49.8	49.0	3.38%	ns	-0.81%	ns
Percent Impaired Cognition	5.0	4.6	4.1	4.5	4.0	3.7	-26.00%	***	-17.78%	*
Percent Behavioral Problems	0.4	0.4	0.3	0.2	0.2	0.4	0.00%	ns	100.00%	ns
Percent Reduced Physical Function	19.9	19.2	17.9	18	16.5	14.8	-25.63%	***	-17.78%	**
Average Casemix Index	1.28	1.33	1.34	1.35	1.41	1.46	14.06%	***	8.15%	** *

Paired t-test on means ***p<.001 **p<.01 *p<.05 (The means are not shown for some measures)
a- Chi-square test ns = not significant

In addition to the 3.2 staffing level, California has higher staffing requirements for Medi-Cal-funded subacute units. Subacute units must provide a minimum daily average of 3.8 actual licensed nursing hours per patient day and at least 2.0 certified nurse assistant hours per resident day (See Title 22, CCR, Section 51215.5). In 2006, 35 subacute care facilities (74 percent) met the 3.8 level compared to 32 facilities in 2004. Because facilities may have both subacute and non-subacute units, the remaining 26 percent of subacute facilities may be meeting the 3.8 standard for their subacute units, but this could not be ascertained because facilities do not report separate staffing data for the subacute units.

The number of nursing facilities that provided the staffing levels at 4.1 hours per resident day, which is recommended by experts, steadily increased from 15 to 26 facilities (31 to 55

percent of facilities) between 2004 and 2006. Considering that subacute nursing facilities receive higher revenues per resident and care for residents with high casemix, they would be expected to have higher staffing levels than they reported.

Subacute Facility Turnover. As the total licensed nursing staff hours increased in subacute facilities, nursing assistant turnover decreased by 22 percent and total nursing staff turnover declined by 20 percent in the 2004-2006 period (Table 9). This is consistent with the expectation that subacute facilities would increase staffing and decrease staff turnover after the new reimbursement rates were provided. It should be noted, however, that staff turnover rates of 63 percent in 2006 are still higher than those found in most other industries and may be associated with poor quality.

Subacute Facility Resident Casemix/Acuity. Table 9 also includes resident acuity level data for subacute care facilities. The average subacute casemix index was 1.46 in 2006, which is considered high, and was 24 percent higher than the 1.18 index for nursing facilities.

In 2006, the majority of residents in these facilities had extensive nursing needs (49 percent) or needed rehabilitation care (32 percent). Residents classified as needing rehabilitation services increased by 15 percent between 2004 and 2006, while the percent of residents with other care needs declined. The overall casemix index increased by 14 percent during the period between 2001 and 2006 and by 8 percent between 2004 and 2006. This suggests that the new Medi-Cal reimbursement rate may have encouraged subacute facilities to accept or retain more Med-Cal residents with higher acuity and/or, alternatively these facilities may have admitted more Medicare residents, who typically have a higher casemix/acuity measure.

Subacute Facility Citations, Deficiencies, and Complaints. Table 10 shows the trends in quality measured by the average number of state citations and federal deficiencies issued by the state Licensing and Certification Program. Although these measures of quality were expected to

Table 10. California Subacute Nursing Facility Citations, Deficiencies, and Complaints, 2001-06 (Non-Exempt Facilities, N= 47)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-06		Percent Change 2004-06	
Total Citations	24	23	23	15	10	21	-12.50%	ns	40.00%	ns
Average Citations	0.51	0.49	0.49	0.32	0.21	0.45	-12.50%	ns	40.00%	ns
Total Federal Deficiencies	675	555	601	742	884	896	32.74%	*	20.75%	*
Average Deficiencies	14.36	11.81	12.79	15.79	18.81	19.06	32.74%	*	20.75%	*
Total Citations and Deficiencies	699	578	624	757	894	917	31.19%	*	21.14%	*
Total Average Citations and Deficiencies	14.87	12.30	13.28	16.11	19.02	19.51	31.19%	*	21.14%	*
Percent Federal Compliance/Substantial Compliance [a]	31.1%	23.8%	25.6%	15.9%	15.2%	7.0%	-77.49%	**	-55.97%	**
Percent Federal Noncompliance	53.3%	64.3%	65.1%	79.6%	63.0%	58.1%	9.01%		-27.01%	
Percent Federal Serious Noncompliance	15.6%	11.9%	9.3%	4.6%	21.7%	32.6%	108.97%		608.70%	
Percent Substandard Care	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	0.00%		230.00%	
Total Complaints & Incidents	452	534	484	395	522	574	26.99%	ns	45.32%	**
Substantiated Complaints	140	153	128	116	158	117	-16.43%	ns	0.86%	ns

Paired t-test on means ***p<.001 **p<.01 *p<.05 (The means are not shown for some measures)
a= Chi-square test where serious noncompliance and substandard care were combined. ns = not significant.

decline (i.e., fewer deficiencies because quality of care was expected to improve) between 2004 and 2006, the total number of citations and total deficiencies received by subacute facilities increased by 21 percent. While the percent of subacute facilities that were found to be out of compliance with federal regulations during their annual inspection (i.e., received deficiencies that had the potential to cause harm or jeopardy) declined by 27 percent, the percent of nursing facilities that were in serious noncompliance with federal requirements (i.e. received deficiencies for harm or jeopardy) increased by 609 percent. In addition, the percent of facilities providing substandard care increased by 230 percent between 2004 and 2006. Overall, 93 percent of subacute facilities were found to be out of compliance with federal regulations in 2006.

The total number of complaints submitted to the Licensing and Certification Program for subacute facilities increased by 45 percent between 2004 and 2006, and the number of substantiated complaints increased by one percent during the same period. These results indicate, contrary to our expectations, that quality of care actually declined between 2004 and 2006.

Nursing Facility Revenues and Expenditures

Subacute Facility Revenues. Table 11 shows that total subacute care facility health care revenues (minus deductions) increased from $351 million in 2001 to $525 million in 2006 (49 percent increase). In the period between 2004 and 2006, health care revenues for subacute facilities increased by 22 percent, which was attributable to a 27 percent, or $73 million, increase in Medi-Cal revenue and a 23 percent increase in Medicare revenue.

The average total revenues per resident day increased from $173 in 2001 to $253 in 2006, representing a 46 percent increase (Table 11). However and when adjusted for inflation, 2006 total revenues grew less dramatically (by about 12 percent) between 2004 and 2006. Average Medi-Cal revenues per day increased from $144 in 2001 to approximately $222 in 2006 (54 percent increase). The increase in average total subacute revenues per day was 20 percent from 2004 to 2006; during the same period, Medi-Cal revenues per day grew by 25 percent. In contrast, Medicare revenues declined by about 3 percent per day; other or private pay revenues increased by 15 percent and self-pay revenues grew by 9.5 percent between 2004 and 2006. Medi-Cal provided 60 percent of total revenues in 2001, which increased to 65 percent by 2006. Between 2004 and 2006, Med-Cal revenues, as a proportion of total subacute revenues, grew by approximately 5 percent. The percent of total revenues provided by the Medicare program remained stable at 17 to 19 percent between 2001 and 2006. Self-pay revenues declined by 50 percent in the 2001-2006 period and by nearly 24 percent between 2004 and 2006.

Table 11. California Subacute Nursing Facility Revenues, 2001-2006 (Non-Exempt Facilities, N= 47)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-2006		Percent Change 2004-06	
Total Medi-Cal Revenue [a]	$214,264,249	$229,275,140	$258,245,731	$266,401,328	$296,871,349	$339,157,564	58.3%	***	27.3%	***
Total Medicare Revenue [a]	$56,691,851	$63,239,763	$70,832,109	$74,316,558	$85,275,673	$91,526,411	61.4%	***	23.2%	*
Total Self Pay Revenue [a]	$34,261,997	$31,019,780	$29,906,518	$27,895,143	$28,170,180	$27,368,034	-20.1%	ns	-1.9%	ns
Total Other Revenue [a]	$46,224,320	$54,836,532	$59,875,355	$61,313,374	$66,046,762	$66,594,490	44.1%	**	8.6%	ns
Total Revenue [a]	$351,442,417	$378,371,215	$418,859,713	$429,926,403	$476,363,964	$524,646,499	49.3%	***	22.0%	***
Avg. Medi-Cal Revenue per Day	$144.40	$151.21	$161.70	$177.76	$195.55	$221.89	53.7%	***	24.8%	***
Avg. Medicare Revenue per Day	$773.23	$445.76	$430.30	$429.11	$451.84	$414.57	-46.4%	ns	-3.4%	ns
Avg. Self Pay Revenue per Day	$158.90	$173.64	$190.70	$206.6	$221.48	$226.24	42.4%	***	9.5%	ns
Avg. Other Revenue per Day	$230.65	$262.27	$272.62	$264.26	$286.32	$302.74	31.3%	***	14.6%	**
Avg. Total Revenue per Day	$173.25	$183.43	$195.92	$211.127	$229.87	$252.86	46.0%	***	19.8%	***
CA CPI Adjusted In 2001 $	$173.25	$180.58	$188.61	$198.78	$208.45	$222.13	28.2%		11.8%	
Avg. Percent Revenue Medi-Cal	60.1%	60.3%	61.2%	62.2%	62.7%	65.0%	8.3%	*	4.8%	ns
Avg. Percent Revenue Medicare	17.1%	17.8%	17.8%	18.1%	18.7%	18.0%	5.9%	ns	0%	ns
Avg. Percent Revenue Self Pay	10.2%	8.1%	7.3%	6.7%	5.6%	4.9%	-50%	***	-23.6%	*
Avg. Percent Revenue Other Payers	12.7%	13.7%	13.7%	13.0%	12.9%	12.1%	-7.7%	ns	-7.7%	ns

[a] Health Care Revenues from Payers After Contractual Deductions Paired t-test on means. ***p<.001 **p<.01 *p<.05 (The means are not shown for some measures) ns = not significant

Subacute Facility Expenditures. Average total expenditures per resident day in subacute nursing facilities increased 46 percent, from $171 in 2001 to $250 in 2006 (46 percent) (Table 12). For the 2004 to 2006 period, total expenditures per day grew by 20 percent. After total expenditures per resident day were adjusted using the CPI, using 2001 dollars, the expenditures increased by 11.5 percent for the 2004 to 2006 period.

Table 12. California Subacute Nursing Facility Expenditures, 2001-2006 (Non-Exempt Facilities, N= 47)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-2006		Percent Change 2004-06	
Avg. Administration Expenses/ Day	$33.61	$36.13	$38.37	$36.58	$41.64	$46.96	39.74%	***	28.39%	***
Avg. Capital Expenses/ Day	$15.92	$16.13	$16.33	$16.86	$17.23	$18.77	17.91%	***	11.33%	**
Avg. Direct Care Expenses/ Day	$96.63	$106.46	$114.28	$128.24	$143.30	$155.22	60.64%	***	21.04%	***
Avg. Other Care Expenses/ Day	$23.66	$24.04	$24.41	$25.24	$26.24	$27.66	16.94%	***	9.59%	***
Avg. Property Taxes/ Day	$0.79	$0.79	$0.90	$0.87	$0.98	$0.90	14.05%	ns	4.13%	ns
Avg. Total Expenses/ Day	$170.61	$183.56	$194.29	$207.80	$229.18	$249.52	46.26%	***	20.08%	***
CA CPI Adjusted Total Expenses per day in 2001 $	$170.61	$180.70	$187.04	$196.65	$208.89	$219.20	28.48%		11.47%	
Avg. Percent Administration Expenses	19.42%	19.48%	19.81%	17.66%	18.09%	19.07%	-1.83%	ns	8.00%	*
Avg. Percent Capital Expenses	9.37%	8.86%	8.49%	8.22%	7.67%	7.65%	-18.29%	***	-6.87%	ns
Avg. Percent Direct Care Expense	56.06%	57.38%	57.94%	60.95%	62.01%	61.52%	9.74%	***	0.94%	ns
Avg. Percent Other Care Expenses	14.65%	13.82%	13.28%	12.75%	11.87%	11.38%	-22.34%	***	-10.80%	***
Avg. Percent Property taxes	0.50%	0.46%	0.48%	0.43%	0.46%	0.38%	-23.51%	*	-10.63%	ns

Paired t-test on means ***p<.001 **p<.01 *p<.05 (The means are not shown for some measures)
ns-not significant

During the 2004-2006 period, administrative expenditures accounted for the highest increase in spending by cost center: 28 percent (from $37 to $47); this figure included the new QAF of $6.73 per resident day in 2005-06. Once the $6.73 QAF was subtracted from the daily rate in 2006, administrative expenditures increased by 9.98 percent between 2004 and 2006. After total administrative expenditures were adjusted for the CPI (in 2001 dollars), administrative costs increased by 19.2 percent. Direct care expenditures also increased by 21 percent between 2004 and 2006; this growth is, in part, attributable to reported increases in staffing levels during the 2004 to 2006 period.

Average administration-related expenditures accounted for 19 percent of the total expenditures in 2006 (having increased by 8 percent between 2004 and 2006). Capital

expenditures declined slightly to 7.7 percent of total expenditures and other care expenditures declined to 11.4 percent of total expenditures (a 10.8 percent decline) during the 2004-2006 period. At the same time, direct care expenditures, as a proportion of total expenditures, increased by less than one percent.

Subacute Facility Wages and Benefits. Table 13 shows that the average hourly wages of administrative staff in subacute facilities was $43 in 2006, which represented a 23.5 percent increase from 2001-2006 and a 10.5 percent increase from 2004-2006. In contrast, nursing assistant average hourly wages increased by only 6.5 percent and licensed nursing hourly wages increased by 7 percent during the 2004-2006 period. However, when wages for nursing assistants were adjusted by the CPI, average wages per hour declined by 0.2 percent between 2001 and 2006 and by 0.5 percent between 2004 and 2006. Similarly, CPI-adjusted licensed staff wage levels declined by 0.2 percent between 2004 and 2006. In contrast CPI-adjusted administrative wages increased by 3.1 percent during the same period. Benefits increased by 7 percent during the 2004 to 2006 period to an average of $4.17 per day in 2006.

Table 13. California Subacute Nursing Facility Wages and Benefits, 2001-2006 (Non-Exempt Facilities, N= 47)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-2006		Percent Change 2004-06	
Administrative Wages/Hour	$35.04	$37.48	$38.04	$39.16	$42.55	$43.28	23.51%	***	10.53%	***
Nursing Assistant Wages/Hour	$9.63	$10.02	$10.28	$10.27	$10.50	$10.94	13.70%	***	6.57%	***
Licensed Nurse Wages/Hour	$21.94	$22.90	$23.55	$24.81	$25.55	$26.56	21.06%	***	7.07%	***
Benefits per Hour	$2.99	$3.19	$3.65	$3.89	$4.09	$4.17	39.39%	***	7.16%	**
CA CPI Administrative Wages in 2001 $	$35.04	$36.89	$36.62	$36.87	$38.58	$38.02	8.5%		3.1%	
CA CPI Licensed Nurse Wages in 2001 $	$21.94	$22.64	$22.67	$23.36	$23.17	$23.32	6.3%		-0.2%	
CA CPI Nursing Assistant Wages in 2001 $	$9.63	$9.86	$9.90	$9.66	$9.52	$9.61	-0.2%		-0.5%	

Paired t-test on means ***p<.001 **p<.01 *p<.05

Subacute Facility Net Income. Total health care revenues from all payers increased by 22.2 percent between 2004 and 2006, while total health care expenses increased by 22.6 percent during the same period (Table 14). Average health care operating margins were about 1 percent in

Table 14. California Subacute Nursing Facility Net Income, 2001-2006 (Non-Exempt Facilities, N= 47)

	2001	2002	2003	2004	2005	2006	Percent Change 2001-2006		Percent Change 2004-06	
Total Health Care Revenue [a]	$350,639,874	$377,711,257	$417,745,586	$429,237,165	$475,850,036	$524,363,118	49.5%		22.2%	
CA CPI Adjusted in 2001 Dollars	$350,639,874	$371,832,482	$402,167,554	$404,135,576	$431,505,588	$460,638,434	29.1%		13.9%	
Total Health Care Expenses [a]	$343,762,960	$376,917,161	$414,536,251	$419,399,817	$471,097,284	$514,306,063	49.6%		22.6%	
CA CPI Adjusted in 2001 Dollars	$343,762,960	$371,050,746	$399,077,898	$394,873,512	$427,195,745	$451,803,590	31.4%		14.4%	
Avg. Net Income from Healthcare Operations [b]	$146,317	$16,896	$68,284	$209,305	$101,122	$213,980	46.2%	ns	2.2%	ns
Avg. Health Care Operating Margin [b]	1.0	-0.7	0.9	0.5	0.2	1.0	0.0%	ns	100.0%	ns

[a] Total health revenues include those from payers and other health care revenues. [b] Net income from health care operations only.
Paired t-test on means ***p<.001 **p<.01 *p<.05 (The means are not shown for some measures)
ns = not significant

2001 and in 2006, but the operating margin increased from 0.5 to 1.0 (100 percent) between 2004 and 2006 (Table 14). When financial measures were adjusted with the CPI, total revenues increased by 13.9 percent between 2004 and 2006 and total expenditures increased by 14.4 percent.

MULTI-LEVEL RETIREMENT COMMUNITIES (MLRC)

The 55 Multi-Level Retirement Communities (MLRC) were analyzed separately from the subacute (N=47) and non-exempt nursing facilities (N=892) (but no tables are shown), because MLRC facilities are exempt from the QAF imposed by AB 1629 (Reimbursement Act, 2004). These exempt facilities had 8,665 admissions and 8,886 discharges during 2006. Total admissions and total discharges declined by 5-7 percent during the 2004 to 2006 time period, although total

days of care and length of stay increased by 2 and 7 percent respectively. Only 53.7 percent of the total days of care were paid by Medi-Cal and this rate remained fairly stable between 2004 and 2006. The new Medi-Cal reimbursement rate system seemed to have little impact on access for Medi-Cal recipients to MLRC facilities, measured by Medi-Cal days of care.

In terms of quality issues, the MLRC facilities reported a total staffing level of 3.61 hrpd in 2006, which is higher than the non-subacute/non-exempt care facilities (3.4 hprd), but not as high as the average staffing levels in subacute facilities (4.37 hprd) in 2006. The MLRC facilities showed a 1 percent increase in nursing assistant hprd, a 3 percent increase in LVN hprd, no change in RN hprd, and an average increase in total staffing levels of 0.3 hprd, or 7 percent between 2004 and 2006. Staff turnover levels were the same as for the non-subacute facilities (67.7 percent) in 2006, but turnover increased by 34 percent between 2004 and 2006. Casemix levels in MLRC facilities were nine percent lower than the average non-subacute nursing facilities. Finally, MLRC average citations and deficiencies declined by 10.5 percent between 2004 and 2006, but the average number of complaints was 2 percent higher during the same period.

The MLRC facilities reported a 44.6 percent increase in total revenues between 2001 and 2006 and a 94 percent increase between 2004 and 2006. Medi-Cal revenues increased 17 percent between 2004 and 2006. The average Medi-Cal revenues per day increased from $110 in 2004 to $148 per day in 2006 (17 percent increase). Medi-Cal revenues as a percent of total revenues remained stable at about 42 percent between 2004 and 2006. Because MLRC facilities had a lower percent of Medi-Cal revenues (42 percent), they received less benefit from the new reimbursement rates than other types of non-subacute nursing facilities.

Average expenditures per resident day in MLRC facilities was $171 in 2004 and $191 in 2006 (an 11.7 percent increase), which was similar to expenditures for non-subacute facilities in 2006. Administrative expenditures accounted for 18 percent of total expenditures, and these

facilities reported a 14 percent increase in administration expenditures between 2004 and 2006. Direct care expenditures were 56 percent of total expenditures in MLRC facilities in 2006 (compared to 52.6 percent for non-subacute facilities). MLRC facilities spent a greater proportion of funds on direct and other care expenditures and less on administration and capital expenditures than the non-subacute/non-exempt facilities. Between 2004 and 2006, wages for nursing assistants increased by 5.8 percent from $11 per hour to $11.64. Wages for licensed nursing staff increased by 6.5 percent and administrative wages increased by 17.5 percent during the same period; however average benefits per employee declined by 2.7 percent.

Finally, in the years 2001, 2002, 2004, and 2005, the average MLRC facilities lost money on their health care operations. Between 2004 and 2006, however, the net income on health care operations was an average of $178,353 per facility, showing a 0.7 percent positive operating margin. The improvement in 2006 occurred because of increased revenues from Medi-Cal (17 percent), Medicare (38.5 percent) and other payer sources (45.5 percent).

FINDINGS BY FACILITY CHARACTERISTICS

This section addresses our fourth research question and includes significant findings related to the effects of facility characteristics on the outcomes of interest. These analyses were restricted to 2004 and 2006 data for nursing facilities only (i.e., the 892 non-subacute and non-exempt facilities). The impacts of the new reimbursement system were examined using the following subgroups: (1) ownership (for-profit vs. non-profit nursing facilities); (2) chains versus non-chains; (3) facility size (very large, large, medium, and small nursing facilities; (4) facilities with high, medium and low percent Medi-Cal revenues; and (5), geographic location of facilities (i.e., seven peer groups). Data are reported in Tables 15 through 41 in Appendix G.

Access and Average Medi-Cal Days of Care. Only four factors were significantly related to the percent change in Medi-Cal days of care. First, the type of ownership played a role

in differences between facilities and changes in access to care over time, measured by average Medi-Cal days. Prior to enactment of the new reimbursement system, non-profit nursing homes had significantly fewer Medi-Cal days of care per facility (13,600 mean days in 2004) than for-profit facilities (23,959 mean days in 2004) (Appendix G, Table 15). After the new reimbursement rates went into effect, non-profit facilities increased their Medi-Cal days by 4.7 percent, while for-profit facilities decreased their average Medi-Cal days of care by 2.6 percent, showing a significant difference between the two types of facilities following implementation of the reimbursement system.

Second, facility size was significantly related to changes in the average number of Medi-Cal days of care. Small nursing facilities (i.e., 59 beds or less) increased their average number of Medi-Cal days by about 1 percent between 2004 and 2006, while all other nursing facilities reported reductions in average Medi-Cal days of care (Appendix G, Table 16).

Third, the percent of Medi-Cal revenues in a facility were related to changes in average Medi-Cal days of care. Facilities that had a high percent of Medi-Cal revenues (i.e., the upper one third of facilities, or those that received 66.27% or more of their revenues from the Medi-Cal program) had a slight increase in Medi-Cal days of care between 2004 and 2006, while facilities with low and medium Medi-Cal revenues showed a 2-5 percent decline in Medi-Cal days of care (Appendix G, Table 17).

Finally, the geographical peer group in which a nursing facility was located had a significant relationship to changes in the number of Medi-Cal days of care. Peer group 7 (including Bay area and Sacramento counties), which received the highest per diem Medi-Cal rates ($163) showed a slightly positive increase in Medi-Cal days of care; all other areas/peer groups had a decline in Medi-Cal days between 2004 and 2006. Peer group 4 (i.e., Amador, El

Dorado, Nevada, Placer and Tuolumne counties) had the second highest Medi-Cal rate ($151) reported the sharpest decline (25.25 percent) in Medi-Cal days of care (Appendix G, Table 18).

Staffing Levels. Staffing levels varied by ownership type and whether or not a facility was part of a chain; staffing levels also varied by the size of a facility, or its number of beds. For example, non-profit nursing facilities had higher registered nurse staffing levels than their for-profit counterparts in 2006 (0.38 vs. 0.30 hprd); however, non-profit facilities also reported a 9.6 percent decline in RN staffing hours between 2004 and 2006 (Appendix G, Table 19). In contrast, for-profit facilities, with lower overall staffing levels than non-profit facilities, increased their RN staffing by 3.4 percent during the same period.

Non-profit nursing homes also reported higher average hours of total nursing staff than for-profit facilities in 2006 (3.7 vs. 3.4 hprd), but their average hours of total direct care staffing declined slightly (by 1.4 percent) between 2004 and 2006 (Appendix G, Table 20). At the same time, for-profit nursing facilities increased their average total nursing hours by 3.5 percent but remained below the total hours of non-profit nursing homes. Nursing facilities that were part of a chain increased RN staffing hours by 5 percent between 2004 and 2006, while non-chain facilities decreased total hours of RN staffing by 1.7 percent (0.32 vs. 0.29 hprd respectively in 2006)(Appendix G, Table 21).

The size of a facility, measured by its number of beds, was also related to the level of RN staffing with small facilities providing the most RN hours (0.36 hprd). Between 2004 and 2006, small facilities, however, had a 4.5 percent reduction in RN hours per resident day, while both large facilities (100-149 beds) and very large facilities (150 beds or more) had a 6-7 percent increase in RN hours (Appendix G, Table 22).

Only one factor among the various facility characteristics was significantly related to nursing home turnover: geographical peer group membership. Facilities in peer group 1 had the

highest turnover (78.7 percent), while facilities in region 7 had the lowest (59.7 percent) in 2006 (Appendix G, Table 23). Facilities in peer group 4 reported a significant decline in nursing turnover (by 54 percent) between 2004 and 2006. Facilities in peer group 1 and group 7 also had declines in turnover, while nursing facilities in the remaining four peer groups experienced increases in staff turnover rates of two to fifteen percent.

Deficiencies and Substantiated Complaints. None of the facility characteristics predicted differences in the levels of deficiencies. In contrast and in 2006, the number of substantiated complaints was significantly higher in for-profit nursing homes than in non-profit homes (2.32 vs. 0.64 complaints) (Appendix G, Table 24). Between 2004 and 2006, non-profit nursing home complaints declined by nearly 30 percent, while the number of complaints in for-profit nursing facilities increased by 44 percent. Levels of substantiated complaints varied across the geographic regions, with peer group 7 having the highest average number of substantiated complaints and peer group 5 having the lowest in 2006 (3.50 vs. 1.26). Between 2004 and 2006, substantiated complaints increased by 75 percent in peer group 7 in 2006, while nursing facilities in peer group 5 had a 17.6 percent increase in complaints between 2004 and 2006 (Appendix G, Table 25).

Total Revenues. In 2006, total revenues per day were significantly higher in chain facilities than in non-chain facilities ($208 vs. $186 per day). Between 2004 and 2006, revenues per day in chain facilities increased by 21.6 percent compared to 17.7 percent for non-chain facilities (Appendix G, Table 26). Not surprisingly, total revenues per day were higher in both large (100-149 beds) and very large facilities (150 or more beds) when compared to small facilities (59 beds or less). In addition, large facilities (100-149 beds) had the highest percent increase in total revenues per day between 2004 and 2006 compared to other facilities (Appendix G, Table 27). Total revenues per day were higher ($240 per day) in facilities with low percentages

of Medi-Cal revenues than in facilities with medium revenues ($191 per day) or high Medi-Cal revenues ($165 per day) in 2006 (Appendix G, Table 28). Facilities with low percentages of Medi-Cal revenues had the greatest increase (23 percent) in revenues per day between 2004 and 2006. Finally, since Medi-Cal rates varied along with cost of living differences across the 7 peer groups, the average total revenues per day also varied by geographic region. Facilities in peer group 4 had a 32 percent increase in total revenues compared to only a 16 percent increase in peer group 1 between 2004 and 2006 (Appendix G, Table 29).

Expenditures Per Day. Expenditures per day were also evaluated using the five types of facility characteristics. Only the percent of Medi-Cal revenues was related to administrative expenditures and changes over time. In 2006, facilities with relatively low percentages of Medi-Cal revenues (i.e., less than 49 percent), spent $52 per day on administrative costs compared to $36 per day in nursing facilities with high Medi-Cal revenues (Appendix G, Table 30). The average facility increased its administrative expenses per day, which included the quality assurance fees and other pass-through costs, by 37 percent between 2004 and 2006. Facilities with high Medi-Cal revenues increased expenditures by 40 percent compared to only 35 percent for facilities with low Medi-Cal revenues during the same period (Appendix G, Table 30).

Nursing facilities that were part of a chain reported higher average per diem expenditures for their direct care cost centers when compared to non-chain facilities ($107 vs. $95 per day) in 2006. Between 2004 and 2006, nursing facility chains increased direct care expenditures by 14 percent, compared to 11 percent for non-chains (Appendix G, Table 31). Facilities that had low Medi-Cal revenues per day spent higher amounts per day, in their direct care cost centers, compared to facilities with high Medi-Cal revenues in 2006 ($124 vs. $85). Facilities with low Medi-Cal revenues reported larger increases in direct care expenditures, than facilities with high Medi-Cal revenues, between 2004 and 2006 (15 vs. 9 percent) (Appendix G, Table 32).

Since revenues and costs of living vary by geographical region, expenditures per day should also fluctuate. Between 2004 and 2006, peer group 1 had the lowest expenditures per day ($84) when contrasted with peer group 7 ($121 per day). The percent change in expenditures varied by geographic area. Peer group 1 had the lowest increase in direct care expenditures between 2004 and 2006, while peer group 4 had the greatest increase (9 vs.18 percent) (Appendix G, Table 33).

For total expenditures, nonprofit facilities spent an average of $238 per resident day compared to $189 per day among for-profit facilities in 2006 (Appendix, Table 34). For-profit facilities had a slightly greater percentage increase in total expenditures than non-profit facilities between 2004 and 2006. During 2006, facilities that were part of a multi-facility chain had higher expenditures per day ($201) than non-chain facilities ($182); chain-affiliated nursing facilities also reported a larger increase (17 vs. 16 percent) in total expenditures per day between 2004 and 2006 (Appendix G, Table 35). Facilities with the lowest level of Medi-Cal revenues (as a proportion of total revenues) had higher expenditures per resident day in 2006, than those with higher levels of Medi-Cal revenues, and these facilities also reported the highest percentage increase in expenditures between 2004 and 2006 (Appendix G, Table 36).

Wages and benefits also varied by type of facility. Non-profit nursing facilities paid higher wages for nursing assistants than for-profit facilities in 2006 ($12.40 vs. $11.20 per hour). Wages in nonprofit facilities increased by 8.7 percent compared with 6.5 percent in for-profit facilities (Appendix G, Table 37). As expected, wages varied by region because of cost of living differences. Wages per hour were highest in peer group 4 ($13.48) and lowest in peer group 1 ($9.40). Between 2004 and 2006, wages increased the most in peer group 3 (13.48 percent) and the least (4.43 percent) in peer group 1 (Appendix G, Table 38).

Net Operating Margins. Profits were measured on health care revenues by subtracting net expenditures from net health care income. Chain facilities had a higher average net operating margins compared to non-chain facilities (3 vs. 1.9 percent). In addition and between 2004 and 2006, chain-affiliated nursing facilities reported larger increases in average operating margins than their non-chain counterparts (Appendix G, Table 39).

The percent of Medi-Cal revenues in nursing facilities was compared with average operating margins. Facilities with the highest percent of revenues from Medi-Cal had the lowest operating margins in 2006, but they also reported the greatest growth in average operating margin between 2004 and 2006 (Appendix G, Table 40). Operating margins varied by peer group in 2006, with group 4 facilities reporting the lowest average operating margin (-0.23 percent), but this was an improvement over operations in 2004 when facilities in this group had an average operating margin of -8.7 percent. In contrast, facilities in peer group 3 had the average highest margins in 2006 (3.1 percent). In addition, the facilities in peer group 3 and peer group 6 reported the highest growth in operating margins between 2004 and 2006. Facilities in peer group 7 also reported substantial increases in their average operating margins between 2004 and 2006 (-2.56 vs. 2.48 percent). Lastly, facilities in peer group 2 were the only facilities (on average) to experience a reduction in net operating margins between 2004 and 2006 (Appendix G, Table 41).

SUMMARY AND DISCUSSION

After enactment of the new statute, the average nursing facility Medi-Cal revenues per day increased from about $124 per day to $152 per day, subacute care facility revenues per day increased from about $178 to $222, and MLRC facility revenues per day increased from $110 to $148 between 2004 and 2006. During that period, revenues from Medi-Cal increased by approximately $590 million and funding from all sources increased by about $1.1 billion for all types of California nursing homes in the study.

Access. The Medi-Cal Long Term Care Reimbursement Act (Reimbursement Act, 2004) was expected to improve access to California's LTC facilities for Medi-Cal residents (i.e., admissions, days of care, and the number of nursing homes accepting Medi-Cal residents). Although the number of total admissions and discharges did increase after the enactment of the cost-based reimbursement system, both the total number of resident days and the average length of stay (LOS) for all residents decreased in nursing facilities as well as in subacute facilities.

For Medi-Cal funded days and contrary to expectations, the total number of days in nursing facilities decreased by 2 percent after enactment of the reimbursement legislation, while Medi-Cal days remained steady at 69 percent of total nursing facility days. In the state's 47 subacute care facilities, Medi-Cal days increased by about 3 percent, but also remained stable at 74 percent of the total days during the 2004 to 2006 period. During the same period, Medicare days increased and self-pay days of care declined in both nursing facilities and subacute care facilities. The casemix of residents in nursing facilities and subacute facilities did increase by 7-8 percent between 2004 and 2006, indicating greater access to care for higher acuity residents. This increase, however, was more likely to be related to increases in the percentage of Medicare days of care than to the new Medi-Cal reimbursement rate system. Medi-Cal days of care did increase in non-profit facilities, but declined in the majority of California's facilities, most of which are for-profit organizations. Smaller facilities and those with high percentages of Medi-Cal revenues were more likely to increase their Medi-Cal days of care. Finally only region seven, which was the region with the highest Medi-Cal reimbursement rates (including the counties in the San Francisco Bay and the Sacramento areas), reported increased access for Medi-Cal residents (in terms of days of care).

The findings suggest that nursing facilities continue to focus on attracting Medicare residents, perhaps, because Medicare revenues per day ($473) are about 3 times as high as the

average new Medi-Cal revenues per day ($152) in 2006. Nursing facilities are also attracted to the Medi-Cal subacute revenues, which were about $222 per resident day (compared to $152 per day for Medi-Cal nursing facility revenues) in 2006.

Quality. After enactment of AB 1629, direct care expenditures and total spending in nursing facilities increased substantially between 2004 and 2006. These increases were expected to be reflected in improved nursing home quality, by fostering higher levels of direct care staffing and reductions in staff turnover rates. Total average staffing hours, however, increased by only 3 percent (from 3.3 hprd in 2004 to 3.4 in 2006) and were only 83 percent of the level recommended by experts (US CMS, 2001). In addition and of greater concern, RN staffing hours only slightly increased from 0.25 in 2004 to 0.26 hprd in 2006 (1.4 percent). In 2006, the average RN staffing level in California facilities was only one-third of the hours recommended by experts (0.75 hprd) (US CMS, 2001).

For-profit nursing facilities, chain owned facilities, and larger facilities all reported significant increases in RN staffing levels between 2004 and 2006, although non-profit and small nursing homes had higher levels of RN staffing in both 2004 and in 2006 (Appendix G). For-profit nursing homes had lower total staffing levels than non-profits, but for-profit nursing facilities did have an increase in total staffing between 2004 and 2006.

Surprisingly, 16 percent of nursing facilities (144 facilities) and 1 subacute facility did not meet the minimum state standard of 3.2 hprd on average over the year. Many facilities may not be in regular compliance for every day and this would not be identified in the aggregate cost report data. It should also be noted that an audit of a sample of nursing homes by the California Licensing and Certification Program found that only 24 percent of nursing homes were in compliance in 2004-05, suggesting that the cost reports may be overstating compliance. Moreover, the Licensing and Certification Program has yet to fully enforce the minimum

standards even though the legislation was enacted in 2000 (CDHS 2007). Thus, California has nursing homes that are not in compliance with the minimum legal standard and, instead, have extremely low staffing levels. The staffing levels were only slightly improved after the new reimbursement rates were adopted.

After the new reimbursement rate was adopted, and in contrast to nursing facilities, subacute care facilities (on average) increased their total staffing level by 7.5 percent and RN staffing by 15 percent between 2004 and 2006. Although the average total staffing levels (4.37 hprd) in subacute facilities met the level recommended by experts, 45 percent of subacute facilities had staffing below the 4.1 hprd recommended level. In subacute facilities, RN staffing levels were only 75 percent of the level recommended by experts (.75 hprd); this is an especially important and potentially problematic finding because these facilities had higher resident casemix/acuity levels than nursing facilities in general, which showing the need for higher staffing levels.

Congruent with expectations, after the enactment of AB 1629, average hourly wages for nursing assistants increased by 7 percent in both nursing and subacute care facilities between 2004 and 2006. When wages for nursing assistants were adjusted for inflation (using the 2001 CPI), however, real wages decreased by about 0.5 percent. In both types of facilities, CPI-adjusted wages for licensed nurses grew by 1.8 percent in nursing facilities and declined by 0.2 percent in subacute facilities. Spending on benefits for all staff in nursing facilities fell by about 1.8 percent per hour between 2004 and 2006. We conclude that the failure to substantially increase wages and benefits were related to the continued high turnover and the low staffing levels in the 2004-2006 period.

Nursing turnover rates have been shown to be a function of workload and the wages paid by nursing facilities (Harrington and Swan 2003; Kash et al., 2006) and high rates of turnover have been associated with poorer quality. It was expected that the new reimbursement system

would help to stabilize the LTC workforce; however and in nursing facilities in particular, staff turnover rates grew slightly worse (by 1 percent) for all nursing staff between 2004 and 2006, and the rates remained high at about 68 percent (with almost seven out of ten staff leaving per year).

Turnover rates improved, however, in three geographic regions of the state (and yet two of these areas still reported the highest turnover rates among the seven geographic peer groups). In contrast, among subacute care facilities, nursing turnover rates declined by 20 percent between 2004 and 2006, but the total rate was still elevated (63 percent). The high turnover rates in both nursing facilities and subacute facilities support the conclusion that the new reimbursement rate did not improve turnover.

Beyond the expectation for improving staffing levels and reduced turnover rates, it was also anticipated that the new reimbursement system would lead to improvements in other quality measures. Among nursing facilities, substantiated complaints increased by 38 percent, while total deficiencies and citations increased by 6 percent. Overall, the large number of facilities that continued to provide poor quality of care and that caused harm and jeopardy to residents is a serious concern.

In terms of facility factors related to complaints and when data were analyzed by subgroups for nursing facilities (N =892) (Appendix G), nonprofit facilities had fewer complaints (on average) than for-profit organizations and complaints declined by 30 percent among non-profit between 2004 and 2006; in contrast and during the same period, the average number of substantiated complaints among for-profit facilities grew by 44 percent. Complaint rates also varied by geographical regions and increased in all regions, but the number of complaints increased dramatically (from 40 to 75 percent) in four of the seven geographic regions. It is clear that the new reimbursement system did not lead to expected improvements in quality, especially for this important measure of consumer satisfaction.

Even more troubling was the increase in the percentage of certified nursing facilities found to be out of compliance with federal regulations between 2004 and 2006, following surveys conducted by the state Licensing and Certification Program. Of the total nursing facilities, 88 percent or approximately 788 of 892 failed to comply with federal regulations and many (approximately 22 percent) had violations that caused harm and jeopardy to residents. Subacute facilities also showed increases in both total deficiencies (21 percent) and substantiated complaints (76 percent); 93 percent of facilities (roughly 44 of 47 facilities) were out of federal compliance with regulatory requirements. This finding reflects a 21 percent increase in non-compliance between 2004 and 2006. Finally, for MLRC facilities, total deficiencies decreased by about 10 percent and the average number of complaints increased slightly between 2004 and 2006.

Confirming the poor quality of care in California nursing homes, the Centers for Medicare and Medicaid Services recently released a list of all special focus facilities. These facilities have a history of serious quality issues and are included in a special program to stimulate improvements in quality of care. Seven California facilities are on the list. Moreover, the Centers for Medicare and Medicaid Services released a list of more than 4,000 nursing facilities targeted for high-risk pressure ulcer and/or physical restraint improvement which includes more than 600 California nursing homes, which is more than half of California facilities (CMS 2008).

Nursing facility owners/operators may, perhaps, argue that the quality did not decline during the study period and that higher deficiency levels and increases in the number of substantiated complaints were related to more active surveillance by the state Licensing and Certification Program. There is evidence, however, that the rigor of the survey and complaint investigation process has not improved. Although the vast majority of complaints must be investigated within ten days, the Licensing and Certification agency has reported a backlog in

complaint investigations and the agency has indicated that it lacks adequate resources to investigate complaints in a timely manner.

A lawsuit was filed against the state by the California Advocates for Nursing Home Reform (CANHR), on behalf of the daughters of two elder neglect victims. The litigants successfully claimed that the state failed to investigate complaints within the time frame required by law; any such delay may result in an inability to substantiate complaints. The state was ordered to investigate complaints within their mandated time limit, file quarterly compliance reports with the Court to demonstrate their compliance with this order and to investigate/remedy its large backlog of complaints by May 12, 2007 (CANHR Advocate, 2006). Although the lawsuit seemed to have a positive impact on complaint investigations by the state, the court order wasn't issued until September 2006, so it is unlikely that this litigation lead to the observed increases in substantiated complaints during the study period.

In addition to problems with the complaint investigation process, the California Joint Legislative Audit Committee voted to order an audit of the Licensing and Certification Program based on the Legislative Analyst's (2006) critical report on the weaknesses in the oversight system and failure to detect deficiencies and a lack of enforcement of California state nursing home laws. Instead, it was acknowledged that surveyors were only evaluating compliance with federal requirements and citations were only given for (any) state violations incidentally noticed during the course of annual survey inspections. These changes in inspection practices were reflected by a decrease in the number of citations given and an increase in deficiencies received. Another lawsuit was filed against the state in September 2006 by an advocacy group and a family member of a nursing home resident claiming that the state was not enforcing California's minimum state staffing legislation; thereby putting residents at risk of harm. While there is some evidence that survey and enforcement activities did increase during the period between 2004- 2006, consumer

advocates have continued to criticize the state program for weak enforcement. In any case, there is certainly no evidence that quality of care in nursing facilities improved after the adoption of the new Medi-Cal reimbursement rate.

Costs. As expected, total revenues and Medi-Cal revenues to nursing facilities (N = 892) increased by 20 percent between 2004 and 2006. Subacute care facility (N = 47) Medi-Cal revenues also increased by 22 percent following implementation of AB 1629. Although revenues per day increased in all nursing facilities, total revenues increased significantly in chains, large facilities (100-149), facilities with low Medi-Cal revenues, and in one northern California peer group (Amador, El Dorado, Nevada, Placer and Tuolumne counties). Total revenue increases were related to increased Medi-Cal and Medicare revenues.

Among nursing facilities, Medi-Cal revenues grew by an average of 20 percent or nearly $500 million and total revenues increased by about 20 percent or $948 million between 2004 and 2006. For subacute care facilities, Medi-Cal revenues grew by an average of 27 percent ($73 million) and total revenues increased by 22 percent ($95 million) between 2004 and 2006. Lastly, among MLRC facilities, Medi-Cal revenues grew by about 17 percent ($3.4 million), while total revenues increased by $8 million between 2004 and 2006.

With increased revenues provided by the new reimbursement system, we expected spending on direct care services would increase. Average direct care expenditures in nursing facilities grew by 13 percent between 2004 and 2006, which is, in part, attributable to wage increases (6-9 percent) and to a modest increase in total nursing staff levels (3 percent). However, the percent of direct care expenditures, as a portion of total spending, actually decreased by 3.7 percent after the new reimbursement system was implemented. When data for nursing facilities (N= 892) were analyzed by subgroup (Appendix G), it was determined that direct care expenditures increased at a higher rate in chain-owned nursing facilities, among facilities with low

percentages of Medi-Cal facilities, and in all geographic regions or peer groups. Among the subacute care facilities (N=47), direct care expenditures per day increased nominally by 21 percent between 2004 and 2006, but the percent of direct care spending (as a portion of total spending) only increased slightly during the same period (approximately 1 percent).

Between 2004 and 2006, nursing facilities and subacute facilities both reduced spending on capital and other indirect resident costs (such as housekeeping, dietary and other expenses) as a portion of total spending. In contrast, administrative expenses in nursing facilities grew by 37 percent after enactment of the new rate system; this increase includes pass-through expenditures related to the quality assurance fee. Administrative expenses represented 22 percent of the total expenses in nursing facilities in 2006. Because this study did not have access to the supplement financial reports that facilities submitted related to pass-through expenditures for QAFs, license fees, training costs, and liability insurance, we could not determine what specific areas resulted in the higher administrative costs.

When data for nursing facilities were analyzed by facility subgroup characteristics, administrative expenses per resident day were lower in facilities with high Medi-Cal revenues; however, these facilities also reported the greatest increases in administrative spending between 2004 and 2006, indicating that expenditures for this cost center increased after adoption of the new rate payment system. Subacute administrative expenditures also grew by 28 percent per day between 2004 and 2006 and represented 19 percent of total expenditures. This growth included increases for administrative wages (11 percent increase), while nursing assistants and licensed nurse wages grew less dramatically (6.6 and 9 percent respectively) between 2004 and 2006.

Among nursing facilities, total expenditures per day increased by 17 percent between 2004 and 2006, while revenues per day increased by 20 percent during the same period. After revenues and expenditures were adjusted, using the 2001 consumer price index, revenues increased by 11.4

percent and expenditures increased by 8.5 percent, between 2004 and 2006. Total expenditures per resident day increased at a higher rate in for-profit nursing homes, chains, and facilities with low Medi-Cal revenues.

The major financial change reported by all types of facilities, following enactment of the new rate payment system, was an increase in average net income from health care operations. This improvement in health care revenues over expenses, also lead to improved operating margins. For nursing facilities specifically, the average margins were 2.54 percent in 2006 compared with 0.03 percent in 2004 (a 747 percent increase).

Despite the overall improvement in operating margins, there were wide differences in the financial solvency of nursing facilities in 2006. Of the total nursing facilities, 31 percent of nursing facilities had negative profit margins and 20 percent of facilities (N=178) had (very high) profit margins of 10 percent or higher. Excessive profits, at levels of 9 percent or higher, are related to poor quality (O'Neill, Harrington, Kitchener & Saliba, 2003).

Nursing facilities that were part of a chain, those that had higher percentages of Medi-Cal revenues, and facilities that were located in five of the seven geographical regions (representing 832 of 892 facilities) had the greatest increases in operating margins (Appendix G). Facilities in two of the seven regions (i.e., group 2 and 4) reported negative operating margins, but the margins also markedly improved in peer group 4 following the introduction of the new reimbursement rate system. Among subacute care facilities, operating margins were 1.0 percent in 2006, having increased from 0.5 percent in 2004. Exempt facilities also showed positive income margins. Overall, the new Medi-Cal reimbursement rate had a positive effect on net incomes and operating margins for all facilities.

Variation by Facility Characteristics. Facilities that were nonprofit, small in size and had a high percentage of Medi-Cal resident days, and facilities in areas with the highest Medi-Cal

per diem rates all had an increase in Medi-Cal days of care following the introduction of the Medi-Cal reimbursement rate system. Large facilities and for-profit facilities (which typically have lower RN and total hours of care per resident day than nonprofits) increased their RN hours and their total nursing hours per resident day between 2004 and 2006. Facility characteristics did not predict differences in deficiencies, but for-profit nursing homes had higher rates of substantiated complaints.

Total revenues were higher in chain facilities, in large and very large facilities, and in facilities with low percentages of Medi-Cal revenues between 2004 and 2006. Revenues varied by geographical peer groups because reimbursement rates varied. Facilities with high Medi-Cal revenues had higher administrative expenses than those with low Medi-Cal revenues. Chains and facilities with low Medi-Cal revenues increased their direct care expenditures and expenditures varied by geographic peer group. Nonprofit facilities paid higher wages for nursing assistants and had higher increases in wages between 2004 and 2006.

Chains had higher increases in net operating margins. Facilities with the highest percent of revenues from Medi-Cal had the lowest operating margins in 2006 and the greatest growth in operating margins between 2004 and 2006. Net operating margins varied significantly by geographical peer group.

CONCLUSIONS AND RECOMMENDATIONS

Medi-Cal revenues increased by $590 million following implementation of the new rate system and total revenues increased by $1.1 billion for all types of nursing facilities between 2004 and 2006. During this period total revenues outpaced expenditures, resulting in higher net incomes for all types of nursing facilities.

Despite increased revenues and improved operating margins, nursing facilities in California did not show significant improvements in access to nursing home services as measured

by increases in Medi-Cal days of care. Although there was a small increase in staffing levels, nurse staffing levels were significantly lower that those recommended by experts and many nursing homes failed to comply with the minimum state staffing standard. Quality of care, after the implementation of the new reimbursement rate system, actually appeared to decline because the number of deficiencies and citations (including those that cause harm and jeopardy) and complaints about poor quality of care increased. Nursing staff turnover rates grew worse in nursing facilities and were unacceptably high in all types of facilities. Following adoption of the new rate system, expenditures for direct care increased somewhat, but administrative expenditures increased at a higher rate. Nursing assistant wages failed to keep pace with inflation between 2004 and 2006 and licensed nursing (inflation-adjusted) wage increases were minimal, while benefits for all staff declined. Overall, the new reimbursement rate increased the net income margins of all types of nursing facilities.

Some barriers may have caused nursing homes to be reluctant to increase staffing levels, wages and benefits. First, the lag in the payment of the Medi-Cal rates was between 18 and 24 months because of the methodology used by the state to set rates. This lag appeared to impede the goal of increasing staffing levels and wages and benefits. Using more current cost reports to set reimbursement rates, or implementing quarterly (or six-month) cost reports, would allow the state to adjust rates more frequently and may encourage nursing homes to improve staffing levels.

Second, the 90th percentile ceiling on the direct and indirect cost centers may be a barrier to increasing staffing levels, even among the best staffed facilities. This ceiling could be removed so facilities can staff at the levels recommended by experts and be reimbursed for their investment.

Third, the uncertainly about whether the Medi-Cal reimbursement rates will be maintained over time may have discouraged facilities from making meaningful investments to increase staffing levels, wages and benefits.

At this point, there is no evidence that the new Medi-Cal reimbursement incentives are sufficient to encourage increases in nursing staffing and increased wages and benefits, which are necessary to improve the quality of nursing home care and reduce staff turnover rates. Without attaching more specific minimum requirements for staffing levels and penalties for poor quality of care, the new payment system appears unlikely to achieve its goals. Florida's experience with financial incentives did not show benefits until higher staffing standards were adopted (Hyer, Slack & Johnson, 2008).

The state should adopt a zero-tolerance standard for facilities that fail to meet the 3.2 hprd standard. Until facilities meet the mandatory state staffing requirements, they could be excluded from benefiting from any reimbursement rate increases and they new admissions could be held until they comply with state's minimum staffing laws.

Research findings have very clearly established the relationship between quality of care and higher staffing levels and a threshold for minimum staffing has been established based on this research. The legislature could enact higher staffing standards for RNs, licensed nurses, and total direct care staffing for each type of facility to ensure that facilities provide appropriate care to residents. Such standards could be gradually increased during the next four years to meet the staffing thresholds recommended by experts (i.e., of 4.1 total hours of staffing per resident, including a level of 0.75 hprd for RNs and 0.55 hprd for LVNs).

The California legislature could enact requirements to assure that nursing facilities use the Medi-Cal reimbursement rates to provide living wages and adequate benefits for nursing staff to attract and retain the nursing home workforce and reduce turnover rates within a year. Without increasing wages and benefits, especially for nursing assistants, turnover and low staffing levels will continue to be a problem (Castle et al., 2005, 2006; Harrington & Swan, 2003; Kash et al., 2006, 2007).

Financial penalties could be imposed on facilities that do not meet the minimum federal quality standards, especially for facilities that have a history of harming residents or placing them in jeopardy. Facilities that have a history of serious quality problems should be prevented from admitting new residents until they comply with federal regulations and they could be excluded from any further increase in Medi-Cal funding. Placing more restrictive caps on administrative spending (excluding the Quality Assurance Fee) and on profit margins may further encourage facilities to spend a greater proportion of the Medi-Cal revenues on direct resident care.

In summary, the legislature should enact changes in the Medi-Cal Long Term Care Reimbursement Act (AB, 1629) to encourage substantial improvements in the quality of nursing home care in California.

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Appendix A: Medi-Cal Long Term Care Reimbursement Act (Reimbursement Act, 2004)

(LEGISLATIVE COUNSEL'S DIGEST and WELFARE AND INSTITUTIONS CODE 14126.033)

Legislative Counsel's Digest

AB 1629, Frommer. Health and dependent care facilities. Existing law provides for the licensure and regulation of health facilities by the State Department of Health Services. Existing law provides for the imposition each state fiscal year upon the entire gross receipts of certain intermediate care facilities a quality assurance fee, as a condition of participation in the Medi-Cal program.

This bill would provide for the imposition of a quality assurance fee on each skilled nursing facility, with some exemptions, to be administered by the Director of Health Services and deposited in the State Treasury. The bill would provide that funds assessed pursuant to these provisions shall be available to enhance federal financial participation in the Medi-Cal program or to provide additional reimbursement to, and support facility quality improvement efforts in, licensed skilled nursing facilities. The bill would provide that these provisions are to be implemented as long as 2 conditions are met, including federal approval. The bill would also specify 4 circumstances, concerning continued federal approval of the quality assurance fee, the enactment and continued effect of the Medi-Cal

Long-Term Reimbursement Act under this bill, the failure of the state to sustain a continued maintenance of effort for state funding of nursing facility reimbursement, and any judicial or federal administrative determinations regarding the unavailability of federal financial participation, under which these provisions would become inoperative. In addition, these provisions would become inoperative on July 1, 2008, and would be repealed on January 1, 2009.

Existing law requires the department to perform various activities to promote the quality of care and life of residents, clients, and patients in these facilities. This bill would require a skilled nursing facility to include in a resident's care assessment the resident's projected length of stay and the resident's discharge potential. The bill would specify additional requirements of a skilled nursing facility and attending physicians at the facility related to resident assessment, care planning, and assistance. The bill would also require the attending physician, if applicable, to indicate in the plan of care the needed care to assist the resident in achieving a resident's preference of return to the community.

Existing law provides for the Medi-Cal program, which is administered by the department and pursuant to which qualified low-income persons receive health care benefits. Existing law required that the Medi-Cal reimbursement rates in effect on August 1, 2003, remain in effect through July 31, 2005, for, among others, freestanding nursing facilities licensed as skilled nursing facilities, intermediate care facilities, and intermediate care facilities for the developmentally disabled.

This bill would delete skilled nursing facilities from the application of this reimbursement rate limitation and would, instead, provide that the reimbursement rate limitation applies to skilled nursing facilities only until the first day of the month following federal approval to implement both the skilled nursing quality assurance fee and the rate methodology.

Existing law provides for the Medi-Cal Long-Term Reimbursement Act of 1990 under which the department is required to develop a reimbursement methodology for freestanding nursing facilities licensed as skilled nursing facilities and intermediate care facilities, and for intermediate care facilities for the developmentally disabled. These provisions, among other

things, require the department to implement a facility specific ratesetting system by August 1, 2004, subject to federal approval and the availability of federal or other funds.

This bill would repeal these provisions. The bill would enact the Medi-Cal Long-Term Reimbursement Act, to be under the administration of the director. The act would require the department to implement a facility specific ratesetting system, subject to federal approval, that would be effective commencing on August 1, 2005, and implemented commencing on the first day of the month following federal approval.

The bill would authorize the department to retroactively increase and make payment of rates to facilities under this provision. The act would require the department to develop and implement a cost-based reimbursement rate methodology for free standing nursing facilities. The act would require the department to seek approval of a Medicaid state plan amendment specifically outlining the reimbursement methodology developed pursuant to these provisions and would provide that this methodology shall be effective commencing on August 1, 2005, and implemented on the first day of the month following federal approval. The act would provide that it shall remain operative only as long as the skilled nursing facility quality assurance fee provisions provided by the bill continues as approved by the federal Centers for Medicare and Medicaid Services and federal financial participation for the methodology implemented under these provisions continues. The rate methodology established pursuant to these provisions would cease to be implemented on and after July 31, 2008.

The bill would make the following appropriations:

(a) $106,781,000 from both the State Treasury and the Federal Trust Fund to the department for expenditure to fund an increase to the 2004-05 skilled nursing facility Medi-Cal reimbursement rate consistent with the existing rate methodology in the Medicaid state plan.

(b) $2,000,000 for the 2004-05 fiscal year and $1,000,000 for the 2005-06 fiscal year to the department from the General Fund for expenditure for purposes of expeditiously implementing the ratesetting system that would be required under this bill.

(c) $350,000 for both the 2004-05 fiscal year and the 2005-06 fiscal year to the department from the General Fund for expenditure for purposes of funding the implementation of the bill.

(d) $200,000 for the 2005-06 fiscal year to the Bureau of State Audits from the General Fund for purposes of implementing the bill. This bill would declare that it is to take effect immediately as an urgency statute. Appropriation: yes.

Welfare & Institutions Code 14126.033.

(a) This article, including Section 14126.031, shall be funded as follows:

(1) General Fund moneys appropriated for purposes of this article pursuant to Section 6 of the act adding this section shall be used for increasing rates, except as provided in Section 14126.031, for freestanding skilled nursing facilities, and shall be consistent with the approved methodology required to be submitted to the Centers for Medicare and Medicaid Services pursuant to Article 7.6 (commencing with Section 1324.20) of Chapter 2 of Division 2 of the Health and Safety Code.

(2) (A) Notwithstanding Section 14126.023, for the 2005-06 rate year, the maximum annual increase in the weighted average Medi-Cal rate required for purposes of this article shall not exceed 8 percent of the weighted average Medi-Cal reimbursement rate for the 2004-05 rate year as adjusted for the change in the cost to the facility to comply with the nursing facility quality assurance fee for the 2005-06 rate year, as required under subdivision (b) of Section 1324.21 of the Health and Safety Code, plus the total projected Medi-Cal cost to the facility of complying with new state or federal mandates.

(B) Beginning with the 2006-07 rate year, the maximum annual increase in the weighted average

Medi-Cal reimbursement rate required for purposes of this article shall not exceed 5 percent of the weighted average Medi-Cal reimbursement rate for the prior fiscal year, as adjusted for the projected cost of complying with new state or federal mandates.

(C) Beginning with the 2007-08 rate year and continuing through the 2008-09 rate year, the maximum annual increase in the weighted average Medi-Cal reimbursement rate required for purposes of this article shall not exceed 5.5 percent of the weighted average Medi-Cal reimbursement rate for the prior fiscal year, as adjusted for the projected cost of complying with new state or federal mandates.

(D) To the extent that new rates are projected to exceed the adjusted limits calculated pursuant to subparagraph (A) or (B), the department shall adjust the increase to each skilled nursing facility's projected rate for the applicable rate year by an equal percentage.

(b) The rate methodology shall cease to be implemented on and after July 31, 2009.

(1)

It is the intent of the Legislature that the implementation of this article result in individual access to

appropriate long-term care services, quality resident care, decent wages and benefits for nursing home workers, a stable workforce, provider compliance with all applicable state and federal requirements, and administrative efficiency.

(2) Not later than December 1, 2006, the Bureau of State Audits shall conduct an accountability evaluation of the department's progress toward implementing a facility-specific reimbursement system, including a review of data to ensure that the new system is appropriately reimbursing facilities within specified cost categories and a review of the fiscal impact of the new system on the General Fund.

(3) Not later than January 1, 2007, to the extent information is available for the three years immediately preceding the implementation of this article, the department shall provide baseline information in a report to the Legislature on all of the following:

(A) The number and percent of freestanding skilled nursing facilities that complied with minimum staffing requirements.

(B) The staffing levels prior to the implementation of this article.

(C) The staffing retention rates prior to the implementation of this article.

(D) The numbers and percentage of freestanding skilled nursing facilities with findings of immediate jeopardy, substandard quality of care, or actual harm, as determined by the certification survey of each freestanding skilled nursing facility conducted prior to the implementation of this article.

(E) The number of freestanding skilled nursing facilities that received state citations and the number and class of citations issued during calendar year 2004.

(F) The average wage and benefits for employees prior to the implementation of this article.

(4) Not later than January 1, 2009, the department shall provide a report to the Legislature that does both of the following:

(A) Compares the information required in paragraph (2) to that same information two years after the implementation of this article.

(B) Reports on the extent to which residents who had expressed a preference to return to the community, as provided in Section 1418.81 of the Health and Safety Code, were able to return to the community.

(5) The department may contract for the reports required under this subdivision.

(d) This section shall become inoperative on July 31, 2009, and as of January 1, 2010, is repealed, unless a later enacted statute, that is enacted before January 1, 2010, deletes or extends the dates on which it becomes inoperative and is repealed.

AB 1629

Subcommittee No 1 on Health and Human Services Outcomes (May 22, 2007)
Nursing Home Rates and Quality Assurance (QA) Fee Authority:

The May Revision continues the Administration's proposal to modify the rate methodology established in AB 1629 (Frommer) of 2004, which implemented a facility specific rate setting system for facilities providing long-term care services (nursing homes).

Specifically, the May Revision proposal does the following:

1. Reduces by $32.6 million ($16.3 million General Fund) the amount paid to nursing homes in 2007-08 by reducing the rate "growth cap" to 4.5 percent, instead of 5.5 percent. The proposed 4.5 percent growth cap would be effective as of August 1, 2007.
2. Limits future rate growth. The maximum annual increase in the weighted average Medi-Cal rate for nursing homes would be adjusted based on a "medical" consumer price index.
3. Extends the sunset date for this nursing home rate methodology and for the QA fee by one year, from July 31, 2008 to July 31, 2009. Under AB 1629, nursing homes pay a QA fee of 6 percent of their revenues (excluding Medicare) to the state. The state obtains federal matching funds and returns most of the money to nursing homes in higher rates—the General Fund also receives a portion of the net benefit.

Senate Budget and Fiscal Review Committee Agenda (May 22, 2007)

AB 1629 Nursing Home Rates:

Approved to (1) restore the nursing home rates to the full 5.5 percent; (2) extend the sunset for the rate methodology for one-year (to 2009); (3) reject the Administration's trailer bill language to change the out year reimbursement to use the medical CPI, and *instead*, adopt placeholder trailer bill language which would provide for a 5.5 percent increase or the medical cost-of-living increase which ever is higher; and (4) extend the required evaluation report on the program for one-year (Abstracted from)

Appendix B –- Geographical Peer Groups

To calculate the Medi-Cal reimbursement rates facilities were divided into peer groups based on county of residence. Following are the counties in each peer group and the rate in May 2006:

Peer Group 1 - $135.06
Colusa, Del Norte, Imperial, Kern, Kings, Lake, Lassen, Tulare, Yuba

Peer Group 2 - $140.06
Butte, Humboldt, Inyo, Madera, Mendocino, Merced, San Luis Obispo, Tehama, Yolo

Peer Group 3 - $145.84
Calaveras, Glenn, Plumas, San Joaquin, Shasta, Siskiyou, Stanislaus, Sutter, Ventura

Peer Group 4 - $150.51
Amador, El Dorado, Nevada, Placer, Tuolumne

Peer Group 5 - $129.25
Los Angeles

Peer Group 6 - $142.77
Fresno, Orange, Riverside, San Bernardino, San Diego, Santa Cruz, Solano

Peer Group 7 - $163.19
Alameda, Contra Costa, Marin, Monterey, Napa, Sacramento, San Francisco, San Mateo, Santa Barbara, Santa Clara, Sonoma

Appendix C -- Revenues, Expenses, and Profitability

Revenue After Deductions. This is total health care revenue earned for providing care to residents, after contractual deductions. Each payer, Medi-Cal, Medicare, self-pay and other payers has predetermined reimbursement rates. Revenue after deductions is the difference between charges based at full established rates and the amount that is actually received from the payer.

Revenues Per Day. This is total revenue after deductions divided by the total number of days of care..

Total Health Care Revenue from Payers. The total amount of revenue that is earned from payers for the provision of skilled nursing care.

Other Health Care Revenue after Deductions. Revenue generated by health care operations from non-resident care services to residents and others. Examples include non-resident food sales and supplies sold to non-patients. Deductions from this type of revenue include those for charity adjustments, administrative adjustments and other deductions not made to payer revenue.

Total Health Care Revenue. The sum of total health care revenue from payers and other health care revenue after deductions. It is revenue earned for providing health care services.

Total Health Care Expenses. Total costs incurred for providing resident care. It does not include non-healthcare expenses like residential care, unrestricted contributions and interest income and gains from investments.

Net Income from Healthcare Operations. Total health care revenue minus total health care expenses. The amount of revenue that is kept as income after expenses are paid.

Health Care Operating Margin. Net income from healthcare operations divided by total health care revenue. The percent of health care revenue that remains as income after expenses have been paid.

Expenses per Day by Cost Center. These are expenses divided by the total number of resident days. Facilities are required to report all expenses to the state each year While some of the expenses are fixed, such as leases, rent, interest, and equipment, facility owners and managers decide how much money to spend on particular services and activities.. Some multi-level care facilities include residential care expenses in these categories, therefore a facility's expenses by cost center may differ from it's total health care expenses. Expenses are separated into the following cost centers:

> **Direct Care Expenses.** This includes nursing care, social services, activities, diagnostic and therapy services, as well as wages and benefits for nursing staff.
>
> **Other Care Expenses.** This includes maintenance, housekeeping, and dietary expenses.
>
> **Administrative Expenses.** Administrative services include overall management and administrative costs for the facility that are not nursing, ancillary, social and activity, maintenance, or dietary expenses. They include general accounting, communication systems, data processing, patient admissions, public relations, professional liability and

non-property related insurance, licenses and taxes, medical record activities, in-service education for nursing staff, and supplies and equipment. These also include administrative employee benefits.

Capital Expenses. Capital expenses include leases, rental, interest, and depreciation. Leases and rental costs include the use of the building, equipment, and improvements for the facility. Interest and depreciation are costs for property, equipment, and other assets. Depreciation spreads the cost of capital assets over their estimated useful life.

Property Taxes. Property taxes are shown separately because these costs can be passed through directly to the Medi-Cal program.

Wages. Total nursing wages are divided by total nursing hours to calculate the average wage per hour for licensed nurses, nursing assistants, and nursing directors and supervisors. Wages are important for recruiting qualified, experienced staff and are also one reason staff either stay at or leave a job. Low wages can result in staffing shortages and unfilled vacancies. The more staff members who remain employed in a facility, the lower the rate of staff changes at a facility. Facilities with low turnover rates may have higher employee morale than those with frequent changes in staff. High morale could result in better quality care. Low wages can also cause poor morale because some staffers may hold two jobs or work double shifts just to earn enough money for basic living expenses. In addition, employees may sometimes be required to work extra shifts, or volunteer to work extra shifts, to cover staff shortages. Quality of care may be diminished due to overworked staff. Many jobs at nursing facilities pay low wages and sometimes the wages for nursing assistants are below the federal poverty level or less than a living wage. Generally wages are well below those of hospital employees, workers in the fast food industry, and many other local businesses. Wages may be low because the owners decide to concentrate on increasing profits or because the facility is having financial problems. They may be kept low in facilities with a high percent of Medi-Cal residents because Medi-Cal reimbursement rates are typically lower than those for other payers.

Benefits. Benefits are reported in aggregate for all employees—administrators, nurses, housekeeping, and other staff. Total benefit expenditures were divided by the total number of employee hours to calculate average benefits per hour.

Appendix D – Staffing, Turnover, and Casemix

Staffing Levels

Determining an adequate nursing staff level depends on the types of residents in a facility and how dependent they are on staff. A staffing level that is adequate in one facility may not be adequate in another facility. In general, the higher the staffing, the better the care. The California minimum staffing requirement is 3.2 hours per resident day for skilled nursing facilities.

Nurse staffing level information is reported as staff hours per resident day (HPRD). The total nursing hours include all licensed nurses, nursing assistants, and directors of nursing, including part-time, full time, and temporary employees. HPRD is calculated by dividing the total nursing hours worked (excluding time for vacations, sick time, disability, and other paid time off) by the total resident days of care during the year. Measuring time this way allows the information to be compared across facilities. It does not indicate the number of nurses working at any given time, how well they are organized, or the amount of care given to any one resident. Nurse staffing is usually lower on evenings, nights, weekends, and holidays.

Having an adequate number of each type of nurse in a facility is important to provide quality care. It is most important to have a high number of registered nurses (RNs), because they have the most education and expertise. Facilities should have at least .75 hours (45 minutes) of RN time per resident day. Some experts recommend a ratio of one RN or LVN for every 15 residents during the day shift; one RN or LVN to every 20 residents in the evening; and one RN or LVN to every 30 residents during the night (U.S. Centers for Medicare and Medicaid Services, report to Congress prepared by Abt Associates Inc., 2001).

Registered nurses have two to six years of professional education and are trained in the management and care of patients. Only RNs can complete resident assessments and care plans. RNs have the training to give complex nursing care and treatments and provide supervision to other nursing staff. They can evaluate acute and chronic conditions and determine when medical attention is needed.

There are a number of laws that regulate RN time:

- State and federal law requires at least one RN to be on duty eight hours per day, seven days a week. It also states that the director of nursing at the facility must be a registered nurse.
- Medicare and Medi-Cal certified facilities must have an RN or LVN on duty 24 hours per day.
- California law requires facilities with 100 or more beds to have one RN on duty 24 hours per day.

Facilities with high RN hours per resident day have more qualified staff to provide supervision than facilities with low RN hours. Some facilities use LVNs in place of RNs, but they do not have as much expertise and training as RNs. Research shows that in general, the more RNs there are at a facility, the better the quality of care.

Licensed vocational nurses (LVNs) and licensed practical nurses (LPNs), who have at least one year of training, work with RNs to assess the needs of residents, to develop treatment plans, and to

evaluate residents' responses to care. They often give medications and treatment and may serve as supervisors of units.
Nursing facilities should have at least .55 hours (33 minutes) of LVN time per resident day (U.S. Centers for Medicare and Medicaid Services, report to Congress prepared by Abt Associates Inc., 2001).

Nursing assistants (NAs), sometimes called orderlies or technicians, provide most of the direct resident care—including bathing, dressing, personal hygiene, feeding, and other care—under the direction of a licensed nurse. All NAs must become certified (CNAs) within four months of being hired. In California, they must take 160 hours of training and pass an exam that shows they are able to complete their basic duties.
Ideally, facilities should have 2.8 to 3.2 nursing assistant hours per resident day, or 168 to 192 minutes per resident day (U.S. Centers for Medicare and Medicaid Services, report to Congress prepared by Abt Associates Inc., 2001). This would be about one nursing assistant for every 6 to 8 residents during the day and evening shifts and one nursing assistant for every 20 residents on the night shift on each unit in the facility.

Turnover
Turnover rates are defined as the percentage of all nurses (not including supervisors) who leave the facility during the year prior to the day the facility completed its cost report for the Office of Statewide Health Planning and Development (OSHPD). Nursing facilities with low rates of change in nursing staff may provide better quality care than facilities with high turnover rates. When nursing staff is constantly changing, it may be stressful and disruptive for residents. They have to keep getting used to new people who are not familiar with their routines or special needs. The lower the nursing staff turnover rate at a nursing facility, the better the quality, continuity, and stability of care. If the turnover rate is high, it could mean there is low employee morale. High employee morale and continuity of care help create a pleasant environment that is more likely to result in high-quality care and high quality of life.

Resident Casemix/Acuity

Casemix Index. The average resident need score is a summary score for the facility that indicates the amount and type of care needed by residents. The summary score ranges are grouped as: low (0.5 - 0.8); medium (0.9 - 1.3); and high (1.4 - 2.4). Facilities with residents that have high care needs require more nursing staff time than facilities that have residents with medium or low care needs.

The federal government developed the Resource Utilization Groups (RUG-III) system to classify resident needs. The following RUG categories are based on the amount of staff time that is needed to provide nursing care and therapy services to the types of residents in that group:

Rehabilitation. Residents are classified into this category based on whether they have a medical condition that requires any combination of rehabilitation services—physical, occupational, or speech therapy. After an illness or injury that leaves the patient with weakness or loss of movement, rehabilitation such as physical, speech, and occupational therapy can help him or her to function as independently as possible.

Extensive, Special Care, or Complex Care. These are residents whose medical conditions require services that extend beyond ordinary nursing care—such as suctioning,

tracheotomy, or ventilator and respirator care. It may include residents with at least one condition that is clinically complex and needs special nursing care such as injections or tube feedings

Impaired Cognition. Impaired cognition is a state of limited intellectual function and memory, usually caused by Alzheimer's disease or dementia. With a mild case, a patient would likely have an impaired work and social life but may be able to live alone. A moderate impairment would make it difficult to live independently and most often requires some supervision. A severe impairment would make independent living difficult, maybe even dangerous, and activities of daily living would require regular supervision

Behavioral Problems. These residents have behavioral problems. Some nursing facilities provide psychological evaluation, assessment, and therapeutic counseling services to residents who have been identified as having difficulties in adjusting to a long-term care setting by their primary care physician. They may be depressed, have anxiety issues, or have behavioral problems such as inappropriate behavior, wandering, frequent crying, or problems with eating or sleeping. Psychological services can often benefit these individuals and can help increase their overall quality of life.

Reduced Physical Functioning. These residents do not meet the criteria of the other special care needs groups, but have limitations in physical activities. This is a category for clients who generally need more nursing and therapy services or have reduced physical functions (loss of motor skills, inability to walk, or incontinence) but who do not meet the criteria of the other groups.

Appendix E – State Citations, Federal Deficiencies, and Complaints

Citation and Deficiency Types

State and federal standards for care are classified into the following nine types:

1. Quality of Care - Failure to care for medical conditions and nursing needs appropriately and on a timely basis. These standards also include whether there is a sufficient number of nurses to care for each resident. This type of violation may identify when a facility failed to help residents with the activities of daily living or provide necessary care or treatment.

2. Mistreatment - A resident's right to be free of verbal, sexual, physical and mental abuse, physical restraints, corporal punishment, and involuntary seclusion has been violated. This type of deficiency may also be given if a facility hires staff found guilty of abuse, neglect or mistreatment.

3. Resident Assessment - Failure to properly assess each resident's care needs, and failure to develop, follow, and evaluate a care plan for each resident. Also, failure to hire qualified and trained nursing staff.

4. Resident Rights - Failure to respect, recognize and uphold the rights of residents.

5. Environment - Failure to maintain the resident environment in a manner that protects the health and safety of its residents, personnel, and the public. These standards include providing enough space for residents, ensuring clean, safe conditions in the facility, and making sure that all equipment is kept in good repair.

6. Nutrition - Failure to meet each resident's nutritional needs and properly prepare and serve meals. The standards are concerned with the storage, preparation, and serving of food under sanitary conditions; and ensuring that residents are served meals that are appetizing and that meet daily nutritional and special dietary requirements.

7. Pharmacy - Failure to comply with pharmacy procedures for properly dispensing and storing medications. These standards are designed to make sure residents get the right medication at the right time.

8. Administration - Failure to provide adequate administration and management. By law, a facility must be run in an efficient and effective manner that enables it to use its resources to attain and maintain the highest level of physical, mental and psychosocial well-being for each resident.
9. Life Safety - Failure to create and maintain a safe environment for residents, and meet state and federal building inspection and fire codes were not met.

State Citations. These are violations of state minimum standards for care discovered by investigators during regular inspections or complaint investigations.. The severity of the violation determines the class of violation given and the class determines the penalty.

State Citation Categories
State citations are categorized into classes, based on how seriously harmed residents either were or could be if the problem is not fixed.

Categories	Severity	Definition
B	No Imminent Danger- Potential for Actual Harm	Violations of standards that have a direct or immediate relationship to health, safety, or security, but do not result in death or present imminent danger.
A	Imminent Danger- Substantial Probability for Actual Harm	Violations of a standard that causes imminent danger to residents or the substantial probability of death or serious harm.
AA	Immediate Jeopardy-Actual Harm	The most serious violation. This citation class is given when there is proof that the facility is responsible for a resident death.

State Penalties
Following are the fines for each citation class:

- Class B-Fines of $100 – $1,000.
- Class A-Fines of $2,000-$20,000.
- Class AA-Fines of $25,000 – $100,000

State Citation Categories. The state citation categories are determined by using all violations received during the last inspection Facilities are categorized based on the most severe citation they received:

- **No Citations** - No citations
- **Minor Citations**-One or more B citation and no A or AA citations
- **Major Citations**-One or more A citation and no AA citations
- **Severe Citations-**One or more AA citation

Federal Deficiencies. These are violations of federal minimum standards for care issued by investigators during inspections or complaint investigations.

Surveyors rate each federal deficiency on a scale that shows the scope and severity of the violation. The scale ranges from A to L. The scope is based on the number of residents affected or how often the problem occurs. There are three scope levels: 1) isolated; 2) pattern; and, 3) widespread. Severity is a measure of the amount of harm that could occur or has occurred to residents as a result of the deficiency, and has four levels: 1) minimal harm; 2) more than minimal harm; 3) actual harm; and, 4) immediate jeopardy. Following is the definition for each deficiency level:

Level	Scope and Severity	Definition
A	Minimal Harm-Isolated	No actual harm was done, but there is a potential to harm a few residents.
B	Minimal Harm-Pattern	No actual harm was done, but there is a potential to harm some residents.
C	Minimal Harm-Widespread	No actual harm was done, but there is a potential to harm many residents.
D	More than Minimal Harm-	No actual harm was done, but there is a potential for more than minimal

	Isolated	harm to a few residents
E	More than Minimal Harm-Pattern	No actual harm was done, but there is a potential for more than minimal harm to some residents.
F	More than Minimal Harm-Widespread	No actual harm was done, but there is a potential for more than minimal harm to many residents.
G	Actual Harm-Isolated	Harm was caused to one or a few residents.
H	Actual Harm-Pattern	Harm was caused to some residents.
I	Actual Harm-Widespread	Harm was caused to many residents.
J	Immediate Jeopardy-Isolated	Harm was caused, including death or potential for death, to one or a few residents.
K	Immediate Jeopardy-Pattern	Harm was caused, including death or potential for death, to some residents.
L	Immediate Jeopardy-Widespread	Harm was caused, including death or potential for death, to many residents.

Federal Deficiency Categories

Facilities are categorized based on the degree to which they were found to be incompliance with federal standards during their most recent survey:

- **In Compliance** - No deficiencies.
- **In Substantial Compliance** - Deficiencies are limited to those with a scope and severity level of A, B or C.
- **Noncompliance (Serious)/Correction Required** - Issued deficiencies that do not exceed a scope and severity level of D or E .
- **Noncompliance (Very Serious)/Correction Required** - Any deficiency in Resident Assessment, Environment, Nutrition, Pharmacy, Administration, or Life Safety that is level F through L or, any deficiency in Mistreatment, Resident Rights or Quality Care that is level G.
- **Substandard Care** - One or more deficiencies issued for Resident Rights, Mistreatment, Quality Care or Quality of Life with a scope and severity level of F, H, I, J, K or L. All facilities in the substandard category must submit written plans of correction and make all necessary corrections within an agreed on time period.

Complaints. A complaint is a formal grievance against a facility that is filed with and investigated by the California Department of Health Services Licensing and Certification (L&C) Program, which is responsible for monitoring nursing facilities. . A complaint is usually filed when someone has an objection to treatment or concerns about safety. Complaints may indicate problems at a nursing facility because, to some extent, they show consumer dissatisfaction with a nursing facility. Facilities also have to report any serious incidents such as falls or other problems to the state L&C program. After L&C investigates a complaint, it is deemed either substantiated if the inspector found the claim to be true, or unsubstantiated if there was no proof to support it. If a complaint is unsubstantiated, sometimes this is because of a delay in the time to the investigation so that evidence is not available. It does not necessarily mean that the complaint was not accurate. Licensing and Certification has had delays in time to investigation documented because of staff shortages.

Appendix F – Days and Admissions

Resident Days. The number of days that residents spent in the facility during the reporting period.

Resident Days by Payer. The number of days that residents spent in the facility for which a particular payer is paying a significant portion of the bill.

Admissions. The number of residents admitted to the facility, or transferred from a residential care unit to the nursing care unit of the facility. This does not include residents returning to the facility under a bed-hold or leave, where a bed has been held open specifically for the resident's return.

Appendix G - Comparison Tables

Medi-Cal Days of Care

Table 15. Changes in Average Medi-Cal Days of Care By Ownership Status

Ownership Type	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Nonprofit Facilities	70	13,600	14,235	4.67%			
For-Profit Facilities	819	23,959	23,340	-2.58%			
Total Facilities	889	23,143	22,622	-2.25%	0.9773	<0.0001	0.0171

Table 16. Changes in Average Medi-Cal Days of Care By Facility Size

Facility Size	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Small (59 beds or less)	191	11,183	11,298	1.03%			
Medium (60-99 beds)	408	20,844	20,327	-2.48%			
Large (100-149 beds)	163	28,256	27,907	-1.24%			
Very Large (150 or more beds)	116	44,303	42,625	-3.79%			
Total Facilities	878	23,217	22,716	-2.16%	0.0002	0.0001	0.0047

Table 17. Changes in Average Medi-Cal Days of Care By the Percent Medi-Cal Revenues

Revenue Level	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Low	291	16,216	15,409	-4.98%			
Medium	307	25,650	24,945	-2.75%			
High	294	27,325	27,359	0.12%			
Total Facilities	892	23,124	22,630	-2.14%	0.0006	<0.0001	0.0325

Table 18. Changes in Average Medi-Cal Days of Care By Peer Groups*

Peer Group	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
1 $135.06	40	26,814	25,945	-3.24%			
2 $140.06	44	22,660	21,278	-6.10%			
3 $145.84	64	24,808	23,863	-3.81%			
4 $150.51	16	33,346	24,927	-25.25%			
5 $129.25	281	24,788	24,320	-1.89%			
6 $142.77	221	22,038	21,737	-1.37%			
7 $163.19	226	20,355	20,565	1.03%			
Total Facilities	892	23,124	22,630	-2.14%	<0.0001	0.0012	<0.0001

* See Appendix B for Counties in Each Geographic Peer Group

Staffing Levels

Table 19. Changes in Average Hours of Care Provided by Registered Nurses By Ownership

Ownership Type	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Nonprofit Facilities	69	0.417	0.377	-9.59%			
For-Profit Facilities	819	0.292	0.302	3.42%			
Total Facilities	888	0.301	0.308	2.33%	0.0719	0.0001	0.0023

Table 20. Changes in Average Hours of Total Nursing Staff By Ownership

Ownership Type	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Nonprofit Facilities	69	3.786	3.734	-1.37%			
For-Profit Facilities	819	3.308	3.422	3.45%			
Total Facilities	888	3.346	3.447	3.02%	0.1842	0.0001	0.0004

Table 21. Changes in Average Registered Nurses Hours of Care By Chain

Chain Membership	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Not a chain	385	0.294	0.289	-1.70%			
Chain	506	0.306	0.321	4.90%			
Total Facilities	891	0.301	0.307	1.99%	0.2894	0.1161	0.0254

Table 22. Changes in Average Registered Nurse Hours of Care By Facility Size

Facility Size	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Small (59 beds or less)	190	0.378	0.361	-4.50%			
Medium (60-99 beds)	408	0.252	0.260	3.17%			
Large (100-149 beds)	163	0.325	0.347	6.77%			
Very Large (150 or more beds)	116	0.310	0.330	6.45%			
Total Facilities	877	0.301	0.307	1.99%	0.0846	<0.0001	0.0207

Table 23. Changes in Average Nursing Turnover Rate By Peer Group*

Peer Group	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
1 $135.06	40	90.94	78.65	-13.51%			
2 $140.06	44	70.83	73.39	3.61%			
3 $145.84	60	57.49	64.21	11.69%			
4 $150.51	16	149.39	68.99	-53.82%			
5 $129.25	277	58.88	67.77	15.10%			
6 $142.77	217	70.27	73.66	4.82%			
7 $163.19	225	62.68	59.67	-4.80%			
Total Facilities	879	66.27	67.70	2.16%	0.0216	0.0002	0.0056

* See Appendix B for Counties in Each Geographic Peer Group

Complaints and Deficiencies

Table 24. Changes in Average Substantiated Complaints By Ownership Status

Ownership Type	N	2004	2006	% Change	Significance by Year	Significance By Type	Significant Interaction
Nonprofit Facilities	70	0.91	0.64	-29.67%			
For-Profit Facilities	819	1.61	2.32	44.10%			
Total Facilities	889	1.55	2.18	40.65%	0.3486	0.0003	0.0357

Table 25. Changes in Average Substantiated Complaints By Peer Group*

Peer Group	N	2004	2006	% Change	Significance by Year	Significance By Type	Significant Interaction
1 $135.06	40	1.73	2.53	46.38%			
2 $140.06	44	1.32	1.68	27.54%			
3 $145.84	64	1.66	2.34	41.49%			
4 $150.51	16	1.75	2.63	50.00%			
5 $129.25	281	1.07	1.26	17.60%			
6 $142.77	221	1.66	1.97	18.80%			
7 $163.19	226	2.00	3.50	75.44%			
Total Facilities	892	1.55	2.18	40.65%	0.0007	<0.0001	0.0055

* See Appendix B for Counties in Each Geographic Peer Group

Revenues

Table 26. Changes in Average Total Revenue Per Resident Day By Chain

Chain Membership	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Not a chain	385	158	186	17.72%			
Chain	507	171	208	21.64%			
Total Facilities	892	166	199	19.88%	<0.0001	<0.0001	<0.0001

Table 27. Changes in Average Total Revenue Per Day By Facility Size

Facility Size	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Small (59 beds or less)	191	163	194	19.02%			
Medium (60-99 beds)	408	166	199	19.88%			
Large (100-149 beds)	163	166	204	22.89%			
Very Large (150 or more beds)	116	168	200	19.05%			
Total Facilities	878	166	199	19.88%	<0.0001	0.5723	0.0282

Table 28. Changes in Average Total Revenue Per Day By Percent Medi-Cal

Percent Medi-Cal Group	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Low	291	196	240	22.57%			
Medium	307	159	191	20.52%			
High	294	143	165	15.99%			
Total Facilities	892	166	199	19.88%	<0.0001	<0.0001	<0.0001

Table 29. Changes in Average Total Revenue Per Day By Peer Group*

Peer Group	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
1 $135.06	40	150	174	15.93%			
2 $140.06	44	161	189	17.67%			
3 $145.84	64	162	197	21.83%			
4 $150.51	16	151	199	32.20%			
5 $129.25	281	150	178	18.98%			
6 $142.77	221	170	203	19.49%			
7 $163.19	226	187	227	21.46%			
Total Facilities	892	166	199	19.88%	<0.0001	<0.0001	<0.0001

* See Appendix B for Counties in Each Geographic Peer Group**Expenditures**

Table 30. Changes in Average Administrative Expenses Per Day By Percent Medi-Cal

Administrative Expenses	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Low	291	38.7	52.1	34.56%			
Medium	307	30.8	42.1	36.88%			
High	294	25.4	35.6	40.21%			
Total Facilities	892	31.6	43.2	36.71%	<0.0001	<0.0001	0.0006

Table 31. Changes in Average Direct Care Expenses Per Day By Chain

Chain Membership	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Not a chain	385	85.8	95.4	11.20%			
Chain	507	94.2	107.2	13.84%			
Total Facilities	892	90.6	102.1	12.69%	<0.0001	<0.0001	<0.0001

Table 32. Changes in Average Direct Care Expenses Per Day By Percent Medi-Cal

Percent Medi-Cal Group	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Low	291	107.5	124.0	15.35%			
Medium	307	86.9	98.3	13.12%			
High	294	77.6	84.5	8.85%			
Total Facilities	892	90.6	102.1	12.69%	<0.0001	<0.0001	<0.0001

Table 33. Changes in Average Direct Care Expenses Per Day By Peer Group*

Peer Group	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
1 $135.06	40	76.8	83.8	9.11%			
2 $140.06	44	86.1	97.8	13.59%			
3 $145.84	64	90.8	102.5	12.89%			
4 $150.51	16	96.2	113.9	18.40%			
5 $129.25	281	77.6	88.0	13.40%			
6 $142.77	221	92.1	104.1	13.03%			
7 $163.19	226	108.0	120.9	11.94%			
Total Facilities	892	90.6	102.1	12.69%	<0.0001	<0.0001	0.0381

* See Appendix B for Counties in Each Geographic Peer Group

Table 34. Changes in Average Total Expenses Per Day By Ownership

Ownership Type	N	2004	2006	% Change	Significance by Year	Significance By Type	Significant Interaction
Nonprofit Facilities	70	205	238	16.26%			
For-Profit Facilities	819	161	189	17.08%			
Total Facilities	889	165	193	16.97%	<0.0001	<0.0001	0.0368

Table 35. Changes in Average Total Expenses Per Day By Chain

Chain Membership	N	2004	2006	% Change	Significance by Year	Significance By Type	Significant Interaction
Not a chain	385	157	182	15.92%			
Chain	507	171	201	17.54%			
Total Facilities	892	165	193	16.97%	<0.0001	<0.0001	0.0013

Table 36. Changes in Average Total Expenses Per Day By Percent Medi-Cal

Percent Medi-Cal Group	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Low	291	194	229	18.34%			
Medium	307	158	186	17.25%			
High	294	143	164	14.66%			
Total Facilities	892	165	193	16.97%	<0.0001	<0.0001	<0.0001

Wages and Benefits

Table 37. Changes in Average Nursing Assistant Wages Per Hour By Ownership

Ownership Type	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Nonprofit Facilities	69	11.4	12.4	8.71%			
For-Profit Facilities	815	10.5	11.2	6.45%			
Total Facilities	884	10.6	11.3	6.60%	<0.0001	<0.0001	0.0111

Table 38. Changes in Average Nursing Assistant Wages Per Hour By Peer Group*

Peer Group	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
1 $135.06	40	9.0	9.4	4.43%			
2 $140.06	44	10.3	11.1	8.47%			
3 $145.84	64	10.8	11.9	9.87%			
4 $150.51	16	11.9	13.5	13.48%			
5 $129.25	281	9.3	9.9	6.66%			
6 $142.77	218	10.4	11.1	6.63%			
7 $163.19	224	12.6	13.3	5.39%			
Total Facilities	887	10.6	11.3	6.60%	<0.0001	<0.0001	<0.0001

* See Appendix B for Counties in Each Geographic Peer Group

Operating Margin

Table 39. Changes in Average Operating Margin By Chain

Chain Membership	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Not a chain	385	0.875	1.908	118.06%			
Chain	507	-0.137	3.013				
Total Facilities	892	0.300	2.536	745.33%	<0.0001	0.9461	0.0173

Table 40. Changes in Average Operating Margin By Percent Medi-Cal

Percent Medi-Cal Group	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
Low	291	0.697	4.183	500.14%			
Medium	307	0.191	2.663	1294.24%			
High	294	0.021	0.772	3576.19%			
Total Facilities	892	0.300	2.536	745.33%	<0.0001	0.0526	0.0392

Table 41. Changes in Average Operating Margin By Peer Group*

Peer Group	N	2004	2006	% Change	Significance by Year	Significance by Type	Significant Interaction
1 $135.06	40	2.006	2.089	4.14%			
2 $140.06	44	2.500	1.460	-41.60%			
3 $145.84	64	0.834	3.098	271.46%			
4 $150.51	16	-8.705	-0.228				
5 $129.25	281	1.931	2.546	31.84%			
6 $142.77	221	0.906	2.910	221.19%			
7 $163.19	226	-2.563	2.482				
Total Facilities	892	0.300	2.536	745.33%	0.0003	0.0461	0.0011

* See Appendix B for Counties in Each Geographic Peer Group