FISCAL YEAR 1989-90
RESIDENTIAL RATES PROPOSAL
ALTERNATIVE RESIDENTIAL MODEL (ARM)

Department of Developmental Services
March 1989

Additional copies may be obtained for at a charge from the Office of Public Affairs, Department of Developmental Services, 1600 Ninth Street, Room 240, P.O. Box 944202, Sacramento, CA 94244-2020

DRAFT

FY 1989-90 RESIDENTIAL RATES PROPOSAL
ALTERNATIVE RESIDENTIAL MODEL (ARM)

PURPOSE

This proposal and the attached report are submitted to the Legislature in fulfillment of Welfare and Institutions Code (WIC) Section 4681.1, which authorizes the Alternative Residential Model (ARM) and requires the Department of Developmental Services (DDS) to propose ARM rates annually to the Legislature.

INTRODUCTION

In April 1988, the Governor signed SB 1513 into law. This statute authorized the Department to implement a new residential rate system called ARM statewide by January 1, 1991. ARM had first been implemented as a pilot project in three regional centers; the Department is now in the process of phasing in the new system in the other regional centers.

ARM is replacing the traditional rate system authorized by the Lanterman Act. The traditional rate system pays set monthly amounts based on each client's assessed need for supervision. Over time, the Department has recognized two major flaws with this system:

(1) The rate system is not tied to any quality assurance standards. In other words, the Department has no authority to assure that providers deliver the supervision prescribed by the assessment process.

(2) Facility cost studies found inaccuracies in the rate structure required by law. For example, the law mandates that rates vary by facility size, whereas cost studies have never confirmed such a cost pattern.

ARM was designed to address both these problems. First, it pays providers according to the level of service they actually provide. The Department developed quality assurance standards which detail exactly what is expected of providers offering each of the four levels of service used in ARM. Second, the Department developed a revised rate structure based on the findings of its prior facility cost studies.

ARM has four levels of service. Level 1 is the SSI/SSP rate. Since it is not set by DDS, it is outside the scope of any DDS rate study. The Department sets rates for Levels 2-4. The attached report addresses these three levels.

BACKGROUND OF THIS RATE STUDY

Last year DDS contracted with an independent consulting firm, Price Waterhouse, do to an extensive study of the costs of a large sample of community care facilities. Although the primary purpose of this study was to update the rates for the Department's traditional rate system in compliance with WIC 4681, DDS also included facilities from the ARM pilot project in the facility sample. The 614 facility sample was drawn from four different rate types, as follows:

Rate Type	Number
CCF Traditional	468
ARM (Levels 2-3)	69
Special Services	46
Negotiated Rate	31
Total	614

Price Waterhouse visited each of the 614 facilities in the sample to collect a complete cost statement and other facility information such as licensed size, type of operation, and client enrollment. This facility data was analyzed and the findings used in developing two reports: one on the traditional rate system and one on ARM. The report on the traditional rate system was submitted to the Legislature in March, 1989, and copies are available upon request from the Department. The report on ARM is attached.

STUDY DESIGN

The objective of the ARM portion of the residential cost study was to develop rates for ARM Levels 2, 3, and 4. To do this, Price Waterhouse started with the 69 ARM facilities in the facility sample. These facilities were all designated as Level 2 or 3. Two constraints limited the size of the sample of ARM facilities and the scope of the data:

- o ARM was a pilot project during the accounting period selected for this study, calendar year 1987. The pilot was conducted in three of the twenty-one regional center areas: Far Northern, Harbor, and Central Valley.

- During 1987, only Levels 2 and 3 of ARM were in operation. Level 4 standards and rates were not implemented until later.

Price Waterhouse analyzed the data from the sixty-nine ARM Level 2 and 3 facilities, and compared them with the data from the considerably larger sample of non-special service facilities under the traditional rate system. Since they found that the costs of these two groups of facilities were not significantly different, they combined the data for the rate element calculations for ARM Levels 2 and 3.

None of the facilities in the ARM sub-sample were Level 4. Price Waterhouse estimated Level 4 costs using the special services and negotiated rates facilities in the sample. These two types of facilities will become Level 4 when ARM is implemented in their areas.

MAJOR FINDINGS OF THE PRICE WATERHOUSE STUDY

The findings of the Price Waterhouse study are discussed in detail in the attached report. Below is a summary of the major findings.

1. The distribution of facility costs was skewed by a small number of "high cost" outlier facilities. These outliers pulled the mean cost above the median cost. Price Waterhouse recommended that: "Sample medians be used as the measure of central tendency for describing the costs of 'typical' facility....We chose the median because it avoided giving undue weight to a small number of high cost outliers and allowed us to use the data from all facilities in the sample."

2. Price Waterhouse tested the data to identify statistically significant cost variations. Four of their findings are of particular interest:

   a) Costs vary significantly by type of operation (owner vs. staff-operated). Consequently, this finding was incorporated into the rate recommendations.

   b) The costs of special services and negotiated rates facilities were statistically similar to each other, and significantly different from all other facilities. This finding supported the decision to develop the ARM Level 4 rate schedule based solely on the costs of the special services and negotiated rates facilities in the sample.

c) Costs vary by geographic region, but not significantly. However, Price Waterhouse developed rates with geographic variation, since WIC 4681.1 requires it. Price Waterhouse identified eleven counties where housing costs tend to be higher than in the rest of the state. They called these counties "High Fair Market Value" (FMV) counties. All other counties were called "Medium FMV". Rates were calculated separately for the two groups of counties, based on the study data.

d) Costs do not vary significantly by facility size. Since WIC 4681.1 states that facility size play a role only if there is "demonstrable variation," Price Waterhouse did not recommend varying the rate by this factor.

3. Although the direct-care staff wages for the Level 3 facilities in the ARM sub-sample were higher than for the Level 2 facilities, this difference was not statistically significant at the 95 percent confidence level. When ARM Level 2 and 3 wages were combined, they were statistically similar to the wages paid by traditional non-special service facilities. Therefore, Price Waterhouse used the single wage rate produced from the combined facility sample, including ARM Levels 2-3 and traditional non-special service facilities, for the Level 2 and 3 rates recommended in the attached report.

4. Price Waterhouse encountered difficulties in estimating the value of owner operator's time in some tasks of facility operation. Since owner-operators tend to be unsalaried, there are no records of the time they work or of the wages they earn. Price Waterhouse used staff-operated facility wage data for those activities which are similar in both kinds of facilities, such as direct supervision. However, time spent in "unallocated services" is not similar in owner- and staff-operated facilities. Owner-operated facilities involve substantially less time in supervisorial, managerial, and other administrative activities than staff operated ones.

   Due to lack of data, Price Waterhouse did not attempt to estimate the value of owner-operator time in the unallocated services rate element. They developed this element using only reported costs.

5. Although the law requires that the rate include a "proprietary fee," it does not define this term. Price Waterhouse defined the term as net total assets per client-day. They used data from the facility sample combined with the national rate of return for residential care facilities published by Dun and Bradstreet.

Based on the above findings, Price Waterhouse developed one rate schedule for ARM Levels 2 and 3, and a separate one for Level 4. These two schedules are shown below in Tables 1 and 4. In addition, Exhibits 1 and 2 at the end of this proposal show each of the rate elements contained in the rates.

TABLE 1

Price Waterhouse Recommended ARM Rates for Levels 2 and 3. (FY 1989-90 dollars)

	Medium FMV Counties		High FMV Counties	
	Owner-Operated	Staff-Operated	Owner-Operated	Staff-Operated
Level 2	$930	$1,084	$987	$1,168
Level 3	$1,117	$1,270	$1,188	$1,369

TABLE 2

Current ARM Rates
Levels 2 and 3

	Medium FMV Counties		High FMV Counties	
	Owner-Operated	Staff-Operated	Owner-Operated	Staff-Operated
Level 2	$933	$1,084	$933	$1,084
Level 3	$1,214	$1,410	$1,214	$1,410

Current ARM rates do not vary by geographic area.

TABLE 3

Comparison of Price Waterhouse Level 2-3 ARM Rates With the Current ARM Rates (percentage difference)

	Medium FMV Counties		High FMV Counties	
	Owner-Operated	Staff-Operated	Owner-Operated	Staff-Operated
Level 2	-0.3%	0.0%	5.8%	7.7%
Level 3	-8.0%	-9.9%	-2.1%	-2.9%

Table 3 shows that the Price Waterhouse ARM rates are higher than the current ARM rates in one area (Level 2 rates in the "High FMV" counties), the same as the current rates in one area (Level 2 rates in "Medium FMV" counties), and lower than all the current Level 3 rates.

TABLE 4

Price Waterhouse recommended ARM rates for Level 4 (FY 1989-90 dollars)

	Medium FMV Counties		High FMV Counties	
	Owner-Operated	Staff-Operated	Owner-Operated	Staff-Operated
Level 4A	-	$2,179	-	$2,432
Level 4B	-	$2,283	-	$2,544
Level 4C	-	$2,389	-	$2,658
Level 4D	-	$2,527	-	$2,804
Level 4E	-	$2,666	-	$2,953
Level 4F	-	$2,807	-	$3,104
Level 4G	-	$2,977	-	$3,285
Level 4H	-	$3,153	-	$3,473
Level 4I	-	$3,398	-	$3,737

The Price Waterhouse Level 4 rates range both above and below the current Level 4 rates, but on the average are about 12 percent higher than the current rates. Nearly all of the difference between these two rate schedules rates is due to the change in the California Consumer Price Index (CPI) from FY 1987-88 (when the current rates were established) to FY 1989-90.

DEPARTMENTAL ADJUSTMENT TO THE PRICE WATERHOUSE FINDINGS

The Department has two concerns with the Price Waterhouse Level 2 and Level 3 rates:

Include an amount to reimburse owner-operators for their time spent in maintenance, repair, and administrative activities in both Levels 2 and 3. The Price Waterhouse rate element for unallocated services costs is based on reported costs only. Since owner-operators do not pay themselves a salary, there are no reported costs for their time spent in these activities. DDS, therefore, developed a model of owner-operator's time spent in administration, maintenance, and repair; imputed a wage (assumed to the same as for direct supervision); and added the resultant modelled cost to the unallocated services cost element for owner-operated facilities.

The adjustment adds $33-$45 to the Price Waterhouse owner-operated rates, depending on the level of service and the region of the state.

Level 3 direct-care staff wages may need adjustment. Price Waterhouse used the same wages for both Levels 2 and 3. Although their data showed that the Level 3 wages were slightly higher than the Level 2 wages, the difference was not statistically significant. This data showed a median Level 3 staff wage (including benefits) of $6.41 per hour, when updated to FY 1989-90 levels. When applied to the Level 3 rates, this wage would increase the rates by $22-$76, depending on the type of facility and region of the state.

However, DDS is not proposing to adjust the rates at this time, since the Level 3 staff wage data came from only fourteen facilities in the ARM sub-sample. A sample this size is too small to be statistically valid. DDS recommends conducting a Level 3 wage survey before proposing an adjustment to the Level 3 rates.

The following table shows the Price Waterhouse rates, as adjusted by the Department, to include owner-operated time in administrative, maintenance, and repair duties.

TABLE 5

Revised Price Waterhouse ARM Level 2 and 3 Rates
(FY 1989-90 dollars)

	Medium FMV Counties		High FMV Counties	
	Owner-Operated	Staff-Operated	Owner-Operated	Staff-Operated
Level 2	$963	$1084	$1023	$1168
Level 3	$1158	$1270	$1233	$1369

TABLE 6

Current ARM Rates
Levels 2 and 3

	Medium FMV Counties		High FMV Counties	
	Owner-Operated	Staff-Operated	Owner-Operated	Staff-Operated
Level 2	$933	$1,084	$933	$1,084
Level 3	$1,214	$1,410	$1,214	$1,410

Current ARM rates do not vary by geographic area.

TABLE 7

Percentage comparison: Adjusted Level 2
and 3 ARM Rates with Current Rates

	Medium FMV Counties		High FMV Counties	
	Owner-Operated	Staff-Operated	Owner-Operated	Staff-Operated
Level 2	3.2%	0.0%	9.6%	7.7%
Level 3	-4.6%	-9.9%	1.6%	-2.9%

The Level 4 rates remain unchanged from the Price Waterhouse findings.

FY 1989-90 RATE PROPOSAL FOR THE ALTERNATIVE RESIDENTIAL MODEL

Implementing rate schedules for ARM Levels 2-4 in Tables 4 and 5 would assure that all rates include each rate element named in WIC 4681.1, including the proprietary fee and geographic variation, both of which are not in the current ARM rates. If DDS were to implement these ARM rates effective July 1, 1989, the cost would be $6.3 million in FY 1989-90. If the effective date were January 1, 1989, the cost would be $3.6 million. These fiscal estimates assume that the rates in Tables 4 and 5 are implemented for all facilities in the ARM system, and that there is no red circle policy for facilities that experience a rate reduction.

However, DDS has significant concerns with the accuracy of the Level 4 ARM rates. These rates were completely estimated using data from facilities not operating under the ARM program. Such estimating was necessary because there was no Level 4 program in effect during the accounting period used for this study. The Department recommends that it obtain supplemental data on the actual costs of operating Level 4 facilities before proposing new Level 4 rates.

Therefore, the Department proposes to implement only the Level 2 and 3 rates shown in Table 5 during FY 1989-90, and to hold the Level 4 rates at their current level until more accurate data can be obtained as the basis for rate-setting. The cost in FY 1989-90 of implementing this proposal starting July 1, 1989 would be $2.9 million. If the effective date were January 1, 1990, the FY 1989-90 cost would be $1.7 million. As with the prior fiscal estimate, these figures assume no red circle policy for facilities experiencing a rate reduction.

Exhibit 1

ARM LEVEL 2 AND 3 RATE RECOMMENDATION

Assumptions:

1) Median costs are used for all elements
2) ARM direct supervision model used
3) Legal wages & benefits per hour
4) BLN varies by geography but not by operation type.
5) UC, D.S., and Prop. Fee vary by operation type & geography

1. Study Data Findings (1987 dollars)

ARM Level 2	Medium FMV Counties Owner Op.	Medium FMV Counties Staff Op.	High FMV Counties Owner Op.	High FMV Counties Staff Op.
Basic Living Needs	$437	$437	$471	$471
Direct Supervision	$277	$358	$301	$389
Unallocated Services	$75	$138	$69	$146
Proprietary Fee	$37	$29	$35	$31
Mandated Improvements	N/A	N/A	N/A	N/A
Special Services	N/A	N/A	N/A	N/A
Dual Diagnosis	N/A	N/A	N/A	N/A
Total	$826	$962	$876	$1,037

ARM Level 3	Medium FMV Counties Owner Op.	Medium FMV Counties Staff Op.	High FMV Counties Owner Op.	High FMV Counties Staff Op.
Basic Living Needs	$437	$437	$471	$471
Direct Supervision	$441	$522	$478	$566
Unallocated Services	$76	$139	$70	$147
Proprietary Fee	$37	$29	$35	$31
Mandated Improvements	N/A	N/A	N/A	N/A
Special Services	N/A	N/A	N/A	N/A
Dual Diagnosis	N/A	N/A	N/A	N/A
Total	$991	$1,127	$1,054	$1,215

2. Summary of Estimated ARM Rates Using 1987 Data from 1988 Rate Study

	Medium FMV Counties Owner Op.	Medium FMV Counties Staff Op.	High FMV Counties Owner Op.	High FMV Counties Staff Op.
ARM Level 2	$826	$962	$876	$1,037
ARM Level 3	$991	$1,127	$1,054	$1,215

3. Recommended ARM Rates for FY 1989-90 Based on Study Sample Data

	Medium FMV Counties Owner Op.	Medium FMV Counties Staff Op.	High FMV Counties Owner Op.	High FMV Counties Staff Op.
ARM Level 2	$930	$1,084	$987	$1,168
ARM Level 3	$1,117	$1,270	$1,188	$1,369

4. Actual ARM Rates Effective April 1, 1988

	Owner Op.	Staff Op.
ARM Level 2	$933	$1,084
ARM Level 3	$1,214	$1,410

Note: Current ARM rates do not provide for geographic variation in rates.

5. Percentage Change in 1988 ARM Rates Required to Match Projected FY 1989-90 Rates Based on 1988 Rate Study Sample

	Medium FMV Counties Owner Op.	Medium FMV Counties Staff Op.	High FMV Counties Owner Op.	High FMV Counties Staff Op.
ARM Level 2	-0.3%	0.0%	5.8%	7.7%
ARM Level 3	-8.0%	-9.9%	-2.1%	-2.9%

EXHIBIT 2

ARM LEVEL 4 RATE RECOMMENDATION

Assumptions:

1) Median costs used for all elements
2) ARM direct supervision model used
3) Legal wages and actual benefits per hour
4) BLN, UC, DS, SS, Prop. Fee vary by geographic region

1. Study Data Findings (1987 dollars)

A) Medium FMV Counties

ARM Rate	WIC 4681.1 Rate Elements							
Level 4	BLN	Direct Supv.	Spec. Svcs.	Unalloc.Sv.	Man. Cap.	Prop. Fee	Dual Diag.	Total
4A	$521	$942	$56	$403	N/A	$12	N/A	$1,934
4B	$521	$1,034	$56	$403	N/A	$12	N/A	$2,026
4C	$521	$1,128	$56	$403	N/A	$12	N/A	$2,120
4D	$521	$1,222	$84	$403	N/A	$12	N/A	$2,242
4E	$521	$1,345	$84	$403	N/A	$12	N/A	$2,365
4F	$521	$1,470	$84	$403	N/A	$12	N/A	$2,490
4G	$521	$1,593	$112	$403	N/A	$12	N/A	$2,641
4H	$521	$1,748	$112	$403	N/A	$12	N/A	$2,796
4I	$521	$1,965	$112	$403	N/A	$12	N/A	$3,013

B) High FMV Counties

ARM Rate	WIC 4681.1 Rate Elements							
Level 4	BLN	Direct Supv.	Spec. Svcs.	Unalloc.Sv.	Man. Cap.	Prop. Fee	Dual Diag.	Total
4A	$597	$1,012	$62	$476	N/A	$11	N/A	$2,158
4B	$597	$1,111	$62	$476	N/A	$11	N/A	$2,257
4C	$597	$1,212	$62	$476	N/A	$11	N/A	$2,358
4D	$597	$1,313	$90	$476	N/A	$11	N/A	$2,487
4E	$597	$1,445	$90	$476	N/A	$11	N/A	$2,619
4F	$597	$1,579	$90	$476	N/A	$11	N/A	$2,754
4G	$597	$1,711	$118	$476	N/A	$11	N/A	$2,914
4H	$597	$1,878	$118	$476	N/A	$11	N/A	$3,081
4I	$597	$2,111	$118	$476	N/A	$11	N/A	$3,314

2) Study Data Findings Updated to April 1, 1988

ARM Rate Level 4	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
4A	$2,001	$2,234	$1,946
4B	$2,097	$2,336	$2,081
4C	$2,194	$2,441	$2,215
4D	$2,321	$2,575	$2,382
4E	$2,448	$2,711	$2,562
4F	$2,577	$2,850	$2,742
4G	$2,733	$3,016	$2,953
4H	$2,894	$3,189	$3,178
4I	$3,119	$3,430	$3,493

3) Percentage Change in Actual 87-88 ARM Level 4 Rates Required to Match Study Data Findings Updated to April 1, 1988 Levels

ARM Rate Level 4	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
4A	2.8%	14.8%	$1,946
4B	0.8%	12.3%	$2,081
4C	-0.9%	10.2%	$2,215
4D	-2.6%	8.1%	$2,382
4E	-4.5%	5.8%	$2,562
4F	-6.0%	3.9%	$2,742
4G	-7.4%	2.1%	$2,953
4H	-8.9%	0.3%	$3,178
4I	-10.7%	-1.8%	$3,493

4) Recommended ARM Level 4 Rates for FY 1989-90 Based on Study Sample Data

ARM Rate Level 4	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
4A	$2,179	$2,432	$1,946
4B	$2,283	$2,544	$2,081
4C	$2,389	$2,658	$2,215
4D	$2,527	$2,804	$2,382
4E	$2,666	$2,953	$2,562
4F	$2,807	$3,104	$2,742
4G	$2,977	$3,285	$2,953
4H	$3,153	$3,473	$3,178
4I	$3,398	$3,737	$3,493

5) Percentage Change in 1987-88 ARM 4 Rates Required to Match Projected FY 1989-90 Rates Based on 1988 Rate Study Sample

ARM Rate Level 4	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
4A	12.0%	25.0%	$1,946
4B	9.7%	22.2%	$2,081
4C	7.9%	20.0%	$2,215
4D	6.1%	17.7%	$2,382
4E	4.1%	15.2%	$2,562
4F	2.4%	13.2%	$2,742
4G	0.8%	11.2%	$2,953
4H	-0.8%	9.3%	$3,178
4I	-2.7%	7.0%	$3,493

DEPARTMENT OF DEVELOPMENTAL SERVICES

FINAL REPORT: FINDINGS AND RECOMMENDATIONS CONCERNING ARM RATES FOR FY1989-90

A REPORT PREPARED PURSUANT TO WELFARE AND INSTITUTIONS CODE SECTION 4681.1

MARCH 15, 1989

Price Waterhouse

DEPARTMENT OF DEVELOPMENTAL SERVICES

FINAL REPORT: FINDINGS AND RECOMMENDATIONS CONCERNING ARM RATES FOR FY 1989-90

Table of Contents

PURPOSE OF THE STUDY

The Department of Developmental Services (DDS) is required by Welfare and Institution Code (WIC) Section 4681.1 to propose rates to the Legislature for purposes of reimbursing residential care facilities operating under the Department's Alternative Residential Model (ARM) system. ARM is a new approach to regulating and reimbursing operators of residential care facilities. DDS has been testing the ARM system on a pilot basis since 1985. With the passage of SB 1513 (Chapter 85, Statutes of 1988), all community care facilities for the developmentally disabled in California will be reimbursed under the ARM system by January 1, 1991. This report is designed to provide the Department with a detailed analysis concerning the costs of operating residential care facilities and recommends ARM rates based on that analysis.

BACKGROUND

In January 1989, Price Waterhouse completed a cost study of residential care facilities for the developmentally disabled based on data collected from on-site visits to 618 facilities, known as the 1988 Residential Rate Study. That study, based on the largest sample of facilities ever contacted for this purpose, was conducted in response to a statutory requirement for a periodic redetermination of rates and for an annual rate proposal by DDS to the Legislature. Through a competitive bid process, Price Waterhouse was selected to conduct the 1988 Residential Rate Study.

Price Waterhouse prepared a report detailing the statistical analysis of the data collected and alternative reimbursement rate schedules, based on that data for facilities under the prior (non-ARM) rate system authorized by WIC 4681. The Department will forward that report and its commentary and recommendations to the Legislature upon the completion of the Administration review and approval process. A copy of the report is available from DDS upon request. Chapter I of this report provides additional background on the origin and purpose of this study.

HOW THIS STUDY WAS CONDUCTED

The data used to develop recommended rates for the ARM system are essentially the same data used to develop the report prepared in response to the WIC 4681 requirement for a rate redetermination study of non-ARM facilities. Data on 40 different cost items were collected from all facilities in the sample. The 40 cost items were then grouped into the major cost categories set out in WIC 4681.1 for analysis and rate recommendation. The major cost categories were Basic Living Needs, Direct Supervision, Special Services, and Unallocated Services costs. Cost information was analyzed to determine the statistical significance of the variation in costs among facilities by service rate type, facility size, operation type, and geographic location. Based on the results of this statistical analysis, ARM rates are recommended in satisfaction of the requirements mandated in WIC 4681.1. The reader should note that Price Waterhouse did not conduct any assessment of the quality of service provided by sample facilities and expresses no opinion on how differences in service quality might impact reported cost variations found in the sample. Chapters II, III, and IV of this report provide background on the study methodology, the sample of facilities, and the nature of the cost data analyzed in this report.

SIGNIFICANT FINDINGS

Chapter V presents the key statistical findings of the project. Some of the most important findings derived from our analysis of the cost data include:

ARM Level 2 and Level 3 Facilities

- Statistical analysis demonstrates that facilities from the ARM pilot sample and those from the sample of Traditional reimbursement rate facilities (82% of all facilities) have similar costs. Based on these results, we combined the ARM and Traditional facility samples to create a single group. The costs of this single group were used to develop recommended rates for facilities that will be designated as ARM Level 2 or Level 3 facilities.

- Within the ARM pilot sample, while ARM Level 2 wage costs were less than ARM Level 3 wage costs, the difference was not statistically significant at the 95% level. Also, there was no statistically significant difference between the ARM pilot sample wage costs and those of Traditional facilities. Therefore, we had no alternative but to use the single wage rate developed from the combined ARM and Traditional facility samples to prepare both the ARM Level 2 and Level 3 Direct Supervision rate element.

- For ARM Level 2 and 3 facilities, facility size was not found to be a statistically significant (at the 95% level) cause of cost variation. Operation type (whether a facility is owner operated or staff operated) was found to impact Unallocated Costs but not Basic Living Needs Costs. Therefore, our rate recommendations for Basic Living Needs do not make a distinction based on operation type. However, for Unallocated Costs we do recommend separate reimbursement rates for owner operated and staff operated facilities. In addition, since WIC 4681.1 stipulates an adjustment factor for geographic cost differences, our rate recommendations provide for such geographic adjustment of rates. (Our statistical analysis did not find geographic variation, by itself, to be statistically significant [at the 95% level].)

ARM Level 4 Facilities

- The category of facilities that will be designated as ARM Level 4 will consist of facilities that currently are reimbursed as either Special Services or Negotiated Rate facilities. These ARM Level 4 facilities will serve clients with more severe disabilities and a greater need for supervision and training. Statistical analysis demonstrated that Negotiated Rate and Special Services facilities have similar costs, costs that are significantly higher than those incurred by facilities that will operate as ARM Level 2 or Level 3 facilities. Based on these findings, we combined cost information of these two types of facilities to develop ARM Level 4 rate recommendations. These Level 4 rates will constitute a distinct and separate rate schedule from those used to reimburse Level 2 or Level 3 facilities.

- Since virtually all of the ARM 4 facilities are staff operated, no rate system distinction is made based on operation type. In addition, statistical analysis indicated that facility size and geographic location do not impact costs. However, since WIC 4681.1 stipulates a geographic factor, our rate recommendation does provide for geographic differences based on the geographic cost difference found among sample facilities.

- For ARM 4 facilities, we found wage costs significantly higher than for the expanded sample of ARM 2 and 3 facilities. We attribute the higher wage cost to the higher level of training ARM 4 staff must possess. Therefore, the ARM 4 Direct Supervision rate element is based on a higher wage rate than ARM 2 and 3 facilities.

General Findings

- Within each of the rate type groups, as well as across other groupings of the facilities (such as by facility size), there was wide variation in reported costs. Data in virtually every cost category were characterized by large standard deviations, an indication that there was wide variation in facility cost experience. This variation reflected the wide differences in facility history, management, and operations found in our field visits. A key feature of this variation was the presence of a relatively small number of high cost "outlier" facilities which tended to pull the sample means above the sample medians.

- As a result of this variation and the fact that DDS had no pre-existing standards defining allowable maximum costs for purposes of rate development, we recommend that the sample medians be used as the measure of central tendency for describing the costs of a "typical" facility. While either the mean or the median can be used as a reasonable measure of central tendency, in this case we chose the median because it avoided giving undue weight to a small number of high cost "outliers" and allowed us to use the data from all facilities in the sample without exclusions.

- In future rate studies it would be possible to utilize sample means for purposes of estimating facility costs if DDS can develop standards that address the treatment of "outlier" facilities. The Department would need to develop guidelines defining maximum allowable costs (guidelines that address how to treat facilities with high costs due to low occupancy rates, for example) or a quantifiable standard for excluding high and low cost outlier facilities.

RECOMMENDED RATE SCHEDULES

Recommended rate schedules for ARM Level 2, Level 3, and Level 4 facilities are presented in Chapter VI of this report. These recommended rates are based on the data collected during the survey phase of the project, the extensive data analysis performed during the project, the Department's proposed ARM Direct Supervision staffing model, and our interpretation of the reimbursement rate requirements of Welfare and Institutions Code Section 4681.1.

The tables which follow present the ARM Level 2 and 3 and also ARM 4 recommended rates and how they compare to actual ARM rates in effect on April 1, 1988. The reader should note that the portions of the table comparing recommended rates (developed from study data) with actual DDS ARM rates show that the actual rates are higher than were recommended rates for certain groups of facilities. This finding should not be interpreted as a recommendation by Price Waterhouse that rates be reduced for any group of facilities shown in the exhibit. Such a decision would involve a degree of disruption to facilities that are already conducting business based on current rate schedules. The Department would have to make a policy decision about whether the disruption entailed by such a rate revision would be justified under the circumstances. Such a decision was beyond the scope of this study, and hence we offer no opinion on this issue.

EXECUTIVE SUMMARY
EXHIBIT 1

ACTUAL ARM RATES AS OF APRIL 1, 1988*

	OWNER OPERATED	STAFF OPERATED
LEVEL 2	$933	$1,084
LEVEL 3	$1,214	$1,410

ARM LEVEL 2 AND 3 RATES IF SET USING SAMPLE MEDIANS UPDATED TO APRIL 1, 1988

	MEDIUM FMV COUNTIES		HIGH FMV COUNTIES	
	OWNER OPERATED	STAFF OPERATED	OWNER OPERATED	STAFF OPERATED
LEVEL 2	$855	$996	$906	$1,073
LEVEL 3	$1,025	$1,166	$1,090	$1,257

PERCENTAGE CHANGE TO MATCH APRIL 1, 1988 ACTUAL RATES

	MEDIUM FMV COUNTIES		HIGH FMV COUNTIES	
	OWNER OPERATED	STAFF OPERATED	OWNER OPERATED	STAFF OPERATED
LEVEL 2	-8.36%	-8.12%	-2.89%	-1.01%
LEVEL 3	-15.57%	-17.30%	-10.21%	-10.85%

RECOMMENDED ARM RATES FOR FY 1989-90 BASED ON STUDY SAMPLE DATA

	MEDIUM FMV COUNTIES		HIGH FMV COUNTIES	
	OWNER OPERATED	STAFF OPERATED	OWNER OPERATED	STAFF OPERATED
LEVEL 2	$930	$1,084	$987	$1,168
LEVEL 3	$1,117	$1,270	$1,188	$1,369

PERCENTAGE CHANGE IN 1988 ARM RATES REQUIRED TO MATCH PROJECTED FY 1989-90 RATES BASED ON 1988 RATE STUDY SAMPLE

	MEDIUM FMV COUNTIES		HIGH FMV COUNTIES	
	OWNER OPERATED	STAFF OPERATED	OWNER OPERATED	STAFF OPERATED
LEVEL 2	-0.32%	0.00%	5.79%	7.75%
LEVEL 3	-7.99%	-9.93%	-2.14%	-2.91%

*April 1, 1988, Actual ARM Rates are not differentiated by geographic location.

EXECUTIVE SUMMARY EXHIBIT 2

ARM LEVEL 4 STUDY DATA FINDINGS
UPDATED TO APRIL 1, 1988

ARM RATE LEVEL 4	MEDIUM FMV COUNTIES	HIGH FMV COUNTIES	ACTUAL 1987-88 ARM 4 LEVEL RATE
4A	$2,001	$2,234	$1,946
4B	$2,097	$2,336	$2,081
4C	$2,194	$2,441	$2,215
4D	$2,321	$2,575	$2,382
4E	$2,448	$2,711	$2,562
4F	$2,577	$2,850	$2,742
4G	$2,733	$3,016	$2,953
4H	$2,894	$3,189	$3,178
4I	$3,119	$3,430	$3,493

PERCENTAGE CHANGE IN ACTUAL 87-88 ARM LEVEL 4 RATES REQUIRE TO MATCH
STUDY DATA FINDINGS UPDATED TO APRIL 1, 1988 LEVELS

ARM RATE LEVEL 4	MEDIUM FMV COUNTIES	HIGH FMV COUNTIES	ACTUAL 1987-88 ARM 4 LEVEL RATE
4A	2.8%	14.8%	$1,946
4B	0.8%	12.3%	$2,081
4C	-0.9%	10.2%	$2,215
4D	-2.6%	8.1%	$2,382
4E	-4.5%	5.8%	$2,562
4F	-6.0%	3.9%	$2,742
4G	-7.4%	2.1%	$2,953
4H	-8.9%	0.3%	$3,178
4I	-10.7%	-1.8%	$3,493

RECOMMENDED ARM LEVEL 4 RATES
FOR FY 1989-90 BASED ON STUDY SAMPLE DATA

ARM RATE LEVEL 4	MEDIUM FMV COUNTIES	HIGH FMV COUNTIES	ACTUAL 1987-88 ARM 4 LEVEL RATE
4A	$2,179	$2,432	$1,946
4B	$2,283	$2,544	$2,081
4C	$2,389	$2,658	$2,215
4D	$2,527	$2,804	$2,382
4E	$2,666	$2,953	$2,562
4F	$2,807	$3,104	$2,742
4G	$2,977	$3,285	$2,953
4H	$3,153	$3,473	$3,178
4I	$3,398	$3,737	$3,493

PERCENTAGE CHANGE IN 87-88 ARM 4 RATES REQUIRED TO MATCH PROJECTED
FY 1989-90 RATES BASED ON 1988 RATE STUDY SAMPLE

ARM RATE LEVEL 4	MEDIUM FMV COUNTIES	HIGH FMV COUNTIES	ACTUAL 1987-88 ARM 4 LEVEL RATE
4A	12.0%	25.0%	$1,946
4B	9.7%	22.2%	$2,081
4C	7.9%	20.0%	$2,215
4D	6.1%	17.7%	$2,382
4E	4.1%	15.2%	$2,562
4F	2.4%	13.2%	$2,742
4G	0.8%	11.2%	$2,953
4H	-0.8%	9.3%	$3,178
4I	-2.7%	7.0%	$3,493

A. PURPOSE OF THE STUDY

The Department of Developmental Services (DDS) is required by Welfare and Institutions Code (WIC) Section 4680 to establish residential care reimbursement rates for 3,376 residential facilities throughout California. These facilities provide residential care services to developmentally disabled persons who (unlike other more severely disabled individuals who reside in developmental centers) are able to function in a residential ("home") environment. Only residential facilities licensed as community care facilities (CCFs) by the Department of Social Services were included in this study.

Welfare and Institutions Code Section 4681.1 further requires DDS to propose rates to the Legislature for purposes of reimbursing residential care facilities operating under the Department's Alternative Residential Model (ARM) system. The ARM system is a new approach to regulating and reimbursing the operators of residential care facilities developed and tested on a pilot basis by DDS since 1985. With the enactment of SB 1513 in 1988, the State has determined that it wishes to use the ARM approach as the only reimbursement system for residential care facilities beginning in 1991. This report is designed to provide the Department with detailed information and analysis concerning the costs of operating residential care facilities that can be used to develop proposed ARM rates. The data used for this purpose is drawn from a large sample of residential care facilities operating under the current (non-ARM) rate system, along with a small sample of ARM facilities that participated in the pilot project in 1987.

This report summarizes the methodology followed to conduct this study, the findings and conclusions from the survey data, the basis of the proposed ARM reimbursement rates, and ARM reimbursement rate schedules.

B. BACKGROUND

1. Lanterman Act

The developmental disabilities service delivery system is administered by the Department of Developmental Services (DDS) under the provisions of the

Lanterman Developmental Disabilities Services Act of 1977 (Division 4.5 of the Welfare and Institutions Code [WIC]). DDS coordinates a service system to persons with developmental disabilities that assures that services are planned and provided as part of a continuum which is sufficiently complete to meet the needs of the population at each stage of life and, to the extent possible, accomplishes these objectives without dislocating individuals from their home communities.

DDS administers a system serving more than 82,000 persons who are developmentally disabled through contracts with twenty-one private, non-profit corporations known as regional centers and through the direct operation of seven developmental centers (formerly known as state hospitals). The regional centers serve as the single point of entry into the system, provide diagnostic, program planning, case management and monitoring services, and are responsible for ensuring that needed services identified in the clients' individual program plans are obtained or purchased for the clients they serve.

2. Residential Services

One major component of the service delivery system for persons with developmental disabilities is residential services. The State Department of Social Services licenses community care facilities which serve a large number of persons with developmental disabilities, as well as persons with other kinds of needs. Community care facilities can serve regional center clients only after being accepted as approved "vendors" of service by a regional center. Funding for regional center clients in such facilities comes from DDS, through the regional centers, supplementing amounts paid to individual clients by federal/state Supplemental Security Income/State Supplemental Program (SSI/SSP).

As of May, 1988, 3,376 community care facilities serve approximately 18,100 regional center clients, as well as a significant number of persons with other needs. These facilities are licensed to serve various numbers of clients, ranging from one or two up to several hundred clients. Facilities may be licensed as adult residential, small family home for children, or group home for children.

Facilities with more than six beds usually employ staff to provide care for the clients. In most facilities with six or fewer beds, care for the clients is provided primarily by an owner/operator — an individual or a couple — with little or no paid staff assistance.

3. Residential Rate System

What the Law Requires

Prior to the development of the ARM system, all residential care rates were governed by WIC Section 4681. WIC Section 4681 mandates DDS to establish rates for residential facilities annually and to redetermine the cost of basic living needs every three years. The intent of Section 4681 is to assure that proposed reimbursement rates are adequate and sufficient for quality care. This section mandates that the rate be composed of the following cost elements:

- Basic Living Needs;
- Unallocated Services (Costs); and
- Direct Supervision.

In addition, other rate elements are allowable under Section 4681, where applicable:

- Special Services;
- Mandated Capital Improvements and Equipment;
- Proprietary Fee; and
- Geographic Cost Factor.

DDS has addressed the rate redetermination requirement of WIC Section 4681 by conducting studies of the costs of residential services in 1977, 1978, 1980, 1984, and 1988. (The rate system was established in 1977.)

Evolution of the Residential Rate Setting Process

Current law requires DDS to establish rates for community care facilities that serve regional center clients. The system for determining rates for residential care has been in effect since 1977. Rates are determined for a given facility based on its size and on the assessed level of supervision required by each client. Four levels of supervision exist, ranging from "basic," with the least supervision, through "minimum" and "moderate" to "intensive," in which the client requires supervision and assistance in most or all of his or her basic needs.

In 1977-78, the "Special Services" program was developed to ensure the provision of expert programming in a small number of facilities for clients whose extensive needs required programs beyond those normally provided. Additional funding to supplement the regular rate was granted for these types of programs. A corresponding rate schedule for "Specialized Services" was developed and implemented.

The "Negotiated Rate" system is an alternative approach to the Special Services rate setting system. In Negotiated Rate facilities, the facility negotiates with the regional center and DDS regarding the kinds of unique services it will provide to clients who need special services. A rate based on allowable costs is established on a facility by facility basis.

The ARM System

In 1985, DDS identified a number of significant problems with the rate system. These included various issues with the design of the rate system, the lack of quality assurance standards, and a significant gap between the rates being paid and the facility expenditures expected by the rate model. To address these problems, DDS proposed in 1985-86 a modification to the reimbursement rate setting system. A pilot test of the proposed system (now called Alternative Residential Model (ARM)) was conducted in 1985-1987. The pilot was conducted in approximately 425 facilities in three regional center areas: Far Northern, Central Valley, and Harbor. ARM is an entirely new system of setting residential rates and linking rates to quality assurance standards. Clients under the ARM system are not divided into minimal, moderate, and intensive rate levels; rather, whole facilities or parts of facilities are identified according to the level of services they provide. For example, Level 2 facilities provide services to persons in a "home-like" setting and teach clients within the context of the normal operations of daily living using a 1:6 staffing ratio. Level 3 facilities provide additional specific, structured programming (training) to clients for a portion of each day. A staffing ratio of 1:3 is provided during these special program hours; a ratio of 1:6 is provided during other hours.

An evaluation of the pilot, including its effects on quality of care was completed in 1987. Consequently, a new law was passed (SB1513, Chapter 85 of 1988) which authorized ARM to be implemented statewide by January 1, 1991. SB 1513 added Section 4681.1 to the Welfare and Institutions Code, requiring DDS to propose to the Legislature reimbursement rates for facilities operating under the ARM system. The cost elements of the ARM rates are set out in WIC Section 4681.1. In general, the cost elements are very similar to those set out in Section 4681 (see above); however, there are some additional detailed cost components allowed by Section 4681.1 that were not included in Section 4681. This report is designed to provide data to support the development of rates that meet the requirements of Section 4681.1.

DDS is now phasing in the ARM system. Complete implementation, including promulgating regulations, will be done by January 1, 1991. At that time, all residential care facilities will be reimbursed for services under the ARM system.

4. CARE Law Suit

In 1986, a law suit was filed against DDS by the California Association for Residential Equality (CARE) stating that the Department's past studies of residential care facilities costs were incomplete. The lawsuit addressed only the traditional rate system authorized by WIC 4681. (The ARM pilot program was outside the scope of the lawsuit.) The basis of the lawsuit was that the sampling technique used by DDS in the 1984 rate study was inadequate and that rates proposed did not include amounts to cover special services, a proprietary fee, or geographic cost differences as required by WIC 4681. On December 11, 1987, a court order was entered in the County of Los Angeles Superior Court against DDS. The Writ of Mandate of this court order states that DDS must take a number of steps to achieve full compliance with WIC 4680 and 4681. The Court ordered DDS to develop a rate proposal to the Legislature based on a statistically valid sample of facilities and to include all rate elements. Key points of the order included:

- Design and conduct a cost study using a statistically valid sampling technique (one which yields data at the 95% confidence level, allowing for a 5% sampling error).

- Produce a rate report and a rate proposal for submission to the Legislature by March 1, 1989, pursuant to the requirements of WIC Section 4681. (The ARM system was not included in the CARE lawsuit and was not addressed in the Court Order.)

- Include in the rate report and proposal an amount for special services, a proprietary fee, and an amount for any cost of living differences which are attributed to different geographic areas.

Through a competitive bid process, the Department selected Price Waterhouse to conduct a study designed to comply with the requirements of WIC 4681 and the court order in the CARE lawsuit. This study was conducted in the period from late June 1988 to late January 1989. Data were collected from a total of 618 facilities through on-site visits conducted by Price Waterhouse staff. A report detailing the statistical analysis of the data collected during the study and alternative reimbursement rate schedules based on that data was completed by Price Waterhouse in late January 1989. The Department will forward that report and its commentary and recommendations to the Legislature upon completion of the Administration review and approval process. Throughout the balance of this report, this earlier report will be referred to as the 1988 Residential Rate Study. A copy of this report is available (for a copying fee) from the Department upon request.

The data collected during the 1988 Residential Rate Study formed the bulk of the data analyzed in this study. Since that study only dealt with rate setting in the context of WIC 4681, it was necessary to extend the analysis in order to address the unique requirements of WIC 4681.1. To accomplish this, the data set used to develop rate alternatives for Traditional and Special Services facilities (under WIC 4681) was supplemented with the addition of data from 69 ARM pilot project facilities and 31 Negotiated Rate facilities. Data from these facilities had been collected as part of the 618 facilities included in the original 1988 Residential Rate Study sample. The analyses of the ARM and Negotiated Rate facility data were not included in the earlier report because both were outside the scope of the WIC 4681 requirements.

C. GOALS OF THIS STUDY

The overall goals of this study are best summarized in Section 2g (3) of the Contract Work Statement, part of the contract between the Department and Price Waterhouse. The key goals of this study are:

- "(b) Recommend how to define, design, and calculate each cost element required by WIC 4681.1 The recommendations should include a list of the specific cost items used to comprise each cost element. The recommendations should be based on generally accepted accounting principles, the findings of the analysis of facility costs, and the requirements of WIC 4681.1."

- "(c) Recommend FY 1989-90 rates for the ARM system, including the amount for each cost element required in WIC 4681.1 These rates should be appropriate for statewide implementation."

These overall goals were to be met through additional statistical analysis of the data collected from the 618 facilities surveyed as part of the 1988 Residential Rate Study discussed above. The analysis was to specifically include consideration of data from the 69 ARM facilities and 31 Negotiated Rate facilities included in the original sample of 618 facilities. Based on the results of this statistical analysis, recommended rates were to be prepared following the requirements set out in WIC Section 4681.1. This report presents the results of the analysis and the recommended ARM rates.

D. LIMITATIONS OF THIS STUDY

Readers of this report should bear in mind certain limitations governing the data and the approach used to prepare this report. These key limitations and their impact are listed below:

- All cost and facility data were collected in the period from July to October 1988. The cost data related to costs incurred during calendar year 1987. This cost data has been adjusted to account for inflation when used to develop recommended rates for Fiscal Year 1989-90.

- Facility participation in the cost study was entirely voluntary, as DDS does not have the power to compel participation. As will be discussed further in Chapter II and Appendix A, a significant number of facilities we contacted declined to participate. We hypothesize that this non-participation was more frequent among smaller, lower cost facilities, thus adding an unmeasurable upward bias to the costs reported in this study.

- Since the ARM system was a pilot program in only three regional centers in calendar year 1987, the bulk of the facilities in the study sample used to develop proposed ARM rates were <u>not</u> facilities operating under the ARM system. Only 11.2% of our final sample of 614 facilities used to develop recommended rates were actually participating in the ARM pilot in 1987. (The methodology used to develop proposed ARM rates in this report does make provision for the additional costs other facilities will incur when converted to the ARM system.)

- Price Waterhouse did not conduct any evaluation of the quality of services provided by facilities included in the survey. Differences in quality and or quantity of service provided to clients in different facilities may have an effect on reported differences in costs; however, we had no independent basis on which to assess this issue.

A. INTRODUCTION

This chapter summarizes the methodology used to collect, organize, and analyze facility cost data for purposes of developing ARM rate recommendations. In general, the data and methodology used in this study were very similar to those used in the preparing the 1988 Residential Rate Study report. This chapter will briefly review the major steps in the study methodology, discuss principle differences between the 1988 Residential Rate and ARM studies, and set out the key limitations inherent in the approach used for this project.

B. SUMMARY DESCRIPTION OF STUDY METHODOLOGY

The general methodology for both the 1988 Residential Rate Study and this ARM study can be summarized in 11 major steps. These steps and the responsible party for each are:

1. Determine sample size (DDS - through independent consultant).
2. Update data on population of facilities; compile listing (DDS).
3. Develop and test survey forms and instructions (DDS and Price Waterhouse).
4. Train surveyors (Price Waterhouse).
5. Schedule survey visits (Price Waterhouse subcontractor).
6. Conduct survey visits (Price Waterhouse).
7. Review completed survey forms (Price Waterhouse).
8. Perform data entry of survey forms (Price Waterhouse subcontractor).
9. Conduct data analysis; test hypotheses (Price Waterhouse and subcontractor).
10. Present rate system alternatives (Price Waterhouse and subcontractor).
11. Write draft report; submit final report after DDS reviews draft (Price Waterhouse).

Readers wishing additional details concerning the methodology are directed to Appendix A and Appendix E of this report for a discussion of study methodology and data collection forms and instructions. The detailed Research Design used for the 1988 Residential Rate Study provides an extensive discussion of the analytical and statistical techniques which were also used in the ARM study. Appendix E is available upon request (for a copying fee) from the Department.

C. PRINCIPLE DIFFERENCES IN METHODOLOGY USED FOR THE ARM STUDY

The scope of the 1988 Residential Rate Study did not include facilities participating in the ARM pilot or those reimbursed as Negotiated Rate facilities. As a result, data from those facilities were not included in the preparation of reimbursement rate alternatives in the earlier study. Furthermore, the sample designed for the earlier study was not specifically designed to meet the needs of the ARM study.

While ARM facilities appeared in the 1988 Residential Rate Study sample, the number of ARM facilities was an incidental result of the process of sampling non-Special Services facilities for the earlier study. This occurred because the need for an ARM study only became apparent after SB 1513 was enacted in April 1988, a point in time after the 1988 Residential Rate Study sample and RFP had already been completed and issued by the Department. Given the substantial size and cost of the 1988 Residential Rate Study sample, the Department decided to use the information gathered from that sample to conduct the ARM study.

A consequence of the manner in which the sample was designed and actual data were collected is that it is not possible to conduct detailed statistical tests of the variations in costs found between facilities participating in the ARM pilot project at Level 2 and Level 3. The size of the sample of ARM facilities actually achieved (69) was not one designed to produce an estimate of Level 2, Level 3, and Level 4 facility mean costs at a 95% confidence level (with a 5% sampling error). The small size of the ARM sample (69) and the fact that 1987 pilot project facilities were only located in three of the twenty-one regional centers contributed to this result. Additionally, since there were no facilities at ARM Level 4 in 1987, it was not possible to collect any data on the actual costs incurred by such facilities.

For purposes of the ARM study then, it was necessary to conduct an additional level of statistical analysis that was not performed during the 1988 Residential Rate Study. For purposes of this study it was necessary to conduct statistical analysis to determine if data from the ARM and Traditional rate system facilities could be combined for purposes of developing ARM Level 2 and Level 3 rates. It was also necessary to determine if Negotiated Rate and Special Services facilities data could be combined for purposes of developing ARM Level 4 rates. (Only Special Services and Negotiated Rate facilities will be designated as ARM Level 4 facilities.) Additional steps were added to the Research Design developed for the 1988 Residential Rate Study to accomplish these tasks and the required analysis was performed and reported in Chapter V of the ARM report. This additional analysis and the presentation of data findings constituted the principle differences between the 1988 Residential Rate Study and ARM reports.

D. STUDY LIMITATIONS

In considering the results of this study, there are several limitations that the reader should bear in mind. These limitations are discussed below.

Financial Audits Were Not Conducted

The surveys conducted in the course of this study were not formal financial audits conducted in accordance with generally accepted auditing standards. While every effort was made in the survey design, instructions, and data collection process to ensure the reasonableness of the data collected, Price Waterhouse expresses no opinion concerning the accuracy of the underlying financial records that were the source of the cost and revenue information collected from facilities.

Quality of Service Was Not Evaluated

The survey visits did not include an evaluation of the quality of program services provided to clients by surveyed facilities. The quality of items such as food, housing, staff supervision, and facility management were not explicitly or implicitly evaluated.

A Compliance Audit Was Not Part of the Study Process

The survey visit was not a compliance audit or evaluation. No determinations were made as to whether facilities met health and safety standards, federal or state labor law requirements concerning wages or working conditions, procedural or regulatory requirements applicable to residential care facilities (other than verification of licensure by the Department of Social Services), or that DDS or Regional Center programmatic or staffing standards were followed.

Study Participation Was Entirely Voluntary

Participation in the survey was entirely voluntary. No provision of law or regulation required facilities serving DDS clients to participate in the study. A substantial number of facilities contacted in an attempt to schedule a survey visit declined to participate, even after the purpose of the study was discussed in a letter from DDS and explained to them over the telephone by Price Waterhouse's scheduling subcontractor.

Facilities Do Not Keep Standardized Financial Records

No provision of current law or regulation requires facility operators to maintain financial records in any standard format. Facility operators that indicated that even minimal financial records (such as a check register for expenses) were not maintained for their facility were excluded from the study sample.

Treatment of Owner Operators' Labor

A significant limitation of this study involved the difficult problem of measuring the time contributed to facility operation by resident owner operators who did not pay themselves (or family members) any wages. The structure of the data collection instrument only provided for collection of wage, benefit, and labor hours worked data for paid staff. Unpaid time provided by owner operators, family members, or volunteers was not measured. This reflected a decision that it would be very difficult to collect reliable information on such activities since no wage or other financial records existed to validate estimates of the time invested by such unpaid staff. Useful data on hours worked by such staff could not have been collected without conducting a time management or workload measurement study that was beyond the scope of this project.

This limitation has been addressed to a major extent by the Department's decision to reimburse owner operators for the Direct Supervision rate element at the same rate as used for staff operated facilities (adjusted for night supervision staffing differences). This is made possible through use of the Department's Direct Supervision staffing model that specifies the daily number of hours of staff time to be devoted to client supervision and training at each level of the ARM system.

However, the Department has no model concerning the amount of time per client day that facility operators must devote to housekeeping (Basic Living Needs) or administrative (Unallocated Services) tasks. As a result, no additional amount has been added to the recommended rates for owner operators for such labor. The Department may wish to examine this issue in a future study. Such a study should consider the total amount of time expended by owner operators on these tasks, the portion of such time that would have been expended on housekeeping, repair, and administrative duties in the normal course of home ownership and identification of the incremental amount of time required to perform tasks because of the operation of the home as a residential care facility.

ARM Sub-Sample Had Limited Value

As noted earlier, the sample of 69 ARM facilities included in the total sample had limited value for purposes of ARM rate development. These limitations included the limited geographic extent of the ARM pilot in 1987 (only three of 21 regional centers were involved), the fact that no ARM Level 4 facilities were in existence during the study period (1987), and the fact that since ARM was in the early pilot stages in 1987, not all ARM facilities were incurring all of the expenses later to be required by the ARM system. As a result of these limitations, the reader is cautioned not to rely too heavily on the descriptive statistics presented about the 69 ARM facilities in the sample as a true measure of the costs to be incurred by facilities when all join the ARM system by 1991.

A number of steps were taken to reduce the effects of these limitations. First, ARM Level 4 rates were developed using data from a combination of Negotiated Rate and Special Services facilities in the sample. (Statistical analysis indicated that these groups had similar cost levels and thus could be combined.) Second, ARM Level 2 and 3 costs were developed using data from a combination of ARM and Traditional rate system facilities in the sample. (Statistical analysis indicated that these groups had similar cost levels and thus could be combined.) Third, the geographic partitioning of the facility population for rate development purposes limited the impact of the ARM pilot facilities in the sample to the appropriate geographic groups of facilities. Finally, the additional costs facilities which would incur for staff training mandated by the ARM system were added into the actual costs reported by study facilities to ensure that rates fairly reflected these additional costs not found in 1987 data.

Potential Sample Bias Due to Non-Participation

As noted above, participation in the study required the voluntary consent of the facility owner operator of the possession of at least some basic financial records (check registers or tax records, for example). Facilities that did not consent or that did not possess records were not included in the sample. This introduces potential bias to the study results to the extent that the non-participating group differs from the sample facilities. Although the bias cannot be measured, it is considered likely that this would be an "upward" bias in terms of the cost data reported. That is, we hypothesize that the average costs reported by our sample would have been lower if more of the non-participating group had been included in the sample.

In attempting to persuade facilities to participate in the survey, the telephone script used by our subcontractor explained the purpose of the survey as follows:

> *"The Department of Developmental Services is conducting a study of the cost of operating residential care facilities. The purpose of this study is to develop a rate proposal that accurately and adequately reflects the costs of facility operation. This study could result in a rate adjustment bringing rates more in line with actual facility costs. The information collected <u>will not</u> be shared with the Department of Social Services Licensing Division or any other governmental agency."*

Based on this background, it appears reasonable to assume that facilities with relatively low costs (and thus little to gain from the study) would be less likely to participate. On the other hand, facilities with higher costs would be more likely to participate in the study since they would have more to gain from any potential upward adjustment in rates.

Finally, it also appears reasonable to assume that facilities lacking in even basic financial records are more likely to be low cost operators. Exclusion of such facilities from the sample would also tend to add an upward bias to the costs reported in the study sample.

organization such as a regional center

4. Each community maintains a list of case managers by area of expertise and location.
5. Clearinghouse maintains the list
6. Person in need of services interviews potential case managers to whom he/she has been referred. If doesn't like, gets another.
7. State person (HHS) coordinates case management services and resolves difficulties.

H. Parent support - Peer group model
   1. People to people focus - experienced parents help those who are new through counseling, training, providing information.
   2. Teach parents about disabilities, how to access system, how to be advocates.
   3. Prepare videos, tapes, handouts for parent use.

Model Community Project - How to Realize the Concept

A. Pilot-test in three areas (Sebastopol, Fresno, San Diego).

B. Pilot-test organizational chart:
   1. Project manager
   2. Communication manager
   3. Area manager for each area
   4. DDS consultant

C. Network to all agencies currently serving "the people" (DD and others) to find out:
   1. what works re services and organizations
   2. where the money is, so we can tap same

D. Obtain state agencies' commitment for the dollars to do the pilot-test. Not just with DDS, but DMH, DSS and whomever else serves "the people". Do this by :
   1. direct discussions with agencies
   2. get community leaders in each city/area to buy into project

A. INTRODUCTION

The sample of facilities used in this report to develop recommended rates for the ARM system is essentially the same sample used to develop the 1988 Residential Rate Study report.

The lawsuit filed by the California Association for Residential Equality (CARE) alleged that the survey samples used in previous DDS rate studies: 1) were not representative in that they did not reflect the population of residential care facilities serving DDS clients, and 2) were not large enough to conduct statistically valid tests. Pursuant to the requirements of the Court Order for the lawsuit, DDS retained an outside consultant, Dr. Shu Geng, to assist DDS in determining the appropriate sample size for this study. Dr. Shu Geng and DDS determined the sample size to be a total of 615 facilities broken down by each of the four bed size groups. These four sample groups were then allocated across geographic regions and general versus Special Services rate types for purposes of sample selection.

The distribution of facilities in the sample was revised as shown on the following pages in Exhibit III-1, based on updated information received by DDS during the preparatory steps of this study. These revisions (correct address and telephone information, as well as facility rate type) resulted from letters sent by DDS and telephone contacts from the regional centers. The comparisons between the original and the revised target samples are summarized below.

- The total number of facilities to be surveyed remained the same at 615.
- The total number of large bed facilities (50 or more beds) was reduced from 63 to 26, in that there are only 26 such facilities in operation.

Exhibit III - 1

DDS 1988 RESIDENTIAL RATE STUDY

COMPARISON OF ORIGINAL TARGET SAMPLE TO REVISED* TARGET SAMPLE

		PMSA		MSA		Non-MSA		Total	Total
SIZE	TYPE	In RFP	Revised	In RFP	Revised	In RFP	Revised	In RFP	Revised
1-6 Beds	Special	17	32	7	16	6	5	30	53
	Neg. Rate	0	18	0	4	0	0	0	22
	ARM	0	13	0	24	0	8	0	45
	CCF-Trad.	226	202	104	76	20	16	350	294
	1-6 Beds Total	243	265	111	120	26	29	380	414
7-15 Beds	Special	6	4	1	2	0	1	7	7
	Neg. Rate	0	0	0	1	0	1	0	2
	ARM	0	1	0	4	0	2	0	7
	CCF-Trad.	42	42	28	24	5	2	75	68
	7-15 Beds Totals	48	47	29	31	5	6	82	84
16-49 Bed	Special	7	6	3	1	0	0	10	7
	Neg. Rate	0	4	0	3	0	0	0	7
	ARM	0	3	0	7	0	0	0	10
	CCF-Trad.	59	51	19	15	2	1	80	67
	16-49 Beds Totals	66	64	22	26	2	1	90	91
50+ Beds	Special	4	3	0	0	0	0	4	3
	Neg. Rate	0	2	0	1	0	0	0	3
	ARM	0	1	0	0	0	1	0	2
	CCF-Trad.	46	16	12	2	1	0	59	18
	50+ Beds Totals	50	22	12	3	1	1	63	26
Totals		407	398	174	180	34	37	615	615

* The original target sample was published in the RFP. This sample was revised on 8/9/88 as described on page IV-1

- In the original target sample, the only distinction by facility type was between Special Services and general which included Traditional, ARM, and Negotiated Rate facilities. However, given the need for additional information about each facility type, Negotiated Rate and ARM facilities were broken out from the previous category of general facilities. The revised target sample included 34 Negotiated Rate, 447 Traditional, and 64 ARM facilities.

- The number of Special Services facilities was increased from 51 to 70, with 70 representing all Special Services facilities. DDS determined the need for additional information about Special Services facilities and decided to survey all of them.

B. COMPARISON OF SAMPLE CHARACTERISTICS TO THE POPULATION

Target Versus Actual Sample

Exhibit III-2 on the following page shows the comparisons of the actual sample to the revised target sample. The comparisons are summarized below:

- A total of 618 survey visits were completed. In order to ensure that the required 615 surveys were completed, a decision was made to "over-book" a few visits due to the cancellation trend. (See Appendix A "Scheduling Problems.") Data from all 618 surveys were used in the 1988 Residential Rate Study. For purposes of this ARM study four (4) Traditional rate type facilities were excluded from the sample. These facilities were all 1 to 6 bed facilities which only served clients at the "Basic" level of supervision. Since DDS has determined that such facilities will not be classified as ARM Level 2 or 3 facilities when ARM is fully implemented, the data from these facilities was excluded from the sample. This exclusion has the effect of raising both the mean and median values for the remaining sample for total Basic Living Needs, Direct Supervision, Unallocated Costs, and total costs per client day.

Exhibit III - 2

DDS 1988 RESIDENTIAL RATE STUDY

COMPARISON OF REVISED TARGET SAMPLE TO ACTUAL SAMPLE

SIZE	TYPE	PMSA Revised	PMSA Actual	MSA Revised	MSA Actual	Non-MSA Revised	Non-MSA Actual	Total Revised	Total Actual
1-6 Beds	Special	32	17	16	11	5	4	53	32
	Neg. Rate	18	19	4	3	0	0	22	22
	ARM	13	8	24	44	8	9	45	61
	CCF-Trad.	202	237	76	120	16	14	294	371
1-6 Beds Total		265	281	120	178	29	27	414	486
7-15 Beds	Special	4	4	2	2	1	0	7	6
	Neg. Rate	0	0	1	1	1	0	2	1
	ARM	1	0	4	3	2	1	7	4
	CCF-Trad.	42	35	24	25	2	0	68	60
7-15 Beds Totals		47	39	31	31	6	1	84	71
16-49 Bed	Special	6	5	1	1	0	0	7	6
	Neg. Rate	4	3	3	2	0	1	7	6
	ARM	3	0	7	2	0	0	10	2
	CCF-Trad.	51	24	15	7	1	0	67	31
16-49 Beds Totals		64	32	26	12	1	1	91	45
50+ Beds	Special	3	2	0	0	0	0	3	2
	Neg. Rate	2	1	1	1	0	0	3	2
	ARM	1	0	0	1	1	1	2	2
	CCF-Trad.	16	5	2	1	0	0	18	6
50+ Beds Totals		22	8	3	3	1	1	26	12
Totals		398	360	180	224	37	30	615	614

- Only 12 (or 46%) of the 26 large bed facilities (50 or more beds) participated in the survey. We attempted to contact every facility in this size category to ask them to participate in the study. Only 12 were willing or able to participate.

- Only 45 of the targeted 91 facilities in the 16-49 bed size category participated in the survey. This represents 40% of this sub-population. We attempted to contact every facility in this size category to ask them to participate in the study but only 45 were willing or able to participate.

- A total of 46 Special Services facilities participated, representing over 65% of the sub-population of such facilities. We attempted to contact every facility in this rate category to ask them to participate in the study in order to achieve the target number of surveys in this category.

- A total of 31 facilities Negotiated Rate facilities (29% of total sub-population) participated in the survey.

Actual Sample Versus Population

Exhibit III-3 compares the actual sample with the population of facilities. This chart also shows the proportions of the sample (by size, facility rate type, and geographical location) compared to the population proportions. The geographical locations are designated as Primary Metropolitan Statistical Area (PMSA), Metropolitan Statistical Area (MSA), and Non-Metropolitan Statistical Area (Non-MSA). These categories are used by the Census Bureau and other demographic researchers to categorize the counties in California. The PMSA category consists of the five counties in the Los Angeles metropolitan area (Los Angeles, Orange, Riverside, San Bernardino, and Ventura) and the ten counties in the San Francisco Bay Area (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma). The MSA category includes 16 counties that are part of other metropolitan statistical areas in California (Butte, El Dorado, Fresno, Kern, Monterey, Placer, Sacramento, San Diego, San Joaquin, Santa Barbara, Shasta, Stanislaus, Sutter, Tulare, Yolo, and Yuba). All other counties were included in the Non-MSA category.

C. GENERAL CHARACTERISTICS OF THE SAMPLE

General characteristics about the sample of facilities surveyed are described in the following sections:

- Ownership Characteristics;
- Mode of Operation;
- Facility Rate Type; and
- Geographical Dispersion.

Ownership Characteristics

The comparison of facility ownership types is shown in Exhibit III-4, on the following page. Significant descriptions are summarized below.

- The total number of owner operator facilities is 473, or 77% of the sample. Of these, over 66% (407) are small, 1-6 bed facilities managed by an owner operator. The owner operator may or may not live at the facility.

- The rest of the facilities in the sample (141) are not managed by an owner operator. This group was further subdivided into non-profit and for profit.

- The total number of non-profit facilities is 89, or 14% of the total. Of these, 62% are 1-6 bed size facilities.

- A vast majority (85%) of the owner operated facilities are reimbursed under the Traditional rate system.

- Over 62% (56) of the non-profit facilities in the sample are in the Special Services and Negotiated Rate categories.

Exhibit III - 4

DDS 1988 RESIDENTIAL RATE STUDY

OWNERSHIP CHARACTERISTICS OF THE SAMPLE OF SURVEYED FACILITIES

Facility Size	Owner/Oper.	Non-Profit	For Profit	Total
1-6 beds	407	55	24	486
7 to 15 beds	49	15	7	71
16 to 49 beds	16	13	16	45
50 + beds	1	6	5	12
Total	473	89	52	614

Geographic Area	Owner/Oper.	Non-Profit	For Profit	Total
PMSA	263	56	41	360
MSA	186	28	10	224
Non-MSA	24	5	1	30
Total	473	89	52	614

Facility Rate	Owner/Oper.	Non-Profit	For Profit	Total
Traditional	404	28	36	468
ARM	62	5	2	69
Neg. Rate	4	20	7	31
Special Service	3	36	7	46
Total	473	89	52	614

Mode of Operation

"Mode of operation" is distinguished from "ownership characteristic." DDS, in its survey forms instructions, sought a specific breakdown of facility types based on ownership composition and operational structure. With regard to operations, facilities are categorized as one of two types: resident owner operated, in which the owner lives at the facility and may or may not be assisted by paid staff, and staff operated, in which the owner does not reside at the facility and where staff are paid for their services. Exhibit III-5, on the following page, shows data on operations characteristics of the facilities surveyed.

- A total of 362 facilities, or 59%, have a resident owner operator, that is, the owner lives at the facility and provides some or all of the client care.

- Over 67% (330 facilities) of the 1-6 bed facilities are resident owner operated. None of the 50+ bed size facilities are owner operated and only 13% (6) in the 16-49 bed size category are owner operated facilities.

- A total of 252 facilities, or 41%, are staff operated facilities. The majority of these (156 or 62%) are 1-6 bed facilities.

- Over half (53%) of the facilities that participated in the survey are small, 1-6 bed facilities that are resident owner operated.

Thus, resident owner operated facilities tend to be small facilities reimbursed under the Traditional or ARM systems, while larger facilities tend to be staff operated. Negotiated Rate and Special Services facilities, in contrast, are almost entirely staff operated facilities.

Exhibit III - 5

DDS 1988 RESIDENTIAL RATE STUDY

OPERATIONS CHARACTERISTICS OF THE SAMPLE OF SURVEYED FACILITIES

Facility Size	Resident Owner Operated*	Staff Operated	Total
1-6 beds	330	156	486
7 to 15 beds	26	45	71
16 to 49 beds	6	39	45
50 + beds	0	12	12
Total	362	252	614

Geographic Area	Resident Owner Operated*	Staff Operated	Total
PMSA	198	162	360
MSA	144	80	224
Non-MSA	20	10	30
Total	362	252	614

Service Rate	Resident Owner Operated*	Staff Operated	Total
Traditional	309	159	468
ARM	51	18	69
Neg. Rate	0	31	31
Special Service	2	44	46
Total	362	252	614

*This includes facilities in which owners provide services and may also have paid staff providing services.

Facility Rate Type Characteristics

Referring again to Exhibit III-3, the following are significant facility rate type characteristics:

- Of the total number of facilities surveyed, 76% (468) are Traditional rate facilities. The next largest group is ARM facilities, which accounts for 11% (69 facilities) of the facilities surveyed; however, only 16% of all ARM facilities participated in the study.

- Over 65% (46) of all Special Services facilities were surveyed. Of these, 70% (32 of 46) are 1-6 bed facilities.

- Only one of the 31 Negotiated Rate facilities surveyed is located in a non-metropolitan statistical area. Of the remaining 30 in the sample, 23 are located in primary metropolitan statistical areas.

Thus, the overwhelming proportion of facilities surveyed were Traditional rate facilities. Although a majority of Special Services facilities participated, much smaller proportions of ARM and Negotiated Rate facilities participated. Of these two latter groups, 77% are 1-6 bed facilities located in PMSA or MSA counties.

Geographical Distribution

Exhibit III-6, on the following page, shows the distribution of facilities surveyed by regional center grouping and by county. Characteristics of the geographical dispersion of surveyed facilities include the following:

- Facilities were surveyed in all 21 regional center areas.

- Of the 614 facilities included in the sample, 47% (289) of them are located in southern California counties, namely Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura.

Exhibit III-6

DDS 1988 RESIDENTIAL RATE STUDY

GEOGRAPHICAL DISPERSION OF FACILITIES SURVEYED

BY REGIONAL CENTER AND COUNTY

Regional Center	Number of Facilities in Sample
Alta	60
Central Valley	60
East Bay	45
East Los Angeles	8
Far Northern	11
Golden Gate	32
Harbor	11
Inland	54
Kern	5
Lanterman	11
North Los Angeles	28
North Bay	43
Orange	36
Redwood	4
San Andreas	26
San Diego	41
San Gabriel/Pomona	34
South Central	25
Tri County	33
Valley Mountain	38
Westside	9
TOTAL	614

County	Number of Facilities in Sample	County	Number of Facilities in Sample
Alameda	30	Sacramento	41
Amador	2	San Bernadino	36
Butte	9	San Diego	39
Contra Costa	12	San Francisco	17
Fresno	15	San Joaquin	35
Humboldt	1	San Luis Obispo	7
Imperial	2	San Mateo	7
Kern	5	Santa Barbara	18
Kings	2	Santa Clara	12
Lake	1	Santa Cruz	8
Los Angeles	112	Shasta	1
Madera	10	Siskiyou	1
Marin	8	Solano	7
Mendocino	2	Sonoma	31
Merced	2	Stanislaus	4
Monterey	6	Sutter	1
Napa	5	Tulare	32
Orange	35	Ventura	8
Placer	16	Yolo	1
Riverside	32	Yuba	1
		TOTAL	614

- Only 30 or about 5% of the facilities surveyed are located in non-metropolitan statistical areas. The majority of facilities surveyed (364 or 59%) are located in either the San Francisco or Los Angles primary metropolitan statistical areas.

Thus, most facilities that participated in this study are located in metropolitan areas (PMSA or MSA counties). This is not surprising, since the majority of all facilities (in the population) are located in these areas.

D. DISCUSSION OF SAMPLE AND STATISTICAL VALIDITY

Why Was the 1988 Residential Rate Study Sample Used in the ARM Study?

There was no statutory or court ordered requirement that the 1988 Residential Rate Study sample be used in this study. There were, however, three reasons why DDS chose to use the same sample for both studies. First, the cost data collected from all facilities in the sample included all of the rate elements and detailed cost subcomponents included in both WIC 4681 and 4681.1. Thus it was possible to use the same data to develop rate recommendations under both statutory provisions. Second, facilities operating in all of the rate systems will eventually be converted to the ARM system by 1991. It is reasonable to survey the costs of facilities operating in all geographic areas and rate systems in order to develop ARM rate recommendations that fairly reflect actual facility cost experience. Third, where ARM rates will differ most from previous rate system (the Direct Supervision rate element and added staff training costs) it is possible to "model" costs in such a way as to properly reflect these new costs while still using survey sample data to estimate other facility cost elements. As a result of these considerations, it was decided to use the same sample to prepare both the 1988 Residential Rate and ARM studies.

Statistical Validity

As mentioned in the methodological discussion in Chapter II and Appendix A, DDS and its contractor, Dr. Shu Geng, determined the sample size and number of facilities within each bed size category that should be surveyed for the 1988

Residential Rate Study in order to achieve statistical validity at the 95% confidence level (with a 5% sampling error). This level of statistical validity for the sample of Traditional and Special Services facilities was required by the Court Order in the CARE lawsuit. The requirements of the Court Order, however, did not apply to to this ARM study. However, given the fact that the 1988 Residential Rate Study sample was the same basic sample used for this study, it is helpful to discuss the nature of the sample in relation to the goals set out in the Court Order as a means to assess the overall usefulness of the sample.

Due to the extensive refusal rate (see Chapter II and Appendix A) and larger than originally expected coefficients of variation in several of the bed size groups, the desired characteristics of the sample as originally anticipated were not obtained in all sub-populations. The issue of what effects, if any, this change has on the value of the statistical tests performed on the data warrants detailed discussion.

Does the Sample Meet the Survey Requirements of the Court Order?

In the CARE lawsuit, the Court specified three things about the sample: it must be sufficiently large enough, it must be random, and it must be capable of producing statistical tests at the 95% confidence level with a sampling error of 5%.

Sample Size

DDS and Dr. Shu Geng determined that a total of 615 facilities would be surveyed. This represents approximately 18% of the known population of DDS residential care facilities. Although this overall sample size is greater than what would be considered adequate for the total population (for instance, 10% of the population is often adequate) the sample sizes for each of the four bed size categories were determined to be necessary to achieve the required confidence level for each bed size group. Thus, the sum total of all samples by bed size category and location resulted in a larger total sample size than if the universe was treated as a single population. A total of 618 facilities were included in the 1988 Residential Rate Study and 614 in this ARM study.

Randomness

The primary objective of a statistical sampling procedure is to develop reasonably precise estimates of the population parameters under study without surveying 100% of the population. DDS used a random sampling technique in compiling the original list (totalling 615) and replacement list (totalling 188) of facilities in the survey sample. Because so many facilities from the original list and the replacement list declined to or could not participate, there was a need to generate additional lists. Unfortunately, for some of the bed size samples, the total population in that category had already been included in the original lists, making it impossible to meet the sample size goal for specific bed size categories since their randomized lists were exhausted. Therefore, in order to complete the number of contracted survey visits required by DDS in the RFP, facilities from a third randomized list were chosen. In effect, the "over-representation" of 1-6 bed facilities is the direct result of the lack of participation of facilities in other bed size categories: to survey 615 facilities, we had to draw upon the 1-6 bed and 7-15 bed size categories since all facilities in the other two size categories either had participated or had been contacted and could not participate. As will be discussed in Chapter VI, the effects of the "over sampling" of smaller facilities in the rate setting process are controlled for when rates are set in a fashion that controls for both mode of operation (owner operated vs. staff operated) and geographic location.

What is the Effect of the High Refusal Rate?

Many facilities chose not to participate in the study because they were not required to; others were screened out because they did not maintain sufficient financial records to participate. Therefore, we speculate that an upward bias was introduced into the cost data. This seems reasonable in that: 1) facilities with no financial records are more likely to be low-cost, and 2) since the survey was voluntary, those facilities with low costs (and hence larger net revenues) have nothing to gain from the results of the study.

Sampling Error at the 95% Confidence Level

Exhibit III-7 shows the actual sampling error achieved for each bed size category and rate type at a 95% confidence level. The original goal of the 1988 Residential

Exhibit III - 7

SAMPLING ERROR AT A 95% CONFIDENCE LEVEL

ACTUAL SAMPLE USED FOR ARM STUDY

Actual Sample by Rate Type

Rate Type	Estimated Population	Sample Size	CV	Sampling Error	Confid. Interval
Spec. Svs & Neg. Rate	177	77	36.44%	6.2%	95%
ARM	407	69	34.60%	7.6%	95%
CCF Trad.	2,792	468	37.46%	3.1%	95%
Total	3,376	614			

Actual Sample Achieved - ARM & Traditional Only

Bed Size	Actual Population	Sample Size	CV	Sampling Error	Confid. Interval
1-6 beds	2,753	432	38.15%	3.3%	95%
7 to 15 beds	329	64	34.75%	7.8%	95%
16 to 49 beds	97	33	27.12%	7.8%	95%
50 + beds	20	8	25.32%	16.4%	95%
Total	3,199	537			

Actual Sample Achieved - S.S. & Neg. Rate Only

Bed Size	Actual Population	Sample Size	CV	Sampling Error	Confid. Interval
1-6 beds	148	54	34.45%	7.6%	95%
7 to 15 beds	9	7	45.41%	19.8%	95%
16 to 49 beds	14	12	34.33%	8.2%	95%
50 + beds	6	4	15.53%	14.3%	95%
Total	177	77			

Notes:
Coefficient of Variation (CV) was computed using total BLN costs including wages and benefits since this was the best measure of cost variation in the study population. (CV = the standard deviation expressed as a percentage of the mean.)

Rate Study sample design was to achieve a 5% sampling error at a 95% confidence level for each bed size in the non-Special Services facilities rate types.

As can be seen in Exhibit III-7, at the 95% confidence level the sampling error was 3.1% for the Traditional rate type facilities in the sample, 7.6% for the ARM facilities, and 6.2% for the Special Services and Negotiated Rate facilities. The sampling error shown can be interpreted as follows (using the Traditional facilities as an example): "There is a 95% probability that additional samples of size 468 taken from the same population will have a mean total Basic Living Needs cost that is within plus or minus 3.1% of the mean found in the sample used in this study."

Exhibit III-7 also shows the sampling error by bed size for the two major groupings of facilities analyzed later in this report. (See Chapter V.) The two groups are the combination of the Traditional and ARM rate type facilities and the combination of the Special Services and Negotiated Rate type facilities. Sampling error in the Traditional and ARM group ranges from a low of 3.3% among the 1-6 bed facilities to 16.4% in the 50+ bed facilities. While the sampling error is large in 50+ group, that group has the smallest number of facilities in the category. Sampling error is under 8% for all other size groups.

Among the Special Services and Negotiated Rate facilities sampling error ranges from 7.6% among the large number of 1-6 bed facilities to 19.8% in the 7-15 bed facilities. It is interesting to note the large sampling errors found for the 7-15 and 50+ bed size groups even though over two-thirds of each population were sampled. This result reflects the large amount of variation found in the costs in each group. The reader should also bear in mind that an attempt was made to contact all facilities in each group to obtain participation in this voluntary survey.

Overall Conclusions

- At a 95% confidence level, a sampling error of less than 10% was achieved for three of the four bed size groups in the ARM and Traditional rate type facilities (1 to 6 beds - 3.3%, 7 to 15 beds - 7.8%, and 16 to 49 beds - 7.8%). Only in the 50+ bed size group was the sampling error greater than 10% (16.4%). As a result, although a 5% sampling error was not achieved for all bed size categories, the results of the survey still provide data sufficient to meet the underlying objectives of the study, namely a sufficiently large, randomly selected sample that can provide statistically meaningful results.

- At a 95% confidence level, a sampling error of less than 10% was achieved for two of the four bed size groups in the Special Services and Negotiated Rate type facilities (1 to 6 beds - 7.6% and 16 to 49 beds - 8.2%). These two groups represent 91% of the total population of such facilities. Larger sampling errors were found in the other two size groups despite sampling over two-thirds of the total population in each group.

- The overall sample is the largest ever surveyed, being nearly eight times larger than the largest previous sample conducted by the Department.

- Due to the voluntary nature of the survey and the relatively high rates on non-participation in the larger bed size groups, a completely random sample was not achieved. We speculate that this may have caused some upward bias in the cost data.

INTRODUCTION

The most essential elements of this project involved the collection and analysis of detailed cost data from over 600 residential care facilities. In this chapter the reader is provided with basic background information concerning how the cost data were structured, how cost allocations were made among the analytical categories used in rate development, how consistent "cost per client day" data were developed, how source data document quality was addressed, and how data outliers were reviewed. The reader seeking additional information about the survey data collection forms and instructions will find them in Appendix E, a separate document that is available at a nominal copying fee from DDS.

A. COST DATA STRUCTURE

The cost data collected during the survey visits was designed to meet the requirements of Welfare and Institutions Code Sections 4681 and 4681.1 with respect to the various cost elements that must be reflected in rates to be paid residential care facilities. Working with a detailed list of cost items originally developed by DDS, Price Waterhouse prepared detailed data collection forms and instructions to gather cost and other required data. DDS reviewed and approved these forms and instructions.

Due to the enormous volume and detail of data associated with this project, we defined a data structure to ensure consistent treatment of cost and other classification data. The major focus of developing this structure was to achieve a level of cost detail appropriate for the purposes of statistical estimation and analysis. For purposes of computing statistical measures and testing hypotheses, we classified the cost data for each facility in the data base into the following matrix:

Basic Living Needs	Direct Supervision	Special Services	Unallocated Costs Facility	Costs Unrelated To Study
1.1 Wages and Benefits	2.1 Wages & Benefits	3.2 Special Supplies	4.1 Wages & Benefits	5.1
1.2 Housing	3.1 Wages & Benefits (Spec. Svs. facil.)	4.9 Consultant Svs.	4.2 Housing	
1.3 Furniture			4.3 Furniture	
1.4 Insurance			4.4 Insurance	
1.5 Utilities			4.5 Utilities	
1.6 Food			4.6 Housekeeping	
1.7 Housekeeping			4.7 Transportation	
1.8 Clothing/Personal Care			4.8 Special Supplies	
			4.9 Consultant Services	
1.9 Transportation			4.10 G&A	
1.10 Special Supplies			4.11 Parent Co. Fee	

We have designated the level of costs identified above as Level 1 costs. Each Level 1 cost is made up of one or more Level 2 costs. Level 2 costs correspond to individual items of expense contained on data collection Form 100. Appendix A of this report presents a detailed listing of the Level 2 costs that make up each of the Level 1 costs listed above. Appendix A also provides a brief description of the types of costs included in each category and major cost allocation considerations for each category. The appendix is organized around the major cost elements of WIC Section 4681.1 in order to demonstrate that the cost data collected in this study meet the requirements of statute for purposes of developing reimbursement rates.

The prime consideration for selecting the Level 1 costs for analysis and not Level 2 costs was to obtain the maximum degree of detail while preserving the comparability of costs from one facility to another. For instance, the Basic Livings Needs Housing Cost (item 1.2 in the table above) for some facilities consists primarily of rental cost and for others it primarily consists of ownership costs (mortgage interest plus depreciation). It is appropriate for certain analyses to treat these costs as a single type, as "the housing costs," rather than treat those facilities which rent as a different population from those which own. However, as necessary, Level 2 costs have been used where the level of aggregation in Level 1 costs is inappropriate (as was the case for the analysis of net assets connected with calculation of a proprietary fee).

This does not mean that we have ignored cost differences in our analysis. Rather it means that we tested factors that we believe may be responsible for cost differences (in this case renting versus owning) as a separate step of our analysis.

B. COST ALLOCATION METHODS

During the survey visit, the staff accountant identified costs directly identifiable on the forms. Where there were instances of expenses that could not be directly and solely allocated to one cost item, the staff accountant would allocate that expense following the instructions for that cost category and after a discussion with the facility operator. The methods of allocation were:

Direct	—	Cost can be directly or specifically identified to cost category(s) due to the nature of the cost or the detail provided by the facility's accounting records.
Square Ft.	—	Allocation percentages developed per Form 150 - Square Footage Allocation Worksheet.
Usage	—	Cost allocated based upon usage/time.
# Clients	—	Number of clients vs. non-clients residing at the facility.
Estimate	—	Per owner operator's judgment. Does not appear unreasonable to data collector.

In addition, for facilities that are part of a larger organization and that reported home office/overhead expenses, so-called "home office expenses" were identified and allocated to appropriate client-related and unrelated cost categories. This allocation was done on the basis of one of four methods:

1. Direct Facility Cost (DFC)

$$\frac{\text{DFC for selected Rate Study Facility}}{\text{Total DFC for all facilities/programs}} = \text{Percentage of home office cost to allocate to selected rate study facility.}$$

2. Staffing Cost

$$\frac{\text{Gross wages for employees working directly for the selected rate study facility}}{\text{Total gross wages for all employees working directly for a facility/programs (i.e., all employees at all facilities/programs)}} = \text{Percentage of home office cost to allocate to selected rate study facility.}$$

3. Number of Staff

$$\frac{\text{Number of staff working directly at selected rate study facility}}{\text{Total number of staff working all facilities/programs}} = \text{Percentage of home office cost to allocate to selected rate study facility.}$$

4. Number of Clients (regional and non-regional center)

$$\frac{\text{Average number of clients living at selected rate study facility}}{\text{Total average number of clients living at all facilities}} = \text{Percentage of home office cost to allocate to selected rate study facility.}$$

C. DEVELOPMENT OF UNIT COSTS

In order to compare costs across a large number of facilities that vary widely in the number of client days of service delivered, it is necessary to develop unit costs using some common denominator. For purposes of this study, "cost per client day" has been used for such comparisons.

Cost data for this study were collected on Form 100, Facility Cost Summary. Form 100 breaks down facility costs into 40 separate cost categories (such as wages, benefits, interest expense, food, etc.). The costs in each of the 40 categories were allocated among four general cost groups that correspond to the general types of costs that Welfare and Institutions Code Section 4681.1 specifies for rate-making purposes. These four groups are:

- Basic Living Needs (BLN);
- Direct Supervision (DS);
- Special Services (SS); and
- Unallocated Facility Costs (UFC).

If part or all of the total costs reported in any of the 40 categories did not contribute to the provision of residential care to clients, then these costs were placed in a fifth category, Unrelated to Rate Study. Costs in this fifth category are excluded in all calculations of "cost per client day." In effect, a 40 x 5 matrix was created to collect and categorize cost data.

In addition to the four major categories (rate elements) listed above, WIC 4681.1 also specifies three other rate elements: mandated capital improvements and equipment, a proprietary fee, and a geographic cost adjustment factor. Depreciation of all capital improvements or equipment was included in BLN and UFC. The other two elements are not directly measurable costs. They are, however, provided for in the rate recommendations based on use of survey data to model geographic cost variations and an adequate proprietary fee.

Cost Per Client Day

In order to compute "cost per client day" it is important to understand that three different groups of persons can reside in a residential care facility: Regional Center (DDS) clients, other clients (mental health, aged, etc.), and other non-client persons (operator, relatives, staff, etc.) residing at the facility. In developing "cost per client day," it is essential to recognize that some of the costs reported in the 40 cost categories and allocated to the four general cost groups (such as BLN or UFC) benefit other persons residing at the facility <u>in addition to</u> Regional Center clients.

Appropriate Recording of Cost Data

The nature of the cost records kept by many facility operators (particularly the large number of small facilities in the population) is such that they do not routinely segregate business-related (client-related) from personal expenses. As the staff accountant gathered information during the survey visit, cost data were recorded onto the survey forms in the following sequence:

1. Is the cost unrelated to residential care?

   If it were determined that a particular cost item was unrelated to the provision of residential care services, then that data were segregated and recorded in the unrelated cost column on Form 100.

2. For costs appropriately related to the provision of residential care services, what is the appropriate allocation of such costs among Basic Living Needs, Direct Supervision, Special Services, and Unallocated Facility Costs?

   Using reasonable and appropriate methods, these costs were allocated across the various rate categories.

3. Then, using the number of DDS Clients, number of other clients, and the number of non-clients at the facility, total cost per client day and cost per person day were calculated.

For purposes of computing "cost per client day" it is necessary to reflect whether a given cost is a function of the number of clients in a facility or the total number of persons residing in a facility. Moreover, this study assumes that there is no difference between Regional Center (DDS) clients and other types of clients (e.g., aged, mental health) in terms of Basic Living Needs and Unallocated Costs. As a result, the "Total Client Days of Residential Care" (Reported on line 13 of Form 50, Client Enrollment Summary) can be used as the appropriate measure of days of client service for unit cost calculations. An exception to this rule concerns Special Services expenses. Since these costs are only incurred on behalf of Regional

Center clients, only the number of client days of Regional Center clients was used to compute "cost per client day" totals for the limited number of Special Services facilities in the sample.

Exhibit IV-1 displays how each cost element in the data set was adjusted for purposes of calculating "cost per client day." (The Research Design used for the 1988 Residential Rate Study report contains a full discussion of cost segregation and allocation. It is available upon request from the Department.)

D. EAD RATINGS ANALYSIS

Definition of EAD Ratings

For the pilot study conducted in February 1988, DDS developed and used a rating system by which it evaluated the level of accuracy and integrity of data collected during its surveys. The so-called EAD or Estimated Accuracy of Data rating also was used in this study to rate data in terms of the source of the data, that is whether or not a document or tangible record existed to support data. Although it is reasonable to assess the "value" of data collected during a survey, it should be kept in mind that the application of DDS' EAD rating is not a procedure employed when conducting financial audits according to generally accepted auditing standards (GAAS). The measures used in following GAAS are employed for different purposes than was the EAD rating used. Put simply, the EAD was used only to assess, in the best judgment of the staff accountant conducting the survey, the basis (or source) of the information gathered during the survey.

The purpose of using an EAD rating in this study was to give DDS the flexibility of first evaluating the nature and sources of data collected during this study and then determining if, due to the lack of reporting standards, there would be the need to eliminate data from the study. Since there is no requirement for a facility to maintain financial records of any kind, DDS thought it prudent to consistently assess the nature of the data at the point it was collected, statistically test for the significance of any differences found among groups, then decide whether to retain data based upon the results of those tests.

Exhibit III - 3

DDS 1988 RESIDENTIAL RATE STUDY

COMPARISON OF ACTUAL SAMPLE TO POPULATION

SIZE	TYPE	PMSA Pop.	PMSA Sample	MSA Pop.	MSA Sample	Non-MSA Pop.	Non-MSA Sample	Total Pop.	Total Sample
1-6 Beds	Special	32	17	16	11	5	4	53	32
	Neg. Rate	80	19	12	3	3	0	95	22
	ARM	58	8	236	44	74	9	368	61
	CCF-Trad.	1,693	237	604	120	88	14	2385	371
	1-6 Beds Total	1,863	281	868	178	170	27	2901	486
7-15 Beds	Special	4	4	2	2	1	0	7	6
	Neg. Rate	0	0	1	1	1	0	2	1
	ARM	1	0	21	3	5	1	27	4
	CCF-Trad.	189	35	100	25	13	0	302	60
	7-15 Beds Totals	194	39	124	31	20	1	338	71
16-49 Bed	Special	6	5	1	1	0	0	7	6
	Neg. Rate	4	3	3	2	0	1	7	6
	ARM	3	0	7	2	0	0	10	2
	CCF-Trad.	67	24	19	7	1	0	87	31
	16-49 Beds Totals	80	32	30	12	1	1	111	45
50+ Beds	Special	3	2	0	0	0	0	3	2
	Neg. Rate	2	1	1	1	0	0	3	2
	ARM	1	0	0	1	1	1	2	2
	CCF-Trad.	16	5	2	1	0	0	18	6
	50+ Beds Totals	22	8	3	3	1	1	26	12
Totals		2159	360	1025	224	192	30	3376	614

Exhibit IV-1

Department of Developmental Services 1988 Residential Rate Study
Calculation of Unit Costs

Cost Item (from Form 100)	Line #	BLN	DS	SS	UFC
Wages	1	Divide by total person days	Divide by total client days	Divide by DDS client days *(S.S. Wages incl. in DS)*	Divide by total client days
Fringe Benefits	2	Divide by total person days	Divide by total client days	Divide by DDS client days *(S.S. benefits incl. in DS)*	Divide by total client days
Facility Rent/lease	3	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days
Furn./Equip. Rent/lease	4	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days
Vehicle Rent/lease	5	**Divide by total client days**	////////////////////////////////	////////////////////////////////	Divide by total client days
Facility Interest	7	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days
Cap. Improve Interest	8	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days
Furn./Equip. Interest	9	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days
Vehicle Interest	10	**Divide by total client days**	////////////////////////////////	////////////////////////////////	Divide by total client days
Facility Depreciation	12	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days
Cap. Improve. Deprec.	13	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days
Furn./Equip. Deprec.	14	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days
Vehicle Deprec.	15	**Divide by total client days**	////////////////////////////////	////////////////////////////////	Divide by total client days
Insurance (non-vehicle)	17	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days
Insurance (vehicle)	18	**Divide by total client days**	////////////////////////////////	////////////////////////////////	Divide by total client days
Utilities	20	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days
Food (groceries)	21	Divide by total person days	////////////////////////////////	////////////////////////////////	////////////////////////////////
Restaurant Meals	22	**Divide by total client days**	////////////////////////////////	////////////////////////////////	////////////////////////////////
Property Taxes	23	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days
Housekeeping Supplies	24	Divide by total person days	////////////////////////////////	////////////////////////////////	Divide by total client days

Exhibit IV-1

Department of Developmental Services 1988 Residential Rate Study
Calculation of Unit Costs

Cost Item (from Form 100)	Line #	BLN	DS	SS	UFC
Office Supp. & Postage	25	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Transport: Gas & oil	26	**Divide by total client days**	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Transport: Maint./repair	27	**Divide by total client days**	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Transport: License fees	28	**Divide by total client days**	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Transport: Other	29	**Divide by total client days**	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Clothing/Personal Care	31	**Divide by total client days**	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////
Special Supplies/Equip.	32	**Divide by total client days**	////////////////////////////////////	Divide by DDS client days *(ARM Level 4 only)*	Divide by total client days
Housekeeping/Laundry	33	Divide by total person days	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Clinical Consulting Svcs.	34	////////////////////////////////////	////////////////////////////////////	Divide by DDS client days (SS) *(ARM Level 4 only)*	Divide by total client days
Administration Svcs.	35	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Advertising	36	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Travel	37	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Dues/Subscriptions	38	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Business Taxes	39	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Required Licenses	40	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Staff Training	41	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Telephone	42	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Facility Repair/Maint.	43	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	**Divide by total person days**
Home office fee/overhead	44	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	Divide by total client days
Miscellaneous Expenses	45	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////	**Divide by total person days**

It should be kept in mind that facilities with no records and facilities whose owners felt their records were inadequate for purposes of this study, were screened out from the study in the scheduling process. Thus, those facilities with "poor" records were not EAD rated since they were not surveyed.

EAD Rating Codes

DDS developed four EAD ratings. A variety of information was evaluated and scored with EAD ratings in this study; however, since this is a cost study, the most important ratings were those given to cost data collected on Form 100 "Facility Cost Summary." The four categories of EAD ratings are:

- EAD Rating of 1: Costs are presumed to be accurate based on a review of accounting records and documents during the course of the survey visit.

- EAD Rating of 2: Costs are based on owner operator's best estimate which cannot be validated by reviewing records and the data does not appear to be unreasonable.

- EAD Rating of 3: Total costs are somewhat questionable to the data collector due to lack of supporting documentation, the data collector has limited confidence in the accuracy of the total costs; however, it is the best estimate that the owner operator could provide.

- EAD Rating of 4: Not applicable. The cost item was not incurred by this facility.

As directed in the forms instructions, staff accountants evaluated all designated data where it was required that an EAD rating be given. The data collector would evaluate the accuracy and integrity of the data and would enter an EAD rating for each line item. Further, in the site memo prepared by the data collector, the staff accountant would summarize his or her opinion about the nature of the data collected.

For purposes of the analysis in this study, Price Waterhouse only evaluated the EAD ratings relevant to costs. (The relevance of EAD ratings on other items was minimal.) The remainder of this section discusses how EAD ratings were used to evaluate the integrity of the cost data.

How EAD Ratings Were Used to Analyze Cost Data

In interpreting the EAD rating definitions (see above), the general hypothesis is that there is no difference in mean costs based on EAD rating. To test this, we used the following procedures:

1. Each cost (line item) was multiplied by its associated EAD rating.

2. The sum of these products was divided by the Total Cost (line 46 on Form 100) for each facility to determine the composite EAD rating.

3. To test our hypothesis at different thresholds, we divided the data set into the following groups of EAD composites:

    a) Below a 1.5 EAD composite and at or above a 1.5 EAD composite;
    b) Below a 1.75 EAD composite and at or above a 1.75 EAD composite;
    c) Below a 2.0 EAD composite and at or above a 2.0 EAD composite;
    d) Below a 2.25 EAD composite and at or above a 2.25 EAD composite; and
    e) Below a 2.5 EAD composite and at or above a 2.5 EAD composite.

T-tests were performed at the 95% level of significance for each of these pairs of groups to determine if there was a significant difference in mean costs per client day in the following cost categories:

- Total Basic Living Needs;
- Total Unallocated Costs; and
- Total Cost.

Results of the Calculations

The distribution of the EAD composites shows that the possible range is 1 to 3:

- 90% of the facilities had an EAD composite of 2.0 or less;
- 96.44% of the facilities had an EAD composite of 2.25 or less;
- 98.1% of the facilities had an EAD composite of 2.5 or less; and
- Only 8% of the facilities fell in the 2.0 to 2.5 range of EAD composites.

The t-values calculated on the groups of EAD composites listed above showed no significance except for Total Unallocated Costs for EAD composites at the 1.5 level. Upon further analysis, we felt other factors may be influencing this difference in unallocated costs other than the integrity of the data sources used. For example, it was determined that the facilities with an average EAD rating below 1.5 (the highest quality data) are disproportionately staff operated facilities with higher Unallocated and Administrative Costs. These facilities would also be expected to have better record keeping practices and thus have lower EAD ratings reflecting better data quality.

When we examined the two groups using the Chi-square statistic, we found there was a statistically significant difference in terms of whether the facilities were owner operated or staff operated. The group with an EAD less than 1.5 had a higher proportion of staff operated facilities than the groups with an EAD higher than 1.5. Therefore, we felt that the difference in costs should not be attributed to the EAD composite rating but rather to the operation status, i.e., whether the facility is owner operated or staff operated.

Conclusions

From this analysis, we concluded that high EAD ratings (meaning less verifiable documentation of data) do not significantly impact the reported levels of costs. Therefore, we did not exclude any data based on EAD ratings from our subsequent statistical analysis.

E. ANALYSIS OF OUTLIERS

As part of our review of the survey data, we reviewed the data for facilities with the highest and lowest values for total costs and individual Level 1 cost elements. This review was conducted to ensure that these outliers did indeed reflect actual experience of surveyed facilities and not a data coding or data entry error. When data entry or data coding errors were detected, correcting entries were made and the total survey data base was updated accordingly. In addition to verifying coding and data entry, our review of outliers was to evaluate the EAD ratings of cost data for outliers to determine one of two things:

1. Are the extreme data due to poor data, that is, data with an EAD rating of greater than 2.5? or
2. Are the data in outlier facilities legitimately recorded, and just unusually high or low compared to other facilities?

The procedures set forth by DDS (in the RFP) to discard outlier data were based solely on the evaluation of data as represented by the EAD ratings. The rationale was that where data were suspect (that is, an EAD rating of 3) and were extreme (that is, either unusually high or low), then that data would be discarded. However, as discussed previously in this chapter, high EAD ratings <u>do not</u> significantly impact the reported levels of costs; therefore, no data were discarded on the basis of EAD ratings. <u>Moreover, since no other criteria aside from EAD ratings were provided for discarding outlier data, no data were discarded from the survey results as a result of EAD ratings.</u>

The review of outliers also served to sharpen our understanding and appreciation of the wide variety of settings and management styles within which residential care services are provided to developmentally disabled persons. Since residential care services are provided in settings as different as a small single family home located in a rural part of the state and a large institution with over 100 beds located in a metropolitan area, wide variations in individual reported cost items are to be expected. Such variations were found in this study.

A. INTRODUCTION

Since Traditional, Negotiated Rate, and Special Services facilities will be phased into the Alternative Residential Model (ARM) system by 1991, it was determined that these facilities should be included in the analysis, along with the relatively small sample ARM facilities in the 1988 Rate Study for ARM rate-making considerations. By 1991, Traditional facilities will become either ARM Level 2 or Level 3 facilities. Negotiated Rate and Special Services facilities will become ARM Level 4 facilities.

In the 1988 Residential Rate Study report, our analyses indicated that there are two distinct sub-sets of the facility population under consideration. ARM and Traditional facilities costs appeared similar in nature, while Negotiated Rate and Special Services facilities costs appeared similar and were distinctly higher than those of the first group. However, since the report only examined Traditional and Special Services facilities, we did not conduct detailed analysis for differences between Traditional and ARM facilities nor for differences between Negotiated Rate and Special Services facilities. (Part 1: Statistical Cost Analysis in Appendix 1 of the 1988 Residential Rate Study contains statistical analysis and findings. In addition, the Research Design contained in Appendix II includes a description of and rationale for the statistical procedures we used. Both documents are available upon request from the Department.)

This chapter summarizes the principal findings of detailed analyses conducted for the ARM study. Specifically, we tested the hypothesis that there is no statistically significant difference between the pilot ARM facilities and Traditional facilities nor is there a difference between Negotiated Rate and Special Services facilities. We also tested for cost differences based on operation type, geographic location, and facility size. If no statistically significant differences were found between the ARM and Traditional facilities, then we felt ARM 2 and 3 rates could best be developed based on the combined cost information of ARM and Traditional facilities. Similarly, if no differences were found between Negotiated Rate and Special Services facilities, we would combine the cost information to develop ARM 4 rate recommendations. Finally, we tested for differences between ARM Level 2 and 3 (includes ARMs and Traditional facilities) and ARM Level 4 facilities (includes Negotiated Rate and Special Services) to determine if ARM Level 2 and 3 rates should be developed separately from ARM Level 4 rates.

B. DESCRIPTION OF THE FACILITIES BY RATE TYPE

Exhibits V-1 and V-2 summarize the mean costs, standard deviations, and median costs of the four different types of facilities: Traditional, ARM, Negotiated Rate, and Special Services. Also, Exhibit V-3 presents the frequency distributions of Total Costs per client day for the four types of facilities. The mean and the median are measures of central tendency and both provide meaningful information concerning the sample data. The mean is simply the sum of the values of all observations divided by the number of observations. The median is the 50th percentile of a distribution — the point at which half of the observations are greater and half of the observations are smaller.

We used both of these measures to describe the data sets. Generally, the mean is preferred for statistical analysis because of the large amount of mathematical work that has been done around the normal distribution. Additionally, if the distribution of data values follows a perfect normal distribution, the mean and the median are the same value. However, the mean is less useful as a descriptive measure of central tendency for skewed distributions. In such situations, the median is often the preferred descriptive measure since it is not as sensitive to the effects of a small number of outlying scores. Since the sample facility costs have a skewed distribution as seen in Exhibit V-3, we suggest that the median is a better point indicator of central tendency for this population than the mean.

As shown in the descriptive statistics and frequency distribution plots, the distribution of the data cannot be assumed to be normal. Most of the cost per client day data distributions can be characterized as steep-left, long right tail. The "long right tail" represents the relatively small number of high cost facilities that consistently bring the sample mean up relative to the median. Realizing the non-normality of the data, we also utilized non-parametric statistical test procedures in addition to parametric statistical procedures. Non-parametric statistical procedures are useful under a broad range of circumstances and are valid under relatively few assumptions regarding the underlying population. One of the most attractive properties of non-parametric procedures is that they do not require that the underlying distribution of data be normal.

EXHIBIT V-1

DEPARTMENT OF DEVELOPMENTAL SERVICES ARM REPORT
SUMMARY OF MEAN COSTS

Rate Type:	*Traditional*									
	1 to 6 Beds		7 to 15 Beds		16 to 49 Beds		50 + Beds		All Facilities	
Cost Component	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Basic Living Needs	$16.23	$6.22	$14.87	$5.27	$14.81	$4.01	$13.59	$2.69	$15.93	$5.97
Direct Supervision (1)	$2.60	$5.74	$4.02	$4.31	$7.94	$6.13	$8.53	$4.27	$3.21	$5.77
Unallocated Costs	$3.59	$3.64	$4.50	$3.43	$6.40	$4.69	$6.96	$3.44	$3.94	$3.76
Total Cost per Client Day	$22.42	$11.56	$23.40	$8.69	$29.15	$10.75	$29.08	$7.06	$23.08	$11.25
Number in Sample:	371	--	60	--	31	--	6	--	468	--
D.S. cost (paid staff only) (2)	$7.76	$9.54	$5.94	$4.48	$8.44	$6.39	$8.53	$4.27	$7.50	$8.00
n=	87	--	34	--	26	--	6	--	153	--

Rate Type:	*ARM (Levels 2 and 3)*									
	1 to 6 Beds		7 to 15 Beds		16 to 49 Beds		50 + Beds		All Facilities	
Cost Component	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Basic Living Needs	$14.54	$5.16	$12.79	$0.62	$11.72	$1.63	$13.97	$6.90	$14.34	$4.96
Direct Supervision (1)	$2.60	$4.14	$4.28	$3.08	$7.72	$0.49	$12.20	$2.56	$3.13	$4.36
Unallocated Costs	$3.43	$2.59	$5.92	$1.81	$7.71	$0.20	$11.45	$4.01	$3.93	$2.97
Total Cost per Client Day	$20.57	$7.10	$22.99	$5.31	$27.15	$1.34	$37.62	$13.47	$21.40	$7.61
Number in Sample:	61	--	4	--	2	--	2	--	69	--
D.S. cost (paid staff only) (2)	$7.98	$6.29	$2.94	$1.86	$7.72	$0.49	$12.20	$2.56	$7.58	$5.53
n=	11	--	3	--	2	--	2	--	18	--

Notes:
1. Mean Direct Supervision Costs calculated for all facilities in the sample.
2. Mean Direct Supervision Costs calculated only for those facilities operated entirely with paid staff.

EXHIBIT V-1

DEPT. OF DEVELOPMENTAL SERVICES ARM REPORT
SUMMARY OF MEAN COSTS

Rate Type:	*Negotiated Rate*									
	1 to 6 Beds		7 to 15 Beds		16 to 49 Beds		50 + Beds		All Facilities	
Cost Component	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Basic Living Needs	$21.85	$6.86	$22.43	--	$18.44	$5.53	$14.89	$3.06	$20.62	$6.51
Direct Supervision (1)	$37.49	$19.35	$26.47	--	$33.12	$16.35	$27.04	$2.20	$35.61	$17.84
Unallocated Costs	$16.11	$8.85	$25.17	--	$21.17	$13.32	$25.49	$5.88	$17.99	$9.78
Special Services (3)	$2.05	$1.65	$1.65		$1.73	$1.98	$1.71	$0.19	$1.95	$1.61
Total Cost per Client Day	$77.30	$26.56	$75.72	--	$74.46	$33.73	$69.12	$6.55	$76.17	$26.26
Number in Sample:	22	--	1	--	6	--	2	--	31	--

Rate Type:	*Special Services*									
	1 to 6 Beds		7 to 15 Beds		16 to 49 Beds		50 + Beds		All Facilities	
Cost Component	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Basic Living Needs	$21.48	$7.90	$20.40	$10.26	$14.32	$5.37	$16.02	$2.58	$20.17	$8.04
Direct Supervision (1)	$35.19	$15.61	$36.20	$34.51	$19.83	$9.72	$28.21	$14.10	$33.02	$18.55
Unallocated Costs	$18.64	$12.27	$16.51	$16.74	$14.32	$8.59	$17.16	$9.17	$17.73	$12.13
Special Services (3)	$1.34	$1.30	$0.71	$0.74	$2.22	$3.70	$0.66	$0.23	$1.35	$1.71
Total Cost per Client Day	$76.66	$27.88	$73.82	$58.94	$50.69	$11.03	$62.05	$25.62	$72.26	$32.10
Number in Sample:	32	--	6	--	6	--	2	--	46	--

Notes:

1. Mean Direct Supervision Costs calculated for all facilities in the sample.
2. Mean Direct Supervision Costs calculated only for those facilities operated entirely with paid staff.
3. Special Services includes clinical consultants and special supplies. Wages and benefits of direct care staff are included in direct supervision costs.

EXHIBIT V-2

DEPT. OF DEVELOPMENTAL SERVICES 1988 RATE STUDY
SUMMARY OF MEDIAN COSTS

Rate Type:	*Traditional*				
Cost Component	1 to 6 Beds	7 to 15 Beds	16 to 49 Beds	50 + Beds	All Facilities
Basic Living Needs	$15.17	$14.30	$14.41	$12.86	$14.91
Direct Supervision (1)	$0.12	$2.36	$5.43	$7.12	$0.88
Unallocated Costs	$2.59	$3.66	$4.91	$6.05	$2.81
Total Cost per Client Day	$19.68	$20.77	$26.06	$31.11	$20.27
Number in Sample:	371	60	31	6	468
D.S. cost (paid staff only) (2)	$4.85	$3.96	$6.51	$7.12	$5.61
n=	87	34	26	6	153

Rate Type:	*ARM (Levels 2 and 3)*				
Cost Component	1 to 6 Beds	7 to 15 Beds	16 to 49 Beds	50 + Beds	All Facilities
Basic Living Needs	$13.68	$12.88	$11.72	$13.97	$13.42
Direct Supervision (1)	$0.53	$4.01	$7.72	$12.20	$1.41
Unallocated Costs	$2.77	$6.05	$7.71	$11.45	$3.11
Total Cost per Client Day	$18.98	$22.94	$27.15	$37.62	$19.30
Number in Sample:	61	4	2	2	69
D.S. cost (paid staff only) (2)	$6.52	$4.01	$7.72	$12.20	$6.66
n=	11	3	2	2	18

Rate Type:	*Negotiated Rate*				
Cost Component	1 to 6 Beds	7 to 15 Beds	16 to 49 Beds	50 + Beds	All Facilities
Basic Living Needs	$19.78	$22.43	$17.65	$14.89	$19.05
Direct Supervision (1)	$37.00	$26.47	$30.01	$27.04	$31.70
Unallocated Costs	$14.30	$25.17	$17.83	$25.49	$16.58
Special Services (3)	$1.66	$1.65	$0.95	$1.71	$1.58
Total Cost per Client Day	$79.31	$75.72	$64.28	$69.12	$73.75
n=	22	1	6	2	31

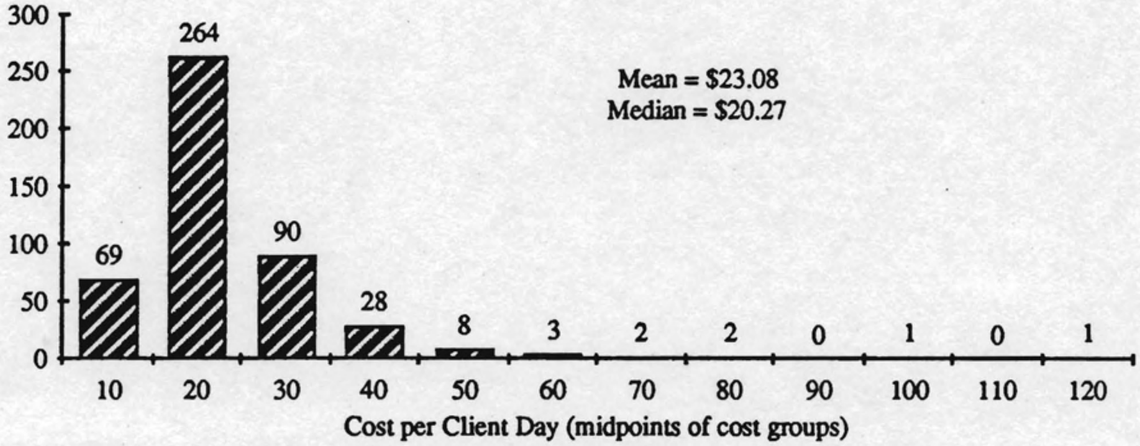
Rate Type:	*Special Services*				
Cost Component	1 to 6 Beds	7 to 15 Beds	16 to 49 Beds	50 + Beds	All Facilities
Basic Living Needs	$19.28	$16.68	$13.01	$16.02	$18.40
Direct Supervision (1)	$34.37	$25.83	$17.66	$28.21	$30.47
Unallocated Costs	$15.37	$10.06	$14.96	$17.16	$14.70
Special Services (3)	$0.00	$0.04	$0.00	$0.33	$0.81
Total Cost per Client Day	$74.47	$51.68	$50.23	$61.72	$64.30
n=	32	6	6	2	46

Notes:

1. Median Direct Supervision Cost calcualted for all facilities in the sample.
2. Median Direct Supervision Cost calculated only for facilities operated entirely with paid staff.
3. Special Services includes clinical consultants and special supplies. Wages and benefits of direct care staff are included in direct supervision costs.

EXHIBIT V-3

**TRADITIONAL FACILITIES
FREQUENCY DISTRIBUTION OF
TOTAL COSTS PER CLIENT DAY**



**ARM PILOT SAMPLE FACILITIES
FREQUENCY DISTRIBUTION OF
TOTAL COSTS PER CLIENT DAY**

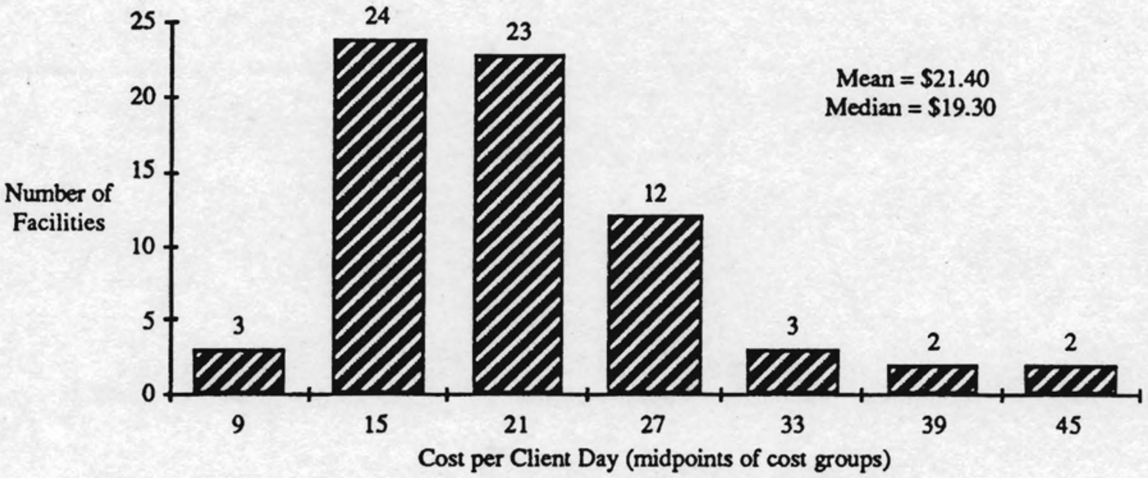
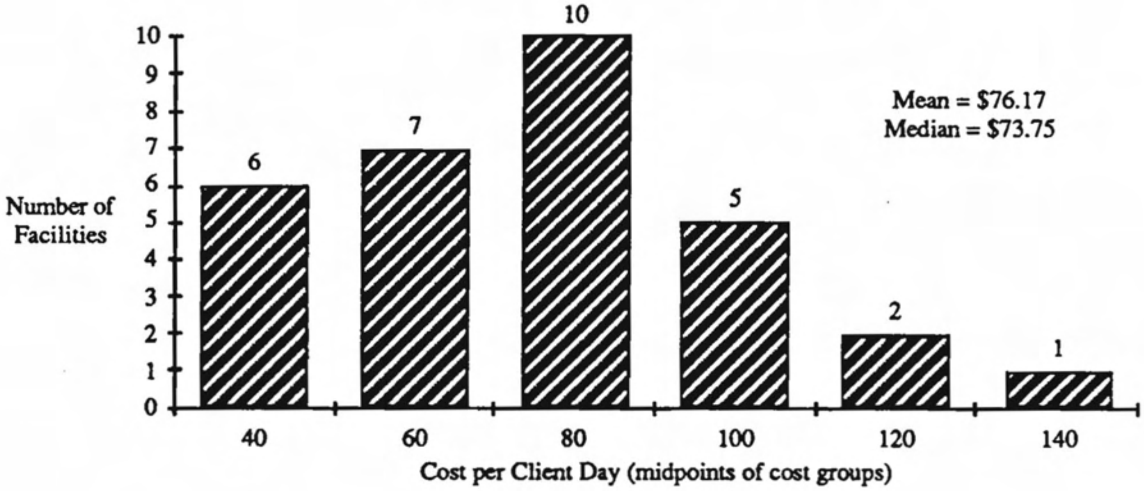
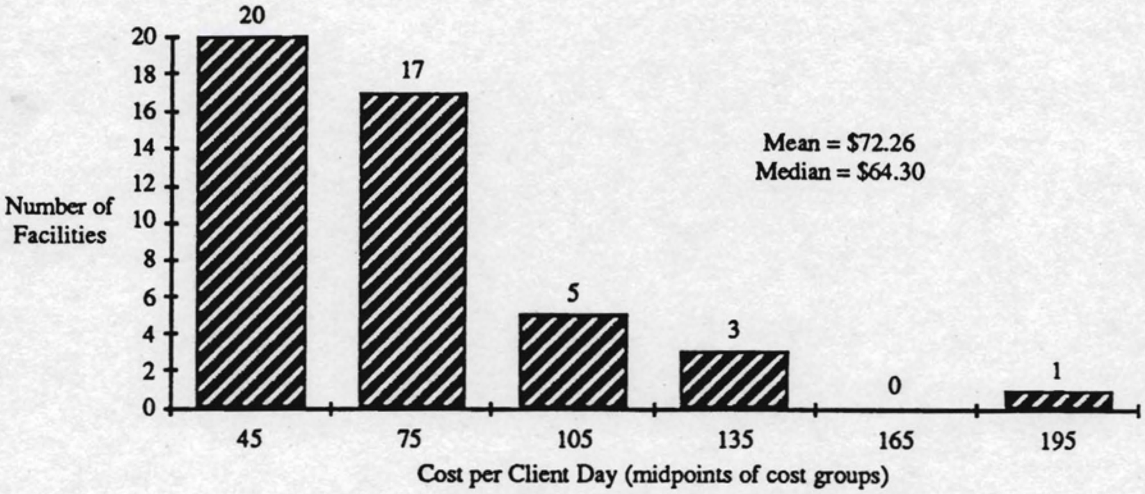


EXHIBIT V-3 (Continued)

**NEGOTIATED FACILITIES
FREQUENCY DISTRIBUTION FOR
TOTAL COSTS PER CLIENT DAY**



**SPECIAL SERVICES FACILITIES
FREQUENCY DISTRIBUTION OF
TOTAL COSTS PER CLIENT DAY**



The long right tail on the frequency distribution graphs further illustrates the existence of high cost outliers. For numerous Level 1 costs, such as Basic Living Needs Housing, Food or Transportation, Direct Supervision, and Unallocated Wages, we examined the highest cost outliers. We found explanatory reasons for the outliers, such as high transportation costs attributed to owner operators using newer high cost vehicles for client use. In addition, low occupancy rates contribute to high costs. For example, a facility with an operator and spouse and one client residing in the house will show higher costs per client day than a owner operator, spouse, and six clients in a similar house. In the former facility, fixed costs are shared by fewer persons than in the latter, resulting in higher costs per client day.

In spite of the existence of such high cost outliers, no facility was eliminated from our analysis because it was an outlier. This reflected the fact that these costs did not result from some type of extraordinary or unusual event that would constitute grounds for excluding the facility as unrepresentative. Further, since the Department has no regulations or guidelines defining the maximum or minimum levels of cost allowed for various cost elements, we had no objective basis on which to exclude such facilities. In the absence of such standards, the reliance on the sample medians (rather than the means) as a measure of central tendency is one measure by which it is possible to avoid the distortion caused by the outliers.

Finally, the review of outliers further emphasized the wide variety of settings and management styles within which residential care services are provided to developmentally disabled persons. Since residential care services are provided in settings as different as a small single family home located in a rural part of the state and a large institution with over 100 beds located in a metropolitan area, wide variations in reported cost items are expected. The large standard deviations found for virtually all cost elements and the shape of the distributions presented in Exhibit V-3 illustrate the wide degree of variation we found in the sample.

C. STATISTICAL TESTS USED IN THIS ANALYSIS

In this analysis, we used t-tests for comparing the means of two groups or the analysis of variance (ANOVA) for comparing the means of more than two groups. (The mean of a set of observations is simply the sum of the observations divided by the number of observations). These tests permit us to determine whether the differences in the means of two or more groups are statistically greater than would be expected if the groups were part of the same population. For example, is the difference in mean Basic Living Needs Housing between ARM and Traditional facilities large enough for us to believe that the difference cannot be reasonably expected from sampling error alone? Our basic null hypothesis (that is, the hypothesis we will try to prove or disprove) is that the means are the same. If this hypothesis is confirmed, it would allow us to treat the two groups as one population for purposes of developing ARM Level 2 and 3 rates. In addition, we used non-parametric tests to confirm our t-test or ANOVA results. These non-parametric tests tend to be less powerful than the parametric t-test or ANOVA tests, but are not subject to errors due to the sample data distribution. With the non-parametric test we can still test the null hypothesis without having to assume there is a normal distribution.

In addition, we used the Scheffe method for multiple pairwise comparisons. The Scheffe method indicates between which groups the significant differences exist. (The reader should refer to the Research Design in Appendix II of the 1988 Residential Rate Study for a detailed discussion of definitions and assumptions for the statistical procedures we used in this analysis.)

D. DEFINITION OF GEOGRAPHIC LOCATION

In the 1988 Residential Rate Study, we analyzed the Metropolitan Statistical Area (MSA) designation and found that it did not appear to be an appropriate system for geographic stratification of community care facilities. However, we designed an alternative geographic stratification based on a clustering of counties in the state. (See Chapter VI and Appendix I: Part VIII of the 1988 Residential Rate Study for a discussion of the statistical results and methodology used for developing an alternative system.)

We developed two clusters of counties based on the Fair Market Value (FMV) of housing. For each facility in the sample, we computed the current fair market value per square foot of facility space (based on estimates provided by facility operators). The facilities were then grouped by county into each of the forty counties represented in the sample. A mean fair market value per square foot was computed for each county. We ranked counties by the reported average fair market value per square foot. Using information on the median price of housing in California counties, we concluded that the top eleven counties in our ranking corresponded to the same group of counties with high housing costs.

As a result of our analysis, we grouped the our sample counties into the following two clusters:

MEDIUM FMV		HIGH FMV
Amador	Sacramento	Alameda
Butte	San Bernardino	Contra Costa
Fresno	San Joaquin	Los Angeles
Humboldt	San Luis Obispo	Marin
Imperial	Santa Barbara	Orange
Kern	Shasta	San Diego
Kings	Siskiyou	San Francisco
Lake	Solano	San Mateo
Madera	Sonoma	Santa Clara
Mendocino	Stanislaus	Santa Cruz
Merced	Sutter	Ventura
Monterey	Tulare	
Napa	Yolo	
Placer	Yuba	
Riverside		

We have used this geographic grouping throughout this report whenever we discuss geographic variation in cost data.

E. ARM LEVEL 2 AND 3 FACILITIES

Characteristics of the ARM Pilot Sample

ARM facilities are designated as "Level 2" or "Level 3" according to the types of services they provide. Level 2 facilities provide services to persons in a home-like setting and teach clients within the context of the normal operations of daily living. Level 3 facilities provide additional specific, structured programming/training to clients for a portion of each day. In addition, in 1987 there were a few facilities that provided care to a certain number of clients at Level 2 and to a certain number of clients in Level 3. These particular facilities are designated as Level 2+3.

Exhibit V-4 provides descriptive statistics on the ARM pilot project sample. Of the 69 ARM facilities in our sample, most are Level 2 (n=46). Also, most are owner operated (n=51) and in the 1-6 bed category (n=61). In addition, 61 of the facilities are located in the medium fair market value geographic cluster. This is a result of the Alternative Residential Model being pilot-tested in 1987 in the catchment areas of three regional centers (Far Northern, Central Valley, and Harbor), two of which are located in medium FMV areas.

Exhibits V-5 and V-6 present mean and median costs and results of statistical tests based on the ARM rate type (Level 2, 3, or 2+3). We found no statistically significant differences for Total Basic Living Needs (BLN), Total Unallocated Costs (UC), or Total Costs per client day. Therefore, we felt it appropriate to combine ARM Level 2, 3, and 2+3 facility data for rate-making purposes. The Direct Supervision element is based on hourly wage and benefit rates multiplied by a modelled amount of direct care staff time. Direct Supervision wage rates are discussed in detail in Section G of this report.

Do Significant Differences Exist Between ARM and Traditional Facilities?

Exhibit V-7 presents mean costs per client day for ARM and Traditional facilities. A t-test was performed on each Level 1 cost component based on rate type and no significant differences were found except for BLN Housing, BLN Utilities, and Total BLN. We felt that the difference in BLN Housing and Total BLN could be attributed to a geographic factor since most of the ARM facilities are located in the medium FMV geographic cluster. Another explanation is that the costs differences could be attributed to operation type. Since most of the ARM facilities are owner operated, the facilities would more likely be owned than rented resulting in lower housing costs. We investigated these possibilities with further analysis controlling for operation type and geographic cluster.

EXHIBIT V-4

DEPARTMENT OF DEVELOPMENT SERVICES ARM REPORT
DESCRIPTIVE STATISTICS
PILOT PROJECT ARM SAMPLE

RATE TYPE BY FACILITY SIZE

	ARM Level 2	ARM Level3	ARM Level 2+3
1-6 BEDS	40	15	6
7-15 BEDS	3	1	0
16-49 BEDS	2	0	0
+50 BEDS	1	0	1
TOTAL	46	16	7

RATE TYPE BY OPERATION TYPE

	ARM Level 2	ARM Level3	ARM Level 2+3
RESIDENT OWNER OP	35	12	4
STAFF OP	11	4	3

RATE TYPE BY GEOGRAPHIC CLUSTER

	ARM Level 2	ARM Level3	ARM Level 2+3
MEDIUM FMV	41	13	7
HIGH FMV	5	3	0

RATE TYPE BY OWNERSHIP TYPE

	ARM Level 2	ARM Level3	ARM Level 2+3
OWNER/OP*	40	16	6
NON-PROFIT	4	0	1
FOR-PROFIT	2	0	0

*Includes non-resident owner operators.

EXHIBIT V-5

ARM FACILITIES: MEAN COSTS PER CLIENT DAY BY RATE TYPE

	ANOVA Significance of Means	ARM Rate Type						Wilcoxon Significance of Means
		Level 2 (n=46)		Level 3 (n=16)		Level 2+3 (n=7)		
		Mean	Std	Mean	Std	Mean	Std	
BLN Wages		0.58	1.06	0.79	0.93	1.83	2.72	
BLN Housing		2.94	2.26	3.09	1.36	2.58	1.59	
BLN Furniture		0.48	0.40	0.50	0.33	0.43	0.32	
BLN Insurance		0.48	0.38	0.41	0.33	0.43	0.43	
BLN Utilities		0.99	0.31	1.11	0.46	1.07	0.59	
BLN Food		3.94	1.81	3.56	0.92	3.09	0.92	
BLN Housekeeping		0.64	0.64	0.40	0.41	0.42	0.47	
BLN Clothing	*	0.26	0.43	0.03	0.06	0.50	0.75	*
BLN Transportation		4.52	4.07	3.08	1.64	3.17	1.39	
BLN Special Supplies		0.09	0.54	0.09	0.27	0.00	0.00	
Total BLN		14.92	5.54	13.06	2.89	13.51	4.50	
Total DS (1)		3.90	3.24	6.82	5.75	5.07	4.56	
UC Wages		0.74	2.06	0.79	1.77	0.76	1.19	
UC Housing		0.11	0.16	0.13	0.15	0.08	0.11	
UC Furniture		0.03	0.07	0.03	0.03	0.01	0.01	
UC Insurance		0.01	0.02	0.02	0.05	0.01	0.01	
UC Utilities		0.03	0.04	0.07	0.09	0.03	0.02	
UC Housekeeping		0.02	0.04	0.03	0.05	0.01	0.01	
UC Transportation		0.23	0.53	0.22	0.34	0.15	0.24	
UC Special Supplies	*	0.00	0.00	0.00	0.00	0.01	0.04	*
UC Consultants	*	0.26	0.35	0.23	0.46	1.18	2.53	*
UC Administration		2.11	1.56	2.24	1.36	2.41	1.58	
UC Overhead	*	0.12	0.72	0.00	0.00	1.39	3.67	*
Total UC		3.67	2.72	3.74	2.20	6.03	5.16	
Total Costs (2)		20.28	6.85	23.19	7.46	24.62	11.60	

Note:
1. Direct Supervision means only for facilities with paid staff.
2. Total Cost means for all facilities (paid and non-paid staff).
An asterisk indicates statistically significant differences at the 95% level.

EXHIBIT V-6

ARM FACILITIES: MEDIAN COSTS PER CLIENT DAY BY RATE TYPE

		ARM Rate Type		
		Level 2 (n=46)	Level 3 (n=16)	Level 2+3 (n=7)
		Median	Median	Median
	BLN Wages	0.00	0.38	1.20
	BLN Housing	2.53	3.00	2.11
	BLN Furniture	0.36	0.45	0.30
	BLN Insurance	0.33	0.33	0.29
	BLN Utilities	0.98	1.07	0.87
	BLN Food	3.51	3.70	2.72
	BLN Housekeeping	0.40	0.30	0.33
	BLN Clothing	0.11	0.00	0.16
	BLN Transportation	4.03	2.66	3.50
	BLN Special Supplies	0.00	0.00	0.00
	Total BLN	13.59	13.26	13.83
Direct Supervision medians only for facilities with paid staff.	Total DS	3.48	5.58	3.10
	UC Wages	0.00	0.00	0.33
	UC Housing	0.02	0.07	0.04
	UC Furniture	0.00	0.01	0.00
	UC Insurance	0.00	0.00	0.01
	UC Utilities	0.02	0.03	0.02
	UC Housekeeping	0.00	0.01	0.00
	UC Transportation	0.00	0.00	0.11
	UC Special Supplies	0.00	0.00	0.00
	UC Consultants	0.13	0.06	0.29
	UC Administration	1.45	1.98	2.30
	UC Overhead	0.00	0.00	0.00
	Total UC	2.76	3.61	3.64
Total Cost medians for all facilities (paid and non-paid staff).	Total Costs	18.66	21.56	22.47

EXHIBIT V-7

ARMS VS TRADITIONAL FACILITIES
MEAN COSTS PER CLIENT DAY BY RATE TYPE

	T-TEST SIGNIFICANCE OF MEANS	RATE TYPE				WILCOXON SIGNIFICANCE OF MEANS
		ARM (n=69)		TRADITIONAL (n=468)		
		Mean	Std	Mean	Std	
BLN Wages		0.75	1.31	0.92	1.43	
BLN Housing	*	2.94	2.01	4.22	3.08	*
BLN Furniture		0.48	0.37	0.44	0.47	
BLN Insurance		0.46	0.37	0.55	0.52	
BLN Utilities	*	1.03	0.38	1.15	0.59	
BLN Food		3.76	1.58	4.06	1.66	
BLN Housekeeping		0.56	0.58	0.64	0.74	
BLN Clothing		0.23	0.44	0.34	0.77	
BLN Transportation		4.05	3.49	3.54	3.24	
BLN Special Supplies		0.08	0.46	0.07	0.26	
Total BLN	*	14.34	4.96	15.93	5.97	*
Total DS (1)		5.14	4.58	5.44	6.66	
UC Wages		0.75	1.90	0.79	2.01	
UC Housing		0.11	0.15	0.15	0.29	
UC Furniture		0.03	0.06	0.03	0.07	*
UC Insurance		0.02	0.03	0.03	0.09	
UC Utilities		0.04	0.05	0.04	0.07	
UC Housekeeping		0.02	0.04	0.03	0.12	*
UC Transportation		0.22	0.47	0.26	0.67	
UC Special Supplies		0.00	0.01	0.00	0.05	
UC Consultants		0.54	0.88	0.30	0.93	
UC Administration		2.17	1.50	1.94	1.36	
UC Overhead		0.22	1.30	0.36	1.69	
Total UC		3.93	2.97	3.94	3.76	
Total Costs (2)		21.40	7.61	23.08	11.25	

Note:
1. Direct Supervision means for all facilities with paid staff.
2. Total Cost means for all facilities (paid and non-paid staff).
An asterisk indicates statistical signigicance at the 95% level.

Exhibits V-8 and V-9 present a comparison of mean costs for owner operated facilities and staff operated facilities. In addition, Exhibit V-10 presents descriptive cost information for ARM and Traditional facilities by bed size, operation type, and geographic location. For owner operated facilities, a statistically significant difference still exists for BLN Housing but not Total BLN. There were no other differences found for Total DS, Total UC, or Total Costs per client day. For staff operated facilities, a statistically significant difference was found for BLN Housing, BLN Food, BLN Clothing, Total BLN, and UC Transportation. No differences were found for Total DS, Total UC, or Total Costs per client day.

Since we controlled for operation type, we attribute the reason for this difference in Total BLN for staff operated facilities to sampling error. The ARM facilities are from a pilot study located in the jurisdiction of three regional centers in the state, Far Northern, Central Valley, and Harbor. Based on these results, we combined ARM (Level 2, 3, and 2+3) and Traditional facilities cost information to obtain sample means and medians for rate-making purposes. Exhibit V-11 presents descriptive statistics on the combination of ARM and Traditional facilities.

For ARM and Traditional Facilities Combined, Does Operation Type Make a Difference?

Exhibit V-12 presents mean costs and statistical test results for ARM and Traditional facilities combined based on facility operation type (owner operated versus staff operated). Under the ARM pilot project, a facility is classified as owner operated if the owner operator lives in the facility. If the owner operator lives elsewhere, the facility is classified as staff operated. Based on this distinction, most of the major Level 1 cost components show a statistically significant difference. However, Total BLN does <u>not</u> show a significant difference. While there are no differences in Total BLN costs, staff operated facilities have significantly higher costs on the following BLN Level 1 components: Wages, Housing, and Insurance. Conversely, owner operated facilities have higher costs on these BLN Level 1 components: Furniture, Food, Clothing, and Transportation. Since at the aggregate level there are no significant differences found for Total BLN, owner operated facilities appear to be partially substituting spending for certain Basic Living Needs items such as Food, Clothing, and Transportation for spending on housekeeping staff.

EXHIBIT V-8

OWNER OPERATED FACILITIES
COMPARISON OF MEAN COSTS
ARMS vs TRADS

Dependent Variable	T-Test Significance of Means	*Comparison of Means and Standard Deviations*				Wilcoxon Significance of Means
		ARM		*TRAD*		
		(n = 51) Owner Op		(n = 309) Owner Op		
		Mean	Std. Deviation	Mean	Std. Deviation	
BLN WAGES		0.31	0.58	0.43	0.92	
BLN HOUSING	*	2.95	2.08	3.91	2.98	*
BLN FURNITURE		0.53	0.41	0.47	0.51	
BLN INSURANCE		0.40	0.32	0.50	0.49	
BLN UTILITIES	*	1.02	0.37	1.15	0.59	
BLN FOOD		4.12	1.64	4.29	1.68	
BLN HOUSEKEEPING		0.54	0.60	0.67	0.84	
BLN CLOTHING		0.29	0.49	0.40	0.87	
BLN TRANSPORTATION		4.72	3.74	4.23	3.56	
BLN SPECIAL SUPPLIES		0.10	0.53	0.07	0.27	
TOTAL BLN		14.99	5.26	16.13	6.20	
TOTAL DS (1)		1.56	2.42	1.15	2.31	
UC WAGES		0.20	0.80	0.22	0.91	
UC HOUSING		0.10	0.15	0.14	0.29	
UC FURNITURE		0.03	0.06	0.02	0.07	*
UC INSURANCE		0.01	0.03	0.02	0.04	
UC UTILITIES		0.04	0.06	0.03	0.07	
UC HOUSEKEEPING		0.02	0.04	0.04	0.15	
UC TRANSPORTATION		0.25	0.52	0.27	0.75	
UC SPECIAL SUPPLIES		0.00	0.00	0.00	0.04	
UC CONSULTANTS		0.34	0.98	0.28	1.06	
UC ADMINISTRATION		2.20	1.58	1.87	1.34	
UC OVERHEAD		0.00	0.00	0.02	0.29	
TOTAL UC		3.19	2.28	2.91	2.47	
TOTAL COSTS		19.74	6.38	20.18	7.93	

Legend

(1) Direct Supervision means for all owner-operated facilities, with paid and non-paid staff.

An asterisk indicates statistical significance at the 95% level.

EXHIBIT V-9

STAFF OPERATED FACILITIES
COMPARISON OF MEAN COSTS
ARMS vs TRADS

Dependent Variable	T-Test Significance of Means	*Comparison of Means and Standard Deviations*				Wilcoxon Significance of Means
		ARM		*TRAD*		
		(n = 18) Staff Op		*(n = 159) Staff Op*		
		Mean	*Std*	*Mean*	*Std*	
BLN WAGES		2.00	1.92	1.88	1.73	
BLN HOUSING	*	2.89	1.84	4.82	3.18	*
BLN FURNITURE		0.33	0.20	0.39	0.36	
BLN INSURANCE		0.63	0.44	0.65	0.55	
BLN UTILITIES		1.06	0.40	1.14	0.59	
BLN FOOD	*	2.74	0.79	3.60	1.54	*
BLN HOUSEKEEPING		0.62	0.53	0.59	0.48	
BLN CLOTHING	*	0.07	0.10	0.20	0.50	
BLN TRANSPORTATION		2.14	1.57	2.18	1.89	
BLN SPECIAL SUPPLIES		0.02	0.05	0.06	0.26	
TOTAL BLN	*	12.51	3.54	15.54	5.48	*
TOTAL DS		7.58	5.53	7.22	7.98	
UC WAGES		2.31	3.01	1.91	2.91	
UC HOUSING		0.15	0.16	0.18	0.29	
UC FURNITURE		0.02	0.03	0.03	0.08	
UC INSURANCE		0.02	0.02	0.04	0.14	
UC UTILITIES		0.05	0.05	0.04	0.07	
UC HOUSEKEEPING		0.03	0.03	0.02	0.04	*
UC TRANSPORTATION	*	0.13	0.23	0.26	0.45	
UC SPECIAL SUPPLIES		0.01	0.02	0.01	0.05	
UC CONSULTANTS		0.37	0.52	0.36	0.61	
UC ADMINISTRATION		2.09	1.29	2.08	1.39	
UC OVERHEAD		0.85	2.49	1.02	2.76	
TOTAL UC		6.01	3.71	5.94	4.88	
TOTAL COSTS		26.11	8.95	28.69	14.27	

Legend:

(1) Direct Supervision means for all staff-operated facilities.

An asterisk indicates statistical significance at the 95% level.

EXHIBIT V-10

ARMS VS TRADS
MEAN COST PER CLIENT DAY BY GEOCLUS, OPERATION TYPE

		MEDIUM FMV				HIGH FMV			
		OWNER OP		STAFF OP		OWNER OP		STAFF OP	
		TRADS	ARMS	TRADS	ARMS	TRADS	ARMS	TRADS	ARMS
1 - 6 BEDS		n = 163	n = 43	n = 38	n = 10	n = 116	n = 7	n = 54	n = 1
	BLNHOUSE	3.70	2.65	4.26	2.96	4.09	4.58	5.57	4.73
	TOTALBLN	16.27	14.58	15.29	12.14	16.03	17.71	17.21	14.67
	TOTALDS (1)	1.00	1.50	5.98	7.49	1.09	0.97	8.29	12.88
	TOTALUC	3.02	3.13	5.08	4.55	2.55	2.93	6.49	8.54
	TOTAL COST	20.29	19.21	26.35	24.18	19.67	21.61	31.98	36.09
7 - 15 BEDS		n = 13	n = 1	n = 13	n = 3	n = 12	n = 0	n = 22	n = 0
	BLNHOUSE	4.58	4.77	3.13	3.48	3.50	n/a	4.68	n/a
	TOTALBLN	15.45	13.41	13.25	12.59	16.43	n/a	14.64	n/a
	TOTALDS (1)	0.85	8.30	5.85	2.94	2.35	n/a	5.72	n/a
	TOTALUC	3.52	7.81	5.57	5.29	3.71	n/a	4.89	n/a
	TOTAL COST	19.82	29.52	24.67	20.81	22.49	n/a	25.25	n/a
16 - 49 BEDS		n = 2	n = 0	n = 10	n = 2	n = 3	n = 0	n = 16	n = 0
	BLNHOUSE	6.79	n/a	4.84	2.02	4.85	n/a	4.89	n/a
	TOTALBLN	16.02	n/a	15.64	11.72	14.16	n/a	14.25	n/a
	TOTALDS (1)	3.28	n/a	9.55	7.72	6.77	n/a	7.74	n/a
	TOTALUC	2.35	n/a	7.99	7.71	4.78	n/a	6.21	n/a
	TOTAL COST	21.65	n/a	33.19	27.15	25.72	n/a	28.20	n/a
50+ BEDS		n = 0	n = 0	n = 1	n = 2	n = 0	n = 0	n = 5	n = 0
	BLNHOUSE	n/a	n/a	6.37	1.63	n/a	n/a	5.59	n/a
	TOTALBLN	n/a	n/a	12.44	13.97	n/a	n/a	13.83	n/a
	TOTALDS (1)	n/a	n/a	5.06	12.20	n/a	n/a	9.22	n/a
	TOTALUC	n/a	n/a	3.94	11.45	n/a	n/a	7.56	n/a
	TOTAL COST	n/a	n/a	21.44	37.62	n/a	n/a	30.61	n/a
ALL FACILITIES		n = 178	n = 44	n = 62	n = 17	n = 131	n = 7	n = 97	n = 1
	BLNHOUSE	3.80	2.70	4.15	2.79	4.06	4.58	5.26	4.73
	TOTALBLN	16.20	14.56	14.87	12.39	16.02	17.71	15.96	14.67
	TOTALDS (1)	1.01	1.65	6.52	7.27	1.33	0.97	7.66	12.88
	TOTALUC	3.05	3.23	5.63	5.87	2.71	2.93	6.14	8.54
	TOTAL COST	20.27	19.44	27.02	25.52	20.07	21.61	29.76	36.09

Note:
(1.) Direct Supervision mean for all facilities in the group, with and without paid staff.

EXHIBIT V-11

DEPARTMENT OF DEVELOPMENT SERVICES ARM REPORT
ARM 2 & 3 (COMBINED ARM AND TRADITIONAL FACILITIES)
DESCRIPTIVE STATISTICS

FACILITY SIZE

	Number of Facilities
1-6 BEDS	432
7-15 BEDS	64
16-49 BEDS	33
+50 BEDS	8
TOTAL	537

OPERATION TYPE

	Number of Facilities
RESIDENT OWNER OP	360
STAFF OP	177

GEOGRAPHIC CLUSTER

	Number of Facilities
MEDIUM FMV	301
HIGH FMV	236

OWNERSHIP TYPE

	Number of Facilities
OWNER/OP*	466
NON-PROFIT	33
FOR-PROFIT	38

*Includes non-resident owner operators.

EXHIBIT V-12

COMBINED ARM & TRADITIONAL FACILITIES
MEAN COSTS BY OPERATION TYPE

	T-TEST SIGNIFICANCE OF MEANS	OPERATION TYPE				WILCOXON SIGNIFICANCE OF MEANS
		OWNER-OPERATED (n = 360)		STAFF-OPERATED (n = 177)		
		Mean	Std	Mean	Std	
BLN Wages	*	0.42	0.88	1.89	1.74	*
BLN Housing	*	3.77	2.89	4.63	3.12	*
BLN Furniture	*	0.48	0.50	0.38	0.35	*
BLN Insurance	*	0.49	0.47	0.65	0.54	*
BLN Utilities		1.13	0.56	1.14	0.57	
BLN Food	*	4.27	1.67	3.52	1.50	*
BLN Housekeeping		0.65	0.81	0.60	0.48	
BLN Clothing	*	0.39	0.83	0.19	0.47	*
BLN Transportation	*	4.30	3.59	2.18	1.86	*
BLN Special Supplies		0.08	0.32	0.06	0.25	
Total BLN		15.97	6.08	15.23	5.39	
Total DS (1)	*	1.21	2.33	7.25	7.75	*
UC Wages	*	0.22	0.89	1.95	2.91	*
UC Housing		0.13	0.27	0.18	0.28	*
UC Furniture		0.03	0.07	0.03	0.08	*
UC Insurance	*	0.02	0.03	0.04	0.13	*
UC Utilities		0.04	0.07	0.04	0.07	*
UC Housekeeping	*	0.03	0.14	0.02	0.04	*
UC Transportation		0.27	0.72	0.24	0.43	*
UC Special Supplies		0.00	0.04	0.01	0.04	*
UC Consultants		0.28	1.05	0.36	0.60	*
UC Administration		1.92	1.38	2.08	1.38	*
UC Overhead	*	0.02	0.27	1.00	2.73	*
Total UC	*	2.95	2.44	5.95	4.77	*
Total Costs (2)	*	20.12	7.72	28.43	13.82	*

Legend:
(1) Direct Supervision means only for facilities with or without paid staff.
(2) Total cost means for facilities with or without paid staff.

An asterisk indicates statistical significances at the 95% level.

Staff operated facilities showed significantly higher costs for Total DS, Total UC, and Total Costs per client day. For the Level 1 components, most of the cost differences appear in wage-related items, such as DS, UC Wages, BLN Wages, and UC Overhead. This finding is not particularly surprising since most owner operated facilities do not employ paid staff.

Based on these results, no distinction is made for Total BLN based on operation type in our ARM Levels 2 and 3 rate recommendation. As prescribed by statute and as will be noted in Chapter VI, Direct Supervision costs will be based on a modelled amount of staff hours per client day based on operation type and rate type (either Level 2 or 3). Finally, because we obtained statistically significant results for Total UC based on operation types, we recommend separate Total UC reimbursements for owner operated and staff operated facilities.

For ARM and Traditional Facilities Combined, Does Facility Size Make a Difference?

Exhibit V-13 presents mean costs and statistical findings for the ARM and Traditional combined facilities based on facility size. Significant differences were found for Total DS, Total UC, and Total Costs. There appears to be an upward trend in that 1-6 bed facilities have lower costs while the 50+ bed group appears to have higher costs. Since we had already determined that operation type makes a significant difference on costs, we decided to control for operation type and then test for differences based on bed size.

Exhibit V-14 presents mean costs and statistical findings for owner operated facilities and Exhibit V-15 presents the same information for staff operated facilities. For owner operated facilities, the non-parametric Wilcoxon test showed a significant difference in Total Costs per client day. However, this was not confirmed by the parametric ANOVA or Scheffe tests. These results may be due to the large standard deviations and the relatively small sample size of 7-15 bed and 16-49 bed facilities. Also, for both owner operated and staff operated facilities, the only other major cost element that showed a significant difference was Total DS. Based on these findings, our rate recommendations do not include separate rates by bed size group for Total BLN or Total UC. As noted previously and as will be

EXHIBIT V-14

COMBINED ARM & TRADITIONAL OWNER-OPERATED FACILITIES
MEAN COSTS BY FACILITY SIZE

	ANOVA SIGNIFICANCE OF MEANS	FACILITY SIZE 1 - 6 BEDS (n = 329)		7 - 15 BEDS (n = 26)		16 - 49 BEDS (n = 5)		WILCOXON SIGNIFICANCE OF MEANS
		Mean	Std	Mean	Std	Mean	Std	
BLN Wages	*	0.36	0.81	1.01	1.40	1.27	0.49	*
BLN Housing		3.72	2.89	4.09	2.75	5.62	3.56	
BLN Furniture		0.48	0.45	0.54	0.91	0.54	0.32	
BLN Insurance		0.47	0.48	0.63	0.36	0.66	0.41	*
BLN Utilities		1.11	0.57	1.29	0.52	1.26	0.62	
BLN Food		4.26	1.68	4.56	1.68	3.45	0.63	
BLN Housekeeping		0.66	0.83	0.59	0.52	0.58	0.16	
BLN Clothing		0.40	0.85	0.32	0.67	0.11	0.17	
BLN Transportation	*	4.46	3.65	2.79	2.37	1.41	0.82	*
BLN Special Supplies		0.08	0.33	0.01	0.04	0.00	0.00	
Total BLN		15.99	6.11	15.82	6.28	14.91	3.11	
Total DS (1)	*	1.09	2.20	1.83	2.73	5.38	4.10	*
UC Wages	*	0.15	0.73	0.85	1.84	1.47	1.48	*
UC Housing		0.13	0.28	0.10	0.15	0.19	0.30	
UC Furniture		0.03	0.07	0.01	0.03	0.02	0.03	
UC Insurance		0.02	0.04	0.02	0.03	0.01	0.02	
UC Utilities		0.04	0.07	0.03	0.05	0.01	0.02	
UC Housekeeping		0.04	0.14	0.01	0.01	0.01	0.02	
UC Transportation		0.27	0.74	0.19	0.43	0.08	0.15	
UC Special Supplies		0.00	0.04	0.00	0.00	0.00	0.00	
UC Consultants		0.28	1.09	0.32	0.36	0.31	0.28	*
UC Administration		1.90	1.38	2.25	1.50	1.70	0.90	
UC Overhead		0.02	0.28	0.00	0.00	0.00	0.00	
Total UC		2.87	2.43	3.77	2.67	3.81	1.81	*
Total Costs (1)		19.96	7.83	21.42	6.70	24.09	3.69	*

Legend:
(1) Direct Supervision and total cost means for all facilities in the sample, with and without paid staff.

An asterisk indicates statistical significance at the 95% level.

EXHIBIT V-15

COMBINED ARM & TRADITIONAL STAFF-OPERATED FACILITIES
MEAN COSTS BY FACILITY SIZE

	ANOVA SIGNIFICANCE OF MEANS	FACILITY SIZE								WILCOXON SIGNIFICANCE OF MEANS
		1 - 6 BEDS (n = 103)		7 - 15 BEDS (n = 38)		16 - 49 BEDS (n = 28)		50 + BEDS (n = 8)		
		Mean	Std	Mean	Std	Mean	Std	Mean	Std	
BLN Wages	*	1.62	1.80	1.87	1.34	2.80	1.54	2.28	2.41	*
BLN Housing		4.82	3.23	4.06	2.76	4.67	3.21	4.70	3.37	
BLN Furniture		0.38	0.31	0.45	0.51	0.30	0.24	0.38	0.28	
BLN Insurance		0.58	0.55	0.80	0.55	0.77	0.51	0.47	0.28	*
BLN Utilities		1.13	0.62	1.21	0.52	1.06	0.48	1.13	0.47	
BLN Food		3.75	1.71	3.35	1.21	3.06	0.99	2.90	0.71	
BLN Housekeeping		0.60	0.51	0.60	0.42	0.52	0.49	0.77	0.41	
BLN Clothing		0.20	0.53	0.14	0.27	0.21	0.56	0.15	0.17	
BLN Transportation	*	2.82	2.12	1.50	0.87	1.12	0.78	0.88	0.64	*
BLN Special Supplies		0.07	0.31	0.02	0.07	0.05	0.13	0.03	0.04	
Total BLN		15.98	6.10	14.00	4.08	14.57	4.14	13.69	3.47	
Total DS (1)		7.40	9.14	5.54	4.42	8.39	6.15	9.45	4.11	*
UC Wages	*	1.44	3.02	1.97	2.22	3.05	2.88	4.57	2.40	*
UC Housing		0.17	0.31	0.17	0.22	0.19	0.20	0.29	0.30	*
UC Furniture	*	0.02	0.08	0.05	0.07	0.02	0.04	0.10	0.13	*
UC Insurance		0.04	0.14	0.06	0.16	0.03	0.04	0.02	0.02	*
UC Utilities		0.04	0.08	0.05	0.05	0.04	0.03	0.06	0.04	*
UC Housekeeping		0.02	0.04	0.01	0.02	0.02	0.03	0.04	0.03	*
UC Transportation		0.30	0.50	0.14	0.24	0.22	0.42	0.12	0.14	
UC Special Supplies		0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00	*
UC Consultants	*	0.29	0.49	0.32	0.37	0.67	1.04	0.34	0.34	*
UC Administration	*	2.30	1.62	1.69	0.74	2.06	1.06	1.18	0.44	*
UC Overhead		1.19	2.95	0.69	2.35	0.65	2.14	1.36	3.40	
Total UC		5.80	5.13	5.16	3.70	6.95	4.75	8.08	3.88	
Total Costs (1)		29.19	15.92	24.70	9.37	29.91	11.02	31.22	8.78	

Legend:
(1) Direct Supervision and total cost means for all facilities in the sample, with and without paid staff.

An asterisk indicates statistical significance at the 95% level.

discussed in Chapter VI, Direct Supervision rates will be modelled on staff hours per client day based on operation type and ARM Level 2 or 3. This model does not provide for setting DS rates based on bed size group.

For ARM and Traditional Facilities Combined, Does Geographic Location Make a Difference?

Exhibit V-16 presents mean costs and statistical findings for ARM and Traditional facilities combined based on geographic cluster. The High FMV geographic cluster showed significantly higher Total Costs per client day ($24.17) than the Medium FMV geographic cluster ($21.84). However, since we previously determined that operation type influences costs, we subsequently controlled for this variable and re-examined the impact of geographic location on costs.

Exhibit V-17 illustrates statistical findings for owner operated facilities based on geographic location. No statistically significant differences were found for any of the major Level 1 cost components. Similarly, Exhibit V-18 presents the same information for staff operated facilities. The only major cost component that shows a significant difference is total BLN. Facilities in the High FMV have a higher mean total cost per day than those in the Medium FMV. Since WIC Section 4681.1 (b)(7) stipulates that "Rates established for all facilities shall include as a "factor" an amount to reflect differences in the cost of living for different geographic areas in the state," our rate recommendations reflect geographic differences based on our Medium FMV/High FMV geographic county clusters.

EXHIBIT V-16

COMBINED ARM & TRADITIONAL FACILITIES MEAN COSTS BY GEOGRAPHIC CLUSTER

	T-TEST SIGNIFICANCE OF MEANS	GEOGRAPHIC CLUSTER MEDIUM FMV (n=301)		HIGH FMV (n=236)		WILCOXON SIGNIFICANCE OF MEANS
		Mean	Std	Mean	Std	
BLN Wages	*	0.69	1.12	1.17	1.69	*
BLN Housing	*	3.66	2.80	4.57	3.15	*
BLN Furniture		0.47	0.44	0.42	0.47	*
BLN Insurance		0.53	0.48	0.55	0.52	
BLN Utilities		1.15	0.60	1.10	0.52	
BLN Food		4.04	1.64	3.99	1.67	
BLN Housekeeping		0.65	0.70	0.62	0.74	
BLN Clothing		0.33	0.75	0.32	0.73	
BLN Transportation	*	3.91	3.64	3.21	2.70	*
BLN Special Supplies		0.05	0.22	0.10	0.37	
Total BLN		15.47	6.01	16.04	5.67	
Total DS (1)	*	4.67	4.76	6.21	7.80	
UC Wages		0.66	1.89	0.94	2.12	
UC Housing		0.14	0.28	0.15	0.27	
UC Furniture		0.02	0.06	0.03	0.09	
UC Insurance		0.02	0.03	0.03	0.12	*
UC Utilities		0.04	0.06	0.04	0.07	
UC Housekeeping		0.03	0.13	0.02	0.09	*
UC Transportation		0.28	0.69	0.23	0.58	
UC Special Supplies		0.00	0.05	0.01	0.04	
UC Consultants		0.34	1.16	0.27	0.47	
UC Administration		2.07	1.44	1.85	1.30	
UC Overhead	*	0.16	1.18	0.58	2.07	*
Total UC		3.77	3.49	4.15	3.88	
Total Costs (2)	*	21.84	9.67	24.17	12.11	*

Legend:

(1) Direct Supervision means only for facilities with paid staff.

(2) Total cost means for facilities with or without paid staff.

An asterisk indicates statistical significance at the 95% level.

EXHIBIT V-17

COMBINED ARM & TRADITIONAL OWNER-OPERATED FACILITIES
MEAN COSTS BY GEOGRAPHIC CLUSTER

	T-TEST SIGNIFICANCE OF MEANS	GEOGRAPHIC CLUSTER				WILCOXON SIGNIFICANCE OF MEANS
		MEDIUM FMV (n=222)		HIGH FMV (n=138)		
		Mean	Std	Mean	Std	
BLN Wages		0.36	0.71	0.51	1.10	
BLN Housing		3.58	2.97	4.08	2.74	*
BLN Furniture		0.50	0.48	0.45	0.52	
BLN Insurance		0.49	0.48	0.48	0.45	
BLN Utilities		1.14	0.58	1.12	0.54	
BLN Food		4.19	1.64	4.39	1.71	
BLN Housekeeping		0.66	0.76	0.64	0.89	
BLN Clothing		0.39	0.82	0.39	0.85	
BLN Transportation		4.53	3.93	3.93	2.93	
BLN Special Supplies		0.05	0.19	0.12	0.45	
Total BLN		15.88	6.32	16.11	5.69	
Total DS (1)		1.14	2.20	1.32	2.52	
UC Wages		0.21	0.87	0.23	0.94	
UC Housing		0.14	0.28	0.12	0.26	
UC Furniture		0.02	0.06	0.03	0.08	
UC Insurance		0.02	0.03	0.02	0.04	*
UC Utilities		0.04	0.06	0.03	0.07	*
UC Housekeeping		0.04	0.15	0.03	0.11	*
UC Transportation		0.28	0.75	0.24	0.67	
UC Special Supplies		0.00	0.05	0.00	0.00	
UC Consultants		0.33	1.30	0.21	0.38	
UC Administration		2.02	1.39	1.76	1.36	
UC Overhead		0.00	0.00	0.05	0.43	
Total UC		3.09	2.54	2.72	2.27	
Total Costs (1)		20.10	7.95	20.15	7.37	

Legend:
(1) Direct Supervision and total cost means for all facilities in the sample, with and without paid staff.

An asterisk indicates statistical significance at the 95% level.

EXHIBIT V-18

COMBINED ARM & TRADITIONAL STAFF-OPERATED FACILITIES MEAN COSTS BY GEOGRAPHIC CLUSTER

	T-TEST SIGNIFICANCE OF MEANS	GEOGRAPHIC CLUSTER				WILCOXON SIGNIFICANCE OF MEANS
		MEDIUM FMV (n=79)		HIGH FMV (n=98)		
		Mean	Std	Mean	Std	
BLN Wages		1.63	1.47	2.10	1.91	*
BLN Housing	*	3.86	2.27	5.25	3.56	*
BLN Furniture		0.38	0.30	0.38	0.39	
BLN Insurance		0.65	0.47	0.65	0.59	
BLN Utilities		1.20	0.65	1.08	0.50	
BLN Food		3.63	1.58	3.43	1.44	
BLN Housekeeping		0.62	0.50	0.58	0.47	
BLN Clothing		0.16	0.45	0.21	0.49	
BLN Transportation		2.15	1.75	2.20	1.95	
BLN Special Supplies		0.06	0.29	0.06	0.21	
Total BLN	*	14.34	4.90	15.95	5.67	*
Total DS (1)		6.68	5.68	7.72	9.08	
UC Wages		1.95	3.05	1.95	2.81	
UC Housing		0.16	0.28	0.19	0.28	
UC Furniture	*	0.02	0.05	0.04	0.09	
UC Insurance		0.02	0.03	0.05	0.17	
UC Utilities		0.04	0.06	0.04	0.07	
UC Housekeeping		0.02	0.03	0.02	0.04	
UC Transportation		0.28	0.46	0.21	0.41	
UC Special Supplies		0.00	0.01	0.01	0.06	
UC Consultants		0.38	0.63	0.34	0.57	
UC Administration		2.20	1.57	1.98	1.20	
UC Overhead		0.60	2.25	1.33	3.03	*
Total UC		5.68	4.86	6.16	4.71	
Total Costs (1)		26.70	12.18	29.83	14.94	

Legend:
(1) Direct Supervision and total cost means for all facilities in the sample, with and without paid staff.

An asterisk indicates statistical significance at the 95% level.

The following table summarizes the statistical findings for ARM Level 2 and 3 facilities. The reader should not confuse the results presented in this table with those presented in Chapter VI, Exhibit VI-1. While this table presents statistical findings only, Exhibit VI-1 presents rate recommendations based on statistical findings and the requirements of WIC 4681.1.

	ARM Pilot Sample n = 69	ARM and Traditionals Combined N = 537		
	Do Level 2, 3, or 2+3 costs differ?	*Do costs differ by Operation Type?*	*Do costs differ by Geographic Region?*	*Do costs differ by Facility Size?*
Basic Living Needs	No statistical difference.	No statistical difference between owner operated and staff operated.	No statistical difference found.	No statistical difference found.
Direct Supervision	No statistical difference.	Statistical difference found at 95% level.	Statistical difference found at 95% level. However, no difference found when controlling for operation type.	Statistical difference found at 95% level. However, no difference found when controlling for operation type.
Unallocated Costs	No statistical difference.	Statistical difference found at 95% level.	No statistical difference found.	Statistical difference found at 95% level. However, no difference found when controlling for operation type.

F. ARM LEVEL 4 FACILITIES

Negotiated Rate and Special Services facilities will be phased into the ARM system as ARM Level 4 facilities by 1991. The purpose of the following analyses is to determine whether significant cost differences exist between Negotiated Rate and Special Services facilities; then for the combined group, we also examine the impact of facility size and geographic location on cost differences.

Do Significant Differences Exist Between Negotiated Rate and Special Services Facilities?

Exhibit V-19 presents mean costs per client day and the results of statistical tests for Negotiated Rate and Special Services facilities. No statistically significant differences were found for any of the major Level 1 cost components which include Total BLN, Total DS, Total UC, Special Services, and Total Costs per client day. Based on these findings, it is appropriate to combine cost information of the two types of facilities to develop ARM 4 rate recommendations. Descriptive statistics on the ARM 4 facilities are shown in Exhibit V-20.

Do Significant Differences Exist Between ARM 2/3 and ARM 4 Facilities?

Most of the ARM 4 facilities are staff operated. Therefore, since we know there are cost differences for the ARM 2 and 3 facilities based on operation type, we separated the expanded sample ARM 2 and 3 facilities combined with CCF Traditional facilities into two groups, owner operated and staff operated and compared them to the mostly staff operated ARM 4 group. Exhibit V-21 presents mean costs and statistical test results. For most of the Level 1 components, significant differences were found. For Total BLN, Total DS, Total UC, and Total Costs per client day, ARM 4 facilities had significantly higher costs. Based on these results, we developed the ARM 4 rate components separately from the ARM 2 and 3 facilities.

Does Facility Size Make a Difference?

Mean costs and statistical test results are shown in Exhibit V-22 for ARM 4 facilities based on facility size. None of the major cost components, such as Total BLN, Total DS, Total UC, Special Services, or Total Costs per client day showed statistically significant differences. Given these results, our ARM 4 rate recommendations do not include sub-components based on facility size.

EXHIBIT V-19

MEAN COSTS PER CLIENT DAY BY RATE TYPE
NEGOTIATED VS SPECIAL SERVICES FACILITIES

	T-TEST SIGNIFICANCE OF MEANS	RATE TYPE				WILCOXON SIGNIFICANCE OF MEANS
		NEGOTIATED (n=31)		SPEC SERV (n=46)		
		Mean	Std	Mean	Std	
BLN Wages		4.22	4.24	4.78	4.77	
BLN Housing		5.61	2.82	4.97	2.45	
BLN Furniture		0.47	0.25	0.44	0.42	
BLN Insurance		1.15	0.99	0.89	0.64	
BLN Utilities		1.52	0.56	1.39	0.44	
BLN Food		4.16	1.09	4.40	1.84	
BLN Housekeeping	*	1.10	0.68	0.69	0.55	*
BLN Clothing		0.23	0.39	0.11	0.35	*
BLN Transportation		2.16	1.53	2.51	1.91	
Total BLN		20.62	6.51	20.17	8.04	
Total DS (1)		35.61	17.84	33.02	18.55	
UC Wages		7.83	6.07	7.43	9.20	
UC Housing		0.44	0.68	0.34	0.71	
UC Furniture		0.06	0.09	0.04	0.07	
UC Insurance		0.06	0.10	0.05	0.12	
UC Utilities		0.14	0.30	0.09	0.15	
UC Housekeeping		0.04	0.07	0.03	0.08	
UC Transportation		0.29	0.66	0.10	0.22	
UC Consultants		0.51	0.58	0.64	0.74	
UC Administration	*	3.31	1.31	2.56	1.37	*
UC Overhead		5.30	9.25	6.44	7.41	
Total UC		17.99	9.78	17.73	12.13	
Special Services (3)		1.95	1.61	1.35	1.71	
Total Costs (2)		76.17	26.26	72.26	32.10	

Notes:
1. Direct Supervision means for all facilities with paid staff.
2. Total Cost means for all facilities (paid and non-paid staff).
3. Special Services includes clinical consultants and special supplies.
   Wages and benefits of direct care staff are included in direct supervision costs.

An asterisk indicates statistical significance at the 95% level.

EXHIBIT V-20

DEPARTMENT OF DEVELOPMENT SERVICES ARM REPORT
ARM 4 FACILITIES
(NEGOTIATED RATE AND SPECIAL SERVICES COMBINED)
DESCRIPTIVE STATISTICS

FACILITY SIZE

	Number of Facilities
1-6 BEDS	54
7-15 BEDS	7
16-49 BEDS	12
+50 BEDS	4
TOTAL	77

OPERATION TYPE

	Number of Facilities
RESIDENT OWNER OP	2
STAFF OP	75

GEOGRAPHIC CLUSTER

	Number of Facilities
MEDIUM FMV	25
HIGH FMV	52

OWNERSHIP TYPE

	Number of Facilities
OWNER/OP	7
NON-PROFIT	56
FOR-PROFIT	14

EXHIBIT V-21

MEAN COSTS PER CLIENT DAY BY RATE TYPE
COMBINED ARM & TRADITIONAL VS ARM 4

	T-TEST SIGNIFICANCE OF MEANS	COMBINED ARM & TRADITIONAL OWNER OPERATED (n = 360)		COMBINED ARM & TRADITIONAL STAFF OPERATED (n = 177)		ARM 4 (n = 77)		*WILCOXON SIGNIFICANCE OF MEANS*
		Mean	Std	Mean	Std	Mean	Std	
BLN Wages	*	0.42	0.88	1.89	1.74	4.55	4.54	*
BLN Housing	*	3.77	2.89	4.63	3.12	5.23	2.61	*
BLN Furniture	*	0.48	0.50	0.38	0.35	0.45	0.36	*
BLN Insurance	*	0.49	0.47	0.65	0.54	1.00	0.80	*
BLN Utilities	*	1.13	0.56	1.14	0.57	1.44	0.49	*
BLN Food	*	4.27	1.67	3.52	1.50	4.30	1.58	*
BLN Housekeeping	*	0.65	0.81	0.60	0.48	0.85	0.64	*
BLN Clothing	*	0.39	0.83	0.19	0.47	0.16	0.37	*
BLN Transportation	*	4.30	3.59	2.18	1.86	2.36	1.76	*
Total BLN	*	15.97	6.08	15.23	5.39	20.35	7.42	*
Total DS	*	1.21	2.33	7.25	7.75	34.06	18.19	*
UC Wages	*	0.22	0.89	1.95	2.91	7.59	8.05	*
UC Housing	*	0.13	0.27	0.18	0.28	0.38	0.69	*
UC Furniture		0.03	0.07	0.03	0.08	0.04	0.08	*
UC Insurance	*	0.02	0.03	0.04	0.13	0.06	0.11	*
UC Utilities	*	0.04	0.07	0.04	0.07	0.11	0.22	*
UC Housekeeping		0.03	0.14	0.02	0.04	0.03	0.07	*
UC Transportation		0.27	0.72	0.24	0.43	0.18	0.45	
UC Consultants	*	0.28	1.05	0.36	0.60	0.59	0.68	*
UC Administration	*	1.92	1.38	2.08	1.38	2.86	1.39	*
UC Overhead	*	0.02	0.27	1.00	2.73	5.98	8.16	*
Total UC	*	2.95	2.44	5.95	4.77	17.84	11.18	*
Total Costs	*	20.12	7.72	28.43	13.82	73.84	29.76	*

Notes:
The following components are not included: BLN Special Supplies and UC Special Supplies are not applicable to ARM 4 facilities and Special Services are not applicable to ARM and Traditional facilities.
An asterisk indicates statistical significance at the 95% level.

EXHIBIT V-22

ARM 4 FACILITIES
MEAN COSTS BY FACILITY SIZE

	ANOVA SIGNIFICANCE OF MEANS	FACILITY SIZE: 1 - 6 BEDS (n= 54)		7 - 15 BEDS (n = 7)		16 - 49 BEDS (n = 12)		50 + BEDS (n = 4)		WILCOXON SIGNIFICANCE OF MEANS
		Mean	Std	Mean	Std	Mean	Std	Mean	Std	
BLN Wages		4.86	5.14	4.14	3.17	3.10	2.30	5.52	2.02	
BLN Housing	*	5.74	2.37	5.54	3.15	3.76	2.69	2.23	1.00	*
BLN Furniture		0.47	0.34	0.52	0.64	0.39	0.29	0.29	0.15	
BLN Insurance		0.96	0.76	1.35	0.81	1.11	1.07	0.52	0.25	
BLN Utilities		1.39	0.45	1.39	0.35	1.68	0.70	1.57	0.36	
BLN Food		4.44	1.49	4.69	2.57	3.81	1.36	3.28	0.94	
BLN Housekeeping		0.84	0.59	0.77	0.42	1.04	1.00	0.70	0.22	
BLN Clothing		0.10	0.23	0.33	0.79	0.30	0.53	0.18	0.15	
BLN Transportation	*	2.76	1.91	1.97	1.11	1.19	0.49	1.17	0.42	*
Total BLN		21.55	7.42	20.69	9.39	16.38	5.62	15.45	2.40	
Total DS (1)		36.13	17.09	34.81	31.72	26.47	14.58	27.62	8.27	
UC Wages		7.63	7.81	9.06	12.31	4.52	4.63	13.77	9.32	
UC Housing		0.39	0.69	0.74	1.27	0.18	0.20	0.27	0.08	
UC Furniture	*	0.03	0.07	0.04	0.07	0.04	0.05	0.22	0.07	*
UC Insurance	*	0.04	0.07	0.16	0.28	0.06	0.07	0.11	0.08	
UC Utilities	*	0.08	0.13	0.14	0.20	0.10	0.10	0.58	0.71	*
UC Housekeeping		0.02	0.07	0.07	0.14	0.04	0.06	0.04	0.05	
UC Transportation		0.20	0.51	0.25	0.44	0.10	0.17	0.09	0.10	
UC Consultants		0.61	0.62	0.99	1.28	0.21	0.28	0.72	0.52	
UC Administration		2.84	1.35	3.23	1.42	2.48	1.62	3.69	1.25	
UC Overhead		5.77	7.38	3.07	2.28	10.03	12.70	1.82	3.65	
Total UC		17.61	10.98	17.75	15.63	17.74	11.27	21.32	7.91	
Special Services (2)		1.63	0.48	0.84	0.76	1.97	2.84	1.19	0.63	
Total Costs (1)		76.92	27.09	74.09	53.81	62.57	26.96	65.59	15.80	

Legend:
(1) Direct Supervision means for all facilities in the sample.
(2) Special Services includes clinical consultants and special supplies.
Wages and benefits of direct care staff are included in direct supervision costs.

An asterisk indicates statistical significance at the 95% level.

Does Geographic Location Make a Difference?

Exhibit V-23 presents mean costs and statistical tests for ARM 4 facilities based on geographic cluster location. No statistically significant differences were found for any of the major Level 1 cost components, such as Total BLN, DS, UC, Special Services, or Total Costs per client day. Based on these findings it would appear that the rate recommendations should not include a geographic location cost component. However, WIC Section 4681.1 (b)(7) stipulates that "Rates established for all facilities shall include as a "factor" an amount to reflect differences in the cost of living for different geographic areas in the state." Therefore, our rate recommendations will reflect geographic differences based on our Medium FMV/High FMV geographic county clusters.

G. DIRECT SUPERVISION WAGE RATES

Exhibits V-24 and V-25 present actual and legal direct supervision wage rates for ARM 2 and 3 facilities and also for ARM 4 facilities with paid staff. A few facilities paid sub-minimum wages and benefits to their employees. The Department asked us to substitute the minimum wage for those facilities to calculate the average "legal" wage paid. We then calculated the legal benefits as 18.383% (the legally required to meet the employer obligation under Social Security, Unemployment Insurance, Employment Training Tax, and Worker's Compensation) multiplied by the legal wage rate. These calculations reflect legal requirements, not actual facility practice. Actual wage rates and actual benefits as shown in Exhibits V-24 and V-25 reflect actual facility practice.

For the ARM pilot sample only, we tested for significant differences in actual wage costs among Level 2, Level 3, and Level 2+3 facilities. While the Level 3 wage costs appeared higher, there was no statistically significant difference among the three wage costs. Next we tested the hypothesis that ARM wage costs do not differ from Traditional facilities. We found no statistically significant difference between the two types of facilities. Finally, we tested the hypothesis that ARM 2 and 3 facilities (combined ARM and Traditional samples) wage costs do not differ from ARM 4 (combined Negotiated Rate and Special Services). ARM 4 wage costs were found to be significantly higher than ARM 2 and 3.

EXHIBIT V-24

COMBINED ARM & TRADITIONAL FACILITIES
ACTUAL AND LEGAL DIRECT SUPERVISION WAGE RATES

		ARM 2 FACILITIES		ARM 3 FACILITIES		ARM 2 + 3 FACILITIES		ARM FACILITIES		TRADITIONAL FACILITIES		COMBINED ARM AND TRADITIONAL FACILITIES		
		MEDIUM FMV	HIGH FMV	MEDIUM FMV	HIGH FMV	MEDIUM FMV	HIGH FMV	MEDIUM FMV	HIGH FMV	MEDIUM FMV	HIGH FMV	MEDIUM FMV	HIGH FMV	ALL AREAS
ACTUAL WAGE RATES		n=19	n=1	n=11	n=3	n=7	n=0	n=37	n=4	n=127	n=145	n=164	n=149	n=313
	MEAN	4.32	3.25	4.62	4.63	4.12	-	4.37	4.28	4.49	4.63	4.47	4.62	4.54
	STD DEV	1.55	-	1.24	0.81	0.81	-	1.33	0.96	1.83	1.73	1.72	1.71	1.72
	MEDIAN	4.22	3.25	4.95	4.27	4.00	-	4.22	4.16	4.25	4.61	4.25	4.61	4.50
ACTUAL BENEFITS (1)		n=12	n=0	n=9	n=2	n=4	n=0	n=25	n=2	n=67	n=89	n=92	n=91	n=183
	MEAN	0.91	-	0.89	0.99	0.84	-	0.89	0.99	0.82	0.73	0.84	0.74	0.79
	STD DEV	0.68	-	0.56	0.19	0.49	-	0.59	0.19	0.74	0.49	0.70	0.49	0.60
	MEDIAN	0.68	-	0.70	0.99	0.96	-	0.70	0.99	0.62	0.65	0.66	0.67	0.66
DIRECT SUPERVISION HOURS PER CLIENT DAY (2)		n=11	-	n=2	n=1	n=3	n=0	n=16	n=1	n=61	n=90	n=77	n=91	n=168
	MEAN	1.22	-	2.69	2.62	1.46	-	1.45	2.62	1.38	1.46	1.40	1.47	1.44
	STD DEV	1.85	-	1.14	-	0.78	-	1.09	-	0.93	1.37	0.96	1.36	1.19
	MEDIAN	0.92	-	2.69	2.62	1.63	-	1.36	2.62	1.26	1.03	1.26	1.04	1.10
LEGAL WAGE RATES (3)		n=19	n=1	n=11	n=3	n=7	n=0	n=37	n=4	n=127	n=145	n=164	n=149	n=313
	MEAN	4.52	3.35	4.75	4.63	4.17	-	4.52	4.31	4.69	4.82	4.66	4.81	4.73
	STD DEV	1.31	-	1.03	0.81	0.71	-	1.13	0.92	1.60	1.44	1.50	1.43	1.47
	MEDIAN	4.22	3.35	4.95	4.27	4.00	-	4.22	4.16	4.25	4.61	4.25	4.61	4.50

Legend:
(1) Actual Benefits excludes $0.00 benefit facilities.
(2) Direct Supervision hours to client days for staff operated facilities only.
(3) Legal Wage Rates with minimum wage substituted in for subminimimum wages.

An asterisk indicates statistical significance at the 95% level.

EXHIBIT V-25

DEPT OF DEVELOPMENTAL SERVICES ARM REPORT
ARM 4 FACILITIES
ACTUAL AND LEGAL DIRECT SUPERVISION WAGE RATES

		NEGOTIATED FACILITIES		SPECIAL SERVICES FACILITIES		COMBINED NEGOTIATED AND SPECIAL SERVICES FACILITIES		
		MEDIUM FMV	HIGH FMV	MEDIUM FMV	HIGH FMV	MEDIUM FMV	HIGH FMV	ALL LOCATIONS
ACTUAL WAGE RATES		n=9	n=22	n=16	n=29	n=25	n=52	n=77
	MEAN	5.55	6.07	5.86	5.87	5.75	5.96	5.89
	STD DEV	1.58	0.89	1.18	1.05	1.31	0.98	1.10
	MEDIAN	5.79	6.31	5.50	6.00	5.61	6.06	5.94
ACTUAL BENEFITS (1)		n=8	n=22	n=16	n=30	n=24	n=52	n=76
	MEAN	1.10	1.13	1.17	1.19	1.14	1.16	1.16
	STD DEV	0.44	0.43	0.41	0.41	0.41	0.41	0.41
	MEDIAN	1.20	1.17	1.10	1.15	1.12	1.17	1.15
DIRECT SUPERVISION HOURS PER CLIENT DAY (2)		n=9	n=22	n=16	n=28	n=25	n=50	n=75
	MEAN	3.95	5.60	4.53	4.99	4.32	5.26	4.95
	STD DEV	1.45	2.40	3.23	2.20	2.70	2.29	2.47
	MEDIAN	3.29	5.01	3.05	4.72	3.23	4.92	4.33
LEGAL WAGE RATES (3)		n=9	n=22	n=16	n=29	n=25	n=52	n=77
	MEAN	5.69	6.07	5.86	5.88	5.80	5.96	5.91
	STD DEV	1.26	0.89	1.18	1.07	1.18	0.98	1.05
	MEDIAN	5.80	6.31	5.50	6.06	5.61	6.06	5.95

(1) Actual Benefits excludes $0.00 benefit facilities.
(2) Direct Supervision hours to client days for staff operated facilities only
(3) Legal Wage Rates with minimimum wage substituted in for subminimum wages.

An asterisk indicates statistical significance at the 95% level.

The current established ARM rates distinguish separate wage rates for Level 2, 3, and 4 facilities. However, our statistical tests showed no difference in wage costs between ARM Level 2 and 3 facilities. Also, since we combined the ARM pilot sample and Traditional facilities for rate development, we were unable to determine separate wage rates for Level 2 or 3 facilities. Therefore, we recommend the same wage rate for Level 2 and 3 facilities. The direct care staff model specifies that direct care hours vary by level, thus the recommended Direct Supervision rate element will be higher for Level 3 facilities than for Level 2.

For ARM 4 facilities, we found wage costs significantly higher than for the expanded sample of ARM 2 and 3 facilities. We attribute this higher wage cost to the higher level of training ARM 4 staff must possess. Therefore, the ARM 4 Direct Supervision rate element is based on a higher wage rate than for ARM 2 and 3 facilities.

For the ARM 2 and 3 facilities (includes ARM pilot sample and Traditional facilities) we tested to determine if significant differences exist in actual wage rates based on geographic location. No significant differences were found. Similarly, for ARM 4 facilities we tested if geographic location impacts wage rates and also found no differences. These results would indicate that our direct supervision wage rate recommendations should carry no geographic distinction. Once again, however, since WIC Section 4681.1 (b)(7) stipulates a geographic adjustment, we adjust our recommendations accordingly as noted in Chapter VI.

H. PROPRIETARY FEE

Based on our analysis conducted in the 1988 Residential Rate Study, we concluded that net total assets per client day was the most appropriate measure of a proprietary fee. Net assets per client is also one of the bases for calculating a proprietary fee suggested by Judge Dowds in his order setting the CARE lawsuit. The reader is directed to Chapter VII and also Appendix I: Part VII in the 1988 Residential Rate Study for a detailed discussion of our methodology for calculating the fee and subsequent analyses. Exhibit V-26 presents descriptive statistics on mean and median net total assets for ARM 2 and 3 facilities and also for ARM 4 facilities.

EXHIBIT V-26

ARM 2 AND 3 FACILITIES
NET TOTAL ASSETS PER CLIENT

	GEOGRAPHIC LOCATION		
	Medium FMV	*High FMV*	*All Locations*
Owner Operated	n = 222 mean = $10,359 std = $8,187 median = $8,877	n = 138 mean = $9,457 std = $6,658 median = $8,548	n = 360 mean = $10,016 std = $7,640 median = $8,753
Staff Operated	n = 79 mean = $7,118 std = $5,519 median = $6,979	n = 98 mean = $9,172 std = $8,734 median = $7,377	n = 177 mean = $8,256 std = $7,523 median = $7,293
Total	n = 301 mean = $9,508 std = $7,705 median = $8,483	n = 236 mean = $9,340 std = $7,574 median = $7,931	n = 537 mean = $9,435 std = $7,639 median = $8,296

ARM 4 FACILITIES
NET TOTAL ASSETS PER CLIENT

	GEOGRAPHIC LOCATION		
All Facilities	*Medium FMV*	*High FMV*	*All Locations*
	n = 25 mean = $5,205 std = $6,106 median = $2,840	n = 52 mean = $5,362 std = $6,380 median = $2,712	n = 77 mean = $5,311 std = $6,252 median = $2,756

For ARM 2 and 3 facilities (includes ARM pilot sample and Traditional facilities) we conducted statistical tests to determine if operation type or geographic location impacts net total assets. A t-test indicated that operation type makes a statistically significant difference. When controlling for operation type, t-tests indicate that geographic location does not impact costs. However, when we conducted a two-way ANOVA for all of the 537 facilities based on operation type and geographic location, we found that operation type by itself makes a significant difference, geographic location by itself does not make a significant difference, and the interaction of operation type and geographic location makes a significant difference. Based on these results, we recommend the proprietary fee have different rates based on operation type. Even though geographic location by itself makes no significant difference, the WIC Section 4681.1 (b)(7) specifies a geographic distinction. Therefore, as noted in Chapter VI, we recommend the proprietary fee also have a geographic distinction.

Since most of the ARM 4 facilities are staff operated, we did not test for significant differences based on operation type. We did test for the impact of geographic location impact and found no significant differences. Again, WIC Section 4681.1 (b)(7) stipulates a geographic cost adjustment; therefore, our rate recommendation in Chapter VI maintains this distinction.

To summarize our recommendations for the proprietary fee element:

- Separate recommendations for ARM Level 2/3 facilities and for ARM Level 4 facilities.

- For ARM Level 2/3 facilities, proprietary fee varies by operation type and geographic location.

- For ARM Level 4 facilities, proprietary fee varies by geographic location only.

A. INTRODUCTION

This chapter presents recommended rates for facilities operating at all levels of the ARM system. The chapter begins with a discussion of several general considerations that governed the development of these rates and then continues with a detailed discussion of how rates were developed using the data collected and analyzed during this project. Recommended FY 1989-90 rates are presented for ARM Level 2, ARM Level 3, and ARM Level 4 facilities.

B. GENERAL RATE-MAKING CONSIDERATIONS

The rate recommendations presented below reflect three general considerations.

1. Rates must conform to the specific requirements of Welfare and Institutions Code Section 4681.1. They must contain all required facility cost elements, including a geographic cost factor, a proprietary fee, and an amount for special services.

2. Rates should be based on findings concerning costs derived from a representative sample of residential care facilities. Since facilities in only three of the twenty-one regional centers were operating under the ARM system in 1987 (year for which survey data was collected) and no facilities were operating at the ARM Level 4 in 1987, it was necessary to develop recommended ARM rates using data drawn from facilities operating under the Traditional, Special Services, and Negotiated Rate systems with appropriate adjustments to reflect new costs imposed by the ARM system.

3. Rates should reflect Department of Developmental Services guidelines concerning the appropriate level of Direct Supervision to be provided to clients with different levels of need for such supervision.

Based on an analysis of the data collected during this project, it was determined that facilities that will operate at the ARM Level 4 (a group which will consist of facilities operating under the Negotiated Rate or Special Services systems in 1987) should be reimbursed based on a rate table developed separately from that used for other facilities. This determination was made on the basis of the significantly higher cost structure and service delivery requirements of the Special Services and Negotiated Rate facilities in the sample. As a result of this finding, we present two separate sets of rates: one for facilities at ARM Level 2 or Level 3 (based on common data concerning basic living needs and unallocated costs) and one for ARM Level 4 facilities. The reader seeking additional information concerning this finding is directed to Chapter V for a fuller discussion of the differences between these two groups of facilities.

C. INTERPRETATION OF WIC 4681.1 AND METHODS USED TO DEVELOP RECOMMENDED RATES

1. Text of WIC 4681.1

The requirements of WIC 4681.1 establish the basic structure and content of the ARM reimbursement rates proposed in this chapter. It is helpful to review the requirements of WIC 4681.1 and how we have interpreted the language contained in the statute prior to turning to the rate recommendations themselves. The subsections of WIC 4681.1 that pertain to rate development are presented below, followed by a discussion of how we have interpreted these requirements in the context of our conduct of this project for the Department. (Key words and phrases which will be discussed are underlined.)

Welfare and Institutions Code Section 4681.1 states:

> (b) In establishing rates to be paid for out-of-home care, the department shall include each of the cost elements in this section as follows:
>
> (1) Rates established for all facilities shall include an <u>adequate amount</u> to care for "basic living needs" of a person with developmental disabilities. "Basic living needs" shall include housing, shelter, utilities, furnishings, food, incidental transportation, housekeeping, and personal care items. The amount required for basic living needs shall be calculated each year as the <u>average cost</u> of these items in community care facilities. The department shall annually publish a listing of the <u>allowable cost components</u> of these cost items and the methodology used to determine the amounts of each item. The amount for basic living needs shall be adjusted depending on the extent to which there is a <u>demonstrated variation</u> based on the <u>size of the out-of-home facility</u>. These amounts shall be adjusted annually to reflect <u>cost-of-living changes</u>.

A redetermination of basic living needs costs shall be undertaken every three years by the State Department of Developmental Services, using the best available estimating methods."

(2) Rates established for all facilities that provide direct supervision for persons with developmental disabilities shall include an amount for "direct supervision." The cost of "direct supervision" shall vary with the person's functioning in the areas of self-care and daily living skills, physical coordination and mobility, and behavioral self-control .... The individual program plan developed pursuant to Section 4646 shall determine the amount of direct supervision required for each individual. The cost of direct supervision shall be calculated as the wage and benefit costs of caregiving staff depending on the level of service being provided to meet the functional needs of the person with developmental disabilities. These rates shall be adjusted annually to reflect wage changes and shall comply with all federal regulations for hospitals and residential care establishments under the federal Fair Labor Standards Act.

(3) Rates established for all facilities that provide "special services" for persons with developmental disabilities shall include an amount to pay for such "special services" for each person receiving special services. "Special services" include specialized training, treatment, supervision, or other services which the individual program plan of each person requires to be provided by the residential facility in addition to the direct supervision provided pursuant to the person's individual treatment plan in subdivision (b). Facilities shall be paid for providing special services for each individual to the extent that such services are specified in the person's individual program plan and the facility is designated provider for such special services. Rates of payment for special services shall be the same as prevailing rates paid for similar services in the area.

(4) To the extent applicable, rates established for facilities shall include a reasonable amount for "unallocated services." These costs shall be determined using generally accepted accounting principles. "Unallocated services" means the indirect costs of managing a facility and includes costs of managerial personnel, facility operations, maintenance and repair, employee benefits, taxes, interest, insurance, depreciation, and general and administrative support. If a facility serves other persons in addition to developmentally disabled persons, unallocated services shall be adjusted depending on the extent to which there is a demonstrated variation due to such factors as facility size or administrative structure.

(5) Rates established for facilities shall include an amount to reimburse facilities for the depreciation of "mandated capital improvements and equipment" as established in the state's uniform accounting manual. For purposes of this section, "mandated capital improvements and equipment" are only those remodeling and equipment costs incurred by a facility because an agency of government has required such remodeling or equipment as a condition for the use of the facility as a provider of out-of-home care to persons with developmental disabilities.

(6) When applicable, rates established for proprietary facilities shall include a reasonable "proprietary fee."

(7) Rates established for all facilities shall include as a "factor" an amount to reflect differences in the cost of living for different geographic areas in the state.

(8) Rates established for developmentally disabled persons who are also mentally disordered may be fixed at a higher rate. The State Department of Mental Health shall establish criteria upon which higher rates may be fixed pursuant to this subdivision. The higher rate for developmentally disabled persons who are also mentally disordered may be paid when requested by the director of the regional center and approved by the Director of Developmental Services.

2. Definition of Key Terms

In order to develop rate recommendations that meet the requirements of WIC 4681.1, it is necessary to interpret the meaning of certain general terms used in the section. Interpretations are necessary in order to determine how to collect, organize, and analyze study data for purposes of developing recommended rates. These key general terms are:

1. "Allowable cost components";
2. "Average cost";
3. "Adequate amount";
4. "Reasonable amount";
5. "Extent applicable";
6. "Demonstrated variation";
7. "Cost of living changes";
8. "Best available estimating methods"; and
9. "Generally accepted accounting principles."

In this section we discuss how these general terms were interpreted for purposes of developing recommended rates. Other terms that are more specific to individual cost elements named in WIC 4681.1 are discussed below in the context of the rate recommendations.

1. "Allowable cost components" have been defined as the list of detailed cost items (also called "Level 2 costs in this report) contained on the Facility Cost Summary (Form 100) used to collect cost data from the sample of facilities contacted during the 1988 Residential Rate Study project. (See Appendix B of this report for a list of these items and a summary description of each. Detailed descriptions and cost allocation rules are contained in the instructions that accompany the data collection forms. The

forms and instructions are reproduced in Appendix E of this report. Appendix E is a separately bound document available upon request (for a copying fee) from the Department.)

This list of cost items (which covers all aspects of facility operation, including basic living needs) was developed by the Department of Developmental Services. The list of cost items has been developed by the Department to support data collection on the costs of residential care facilities for purposes of past and current rate development projects. The list represents the Department's best effort to capture all necessary costs connected with the provision of residential care services consistent with the intent of the Welfare and Institutions Code. At the beginning of this project, Price Waterhouse reviewed this list and developed data collection instructions to insure that comprehensive and comparable cost data was collected from sample facilities.

2. "Average cost" has been defined as the statistic or measure of central tendency in the distribution of facility costs that best describes the cost of the typical facility. Based on an analysis of the data collected during this study, the statistic used to define "average cost" is the median.

   In common usage, three different measures of central tendency are often referred to by the term "average." These measures are the mode, median, and mean. The mode is the value (in this case a cost) that occurs most frequently in a sample. The median is the value which lies above half of the observed values and below half the observed values (the middle value) when all observations in the sample are ranked in ascending order. The mean is the arithmetic result of summing the values of all observations in the sample and dividing by the total number of observations. (See Statistics: A New Approach by Wallis and Roberts, Chapter 7, for a fuller discussion of this issue.)

   Initial consideration was given to using the mean as the measure of central tendency for purposes of defining average cost. Analysis of the data, however, indicated that the mean in our sample was heavily influenced by a relatively small number of high cost "outlier" facilities. These high cost "outliers" represent facilities with unusual factors (such as low occupancy rates or unusually expensive homes or vehicles) that drive up facility costs. DDS does not have any published standards which defined allowable maximum amounts that could be spent on a given cost element or component. Similarly, DDS has no minimum occupancy standard which could be used to exclude low occupancy facility costs from the sample (low numbers of clients translate into high costs per client day since there are fewer clients to share fixed housing and other facility costs).

In the absence of such standards, Price Waterhouse had no a priori justification on which to exclude such facilities' costs from the sample in order to compute a mean cost that was free from such distortions. If DDS were to develop such standards or were to adopt a regulation defining "allowable level of costs" as a precisely quantifiable level it would be possible in future rate studies to utilize the sample mean as the appropriate measure of central tendency. Such an approach would have the advantage of working with sample means, with all the computational and statistical analysis advantages possessed when working with means. In the absence of such standards, this study sought another approach.

The median was chosen because it is a measure of central tendency that is least affected by the inclusion of a small number of facilities with extremely high or low costs in the data sample. In the context of this study, the median is that facility cost which lies above the costs of one half of the sample and below one half of the sample. Its use has the advantage of not excluding any facility's data from the sample and yet not being unduly influenced by high cost outliers.

3. "Adequate amount" was defined as the cost found in the median facility for each cost element named in WIC 4681.1 when facilities were grouped by geography (High or Medium Cost county groups), mode of operation (staff operated or owner operated), and ARM Level (ARM 2 & 3 vs. ARM 4). The median was found for each of the cost elements named in WIC 4681.1. (For example, a separate median was computed for each cost element for

owner operated, ARM Level 2 or 3 facilities located in Medium Cost counties.)

For each individual cost element named in WIC 4681.1 (basic living needs, direct supervision, unallocated services costs, proprietary fee, etc.), a total cost was calculated for each facility in the sample. This total cost was the sum of each of the individual cost components included in the data collection forms (see Appendices B and E) or an amount modelled based on study data and a predetermined standards (Direct Supervision or Proprietary Fee). Once a total cost was calculated for each facility, the facility costs were arrayed in ascending order and the median for each group of facilities (organized by geographic location, operation type, and ARM level) was computed. These medians were used to define a separate "adequate amount" for each cost element included in the reimbursement rate.

A conscious decision was made to compute a median amount for each rate element separately rather than to compute a single median for all elements combined at the facility level. This was done for two reasons. First, WIC 4681.1 appears to require that an "adequate amount" be established for each separate rate element individually. Second, two of the rate elements (Direct Supervision and Proprietary Fee) are modelled rather than based on directly observable facility cost data. Direct Supervision is modelled in large part to ensure that all operators receive enough reimbursement to be able to afford to provide required levels of staffing. As was found in the January 1989 study of Traditional facility reimbursement rates (required by WIC 4681), actual facility cost experience (in staff operated facilities) indicates that most operators do not currently provide required levels of direct supervision. As a result, actual facility cost data for Direct Supervision cannot be used to develop ARM rates since this would result in inadequate reimbursement for this rate element. As a result of these two considerations, overall rates were developed based on addition of the "adequate amount" computed for each individual rate element using the median data as described above.

It should be noted that this approach to determining an "adequate amount" provides facility operators maximum flexibility in deciding how to allocate funds amongst the different individual cost components that make up a cost element such as basic living needs. No effort was made to set maximum cost limits for individual cost components such as housing or transportation. Different conditions in different facilities and the ability to substitute one type of cost for another require a rate setting approach that maintains maximum flexibility for facility operators to choose how they will meet client needs. This "median based" approach that utilizes cost data aggregated to the WIC 4681.1 cost element level (e.g., BLN, unallocated costs, etc.) provides such flexibility.

4. "<u>Reasonable amount</u>" is defined in the same manner as "adequate amount."

5. "<u>Extent applicable</u>" is defined in the same manner as "allowable cost components."

6. "<u>Demonstrated variation</u>" is defined to mean proven through a statistical hypothesis testing technique (such as a t-test or ANOVA) at the 95% confidence level. Demonstrated variation would apply to questions such as whether there is a statistically significant difference in costs due to facility size differences.

7. "<u>Cost of living changes</u>" are defined as changes in the California Consumer Price Index (CPI). For purposes of developing recommended rates for use in future fiscal years (FY 1989-90) we have used estimates of the change in the California CPI developed by the Commission on State Finance. (Other sources, such as the Department of Finance, may produce projections that vary from those used in this report due to differences in the projection model used.)

8. "<u>Best available estimating methods</u>" are defined as the collection of actual cost data from a representative sample of residential care facilities for use in the development of rate recommendations. A description of the sample of facilities and methodology used in developing these rate recommendations are contained in Chapters II, III, and IV of this report. Pursuant to the requirements of WIC 4681.1 (b)(1), such a sample would have to be undertaken once every three years. In the interim years, cost data drawn

from the sample would need to be updated using changes in wage rates, legally required employer tax and benefit payments, labor law changes, and changes in the California Consumer Price Index.

9. "Generally accepted accounting principles" are defined as the conventions, rules, and procedures that define accepted accounting practice, including broad guidelines as well as detailed procedures. The basic doctrine was set forth by the Accounting Principles Board of the American Institute of Certified Public Accountants, which was superceded in 1973 by the Financial Accounting Standards Board (FASB), an independent self-regulatory body. For purposes of this study, such principles were considered in developing methods for allocating facility costs among cost elements, computing depreciation on tangible assets, and allocating parent corporation costs to specific facilities.

3. Structure of Recommended Rates

Exhibit VI-1, summarizes the general characteristics of the recommended rates set out in this chapter and how they compare to the various provisions of WIC 4681.1. The rows of the exhibit correspond to seven of the eight rate elements required by statute. The eighth element, a geographic factor, is included as one of the six column headings. The column headings set out the key structural features of the rates we recommend. Key features of our recommended rates are discussed below. Detailed information on each follows in the sections of this chapter where specific rate recommendations are set forth.

EXHIBIT VI-1
PRINCIPLE CHARACTERISTICS OF RECOMMENDED ARM RATES

WIC 4681.1 Rate Element	*(1) Is Rate Element Included in Rates For:*			*(2) Do ARM Level 2 Rates Differ from ARM Level 3?*	*(3) Do ARM Level 2&3 Rates Differ from ARM 4?*	*(4) Does Rate Element Vary by Operation Type?*	*(5) Does Rate Element Vary by Geographic Region?*	*(6) Does Rate Element Vary by Size?*
	ARM2	*ARM3*	*ARM4*					
Basic Living Needs (BLN)	Yes	Yes	Yes	No. Same BLN costs used for both levels.	Yes	No. WIC 4681.1 (b)(1) does not allow this.	Yes	No. Not found to be statistically significant.
Direct Supervision	Yes	Yes	Yes	Yes. Hours per client day vary, same wage rates for both levels.	Yes	Yes. ARM staff model requires this.	Yes. Wage rates are varied by region.	No. ARM staff model does not vary by size.
Special Services	Not applicable	Not applicable	Yes	Not applicable	Yes	N/A. All ARM4 facilities are staff operated.	Yes	No. ARM4 clinical staff model does not vary by size.
Unallocated Services	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No. Not statistically significant after controlling for operation type.
Mandated Capital	Included in BLN & Unallocated	Included in BLN & Unallocated	Included in BLN & Unallocated	Same as BLN & Unallocated	Yes	Same as BLN & Unallocated	Same as BLN & Unallocated	Same as BLN & Unallocated
Proprietary Fee	Yes	Yes	Yes	No. Same Prop. Fee for both levels.	Yes	Yes	Yes	No. Not found to be statistically significant.
Dual Diagnosis Clients	Not applicable	Not applicable	Not applicable	No	Not applicable	Not applicable	Not applicable	Not applicable

As the first group of three columns indicate, the proposed rates include all of the required rate elements set forth in statute. Since ARM Level 2 and Level 3 facilities are not authorized to provide special services, no such rate element is provided for such facilities. A discussion of the treatment mandated capital improvements and mentally disordered (dual diagnosis) clients follows later in this chapter.

The second column indicates that the same data, drawn from the 1988 Residential Rate Study sample, was used to set rates for both ARM Level 2 and Level 3 facilities. The sample provided no way to distinguish between Level 2 and Level 3 costs, since only 69 of the 537 facilities in the sample were actually in the ARM pilot in 1987. As a result, we had no objective basis upon which to conclude that ARM Level 2 costs were different than ARM Level 3 and thus determined that the only reasonable course was to use the same data to develop recommended rates for both levels. (As discussed in Chapter V, an analysis of the limited amount of data from the 69 ARM facilities in our sample indicated that ARM Level 2 costs are not significantly different (at the 95% level) from ARM Level 3 costs.) The only exception to this approach involves Direct Supervision. The ARM model prescribes a larger amount of Direct Supervision staffing for Level 3 compared to Level 2. These ARM staffing standards were used to model rates (using the sample hourly wage and benefit rates) for Direct Supervision.

The third column illustrates that the recommended rates for ARM Level 4 are different in all respects than those recommended for ARM Level 2 and Level 3. As was discussed in Chapter V, ARM Level 4 facilities were found to have significantly different (at the 95% level) costs for all cost elements than ARM Level 2 or 3 facilities. As a result of these differences, separate rates were recommended for these facilities. Data from these ARM Level 4 facilities were kept separate from data of the Level 2 or 3 facilities for purposes of developing all rate elements.

The fourth column indicates where rates for ARM Level 2 and Level 3 facilities are varied based on facility operation type (owner operated or staff operated). WIC 4681.1(b)(1) does not allow for variation in Basic Living Needs costs on any criteria other than size of facility. As a result, BLN costs are not varied by operation type. The other rate elements are varied based on operation type since we found operation type to be a statistically significant explanatory variable (see Chapter V). The ARM Direct Supervision model explicitly provides for variation based on operation type (licensing requirements so dictate) and the statute provides that Unallocated Services costs may vary based on "demonstrated variation" due to "administrative structure." Proprietary fee varies by operation type since we found a statistically significant variation by operation type in the underlying variable which determines proprietary fee.

The fifth column illustrates that all rate elements are varied by geographic region. This appears to be required by WIC 4681.1 (b)(7) which mandates a geographic variation and does not qualify the requirement with the phrase "demonstrated variation." (Although the data did vary by geographic region, this variation was not shown to be statistically significant.)

The sixth column illustrates that rate elements are not varied by facility bed size. Facility size was either not found to be statistically significant as an explanatory variable or was no longer significant after controlling for facility operation type. Since the ARM Direct Supervision staffing model does not vary by facility size, the Direct Supervision element did not vary by bed size either.

When considering Exhibit VI-1, the reader should bear in mind that it reflects a combination of the results of two types of analyses. The first set of results are those derived from the statistical analyses of the data discussed in Chapter V. The second was the analysis of the requirements of WIC 4681.1. Wherever possible, we have sought to utilize the conclusions drawn from the statistical analyses <u>if permitted by the specific language of WIC 4681.1</u>. However, in some cases (e.g., geographic cost factor) WIC 4681.1 is so specific that the requirements of statute overrule the conclusions of the statistical analysis (e.g., geographic variation in costs cannot be proved at the 95% confidence level with the data available) and left no choice but to recommend rates in the manner set forth in Exhibit VI-1.

D. REIMBURSEMENT RATES FOR ARM LEVEL 2 AND 3 FACILITIES

This section presents our specific findings concerning reimbursement rates for facilities that will be operating as ARM Level 2 and Level 3 facilities. The section presents each rate element contained in WIC 4681.1 separately and then concludes with the monthly rate that reflects all elements. All data concerning actual costs reported by sample facilities are drawn from the 537 Traditional and ARM rate facilities included in this study. Data from all other rate systems (Negotiated Rate and Special Services) were excluded from this analysis and were used in the development of ARM Level 4 rates.

1. Basic Living Needs

WIC Section 4681.1(b)(1) states that:

> Rates established for all facilities shall include an adequate amount to care for "basic living needs" of a person with developmental disabilities. "Basic living needs" shall include housing, shelter, utilities, furnishings, food, incidental transportation, housekeeping, and personal care items. The amount required for basic living needs shall be calculated each year as the average cost of these items in community care facilities. The department shall annually publish a listing of the allowable cost components of these cost items and the methodology used to determine the amounts of each item. The amount for basic living needs shall be adjusted depending on the extent to which there is a demonstrated variation based on the size of the out-of-home facility. These amounts shall be adjusted annually to reflect cost-of-living changes. A redetermination of basic living needs costs shall be undertaken every three years by the State Department of Developmental Services, using the best available estimating methods."

The following listing summarizes the items that constitute basic living needs expenses for purposes of this study and the development of rate recommendations:

- Salaries and benefits for staff providing cooking, housekeeping, or laundry services;
- Housing (utilities, insurance, rent or interest expense on shelter and furnishings, depreciation expense for buildings, furniture, equipment, and capital improvements, and property taxes);
- Food (both in home and restaurant meals);

- Clothing and personal care items purchased for the client by the facility owner other than through the SSI/SSP personal and incidental allowance;
- Housekeeping services and supplies and miscellaneous supplies; and,
- Transportation expenses (vehicle lease or interest expense, operating expenses, depreciation expense, insurance costs related to use of the vehicle for client purposes, and public transit expenses, if any).

A complete list of all the cost components that make up the Basic Living Needs cost element is presented in Appendix B. The mean and median costs for Basic Living Needs are presented in Exhibit VI-2. Data are presented by facility operation type (owner or staff operated) and by geographic region (Medium or High Fair Market Value county groups). It should be noted that the differences by operation type are not statistically significant nor are they required by WIC 4681.1 (b)(1) and therefore these differences are not included in the recommended rates. They are presented here merely as an item of information. Findings are also presented without respect to geographic region for illustrative purposes only. Findings are not presented by bed size group since this was not found to be statistically significant.

Exhibit VI-2

ARM Level 2 & 3 Facilities
Basic Living Needs Costs Per Client Month
(1987 dollars)

Facility Operation Type	Sample Mean BLN Cost per Month		Sample Median BLN Cost per Month		Geographically Combined Groups	
	Med.FMV	High FMV	Med.FMV	High FMV	Mean	Median
Owner Op.	$483 (N=222)	$490 (N=138)	$444	$472	$486	$452
Staff Op.	$436 (N=79)	$485 (N=98)	$407	$469	$463	$446
Total (N=537)	$471 (N=301)	$488 (N=236)	$437	$471	$478	$448

2. Direct Supervision

WIC Section 4681.1 (b)(2) states that:

(2) Rates established for all facilities that provide direct supervision for persons with developmental disabilities shall include an amount for "direct supervision." The cost of "direct supervision" shall vary with the person's functioning in the areas of self-care and daily living skills, physical coordination and mobility, and behavioral self-control .... The individual program plan developed pursuant to Section 4646 shall determine the amount of direct supervision required for each individual. The cost of direct supervision shall be calculated as the wage and benefit costs of caregiving staff depending on the level of service being provided to meet the functional needs of the person with developmental disabilities. These rates shall be adjusted annually to reflect wage changes and shall comply with all federal regulations for hospitals and residential care establishments under the federal Fair Labor Standards Act.

The Department of Developmental Services has developed a staffing model for the amount of direct care staff time needed to provide supervision and training to clients in ARM Level 2 and Level 3 facilities. The model used for this report is a revised and updated version of the model used in the Department's ARM rate proposal for 1987-88. The revisions include:

- The coverage factor (relief factor) allows the same number of days of absence for owner and staff operated facilities.
- The coverage factor has been expanded to include staff absences to attend training required for Level 2 and Level 3 facilities.
- The night supervision factor was revised to more closely reflect the federal Fair Labor Standards Act requirements and CCF licensing requirements.

The detailed staffing model developed by DDS is included as part of Appendix C of this report. Exhibit VI-3 summarizes the direct supervision staffing model used by the Department for ARM Level 2 and Level 3 facilities.

Exhibit VI-3

ARM Direct Supervision Staffing Model
Developed by DDS

ARM Rate Level	Operation Type	Hours per Client Day: Daytime	Night	Coverage	Daily Total	Hours Per Month
Level 2	Owner	1.71	0.00	0.10	1.81	55.1
	Staff	1.71	0.50	0.13	2.34	71.2
Level 3	Owner	2.71	0.00	0.17	2.88	87.6
	Staff	2.71	0.50	0.20	3.41	103.7

The hours of staffing per client day vary by facility operation type because facility licensing requirements dictate the level of night staff coverage in facilities that are not operated by a live-in resident operator. The hours of staffing vary between Level 2 and Level 3 facilities as a result of the added need for supervision of clients assigned to Level 3 facilities.

Exhibit VI-4 displays the mean and median hourly wage and benefit rates found in our sample facilities. The hourly wage rates have been adjusted to correct for facilities that were found to pay less than the legal minimum wage in 1987. The adjusted wage was calculated based on data reported by the sample facilities after excluding owner operated facilities with no paid staff and increasing hourly wage rates to the minimum wage level ($3.35 per hour) for facilities that paid sub-minimum wages in 1987. Hourly benefit costs are based on the legally required level (18.383% of wage costs) of employer taxes for operators of residential care facilities in 1987. Wage rate data from a total of 164 facilities in the Medium FMV counties and 149 in the High FMV counties were used to compute the mean and median rates.

Exhibit VI-4

Hourly Compensation Costs for Direct Supervision Staff ARM Level 2 & 3
Wages Adjusted to Correct for Sub-Minimum Wage Facilities
Benefits Adjusted for Legally Required Levels

	Mean Wage Rate		Median Wage Rate		Geographically Combined Groups	
	Med. FMV	High FMV	Med. FMV	High FMV	Mean	Median
Hourly Wage Rate:	$4.66	$4.81	$4.25	$4.61	$4.73	$4.50
Taxes & Benefits:	$0.86	$0.88	$0.78	$0.85	$0.87	$0.83
Total Hourly Cost	$5.52	$5.69	$5.03	$5.46	$5.60	$5.33

A substantial number of facilities in our sample paid less than the minimum wage or less than the legally required level of benefits. The actual unadjusted mean hourly wage rate was $4.47 in the Medium FMV counties and $4.62 in the High FMV counties. The actual mean hourly benefit rate in our sample was $0.47 in the Medium FMV counties and $0.45 in the High FMV counties. These later figures reflected the impact of 130 facilities that reported paying no employer taxes on wages paid to employees.

As was discussed in Chapter V, we examined the hourly wage and benefit rates paid for Direct Supervision staff by the ARM Level 2 and Level 3 pilot project facilities in our sample. We did not find a statistically significant difference in the mean wage rates paid by Level 2 and Level 3 facilities. (This was in part due to the small size of the ARM sample (an issue discussed in Chapter II) which limited our ability to statistically test many propositions about the ARM sub-population.) Therefore, we had no basis for determining whether ARM Level 3 facilities pay higher wages than Level 2 facilities. As a result, we used the wage and benefit rates derived from our combined ARM and Traditional facility sample to model Direct Supervision wage and benefit rates without providing a different compensation rate for Level 2 and Level 3 facilities as the Department has done in previous rate proposals.

Exhibit VI-5 displays the monthly cost that would be incurred by a facility that actually provided the amount of daily direct supervision staff time per client required by the model. That cost was calculated using the adjusted direct supervision staff compensation costs reported in Exhibit VI-4 above.

The fringe benefits rate reflects the amounts legally required in 1987 to meet the employer obligation under Social Security (7.15% of wages), Unemployment Insurance (1.699% of wages), the Employment Training Tax (0.064% of wages), and Worker's Compensation (9.47% of wages for facilities that are not self-insured). The reader should note that the fringe benefit calculation reflects legal requirements, not actual facility practice. A substantial number of facilities included in the sample reported paying no employer taxes on wages paid to direct supervision staff.

Exhibit VI-5

ARM Direct Supervision Cost per Client Month
Using ARM Model and Legal Wage and Benefit Rates
(1987 dollars)

ARM Rate Level	Operation Type	Adjusted Mean Rates: Med. FMV	Adjusted Mean Rates: High FMV	Combined
Level 2	Owner	$304	$314	$309
	Staff	$393	$405	$399
Level 3	Owner	$484	$498	$491
	Staff	$572	$590	$581

ARM Rate Level	Operation Type	Adjusted Median Rates: Med. FMV	Adjusted Median Rates: High FMV	Combined
Level 2	Owner	$277	$301	$294
	Staff	$358	$389	$379
Level 3	Owner	$441	$478	$467
	Staff	$522	$566	$553

3. Special Services

WIC Section 4681.1 (b)(3) states that:

> (3) Rates established for all facilities that provide "special services" for persons with developmental disabilities shall include an amount to pay for such "special services" for each person receiving special services. "Special services" include specialized training, treatment, supervision, or other services which the individual program plan of each person requires to be provided by the residential facility in addition to the direct supervision provided pursuant to the person's individual treatment plan in subdivision (b). Facilities shall be paid for providing special services for each individual to the extent that such services are specified in the person's individual program plan and the facility is designated provider for such special services. Rates of payment for special services shall be the same as prevailing rates paid for similar services in the area.

None of the 537 facilities included in our sample of facilities operating under the Traditional or ARM reimbursement rate systems were authorized to provide "special services" to their clients. Consequently, they reported no costs connected with "special services." As a result, there is no "special services" element included in rates for this group of facilities. It is our understanding that ARM Level 2 or Level 3 facilities will not be authorized to provide special services, hence such a rate element is not applicable for this group of facilities. For a discussion of rates for facilities authorized to provide "special services" please see Section E of this chapter.

4. Unallocated Services

WIC Section 4681.(b)(4) states that:

> (4) To the <u>extent applicable</u>, rates established for facilities shall include a <u>reasonable amount</u> for "unallocated services." These costs shall be determined using <u>generally accepted accounting principles</u>. "Unallocated services" means the indirect costs of managing a facility and includes costs of managerial personnel, facility operations, maintenance and repair, employee benefits, taxes, interest, insurance, depreciation, and general and administrative support. If a facility serves other persons in addition to developmentally disabled persons, unallocated services shall be adjusted depending on the extent to which there is a <u>demonstrated variation</u> due to such <u>factors as facility size or administrative structure</u>.

The following listing summarizes the items that constitute Unallocated Services costs for purposes of this study and the development of rate recommendations:

- Administrative, supervisory, and managerial wages and benefits.
- Housing expenses connected with that portion of a facility and its furniture and equipment devoted to office or administrative requirements, including rent or interest expense, property taxes, insurance, utilities, and depreciation.
- Housekeeping, maintenance, and repair expenses that were not allocated to the portion of a facility used for client purposes but that were allocated to the facility's office or administrative section.
- Administrative professional services (accounting, legal assistance).
- Clinical consulting services.
- Staff training costs, including tuition and fees.
- Travel expenses.
- Advertising expenses.
- Business taxes and license fees.
- Offices supplies and expenses.
- Dues and subscriptions.
- Telephone and postage expenses.
- Miscellaneous expenses.
- Overhead fees or administrative expenses charged to a facility by its parent organization, if any.

A full discussion of the study methodology, the resulting sample, and the cost data is presented in Chapters II, III; and IV of this report. The actual cost data collection instrument and related instructions are presented in Appendix E of this report.

The reader should note that benefit costs for direct care service employees and employees providing basic living needs services (housekeeping, cooking, etc.) have been included in the respective categories and not in the "unallocated services" category. Taxes, interest expense, insurance, maintenance, and depreciation expenses have been treated similarly for the proportion of facility costs related to basic living needs and direct supervision as opposed to administrative purposes.

Exhibit VI-6 presents the mean and median costs for "unallocated services" by operation type (owner versus staff operated) and geographic location. Findings are also presented without respect to geographic location for illustrative purposes. Findings are not presented by bed size group since this was not found to be statistically significant.

In the recommended rates presented later in this chapter, a fixed amount is added to Unallocated Services to compensate facility operators for added training costs (course tuition and fees) associated with the ARM system. For all Level 2 facilities, a flat $1 per client per month is added. For all Level 3 facilities, a flat $2 per client per month is added.

Exhibit VI-6

ARM Level 2 & 3 Facilities
Unallocated Services Costs Per Client Month
(1987 dollars)

Facility Operation	Sample Mean Unalloc. Cost per Month		Sample Median Unalloc. Cost per Month		Unallocated Cost Combined Groups	
Type	Med.FMV	High FMV	Med.FMV	High FMV	Mean	Median
Owner Op.	$94 (N=222)	$83 (N=138)	$74	$68	$90	$70
Staff Op.	$173 (N=79)	$187 (N=98)	$137	$145	$181	$140
Total (N=537)	$115 (N=301)	$126 (N=236)	$86	$87	$120	$87

5. Mandated Capital Improvements and Equipment

WIC Section 4681.1(b)(5) states that:

(5) Rates established for facilities shall include an amount to reimburse facilities for the depreciation of "mandated capital improvements and equipment" as established in the state's uniform accounting manual. For purposes of this section, "mandated capital improvements and equipment" are only those remodeling and equipment costs incurred by a facility because an agency of government has required such remodeling or equipment as a condition for the use of the facility as a provider of out-of-home care to persons with developmental disabilities.

In preparation for its 1987-88 residential rate proposal, DDS reviewed Title 22 regulations to determine if they contained any mandates as described above. DDS found no mandates for improvements or equipment. However, for this study, the Department required Price Waterhouse to collect data on any capital improvement costs related to the client portions (including necessary administrative or office space) of the facility. These costs were included in the calculation of depreciation expenses and were included in the basic living needs and unallocated facility cost components.

Therefore, no separate cost has been reported for this rate element in our study. In collecting depreciation expense data during the study, no effort was made to distinguish whether a capital improvement or an item of equipment was mandated by a governmental agency as a condition of a facility being licensed to provide care to developmentally disabled persons. As a result, no depreciation expense was excluded because a capital improvement or item of equipment was determined not to be mandated as specified in WIC 4681(e).

From an accounting theory viewpoint, depreciation connected with any asset used in the business is a legitimate expense of operation, regardless of whether the asset was mandated by a governmental agency. We believe that our treatment of all depreciation expenses (mandated or not) is an equitable and appropriate manner for ensuring that facility operators are compensated for depreciation expenses. This approach meets the basic requirements of WIC 4681.1(b)(5) and provides operators with compensation of all necessary capital improvement or equipment investments.

6. Proprietary Fee

WIC Section 4681.1(b)(6) states that:

(6) When applicable, rates established for proprietary facilities shall include a reasonable "proprietary fee."

WIC Section 4681.1 (b)(6) does not define the term "proprietary fee" or explain when such a fee is applicable. The Court Order in the CARE lawsuit provided us with one source of guidance in regard to calculating a proprietary fee. It states that in defining proprietary fee the Department consider a "...reasonable return on the funds invested in fixed assets, but may not take into consideration whether or not the proprietor is employed in the business."

The Court also found that "... the proprietary fee, if applicable, could pertain to both for-profit and not-for-profit community care facilities." As a consequence of this finding, we make no distinction among facilities based on their type of ownership when calculating an appropriate proprietary fee.

Calculation of a Proprietary Fee

In a cost study such as this, in which actual costs are identified and recorded, it is not possible to identify a proprietary fee specifically, as though it were some other item of expense. A proprietary fee may best be defined as a residual amount, an amount left over after all other expenses have been paid. As a result, it was necessary to develop a model of how to calculate proprietary fees for residential care facilities.

As suggested above, there are two pieces of information required to calculate an appropriate proprietary fee. The first is a measure of the "fixed assets" employed by a residential care facility and the second is an appropriate "rate of return" on funds invested in fixed assets.

Fixed Assets

The cost survey provided information that could be used to measure the fixed assets employed by residential care facilities. The survey included items designed to capture depreciation expenses for the facility building, capital improvements, furniture and equipment, and motor vehicles to the extent these assets were employed to provide service to clients. Using these reported figures and the useful lives of each category of asset (30 years for buildings, 15 years for capital improvements, 8 years for furniture and equipment, and 5 years for vehicles) it was possible to calculate for each facility the gross book value (based on original purchase price) of fixed assets employed to provide client care.

These gross book values were reduced to reflect accumulated depreciation on the assets in question in order to estimate the "net assets" of each facility. For buildings, the largest asset employed by most facilities, accumulated depreciation was calculated based on the number of years the facility had been used as a residential care facility by the current owner. For other types of assets, it was not possible to obtain the amount of accumulated depreciation directly from the computerized sample data file due to the mixture of assets in each asset category. As a result, we used a conservative set of assumptions concerning the amount of accumulated depreciation for each asset type in order to compute net assets.

Our assumptions were as follows: for capital improvements, 3 years of accumulated depreciation (thus for an asset whose useful life is 15 years, 12/15ths of gross asset value were undepreciated); for furniture and equipment, 2 years of accumulated depreciation (thus for an asset whose useful life is 8 years, 6/8ths of gross asset value were undepreciated); and for vehicles, 2 years of accumulated depreciation (thus for an asset whose useful life is 5 years, 3/5ths of gross asset value were undepreciated).

Based on this methodology, we calculated a net asset value for all of the 537 facilities in our sample of Traditional and ARM reimbursement rate facilities. Exhibit VI-7 presents our findings concerning net assets per client in our sample facilities.

Exhibit VI-7

ARM Level 2 & 3 Facilities
Net Assets Per Client and Monthly Proprietary Fee
(1987 dollars)

Facility Operation Type	Sample Mean Net Assets Per Client		Sample Median Net Assets Per Client		Geographically Combined Groups	
	Med.FMV	High FMV	Med.FMV	High FMV	Mean	Median
Owner Op.	$10,359 (N=222)	$9,457 (N=138)	$8,877	$8,548	$10,016	$8,753
Staff Op.	$7,118 (N=79)	$9,172 (N=98)	$6,979	$7,377	$8,256	$7,293
Total (N=537)	$9,508 (N=301)	$9,340 (N=236)	$8,483	$7,931	$9,435	$8,293

Pre-Tax rate of return for calculating the proprietary fee: **4.97 %**

Facility Operation Type	Sample Mean Monthly Proprietary Fee		Sample Median Monthly Proprietary Fee		Geographically Combined Groups	
	Med.FMV	High FMV	Med.FMV	High FMV	Mean	Median
Owner Op.	$43	$39	$37	$35	$41	$36
Staff Op.	$29	$38	$29	$31	$34	$30
Total	$39	$39	$35	$33	$39	$34

We found no statistically significant difference in mean net assets employed per client across the four bed size groups or our two geographic groupings of counties. As was noted in Chapter V, we did find a statistically significant difference in mean net assets per client between owner operated and staff operated facilities.

Rate of Return on Net Assets

The second piece of information required to calculate a proprietary fee is an appropriate rate of return on net assets employed by the facility. The study data collection process did not include determination of the after-tax earnings of each residential care facility. This would have required a detailed examination of the owner's federal and state income tax records and an allocation of net after-tax income between residential care operations and other sources of income. Such an effort would have been beyond the scope of this project and would have created serious problems with obtaining sufficient cooperation from many facility operators. As a result, it was not possible to directly calculate the rate of return on assets for our sample facilities.

Instead, we used a national data base of financial statistics to obtain a national measure of return on assets for facilities similar to those in this study. The Dun and Bradstreet Industry Data Report (for 1985-86, 1986-87, and 1987-88) reports that the three year average after-tax rate of return on net assets for residential care facilities (Standard Industrial Code 8361) was 3.23%.
Since this was an after-tax rate of return, it is necessary to adjust this rate to reflect the fact that in our rate calculations it will be necessary to provide pre-tax reimbursement sufficient to allow an after-tax rate of return equal to 3.23%.

Since facilities in our sample are taxed at a variety of rates ranging from zero for non-profit organizations to the top brackets of both the federal and state personal and corporate income taxes, it was necessary to assume some average tax rates in order to adjust the after-tax 3.23% rate of return from Dun and Bradstreet to a pre-tax rate of return estimate. Using an assumption that most facilities are operated by individual self-employed operators who pay federal income taxes at the 28% marginal tax rate and state income taxes at the 9.3% marginal tax rate, our assumed tax rate is 34.7% (allowing for the federal deduction provided for state income taxes). Using this tax rate, it is possible to calculate what the pre-tax rate of return on assets must be to allow an after tax 3.23% return on net assets. The required pre-tax rate of return is 4.97% (4.97% X (1-tax rate) = 3.23%).

Estimated Proprietary Fees

Exhibit VI-7 summarizes our calculation of proprietary fees using sample data. Using mean net assets employed per client for each combination of operation type and geographic location and an annual pre-tax rate of return of 4.97%, the annual proprietary fee per client ranges from $29 to $43 per client per month. Using the median net assets of our sample and an annual pre-tax rate of return of 4.97%, the monthly proprietary fee ranges from $29 to $37 per client per month.

The reader should remember that these are <u>modelled</u> amounts based on the sample mean or median net assets employed per client. The actual return for any individual facility would vary from this 4.97% pre-tax target based on the amount of net assets employed per client. For facilities with smaller amounts of net assets per client, the above-mentioned proprietary fees would produce higher rates of return, while facilities employing larger amounts of net assets would realize lower rates of return.

Finally, the reader should note that the estimates (mean and median) of proprietary fees developed above are <u>completely separate from and in addition to</u> any compensation paid for owner operators who work in their facility without receiving a wage and any allowance for interest expense on borrowed funds. The direct supervision cost element is modelled based on exclusive use of paid labor for direct supervision functions. Owner operators receive the same reimbursement rate regardless of whether or not they pay themselves a wage or employ any direct supervision staff.

Interest expense on all borrowed funds employed in the business is included in the basic living needs and unallocated services cost portions of the cost survey. As a result, allowance for the cost of borrowed funds is already included in the basic living needs and unallocated services portions of the reimbursement rates.

Therefore, the proprietary fees (mean and median) provided above may also be interpreted as a return on equity funds invested in the business. The resulting rate of return on owners' equity would depend upon the degree of leverage (% of total capital from borrowed funds) employed by the business.

7. Geographic Cost Factor

WIC Section 4681.1(b)(7) states that:

> **Rates established for all facilities shall include as a "factor" an amount to reflect differences in the cost of living for different geographic areas in the state.**

Based on an analysis of the data collected during this study, we found a statistically significant difference in total costs per client day based on the geographic location of facilities, before controlling for facility operation type. When we controlled for operation type, a finding of statistically significant differences based on geographic location was found only for Basic Living Needs and only then between staff operated facilities in the High and Medium FMV groups of counties (see Exhibit V-18). For all other cost elements, there was no statistically significant difference in costs based on geographic location, once facility operation type had been controlled for. An analysis of the impact of geographic location on costs is discussed in Chapter V.

The reader should understand that this finding does not mean that geographic location is unimportant, but rather that the data collected during this study (with the exception noted above) do not show a statistically significant difference in costs based on geographic location, once method of operation (owner versus staff operated facilities) is taken into account.

One possible explanation for this is the fact that the costs measured in this study were not "unconstrained" or truly independent variables. All of the facilities studied were receiving payments under the Traditional or ARM reimbursement rate system. As a result, it appears that many (but not all) operators make an attempt to "fit" costs within existing reimbursement rates. Facilities with relatively low fixed costs (e.g., housing) appear to spend somewhat more on variable cost items (e.g., food, transportation) and vice versa. As a result, geographic cost variations are sufficiently blurred so as to result in the absence of statistically significant (at the 95% level) differences in mean total costs. In the absence of appropriate and objective measures of the "quality of client service" it is impossible for us to determine whether service quality suffers in this cost constrained system.

Despite this finding, WIC 4681.1(b)(7) requires that rates contain a factor that reflects geographic differences in the cost of living. As a result, we use data developed in this study to present rates based on the data (medians or means) found in each of the two geographic groups of counties. For information, we also present the same data used to develop recommended rates without respect to geographic region so interested parties might determine what rates might be without respect to geographic region.

Exhibit VI-8 and Exhibit VI-9 display sample data findings for each of the WIC 4681.1 rate elements by geographic region (and on a statewide basis as well).

As a result, the rates recommended in this chapter are presented with two separate tables, one for facilities in the 11 High FMV counties and one for the balance of the state (Medium FMV counties). These rate tables reflect the sample medians for basic living needs and unallocated costs by each geographic area and bed size group found in our sample of 537 Traditional and ARM rate type facilities. The rates also reflect use of each region's own median hourly compensation costs for direct supervision staff. This compensation cost is used to prepare the modelled direct supervision reimbursement rate element.

8. Dual Diagnosis Rate

WIC Section 4681.1(b) (8) states that:

(8) Rates established for developmentally disabled persons who are also mentally disordered may be fixed at a higher rate. The State Department of Mental Health shall establish criteria upon which higher rates may be fixed pursuant to this subdivision. The higher rate for developmentally disabled persons who are also mentally disordered may be paid when requested by the director of the regional center and approved by the Director of Developmental Services.

The Department has never used its option to propose a higher rate for this client group. This is because the prescribed treatment program for a client does not focus on diagnosis. Once it is determined that the person is eligible for services, the interdisciplinary team meets to discuss client assessments, determines client needs, then develops the most appropriate program plan for the individual. For developmentally disabled persons who are also mentally disordered, the treatment plan would address clients' needs under both diagnoses. Consequently, the Department has not identified any separate costs specific to this client group which are not already covered under the Direct Supervision cost element. Accordingly, no data pertaining to the development of a dual diagnosis rate was collected or analyzed during this study.

9. Summary of Rate Elements

Exhibits VI-8 and VI-9 on the following pages summarize our findings concerning the mean and median levels of the various rate elements specified in WIC Section 4681.1 by facility operation type and geographic region.

10. Adjustment for Cost of Living Changes Required in FY 1989-90

The Department requested that we report on the cost of living adjustment required to prepare rate schedules for use in the 1989-90 fiscal year. This request is in keeping with the requirements of WIC Section 4681.1 that "... amounts be adjusted annually to reflect cost-of-living changes."

Since the data collected during the study was for calendar year 1987, it is necessary to adjust the reported and modelled costs for changes in the cost of living between calendar 1987 and the 1989-90 fiscal year. To accomplish this, we obtained data from the Commission on State Finance concerning the actual rate of inflation, as measured by the California Consumer Price Index (CPI) for All Urban Consumers, between the second quarter of calendar year 1987 and the third quarter of calendar year 1988. Also obtained from the same source was an estimate of inflation (using the same index) for the period from the end of the third calendar quarter of 1988 to the first quarter of calendar year 1990.

Exhibit VI-8

ARM LEVEL 2 & 3 FACILITIES SUMMARY OF COST ELEMENTS BASED ON SAMPLE MEDIANS DOLLARS PER CLIENT MONTH (1987 DOLLARS)

Cost Element	Medium FMV Counties 6/ Owner Operated	Medium FMV Counties 6/ Staff Operated	High FMV Counties 6/ Owner Operated	High FMV Counties 6/ Staff Operated	Combined Counties Owner Operated	Combined Counties Staff Operated	All Counties All Facilities
Basic Living Needs	$444	$407	$472	$469	$452	$446	$448
(BLN without respect to operation type)	$437	$437	$471	$471	$448	$448	
Direct Supervision 1/							
Level 2	$277	$358	$301	$389	$294	$379	8/
Level 3	$441	$522	$478	$566	$467	$553	
Special Services 2/	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Unallocated Services Costs 3/							
ARM Level 2	$75	$138	$69	$146	$71	$141	$88
ARM Level 3	$76	$139	$70	$147	$72	$142	$89
Mandated Capital Improvements 4/	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Proprietary Fee	$37	$29	$35	$31	$36	$30	$34
Dual Diagnosis 5/	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Actual Wage rate		$4.25		$4.61		$4.50	8/
Actual Benefit Rate (with zero values)		$0.31		$0.27		$0.31	
Actual Benefit Rate (excludes zero values)		$0.66		$0.67		$0.66	
Legal Wage Rate		$4.25		$4.61		$4.50	
Legal Benefit Rate 7/		$0.78		$0.85		$0.83	

Notes:

1/ Direct Supervision costs calculated using wage rates adjusted for subminimum wage payers and legally required benefits levels.
2/ ARM Level 2 and Level 3 facilities do not offer special services.
3/ Includes additional $1 at Level 2 and $2 at Level 3 for ARM mandated staff training costs.
4/ Included in depreciation expense in Basic Living Needs and Unallocated Services cost elements.
5/ Included in Direct Supervision staffing costs.
6/ High FMV counties are: Alameda, Contra Costa, Los Angeles, Marin, Orange, San Diego, San Francisco, San Mateo, Santa Clara, Santa Cruz, and Ventura. All other counties are in the Medium FMV group.
7/ Legally required benefits are 18.383% of legal wage rate.
8/ Direct Supervision hours are modeled by level and operation type only.

Exhibit VI-9

ARM LEVEL 2 & 3 FACILITIES SUMMARY OF COST ELEMENTS BASED ON SAMPLE MEANS
DOLLARS PER CLIENT MONTH (1987 DOLLARS)

Cost Element	Medium FMV Counties 6/		High FMV Counties 6/		Combined Counties		All Counties
	Owner Operated	Staff Operated	Owner Operated	Staff Operated	Owner Operated	Staff Operated	All Facilities
Basic Living Needs	$483	$436	$490	$485	$486	$463	$478
(BLN without respect to operation type)	$471	$471	$488	$488	$478	$478	
Direct Supervision 1/							
Level 2	$304	$393	$314	$405	$309	$399	8/
Level 3	$484	$572	$498	$590	$491	$581	
Special Services 2/	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Unallocated Services Costs 3/							
ARM Level 2	$95	$174	$84	$188	$91	$182	$121
ARM Level 3	$96	$175	$85	$189	$92	$183	$122
Mandated Capital Improvements 4/	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Proprietary Fee	$43	$29	$39	$38	$41	$34	$39
Dual Diagnosis 5/	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Actual Wage rate		$4.47		$4.62		$4.54	8/
Actual Benefit Rate (with zero values)		$0.47		$0.45		$0.46	
Actual Benefit Rate (excludes zero values)		$0.84		$0.74		$0.79	
Legal Wage Rate		$4.66		$4.81		$4.73	
Legal Benefit Rate 7/		$0.86		$0.88		$0.87	

Notes:

1/ Direct Supervision costs calculated using wage rates adjusted for subminimum wage payers and legally required benefits levels.
2/ ARM Level 2 and Level 3 facilities do not offer special services.
3/ Includes additional $1 at Level 2 and $2 at Level 3 for ARM mandated staff training costs.
4/ Included in depreciation expense in Basic Living Needs and Unallocated Services cost elements.
5/ Included in Direct Supervision staffing costs.
6/ High FMV counties are: Alameda, Contra Costa, Los Angeles, Marin, Orange, San Diego, San Francisco, San Mateo, Santa Clara, Santa Cruz, and Ventura. All other counties are in the Medium FMV group.
7/ Legally required benefits are 18.383% of legal wage rate.
8/ Direct Supervision hours are modeled by level and operation type only.

We combined these actual and forecast data to obtain an estimated rate of inflation of 12.5% for the two and one half year period involved. This 12.5% factor can be applied to the rates developed above in order to adjust them for price changes between July 1987, the midpoint of the calendar year of our study, and January 1, 1990, the midpoint of the 1989-90 fiscal year.

A final adjustment was made to reflect the increase in Social Security contributions required of employers beginning in 1988. The FICA tax rate increased from 7.15% of covered payroll to 7.51%. This adjustment made in all hourly compensation costs used to prepare rate alternatives for the 1989-90 fiscal year. The reader should also note that while the minimum wage was increased from $3.35 per hour to $4.25 per hour effective July 1, 1988, no special adjustment in compensation costs was made to reflect this change. This decision reflects the fact that both the mean and median hourly wage rates used to model direct supervision were greater than $4.25 per hour in 1987. All hourly wage rates were increased by the 12.5% change in the California CPI for purposes of preparing estimates of 1989-90 rate alternatives. Hourly benefit rates were increased to reflect an increase in employer's Social Security contributions that took effect in 1988.

11. Rate Recommendations for ARM Level 2 and Level 3

Exhibit VI-10 presents the recommended rates for ARM Level 2 and Level 3 facilities based on the data and analysis discussed in this report. The structure of the recommended rates is that presented in Exhibit VI-1 earlier in this chapter. Key features of the recommendation include:

- Rates vary by geographic region for all rate elements.

- Rates vary by facility operation type for Direct Supervision, Unallocated Services, and Proprietary Fees. Basic Living Needs does not vary by operation type, but only by geographic region.

Exhibit VI-10

ARM LEVEL 2 AND 3 RATE RECOMMENDATION

Assumptions:
1) Median costs are used for all elements
2) ARM direct supervision model used
3) Legal wages & benefits per hour
4) BLN varies by geography but not by operation type.
5) UC, D.S., and Prop. Fee vary by operation type & geography

1. Study Data Findings (1987 dollars)

	Medium FMV Counties		High FMV Counties	
ARM Level 2	**Owner Op.**	**Staff Op.**	**Owner Op.**	**Staff Op.**
Basic Living Needs	$437	$437	$471	$471
Direct Supervision	$277	$358	$301	$389
Unallocated Services	$75	$138	$69	$146
Proprietary Fee	$37	$29	$35	$31
Mandated Improvements	N/A	N/A	N/A	N/A
Special Services	N/A	N/A	N/A	N/A
Dual Diagnosis	N/A	N/A	N/A	N/A
Total	$826	$962	$876	$1,037

	Medium FMV Counties		High FMV Counties	
ARM Level 3	**Owner Op.**	**Staff Op.**	**Owner Op.**	**Staff Op.**
Basic Living Needs	$437	$437	$471	$471
Direct Supervision	$441	$522	$478	$566
Unallocated Services	$76	$139	$70	$147
Proprietary Fee	$37	$29	$35	$31
Mandated Improvements	N/A	N/A	N/A	N/A
Special Services	N/A	N/A	N/A	N/A
Dual Diagnosis	N/A	N/A	N/A	N/A
Total	$991	$1,127	$1,054	$1,215

2. Summary of Estimated ARM Rates Using 1987 Data from 1988 Rate Study

	Medium FMV Counties		High FMV Counties	
	Owner Op.	**Staff Op.**	**Owner Op.**	**Staff Op.**
ARM Level 2	$826	$962	$876	$1,037
ARM Level 3	$991	$1,127	$1,054	$1,215

3. Recommended ARM Rates for FY 1989-90 Based on Study Sample Data

	Medium FMV Counties		High FMV Counties	
	Owner Op.	**Staff Op.**	**Owner Op.**	**Staff Op.**
ARM Level 2	$930	$1,084	$987	$1,168
ARM Level 3	$1,117	$1,270	$1,188	$1,369

4. Actual ARM Rates Effective April 1, 1988

	Owner Op.	Staff Op.
ARM Level 2	$933	$1,084
ARM Level 3	$1,214	$1,410

Note: Current ARM rates do not provide for geographic variation in rates.

5. Percentage Change in 1988 ARM Rates Required to Match Projected FY 1989-90 Rates Based on 1988 Rate Study Sample

	Medium FMV Counties		High FMV Counties	
	Owner Op.	**Staff Op.**	**Owner Op.**	**Staff Op.**
ARM Level 2	-0.3%	0.0%	5.8%	7.7%
ARM Level 3	-8.0%	-9.9%	-2.1%	-2.9%

- ARM 2 and ARM 3 rates are the same for Basic Living Needs, Unallocated Services, and Proprietary Fees since it was not possible to distinguish between the two groups using study data. The Direct Supervision element does vary based on the ARM staffing model. Unallocated Services cost data were the same, but were adjusted differentially to account for ARM training requirements.

- Rate elements are based on sample medians for all rate components, including hourly wage rates used to model direct supervision costs.

Exhibit VI-10 also presents a comparison of the recommended FY 1989-90 ARM Level 2 and Level 3 rates to the 1988 ARM rate schedule and indicates the percentage difference between the recommended 1989-90 rates and the rates currently in effect.

Exhibit VI-11 presents a comparison of the actual DDS ARM rates in effect on April 1, 1988, to Level 2 and Level 3 rates based on sample data from 1987 updated for inflation's effects to April 1, 1988. This exhibit also summarizes the percentage difference between actual DDS rates and those derived from study data.

The reader should note that in both Exhibit VI-10 and Exhibit VI-11 the portions of the table comparing recommended rates (developed from study data) with actual DDS ARM rates shows that the actual 1988 rates are higher than were recommended rates for certain groups of facilities. This finding should not be interpreted as a recommendation by Price Waterhouse that rates be reduced for any group of facilities shown in the exhibits. Such a decision would involve a degree of disruption to facilities that are already conducting business based on current rate schedules. The Department would have to make a policy decision about whether the disruption entailed by such a rate revision would be justified under the circumstances. Such a decision was beyond the scope of this study, and hence we offer no opinion on this issue. A summary of the study data findings used to prepare these rate alternatives is contained

Exhibit VI-11

COMPARISON OF DDS ARM RATES AS OF APRIL 1, 1988 TO RATES REQUIRED IF BASED ON SAMPLE DATA FINDINGS

ACTUAL ARM RATES AS OF APRIL 1, 1988

	LEVEL 2 OWNER OP	LEVEL 2 STAFF OP	LEVEL 3 OWNER OP	LEVEL 3 STAFF OP
BASIC LIVING NEEDS	$454	$454	$454	$454
DIRECT SUPERVISION	$293	$336	$554	$656
UNALLOCATED COSTS	$186	$294	$206	$300
TOTAL COSTS	$933	$1,084	$1,214	$1,410

ARM LEVEL 2 AND 3 RATES IF SET USING SAMPLE MEDIANS UPDATED TO APRIL 1, 1988

	MEDIUM FMV COUNTIES		HIGH FMV COUNTIES	
	LEVEL 2 OWNER OP	LEVEL 2 STAFF OP	LEVEL 2 OWNER OP	LEVEL 2 STAFF OP
ARM LEVEL 2				
BASIC LIVING NEEDS	$452	$452	$487	$487
DIRECT SUPERVISION	$287	$371	$312	$403
UNALLOCATED SERVICE	$78	$143	$71	$151
PROPRIETARY FEE	$38	$30	$36	$32
TOTAL COSTS	$855	$996	$906	$1,073
	LEVEL 3 OWNER OP	LEVEL 3 STAFF OP	LEVEL 3 OWNER OP	LEVEL 3 STAFF OP
ARM LEVEL 3				
BASIC LIVING NEEDS	$452	$452	$487	$487
DIRECT SUPERVISION	$456	$540	$495	$586
UNALLOCATED SERVICE	$79	$144	$72	$152
PROPRIETARY FEE	$38	$30	$36	$32
TOTAL COSTS	$1,025	$1,166	$1,090	$1,257

PERCENTAGE CHANGE TO MATCH APRIL 1, 1988 ACTUAL RATES

	MEDIUM FMV COUNTIES		HIGH FMV COUNTIES	
	OWNER OPERATED	STAFF OPERATED	OWNER OPERATED	STAFF OPERATED
LEVEL 2	-8.36%	-8.12%	-2.89%	-1.01%
LEVEL 3	-15.57%	-17.30%	-10.21%	-10.85%

in Appendix C to this report. Included in that appendix, for illustrative purposes, is a calculation of the FY 1989-90 rates based on sample means rather than medians.

E. REIMBURSEMENT RATES FOR ARM LEVEL 4 FACILITIES

This section presents findings concerning reimbursement rates for facilities that will be designated as ARM Level 4 by the Department of Developmental Services. As was noted earlier, only these facilities are authorized to provide the "special services" described in WIC Section 4681.1(b)(3).

As was discussed in Chapter V, our analysis indicated a statistically significant difference in the mean costs reported by Special Services and Negotiated Rate facilities (facilities that will become ARM Level 4) and facilities operating under the Traditional and ARM Level 2 & 3 rate systems. Statistically significant differences were found for total Basic Living Needs costs, total Direct Supervision costs, total Unallocated Services costs, and total cost per client. In general, total costs per client day for ARM Level 4 facilities were more than three times higher than those of Traditional and ARM Level 2 & 3 rate type facilities. This difference was reflected not only in the areas of direct supervision and special services staffing, but also (to a lesser degree) in unallocated costs and basic living needs costs.

1. General Approach to ARM Level 4 Rate Development

As a result of these statistical findings and by virtue of how past rates have been set for these facilities, it is reasonable to treat the ARM Level 4 facilities as a separate group for purposes of setting residential care facility rates.

In the remainder of this chapter, the reimbursement rate recommendation for ARM Level 4 facilities are presented for each of the rate elements required in WIC Section 4681.1 using the data reported by the combined sample of 46 Special Services and 31 Negotiated Rate facilities. Except where noted, the methodology used to develop these individual rate elements is the same as that used for ARM Level 2 and Level 3 facility rate development. It should also be noted that there is no distinction made in the Level 4 rates based on facility operation type. This is the case because the Department has indicated that all Level 4 facilities will be treated as staff operated facilities. (In our sample, only 2 of 77 facilities reported a resident owner operator.)

All of the ARM Level 4 mean and median data referred to in the balance of this section may be found in Exhibits VI-21 and VI-22. The recommended rates are presented in Exhibit VI-23.

2. Basic Living Needs - WIC Section 4681.1(b)(1)

The same definition of basic living needs was used as with ARM Level 2 and Level 3 facilities with one exception. From basic living needs costs we subtracted the costs of "special services supplies" purchased by the facility. This individual cost component is part of the special services rate element rather than part of basic living needs. Mean and median basic living needs costs were developed from the sample for each geographic region and for the sample as a whole without regard to geography. Exhibit VI-12 presents the study findings with regard to Basic Living Needs for ARM Level 4 facilities.

Exhibit VI-12

ARM Level 4 Facilities
Basic Living Needs Costs per Client Month
(1987 dollars)

Facility	Sample Mean BLN Cost per Month		Sample Median BLN Cost per Month		Geographically Combined Group	
Type	Med. FMV	High FMV	Med. FMV	High FMV	Mean	Median
ARM 4	$558	$648	$521	$597	$619	$576
(N=77)	(N=25)	(N=52)	(N=25)	(N=52)	(N=77)	(N=77)

3. Direct Supervision - WIC Section 4681.1 (b)(2)

The Department has developed a direct supervision staffing model for ARM Level 4 facilities that has nine different levels (Levels 4A - 4I). These levels provide from 4.60 hours per client per day (Level 4A) to 9.60 hours per client day (Level 4I) of direct supervision staffing. Facilities will be assigned to one of the nine levels based on the type of program and staffing they offer. Exhibit VI-13 displays the ARM Level 4 Direct Supervision Staffing Model. A discussion of the development of this model is contained in Appendix C along with the discussion of the Level 2 and Level 3 direct supervision models.

Exhibit VI-13

DDS ARM Level 4 Direct Supervision Staffing Model

ARM 4	Hours per Client Day			Daily	Hours per
Level	Daytime	Night	Coverage	Total	Month
4A	3.00	1.33	0.27	4.60	139.9
4B	3.43	1.33	0.29	5.05	153.6
4C	3.86	1.33	0.32	5.51	167.6
4D	4.29	1.33	0.35	5.97	181.6
4E	4.86	1.33	0.38	6.57	199.9
4F	5.43	1.33	0.42	7.18	218.4
4G	6.00	1.33	0.45	7.78	236.7
4H	6.71	1.33	0.50	8.54	259.8
4I	7.71	1.33	0.56	9.60	292.0

Exhibit VI- 14 displays the mean and median hourly compensation costs for Direct Supervision Staff in ARM Level 4 facilities. As was the case in Level 2 and Level 3, the data has been adjusted to compensate for a small number of facilities that reported paying some employees below the minimum wage. Employer taxes and benefits are presented based on study data findings. Study results indicated that benefit levels were above the legally required minimum level of 18.383% in 1987. It is noteworthy that Level 4 facilities median hourly compensation cost for direct supervision staff is more than 25% higher (over $1.50 per hour) than that found in ARM Level 2 and 3 facilities.

Exhibit VI-14

Hourly Compensation Cost for Direct Supervision Staff ARM Level 4
Wages Adjusted to Correct for Sub-Minimum Wage Facilities
Benefits Based on Actual Study Findings (above legal minimums)
(1987 dollars)

	Mean Hourly Rates		Median Hourly Rates		Geographically Combined Groups	
	Med. FMV	High FMV	Med. FMV	High FMV	Mean	Median
Hourly Wage Rate:	$5.80	$5.96	$5.61	$6.06	$5.91	$5.95
Taxes & Benefits:	$1.14	$1.16	$1.12	$1.17	$1.16	$1.15
Total Hourly Cost	$6.94	$7.12	$6.73	$7.23	$7.07	$7.10
(N=76)	(N=25)	(N=52)	(N=25)	(N=52)	(N=77)	(N=77)

Using the information presented in Exhibits VI-13 and VI-14, mean and median direct supervision costs are presented in Exhibits VI-15.

Exhibit VI-15

ARM Level 4 Direct Supervision Cost Per Client Month
Using DDS Direct Supervision Model and
Exhibit VI-14 Hourly Compensation Costs
(1987 dollars)

		Monthly Cost Using Mean Hourly Rates of		Monthly Cost Using Median Hourly Rates of		Geographically Combined Groups	
ARM 4 Level	DS. Hrs. Per Month	Med. FMV $6.94	High FMV $7.12	Med. FMV $6.73	High FMV $7.23	Mean $7.07	Median $7.10
4A	139.9	$964	$996	$942	$1,012	$987	$992
4B	153.6	$1,058	$1,094	$1,034	$1,111	$1,083	$1,089
4C	167.6	$1,155	$1,193	$1,128	$1,212	$1,182	$1,188
4D	181.6	$1,251	$1,293	$1,222	$1,313	$1,280	$1,288
4E	199.9	$1,377	$1,423	$1,345	$1,445	$1,409	$1,417
4F	218.4	$1,505	$1,555	$1,470	$1,579	$1,540	$1,549
4G	236.7	$1,631	$1,685	$1,593	$1,711	$1,669	$1,678
4H	259.8	$1,790	$1,850	$1,748	$1,878	$1,831	$1,842
4I	292.0	$2,012	$2,079	$1,965	$2,111	$2,059	$2,071

4. Special Services - WIC 4681.1 (b)(3)

The Special Services rate element for Level 4 facilities is constructed from two components. The first is an allowance for reasonable expenses for "special supplies and equipment." This is a detailed cost component contained on the data collection forms that was designed to capture facility expenses for supplies and equipment required to serve clients in need of "special services." Mean and median data from our sample are presented in Exhibits VI-16.

Exhibit VI-16

ARM Level 4 Facilities
Special Supplies and Equipment Costs Per Month
(1987 dollars)

Facility	Sample Mean Spec.Sup. Cost per Month		Sample Median Spec.Sup. Cost per Month		Geographically Combined Groups	
Type	Med. FMV	High FMV	Med. FMV	High FMV	Mean	Median
ARM 4	$5	$13	$0	$6	$11	$4
(N=77)	(N=25)	(N=52)	(N=25)	(N=52)	(N=77)	(N=77)

The second component of this rate element is an allowance for the expense of employing outside clinical consultants. The Department has developed a model number of hours per client month for such clinical consultant assistance. This model varies by ARM Level 4A through Level 4I, with increasing amounts of time authorized at the higher levels. Through its own research, the Department has determined that the average cost of such consultant assistance is $28.04 per hour. This hourly rate is multiplied by the model number of hours per client per month at each level to obtain a monthly allowance for clinical consultants. The result is presented in Exhibits VI-17.

Exhibit VI-17

ARM Level 4 Facilities
Allowance for Clinical Consultant Costs Per Client Month
(1987 dollars)

ARM 4 Level	Clinical Consultant Hrs./Month	DDS Authorized Cost/Hr.	Monthly Cost
4A	2	$28.04	$56
4B	2	$28.04	$56
4C	2	$28.04	$56
4D	3	$28.04	$84
4E	3	$28.04	$84
4F	3	$28.04	$84
4G	4	$28.04	$112
4H	4	$28.04	$112
4I	4	$28.04	$112

Exhibit VI-18 displays the result of combining the two components discussed above to produce the recommended Special Services rate element for ARM Level 4 facilities.

Exhibit VI-18

ARM Level 4 Facilities
Total Special Services Cost Per Month
(1987 dollars)

ARM 4	Sample Mean Spec.Svc. Cost per Month		Sample Median Spec.Svc. Cost per Month		Geographically Combined Groups	
Level	Med. FMV	High FMV	Med. FMV	High FMV	Mean	Median
4A	$61	$69	$56	$62	$67	$60
4B	$61	$69	$56	$62	$67	$60
4C	$61	$69	$56	$62	$67	$60
4D	$89	$97	$84	$90	$95	$88
4E	$89	$97	$84	$90	$95	$88
4F	$89	$97	$84	$90	$95	$88
4G	$117	$125	$112	$118	$123	$116
4H	$117	$125	$112	$118	$123	$116
4I	$117	$125	$112	$118	$123	$116

5. Unallocated Services - WIC Section 4681.1 (b)(4)

The same definition of unallocated services costs was used as with ARM Level 2 and Level 3 facilities. The mean and median data derived from the sample facilities used to develop ARM Level 4 rates are presented in Exhibit VI-19. As a review of the exhibit will indicate, both the means and medians for Level 4 unallocated services costs are approximately four times the corresponding amounts for Level 2 and Level 3 facilities.

Exhibit VI-19

ARM Level 4 Facilities
Unallocated Services Costs Per Client Month
(1987 dollars)

Facility Type	Sample Mean Unalloc. Cost per Month		Sample Median Unalloc. Cost per Month		Geographically Combined Groups	
	Med.FMV	High FMV	Med.FMV	High FMV	Mean	Median
ARM 4	$486	$570	$403	$476	$543	$469
(N=77)	(N=25)	(N=52)	(N=25)	(N=52)	(N=77)	(N=77)

6. Mandated Capital Improvements and Equipment - WIC Section 4681.1 (b)(5)

These costs for ARM Level 4 facilities were treated in the same fashion as with ARM Level 2 and Level 3 facilities. No separate amount is provided since costs of all improvements, mandated or not, are included as part of the basic living needs and unallocated services cost elements. As noted above, this approach complies with the requirements of WIC 4681.1.

7. Proprietary Fee - WIC Section 4681.1 (b)(6)

A proprietary fee for ARM Level 4 facilities was computed using the same methodology and estimated pre-tax rate of return used for ARM Level 2 and Level 3 facilities. Data on the mean and median net assets per client for ARM Level 4 facilities are presented in Exhibit VI-23. Net assets, and hence the proprietary fee, are lower in ARM Level 4 facilities than in our sample of Level 2 and Level 3 facilities. The difference appears to reflect greater prevalence of rented facilities or more fully depreciated facilities and equipment in our ARM Level 4 sample. This difference between Level 4 facilities and the combination of Level 2 and Level 3 facilities was found to be statistically significant at the 95% confidence level. Exhibit VI-20 also presents the monthly proprietary fee based on using an annual pre-tax rate of return of 4.97%.

Exhibit VI-20

ARM Level 4 Facilities
Calculation of Proprietary Fee
(1987 dollars)

	Sample Mean		Sample Median		Geographically Combined Groups	
	Med.FMV	High FMV	Med.FMV	High FMV	Mean	Median
Net Assets Per Client	$5,205	$5,362	$2,840	$2,712	$5,311	$2,756
Annual Pre-Tax Return (%)	4.97%	4.97%	4.97%	4.97%	4.97%	4.97%
Monthly Prop. Fee	$22	$22	$12	$11	$22	$11
(N=77)	(N=25)	(N=52)	(N=25)	(N=52)	(N=77)	(N=77)

8. Geographic Cost Factor - WIC Section 4681.1 (b)(7)

Based on an analysis of the data collected during this study, we found no statistically significant (at the 95% level) differences in major cost elements based on geographic location for ARM Level 4 facilities. (See Chapter V for a discussion of this finding.) Despite this finding, WIC 4681.1(b)(7) requires that rates contain a factor that reflects geographic differences in the cost of living. As a result, we use data developed in this study to present rates based on the actual difference found in each of the two geographic groups of counties. For informational purposes, we also present the same data used to develop recommended rates without respect to geographic region so interested parties might determine what rates would be without respect to geographic region.

Exhibits VI-21 and Exhibit VI-22 display sample data findings for each of the WIC 4681 rate element by geographic region (and on a statewide basis as well).

As a result, the rates recommended in this chapter are presented with two separate tables, one for facilities in the 11 High FMV counties and one for the balance of the state (Medium FMV counties). These rate tables reflect the sample medians for basic living needs and unallocated costs by each geographic area and bed size group found in our sample of 77 Negotiated Rate and Special Services rate type facilities. The rates also reflect use of each region's own median hourly compensation costs for Direct Supervision staff. This compensation cost is used to prepare the modelled Direct Supervision reimbursement rate element.

9. Dual Diagnosis Rate - WIC Section 4681.1 (b)(8)

The Department has never used its option to propose a higher rate for this client group. This is because the prescribed treatment program for a client does not focus on diagnosis. Once it is determined that the person is eligible for services, the interdisciplinary team meets to discuss client assessments, determines client needs, then develops the most appropriate program plan for the individual. For developmentally disabled persons who are also mentally disordered, the treatment plan would address clients' needs under both diagnoses. Consequently, the Department has not identified any separate costs specific to this client group which are not already covered under the direct supervision or special services cost elements. Accordingly, no data pertaining to the development of a dual diagnosis rate was collected or analyzed during this study.

10. Adjustment for Cost of Living Changes Required in FY 1989-90

The same methodology and measure of the change in the cost of living was used to adjust ARM Level 4 rates as was used for ARM Level 2 and Level 3 facilities.

11. Summary of ARM Level 4 Rate Elements

Exhibits VI-21 and VI-22 summarize our findings concerning the mean and median cost of the various rate elements specified in WIC 4681.1 by facility geographic location and ARM Level (4A - 4I).

12. Rate Recommendations for ARM Level 4

We conclude this chapter with the presentation of recommended rates for ARM Level 4 facilities. Exhibit VI-23 presents these rates. The structure of the rates is based on the data and analysis discussed in this report and our interpretation of the requirements of WIC 4681.1 as discussed earlier in this chapter.

Exhibit VI-23 also presents a comparison of the recommended FY 1989-90 ARM Level 4 rates to the 1988 ARM Level 4 rates and indicates the percentage difference between the recommended rates and the rates currently in effect. The reader should note that in Exhibit VI-23 the portions of the table comparing recommended rates (developed from study data) with actual DDS ARM rates show that the actual 1988 rates are higher than were recommended rates for certain groups of facilities. This finding should <u>not</u> be interpreted as a recommendation by Price Waterhouse that rates be reduced for any group of facilities shown in the exhibit. Such a decision would involve a degree of disruption to facilities that are already conducting business based on current rate schedules. The Department would have to make a policy decision about whether the disruption entailed by such a rate revision would be justified under the circumstances. Such a decision was beyond the scope of this study, and hence we offer no opinion on this issue.

A summary of the study data findings used to prepare these rates is contained in Appendix D to this report. Included in that appendix, for illustrative purposes, is a calculation of the FY 1989-90 rates based on sample means rather than medians.

EXHIBIT VI-21

ARM 4 FACILITIES SUMMARY OF COST ELEMENTS ON SAMPLE MEDIANS DOLLARS PER CLIENT MONTH (1987 DOLLARS)

Cost Element	Medium FMV Counties 4/	High FMV Counties 4/	Combined Counties
Basic Living Needs	$521	$597	$576
Direct Supervision 1/			
Level 4A - 4.60 hrs/client day	$942	$1,012	$994
Level 4B - 5.05 hrs/client day	$1,034	$1,111	$1,091
Level 4C - 5.51 hrs/client day	$1,128	$1,212	$1,190
Level 4D - 5.97 hrs/client day	$1,222	$1,313	$1,289
Level 4E - 6.57 hrs/client day	$1,345	$1,445	$1,419
Level 4F - 7.18 hrs/client day	$1,470	$1,579	$1,551
Level 4G - 7.78 hrs/client day	$1,632	$1,842	$1,778
Level 4H - 8.54 hrs/client day	$1,748	$1,878	$1,844
Level 4I - 9.60 hrs/client day	$1,965	$2,111	$2,073
Unallocated Costs	$403	$476	$469
Special Supplies and Equipment	$0	$6	$4
Allowance for Clinical Consultants ($28.04/hr times authorized hours)			
Level 4A - 2 hours per client/month	$56	$56	$56
Level 4B - 2 hours per client/month	$56	$56	$56
Level 4C - 2 hours per client/month	$56	$56	$56
Level 4D - 3 hours per client/month	$84	$84	$84
Level 4E - 3 hours per client/month	$84	$84	$84
Level 4F - 3 hours per client/month	$84	$84	$84
Level 4G - 4 hours per client /month	$112	$112	$112
Level 4H - 4 hours per client /month	$112	$112	$112
Level 4I - 4 hours per client /month	$112	$112	$112
Mandated Capital Improvements 2/	N/A	N/A	N/A
Net Assets per Client	$2,840	$2,712	$2,756
Proprietary Fee	$12	$11	$11
Dual Diagnosis 3/	N/A	N/A	N/A
Actual Direct Supervision Wage rate	$5.61	$6.06	$5.94
Actual Benefit Rate (with zero values)	$1.11	$1.17	$1.13
Actual Benefit Rate (excludes zero values)	$1.12	$1.17	$1.15
Legal Wage Rate	$5.61	$6.06	$5.95
Legal Benefit rate 5/	$1.03	$1.11	$1.09
Unallocated Wage Rate	$7.85	$8.94	$8.78
Actual Benefit Rate (with zero values)	$2.01	$1.82	$1.82
Actual Benefit Rate (excludes zero values)	$2.05	$1.82	$1.83

Notes:

1/ Direct Supervision costs calculated using legal wage rates adjusted for subminimum wage payers & actual benefit rate. Actual benefit rate is higher than legal minimum rate. The same approach was used for Unallocated Services compensation.

2/ Included in depreciation expense in Basic Living Needs and Unallocated Services.

3/ Included in Direct Supervision staffing costs.

4/ High FMV counties are: Alameda, Contra Costa, Los Angeles, Marin, Orange, San Diego, San Francisco, San Mateo, Santa Clara, Santa Cruz, and Ventura. All other counties are in the Medium FMV group.

5/ Legally required benefits are 18.383% of legal wage rate.

EXHIBIT VI-22

ARM 4 FACILITIES SUMMARY OF COST ELEMENTS ON SAMPLE MEANS DOLLARS PER CLIENT MONTH (1987 DOLLARS)

Cost Element	Medium FMV Counties 4/	High FMV Counties 4/	Combined Counties
Basic Living Needs	$558	$648	$619
Direct Supervision 1/			
Level 4A - 4.60 hrs/client day	$971	$996	$989
Level 4B - 5.05 hrs/client day	$1,066	$1,094	$1,086
Level 4C - 5.51 hrs/client day	$1,163	$1,193	$1,185
Level 4D - 5.97 hrs/client day	$1,260	$1,293	$1,284
Level 4E - 6.57 hrs/client day	$1,387	$1,423	$1,413
Level 4F - 7.18 hrs/client day	$1,516	$1,555	$1,544
Level 4G - 7.78 hrs/client day	$1,718	$1,796	$1,781
Level 4H - 8.54 hrs/client day	$1,803	$1,850	$1,837
Level 4I - 9.60 hrs/client day	$2,027	$2,079	$2,065
Unallocated Costs	$486	$570	$543
Special Supplies and Equipment	$5	$13	$11
Allowance for Clinical Consultants ($28.04/hr times authorized hours)			
Level 4A - 2 hours per client/month	$56	$56	$56
Level 4B - 2 hours per client/month	$56	$56	$56
Level 4C - 2 hours per client/month	$56	$56	$56
Level 4D - 3 hours per client/month	$84	$84	$84
Level 4E - 3 hours per client/month	$84	$84	$84
Level 4F - 3 hours per client/month	$84	$84	$84
Level 4G - 4 hours per client /month	$112	$112	$112
Level 4H - 4 hours per client /month	$112	$112	$112
Level 4I - 4 hours per client /month	$112	$112	$112
Mandated Capital Improvements 2/	N/A	N/A	N/A
Net Assets per Client	$5,205	$5,362	$5,311
Proprietary Fee	$22	$22	$22
Dual Diagnosis 3/	N/A	N/A	N/A
Actual Direct Supervision Wage rate	$5.75	$5.96	$5.89
Actual Benefit Rate (with zero values)	$1.10	$1.16	$1.14
Actual Benefit Rate (excludes zero values)	$1.14	$1.16	$1.16
Legal Wage Rate	$5.80	$5.96	$5.91
Legal Benefit rate 5/	$1.07	$1.10	$1.09
Unallocated Wage Rate	$8.86	$10.03	$9.63
Actual Benefit Rate (with zero values)	$1.74	$1.86	$1.82
Actual Benefit Rate (excludes zero values)	$1.82	$1.90	$1.88

Notes:

1/ Direct Supervision costs calculated using legal wage rates adjusted for subminimum wage payers & actual benefit rate. Actual benefit rate is higher than legal minimum rate. The same approach was used for Unallocated Services compensation.

2/ Included in depreciation expense in Basic Living Needs and Unallocated Services.

3/ Included in Direct Supervision staffing costs.

4/ High FMV counties are: Alameda, Contra Costa, Los Angeles, Marin, Orange, San Diego, San Francisco, San Mateo, Santa Clara, Santa Cruz, and Ventura. All other counties are in the Medium FMV group.

5/ Legally required benefits are 18.383% of legal wage rate.

EXHIBIT VI-23

ARM LEVEL 4 RATE RECOMMENDATION

Assumptions:
1) Median costs used for all elements
2) ARM direct supervision model used
3) Legal wages and actual benefits per hour
4) BLN, UC, DS, SS, Prop. Fee vary by geographic region

1. Study Data Findings (1987 dollars)

A) Medium FMV Counties

ARM Rate	WIC 4681.1 Rate Elements							
Level 4	BLN	Direct Supv.	Spec. Svcs.	Unalloc.Sv.	Man. Cap.	Prop. Fee	Dual Diag.	Total
4A	$521	$942	$56	$403	N/A	$12	N/A	$1,934
4B	$521	$1,034	$56	$403	N/A	$12	N/A	$2,026
4C	$521	$1,128	$56	$403	N/A	$12	N/A	$2,120
4D	$521	$1,222	$84	$403	N/A	$12	N/A	$2,242
4E	$521	$1,345	$84	$403	N/A	$12	N/A	$2,365
4F	$521	$1,470	$84	$403	N/A	$12	N/A	$2,490
4G	$521	$1,593	$112	$403	N/A	$12	N/A	$2,641
4H	$521	$1,748	$112	$403	N/A	$12	N/A	$2,796
4I	$521	$1,965	$112	$403	N/A	$12	N/A	$3,013

B) High FMV Counties

ARM Rate	WIC 4681.1 Rate Elements							
Level 4	BLN	Direct Supv.	Spec. Svcs.	Unalloc.Sv.	Man. Cap.	Prop. Fee	Dual Diag.	Total
4A	$597	$1,012	$62	$476	N/A	$11	N/A	$2,158
4B	$597	$1,111	$62	$476	N/A	$11	N/A	$2,257
4C	$597	$1,212	$62	$476	N/A	$11	N/A	$2,358
4D	$597	$1,313	$90	$476	N/A	$11	N/A	$2,487
4E	$597	$1,445	$90	$476	N/A	$11	N/A	$2,619
4F	$597	$1,579	$90	$476	N/A	$11	N/A	$2,754
4G	$597	$1,711	$118	$476	N/A	$11	N/A	$2,914
4H	$597	$1,878	$118	$476	N/A	$11	N/A	$3,081
4I	$597	$2,111	$118	$476	N/A	$11	N/A	$3,314

2) Study Data Findings Updated to April 1, 1988

ARM Rate Level 4	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
4A	$2,001	$2,234	$1,946
4B	$2,097	$2,336	$2,081
4C	$2,194	$2,441	$2,215
4D	$2,321	$2,575	$2,382
4E	$2,448	$2,711	$2,562
4F	$2,577	$2,850	$2,742
4G	$2,733	$3,016	$2,953
4H	$2,894	$3,189	$3,178
4I	$3,119	$3,430	$3,493

3) Percentage Change in Actual 87-88 ARM Level 4 Rates Required to Match Study Data Findings Updated to April 1, 1988 Levels

ARM Rate Level 4	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
4A	2.8%	14.8%	$1,946
4B	0.8%	12.3%	$2,081
4C	-0.9%	10.2%	$2,215
4D	-2.6%	8.1%	$2,382
4E	-4.5%	5.8%	$2,562
4F	-6.0%	3.9%	$2,742
4G	-7.4%	2.1%	$2,953
4H	-8.9%	0.3%	$3,178
4I	-10.7%	-1.8%	$3,493

EXHIBIT VI-23

4) Recommended ARM Level 4 Rates for FY 1989-90 Based on Study Sample Data

ARM Rate Level 4	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
4A	$2,179	$2,432	$1,946
4B	$2,283	$2,544	$2,081
4C	$2,389	$2,658	$2,215
4D	$2,527	$2,804	$2,382
4E	$2,666	$2,953	$2,562
4F	$2,807	$3,104	$2,742
4G	$2,977	$3,285	$2,953
4H	$3,153	$3,473	$3,178
4I	$3,398	$3,737	$3,493

5) Percentage Change in 1987-88 ARM 4 Rates Required to Match Projected FY 1989-90 Rates Based on 1988 Rate Study Sample

ARM Rate Level 4	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
4A	12.0%	25.0%	$1,946
4B	9.7%	22.2%	$2,081
4C	7.9%	20.0%	$2,215
4D	6.1%	17.7%	$2,382
4E	4.1%	15.2%	$2,562
4F	2.4%	13.2%	$2,742
4G	0.8%	11.2%	$2,953
4H	-0.8%	9.3%	$3,178
4I	-2.7%	7.0%	$3,493

A. SUMMARY OF STUDY METHODOLOGY

The methodology for both the 1988 Residential Rate Study and this ARM study can be summarized in 11 major steps. These steps and the responsible party for each are:

1. Determine sample size (DDS - through independent consultant).
2. Update data on population of facilities; compile listing (DDS).
3. Develop and test survey forms and instructions (DDS and Price Waterhouse).
4. Train surveyors (Price Waterhouse).
5. Schedule survey visits (Price Waterhouse subcontractor).
6. Conduct survey visits (Price Waterhouse).
7. Review completed survey forms (Price Waterhouse).
8. Perform data entry of survey forms (Price Waterhouse subcontractor).
9. Conduct data analysis; determine if 1988 Residential Rate Study sample can be used for ARM rate development; test hypotheses (Price Waterhouse and subcontractor).
10. Develop rate recommendations (Price Waterhouse and subcontractor).
11. Write draft report; submit final report after DDS reviews draft (Price Waterhouse).

B. DETAILED DESCRIPTION OF METHODOLOGY

1. Determine Sample Size

Prior to releasing the Request for Proposals to select a firm to conduct both the studies, DDS determined the appropriate sample size for meeting the statistical validity requirements specified in the Court Order for the CARE lawsuit. DDS also updated its data base of information on residential facilities in order to prepare for the selection of survey participants.

In February 1988, DDS employed an outside contractor, Dr. Shu Geng, to assist DDS in determining the appropriate sample size necessary for meeting the statistical requirements of the Court Order. Dr. Shu Geng's assistance to DDS focused on taking information about the population of community care facilities and using it to determine the sample size for the survey study. The following major steps were taken in this effort:

- DDS re-analyzed the most recent survey data (from the 1984 study) in terms of classifications of the population such as facility size and geographic location.

- A pilot study was conducted in the Spring of 1988 to obtain more detailed and recent data on facility costs and to provide improved estimates of cost variation.

- From these activities, DDS' consultant designed a sampling procedure and determined the sample size of a survey to meet the Court requirement for a statistically sound study.

Based on the above activities, the required sample size for the final survey design was determined for each bed size category. Each bed size category is further broken down by geographic region and the service type (special services or general). After the mathematical calculations were completed to allocate the number of facilities to be surveyed in each bed size category across geographic region and between service type, the final sample, shown on the following page in Exhibit A-1, was presented in the Request for Proposals. (For a full discussion of the methodology used to determine sample size, see "Sample Size for Determining the Residential Care Rate" by Shu Geng, Ph.D., June 5, 1988, available upon request from the Department.)

2. Update Data on Population of Facilities; Compile Listing

After the sample size was determined, DDS created a stratified random sample list of 615 facilities. Through a computerized random selection process, DDS selected the initial sample (comprised of a total of 615 facility names) and a supplemental list (comprised of 188 facility names) which would be used, as needed, if less than 100% participation was achieved with the initial sample list. DDS then mailed introductory letters to all facilities on the list informing them that they had been selected to participate in the survey study. In addition, DDS identified a supplemental random list of 188 facilities and mailed them introductory letters to inform them that they might be selected to

Exhibit A - 1
Excerpt from DDS RFP
("Original Target Sample")

Table 3A

Universe and Sample for
1988 Residential Rate Study
by Location and Facility Size

Revised 4/21/88

SIZE	CCF TYPE*	LOCATION: PMSA N	PMSA n	MSA N	MSA n	NON-SMA N	NON-SMA n	TOTAL N	TOTAL n	TOTAL %	CV
1	Spec	92	17	19	7	6	6	117	30	26	
	Gen	1,807	226	856	104	162	20	2,825	350	12	
	Sub-Tot	1,899	243	875	111	168	26	2,942	380	13	50
2	Spec	12	6	1	1	-	-	13	7	54	
	Gen	187	42	126	28	24	5	337	75	22	
	Sub-Tot	199	48	127	29	24	5	350	82	23	25
3	Spec	14	7	3	3	-	-	17	10	59	
	Gen	134	59	43	19	5	2	182	80	44	
	Sub-Tot	148	66	46	22	5	2	199	90	45	30
4	Spec	4	4	-	-	-	-	4	4	100	
	Gen	54	46	14	12	1	1	69	59	86	
	Sub-Tot	58	50	14	12	1	1	73	63	86	50
TOTAL	Spec	122	34	23	11	6	6	151	51	34	
	Gen	2,182	373	1,039	163	192	28	3,413	564	17	
	Total	2,304	407	1,062	134	198	34	3,564	615	17	

* Spec = CCFs that provide special services
Gen = CCFs that do not provide special services. These numbers include a limited number of ARM and Negotiated Rate facilities that came up in random-sampling process.

participate in the survey study should the need occur due to facilities on the original list being unable to participate in the study. In addition, regional centers also assisted in contacting sample facilities in their regions to let operators know that they would be contacted by an outside consultant. Finally, DDS mailed letters simply describing the study to the rest of the facilities that were active community care facility vendors.

Updated Sample Listings

From the letters sent out by DDS and the telephone contact made by regional centers, the list of facilities in the sample was updated with current information, such as new addresses, telephone numbers, and owner information. Moreover, some facilities were dropped from the sample due to one of the following reasons:

- Not interested in participating;
- No longer serving DDS clients; and
- No longer in business.

From these activities, the original sample list of 615 facilities was reduced to 576 (a reduction of 39). This list, plus the supplemental list of 188 facilities, was transferred into the survey status data base maintained by Price Waterhouse. It was with these revised lists that Price Waterhouse (through a subcontractor, J.D. Franz Research, Inc.) contacted facilities to arrange for survey visits by Price Waterhouse staff accountants.

New Sub-Population Sample Sizes

The updated information from the initial contact letters (as well as the results of contacts by the regional centers) caused the sample sizes for the sub-populations within the sample matrix to change. Exhibit A-2 is the revised sample mix broken down into the revised sub-population groups (by bed size, facility rate type, and geographical location). In essence, the mix of sub-populations changed due to the updated information received about the population of

Exhibit A - 2

DDS 1988 RESIDENTIAL RATE STUDY

REVISED TARGET SAMPLE
(Provided by DDS on August 9, 1988)

SIZE	TYPE	PMSA	MSA	Non-MSA	Total
1-6 Beds	Special	32	16	5	53
	Neg. Rate	18	4	0	22
	ARM	13	24	8	45
	CCF-Trad.	202	76	16	294
1-6 Beds Total		265	120	29	414
7-15 Beds	Special	4	2	1	7
	Neg. Rate	0	1	1	2
	ARM	1	4	2	7
	CCF-Trad.	42	24	2	68
7-15 Beds Totals		47	31	6	84
16-49 Bed	Special	6	1	0	7
	Neg. Rate	4	3	0	7
	ARM	3	7	0	10
	CCF-Trad.	51	15	1	67
16-49 Beds Totals		64	26	1	91
50+ Beds	Special	3	0	0	3
	Neg. Rate	2	1	0	3
	ARM	1	0	1	2
	CCF-Trad.	16	2	0	18
50+ Beds Totals		22	3	1	26
Totals		398	180	37	615

facilities. For instance, initially, DDS thought there were 63 large (50 or more beds) facilities in the population. After contacts were first made, DDS found there actually is a total of only 26 such facilities. Thus, the total sub-population became the sample size for that portion of the sample matrix.

3. Develop and Test Survey Forms and Instructions

Working together with DDS staff, Price Waterhouse refined the forms and instructions initially developed by DDS and provided in the Request for Proposals. The purpose of refining the forms was to ensure that all the necessary data elements were included in order to meet study objectives. Also, from practical experience gained through DDS' audit staff conducting the preliminary study in the Spring of 1988 and from the experience of Price Waterhouse staff accountants in reviewing a variety of financial records in many business enterprises, the forms and instructions were streamlined to ensure that complete and relevant data were collected in the form that made data entry and analysis most efficient. The instructions for completing the forms were made consistent among all related forms. Additional forms were developed to collect data on corporate ownership and to summarize wages paid to staff.

Forms Pre-Test and Final Revisions

After the forms were revised to reflect the modifications by the DDS and Price Waterhouse project teams, 12 pilot surveys were conducted to test the feasibility and completeness of the forms. From these pilot surveys, minor changes were made to the forms which then were made final for use in conducting the remaining surveys.

The final forms package for the survey visits included five primary data collection forms, 12 supporting worksheets, and a survey visit exit checklist. The instructions for the forms package totalled 64 pages in length. In addition to the forms package, each completed survey visit included the preparation of a one to three page survey visit memo. This memo described the facility and its operation in general terms and noted any unique aspects of financial or other information collected. A copy of the complete data collection forms package and instructions is included in Appendix E of this report.

4. Train Surveyors

All staff assigned to conduct the survey visits were Price Waterhouse staff accountants. All staff accountants assigned to the project had college degrees in accounting or related subjects and had at least one year of experience with Price Waterhouse prior to being assigned to this project. The time schedule for the project and the large number of surveys required the use of staff from ten California offices of Price Waterhouse to conduct survey visits.

Three training sessions were held for Price Waterhouse staff who would be assigned to conduct survey visits. Training sessions were conducted by Price Waterhouse staff with the involvement of DDS staff. In total, approximately 75 staff accountants were trained in the procedures. A video tape was made of one training session so staff would be able to refresh their memory of the survey procedures as the need might arise.

5. Schedule Survey Visits

Price Waterhouse subcontracted with J.D. Franz Research, Inc., to arrange the appointments for all survey visits. J.D. Franz used the revised sample lists of facilities to schedule visits beginning the third week of July 1988. In scheduling visits, J.D. Franz staff followed a standard telephone script which was used to introduce the respondent to the project, ask the respondent if he or she were familiar with the study, and if needed, to persuade facility operators to participate in the study since participation was voluntary.

Once the respondent agreed to a visit, a date and tentative time were set for the visit. Then, J.D. Franz mailed background materials (prepared by Price Waterhouse) which the respondent could use to prepare for the visit. Survey schedules were distributed to three Price Waterhouse offices, each of which assigned staff from offices located in their areas to survey visits scheduled in their areas. Staff accountants contacted facility operators two or three days in advance of the scheduled survey day to confirm the address, time of the visit, the type and availability of financial records, and to make any special arrangements (such as for parking).

Scheduling Problems

There were significant problems in scheduling all survey visits. The main reason for these problems can be attributed to one factor: participation in the study was purely voluntary. (In addition to causing scheduling problems, this factor most likely introduced some bias, albeit immeasurable, into the results of the study. This phenomenon is discussed in more detail below.) Facility operators were under no statutory or regulatory requirement to participate in the study. In order to obtain 614* completed survey visits, it was ultimately necessary to telephone 2,731 of the total 3,376 facilities on the DDS listing. This represented over 80% of the entire population of facilities. Of the 2,731 facilities called, 24% (661) refused to participate in the study or cancelled a scheduled visit and could not reschedule a visit for a later date. An additional 8% (211) of the facilities called were not able to participate due to a lack of records, not having DDS clients during 1987, or the closure of the facility. The balance of the facilities called (45%) were either unable to decide whether or not to participate ("please call me back later") after as many as five calls back to them, or had telephone numbers that were not answered when repeatedly called at different times on different days. Approximately 1,500 hours of staff time were devoted to the task of scheduling visits for this project.

Another major reason for scheduling problems was that visits were scheduled during the typical vacation season (July, August, and early September). Due to start-up delays, scheduling of survey visits was not begun until July 5, 1988, approximately one month after the planned effective date of the contract to

*Although 615 survey visits were required according to the terms of the contract, Price Waterhouse "overbooked" visits to ensure that a total of 615 was achieved. Thus, a total of 618 survey visits were completed. As noted in Chapter III, four surveys were excluded from the analysis used in development of ARM rate recommendations.

Price Waterhouse. Although delays in compiling the final list of facilities could have been minimized or avoided, the major problem with scheduling visits was, nonetheless, that participation in the study was voluntary.

Although it was originally planned that all visits would be completed by September 15, it was not until October 28 that the last visit was completed.

6. Conduct Survey Visits

All data concerning facility costs and other characteristics were collected through in-person, on-site visits conducted by Price Waterhouse staff accountants using the forms and instructions package discussed above. Each survey visit began with a physical tour of the facility and a general discussion of its operations. Facility characteristics (size, ownership, staffing, etc.) and client data were collected before cost and revenue data were collected. This was done to give the staff accountant a frame of reference for considering the reasonableness of the cost and revenue data to be collected.

All survey data were collected directly from the facility owner or manager and were based on available financial, clients, and staff records. As noted above, facility owners or managers were contacted prior to the visit to confirm the scheduled appointment and to discuss the financial and other records needed for the survey visit. Records reviewed in the course of a survey visit typically included Regional Center invoices for client services rendered, tax returns, check registers, receipts for major purchases or recurring items (utilities, rent, etc.), and other facility accounting and financial records. When necessary, an additional visit was made to the parent organization of a particular facility to collect data about "overhead" or "home office" expenses charged to a particular facility.

Expense Allocation Procedures

Often it was necessary to allocate total expenses among different survey categories (for example, between the Basic Living Needs and Unallocated Facility Costs categories) when facility accounting records did not provide for such allocation. All allocations were made after consultation with the owner or manager and were based on factors such as the amount of building space devoted to client use, percentage of vehicle or equipment use for client purposes, or the owner or manager's best estimate of the proper allocation among categories.

Data Rating Procedures

As part of the survey process, the staff accountant was required to score the quality of the information provided by the facility owner or manager. An Estimated Accuracy of Data (EAD) score was assigned to each data item collected. This step was required because of the wide range of record keeping practices in the facilities surveyed. Items were scored on a four-point scale, with "1" representing well documented data, "2" representing reasonable estimates based on partial supporting evidence, and "3" representing data of questionable quality but the only data that could be supplied by the facility. An EAD rating of "4," not applicable, was given to cost items that were not incurred by that facility. As will be discussed later in this report, over 90% of the sample had average composite EAD scores* of 2.0 or lower, representing a relatively high level of data quality given the record keeping practices involved. This result is not surprising since facilities that did not keep financial records were screened out in the scheduling process.

Duration of Survey Visits and Wrap-Up

The typical survey visit required three to four hours for on-site data collection by a staff accountant plus two to three hours of write-up and cross checking prior to completion of the survey visit file. Surveys of larger facilities or those that were owned by a separate parent organization (such as a non-profit

---

*Composite EAD scores represent the rating of each cost line item weighted by the cost of that line item. Thus, higher cost items have greater "weight" than lower cost items. See Chapter IV for details.

corporation) required larger amounts of time (up to 16 hours) for data collection and write-up. Where necessary, follow-up phone calls to the facility were made to clarify questions by Price Waterhouse reviewers (see the following section).

7. Review Completed Survey Forms

After each survey visit was completed, the staff accountant created a file composed of all required survey forms, any supporting documentation obtained at the survey visit, and a summary memorandum describing the facility and its operations in general terms. Specific notes about financial or client information, such as when the facility began its operations, significant changes in operations affecting the fiscal year in which data were collected, or any unique features of the facility were noted in the memorandum.

Each file was reviewed by one of four senior audit staff. The main purpose of the review was to ensure consistency in the treatment of data and adherence to appropriate survey procedures. It should be emphasized that the survey visits were not formal financial audits, and thus, generally accepted auditing standards (GAAS) were not enforced. Given the nature of the financial records kept by the majority of facilities in the sample, audits based on GAAS would not have been possible. Rather, the senior audit staff reviewed files to ensure staff accountants' adherence to the instructions developed jointly by Price Waterhouse and DDS for completing the forms.

The review focused mainly on how unique aspects of a facility's operations were treated by the staff accountant in the field and that information on the forms was complete and consistent. Where there were discrepancies or omissions, the reviewer worked with the staff accountant to resolve them.

8. Perform Data Entry of Survey Forms

Completed and reviewed survey files were assigned control numbers and entered into a log prior to preparation of files for data entry. In addition, all files were checked for completeness and proper coding prior to being key-entered by R&D Data Inc., a subcontractor to Price Waterhouse. There were

504 separate data items key-entered from the survey forms package for each facility. Upon completion of data entry, the data were formatted into a Statistical Analysis System (SAS) data set. Then, using SAS functions, mathematical and other data verification tests were performed to ensure that correct data were entered into the study data base.

9. Conduct Data Analysis; Determine if the 1988 Residential Rate Study Sample Could be Used in the ARM Study, Test Hypotheses

The 1988 Residential Rate Study research design approved by DDS was developed to ensure that the hypotheses tested would meet the goals outlined in the Contract Work Statement. The same research design was employed for this study, with minor modifications to address the additional analysis of the ARM sub-sample. The data structure of the design is such that it allows a level of detail appropriate for statistical hypothesis testing and analysis. The major consideration in designing this structure was to obtain the maximum degree of detail while preserving the comparability of costs across facilities. For each analytical method, the purpose of the analysis, the general hypotheses, the factors to be analyzed, and the SAS statistical procedure have been noted in the research design.

Key features of the research design are the development of unit costs and a review of outliers. Since costs were collected from facilities that varied widely in the number of clients served, it was necessary to reduce cost data to some common denominator to facilitate comparisons across facilities. This required creating a "cost per client day" for each cost element in the data set. Once the data were reduced to a common "cost per client day" basis, it was then possible to compare costs across the wide range of facilities in the sample.

Additionally, after cost per client day figures were computed for all facilities, a review of the highest and lowest values reported (outliers) for each WIC 4681.1 element (Basic Living Needs, Direct Supervision, etc.) was conducted to ensure that outliers did not represent data entry or coding errors. The reader should note that none of the 618 facilities surveyed was excluded from the data analysis because of being on the high or low end of the cost distribution for any cost data element. For purposes of the ARM study, however, four facilities were excluded because it was determined by DDS that these facilities would not be eligible to be ARM Level 2, 3 or 4 facilities since they were only providing service to clients classified at the "basic" level under the traditional rate system. As a result, the total size of the sample used in the ARM study was 614.

For purposes of the ARM study, it was necessary to conduct an additional level of statistical analysis that was not necessary during the 1988 Residential Rate Study. The scope of the earlier study did not include facilities participating in the ARM pilot or those reimbursed as Negotiated Rate facilities. As a result, data from those facilities was not included in the preparation of reimbursement rate alternatives in the 1988 Residential Rate Study. Furthermore, the sample designed for the earlier was not specifically designed to meet the needs of the ARM study. The need for an ARM study only became clear after SB 1513 was enacted in April 1988, a point in time after the 1988 Residential Rate Study sample and RFP had already been completed.

For purposes of this study it was necessary to conduct statistical analysis to determine if data from the ARM and Traditional rate system facilities could be combined for purposes of developing ARM Level 2 and Level 3 rates. It was also necessary to determine if Negotiated Rate and Special Services facilities data could be combined for purposes of developing ARM Level 4 rates. Additional steps were added to the Research Design developed for the 1988 Residential Rate Study to accomplish these tasks and the required analysis was performed and reported in Chapter V of the ARM report.

10. Present Rate Recommendations

The methodology used to develop rate recommendations is discussed extensively in Chapter VI.

ARM REPORT -- APPENDIX B: DETAILED LIST OF COST ELEMENTS

Form 100 Line #	Level 1 Cost #	DETAILED LIST OF LEVEL 2 COST COMPONENTS	SUMMARY DESCRIPTION (see instructions accompanying Form 100 for detailed description)
		Basic Living Needs WIC 4681.1 (b) (1)	
	1.1	WAGES AND BENEFITS	
1		Wages	Wages paid for staff providing cooking, house cleaning, laundry services.
2		Fringe Benefits	Employer FICA, UI, health insurance, workers compensation, retirement, or other benefits.
	1.2	HOUSING	
3		Rent / Lease - Facility building	Rent, lease, interest, depreciation, and property tax expenses allocated to the portion of the facility utilized to provide residential care services based on percentage of building square footage devoted to client use. Common areas are included in the area available for client use.
		Interest expense for:	
7		Facility, Building and Additions	
8		Other Capital and Leasehold Improvements	
		Depreciation expense for:	
12		Facility, Building and Additions	Depreciation expense on all facility space and improvements allocated to client use regardless of whether such space or improvement was mandated by a governmental agency.
13		Other Capital and Leasehold Improvements	
23		Property Taxes	
	1.3	FURNITURE	
4		Rent / Lease expense for furniture & equipment	Rent, lease, interest, and depreciation expense allocated to furniture and equipment used for client service. Includes bed room furniture, common area furniture, kitchen equipment, and other items of equipment or furniture used to provide residential services to clients.
9		Interest expense for furniture & equipment	
14		Depreciation expense for furniture & equipment	
	1.4	INSURANCE	
17		Insurance (excluding vehicles)	Fire, flood, earthquake, and general liability insurance. Portion allocated to client service portions of the facility based on relative share of facility square footage.
	1.5	UTILITIES	
20		Utilities	Gas, electric, water, sewage, garbage, wood, oil, coal or other utility expenses allocated to client service portions of the facility.
	1.6	FOOD	
21		Groceries	Grocery costs for food prepared at home for clients, staff, or family members. (Cost per client day for food makes adjustment for portion of food consumed by non-clients.)
22		Restaurant meals	Client restaurant meals only. Meals for other persons explicity excluded.
	1.7	HOUSEKEEPING	
24		Houskeeping/Maint Supplies	Housekeeping, cleaning, paper products, and maintenance supplies costs allocated to client service functions. (Allocation can be based on square footage method.)
33		Housekeeping and Laundry Services	Payments to outside parties for housekeeping or laundry services allocated to client service functions.
	1.8	CLOTHING AND PERSONAL CARE	
31		Clothing/Personal Care	Expenses for toiletries or clothing paid by facility operator and not paid for from client's personal and incidental allowance or other personal or family funds of the client.

Form 100 Line #	Level 1 Cost #	DETAILED LIST OF LEVEL 2 COST COMPONENTS	SUMMARY DESCRIPTION (see instructions accompanying Form 100 for detailed description)
	1.9	TRANSPORTATION	
5		Rent / Lease - Vehicles	All vehicle rent, lease, interest, depreciation, insurance, or other operating costs allocated to client service based on the percentage of total annual miles driven for client purposes. The portion of such expenses related to the facility operator's personal or family use should be excluded as an unrelated cost.
10		Interest - Vehicles	
15		Depreciation - Vehicles	
18		Insurance - Vehicle insurance	
		Other Transportation Costs	
26		Gas and Oil	
27		Maintenance and Repairs	
28		License Fees	
29		Other	Other transportation expenses including public transportation fares for client transportation.
32	1.10	SPECIAL SUPPLIES AND EQUIPMENT (ARM 2 or 3 only)	Items of equipment with a value less than $500 purchased during the year for client use. Items over $500 should be capitalized and depreciated in the above category.

Form 100 Line #	Level 1 Cost #	DETAILED LIST OF LEVEL 2 COST COMPONENTS	SUMMARY DESCRIPTION (see instructions accompanying Form 100 for detailed description)
		Direct Supervision (labor only) WIC 4681.1 (b) (2)	
	2.1	WAGES AND BENEFITS	
1		Wages for Direct Supervision staffing	Wages paid for staff that direct care or supervision of clients in the facility. Common job titles include houseparent, resident aid or staff, or staff programmer. That portion of the cost of a supervisor, manager, or program director position devoted to direct supervision of clients is also allocated to this category.
2		Fringe Benefits for Direct Supervision staffing	Employer FICA, UI, health insurance, workers compensation, retirement, or other benefits for direct supervision staff.
	3.1	WAGES AND BENEFITS	
1		Wages for Special Services staffing	Wages paid for staff that provided Special Services programming for clients in facilities vendored for Special Services under the old (WIC 4681) rate system.
2		Fringe Benefits for Special Services stafffing	Employer FICA, UI, health insurance, workers compensation, retirement, or other benefits for special services staff (under the old Special Services rate system). (Affects ARM 4 only)
		Special Services WIC 4681.1 (b) (3) •	
	3.2	SPECIAL SUPPLIES AND EQUIPMENT	
32		Special Supplies / Equipment (ARM 4 only)	Items of equipment with a value less than $500 purchased during the year for client use. Items over $500 should be capitalized and depreciated in the BLN category. Only ARM level 4 facilities use this category due to client needs dictating such expenses.
	4.9	CONSULTANT SERVICES	
34		Clinical Consulting Services (ARM 4 only)	Cost of services provided by outside consultants who provide expert consultation on client related clinical issues such as assessing client behavior and devising appropriate intervention programs, training staff to perform certain special techniques related to a client's treatment plan. Costs are reported here only for ARM level 4 facilities due to to significant nature of these expenses for such facilities. All other facilities report such costs in Unallocated Costs.

• This category is also referred to as Ancillary Services in some literature.

Form 100 Line #	Level 1 Cost #	DETAILED LIST OF LEVEL 2 COST COMPONENTS	SUMMARY DESCRIPTION (see instructions accompanying Form 100 for detailed description)
		Unallocated Cost Facility WIC 4681.1 (b) (4)	
	4.1	WAGES AND BENEFITS	
1		Wages	Wages paid for staff that perform executive, managerial, supervisory, administrative, or program management functions. Also includes office staff and facility maintenance or repair staff expense. Portions of salaries or wage costs of such employees may be allocated to direct supervision expense based on the portion of such employees time devoted to such tasks. Costs related to the time such employees spend on non-residential care programs or activities is excluded.
2		Fringe Benefits	Employer FICA, UI, health insurance, workers compensation, retirement, or other benefits for employees wages related to tasks assigned to the Unallocated Costs wage category above.
	4.2	HOUSING	
3		Rent / Lease for facility building	Rent, lease, interest, depreciation, and property tax expenses allocated to the portion of the facility utilized to provide administrative or office space for the residential care program based on the relative share of total facility square footage allocated to such uses. Expenses related to that portion of the space utilized by non-residential care programs or activities is excluded.
		Interest expense for:	
7		Facility, Building and Additions	
8		Other Capital and Leasehold Improvements	
		Depreciation expense for:	
12		Facility, Building and Additions	Depreciation expense on all facility space and improvements allocated to office or administrative space regardless of whether such space or improvement was mandated.
13		Other Capital and Leasehold Improvements	
23		Property Taxes	
	4.3	FURNITURE	
4		Rent / Lease expense for furniture & equipment	Rent, lease, interest, and depreciation expense allocated to furniture and equipment used for administrative or office purposes. Such assets must at least indirectly benefit clients in order to be included. Examples include (but are not limited to) office furniture and computers.
9		Interest expense for furniture & equipment	
14		Depreciation expense for furniture & equipment	
	4.4	INSURANCE	Fire, flood, earthquake, and general liability insurance. Portion allocated to office or administrative portions of the facility based on relative share of total facility square footage.
17		Insurance (excluding vehicles)	
	4.5	UTILITIES	Gas, electric, water, sewage, garbage, wood, oil, coal or other utility expenses allocated to portions of the facility devoted to office or administrative uses based on relative sq. footage.
20		Utilities	
	4.6	HOUSEKEEPING	
24		Houskeeping/Maint Supplies	Housekeeping, cleaning, paper products, and maintenance supplies costs allocated to office functions. (Allocation can be based on relative square footage for such purposes.)
33		Housekeeping and Laundry Services	Payments to outside parties for housekeeping or laundry services allocated to office functions based on square footage allocation method.

Form 100 Line #	Level 1 Cost #	DETAILED LIST OF LEVEL 2 COST COMPONENTS	SUMMARY DESCRIPTION (see instructions accompanying Form 100 for detailed description)
	4.7	TRANSPORTATION	
5		Rent / Lease - Vehicles	All vehicle rent, lease, interest, depreciation, insurance, or other operating costs allocated to administrative functions based on the percentage of total annual miles driven for such purposes. The portion of such expenses related to the facility operator's personal or family or for non-residential care programs should be excluded as an unrelated cost.
10		Interest - Vehicles	
15		Depreciation - Vehicles	
18		Insurance - Vehicle insurance	
		Other Transportation Costs	
26		Gas and Oil	
27		Maintenance and Repairs	
28		License Fees	
29		Other	Other expenses including public transportation fares for administrative purposes.
	4.8	SPECIAL SUPPLIES AND EQUIPMENT	Items of equipment with a value less than $500 purchased during the year for administrative o office use. Items over $500 should be capitalized and depreciated in the appropriate category.
32		Special Supplies / Equipment (ARM 2 or 3 only)	
	4.9	CONSULTANT SERVICES	
34		Clinical Consulting Services (ARM 2 or 3 only)	Cost of services provided by outside consultants who provide expert consultation on client related clinical issues such as assessing client behavior and devising appropriate intervention programs, training staff to perform certain special techniques related to a client's treatment plan. Costs are reported here only for ARM level 2 or 3 facilities due to to relatively insignificant nature of these expenses for such facilities.
35		Accounting and Legal Services	Costs of outside legal, accounting, clerical, or managerial services not provided by facility staff. Services must be related to the residential care facility activities of the operator.
	4.10	GENERAL AND ADMINISTRATIVE	
36		Advertising	Advertising costs required by facility operation, such as advertising for staff.
37		Travel	Staff travel expense while on facility business, such as travel to the Regional Center office or travel to attend training sessions.
38		Dues / Subscriptions	Dues for professional organizations related to residential care or subscriptions for publications directed at clients.
39		Business Taxes	Business taxes that must be paid as a condition of operating a residential care facility. Does not include property taxes (see above) or business or personal income taxes.
40		Licenses	Fees for licenses required in order to operate a residential care facility. (e.g., a city license)
41		Staff Training	Staff training expenses such as course fees, seminar fees, course registration fees.

Form 100 Line #	Level 1 Cost #	DETAILED LIST OF LEVEL 2 COST COMPONENTS	SUMMARY DESCRIPTION (see instructions accompanying Form 100 for detailed description)
42		Telephone	All basic monthly telephone charges and long distance charges related to residential care facility business. Charges related to facility operator's personal or family phone calls should be excluded as unrelated expenses.
43		Facility Repair and Maintenance	Materials, supplies, and contract labor for maintenance or repair of the facility or its equipment. Major long term capital improvements should be capitalized and depreciated in the appropriate cost category. This category relates to routine repairs and maintenance.
25		Office Supplies	Office supply and postage expense related to residential care facility business. Costs incurred for other purposes should be excluded.
45		Other Unallocated Services Expenses	Expenses that are related to facility business but do not fit into any other category. This category should not exceed 1% of total facility expenses. (e.g., reimbursement of uninsured damage to a neighbor's property caused by a staff member while on duty.)
	4.11	PARENT COMPANY FEE	
44		Home Office Fee / Overhead	If the facility is part of a larger corporation or organization, a proportional share of home office or headquarters expense can be allocated to the facility. Such allocation should be based on an acceptable allocation method (such as relative share of staff, facility costs, or number of clients served). See instructions for Form 100A for additional details on allocation. Home office costs include administrative salaries and benefits, office expenses, rent or depreciation, or other legitimate costs of operation. Costs related to activities unrelated to residential care purposes should be excluded from the pool of home office costs to be allocated.
All		***Costs Unrelated to Study***	This category appears opposite all of the above cost categories on the data collection form to remind the data collector to be sure to exclude the portion of any cost that is unrelated to the the operation of the facility as a residential care facility. Examples include interest expense on assets unrelated to residential care (such as a pleasure boat) or unrelated businesses of the facility owner.

* All capitalized categories are Level-1 costs.

DATA USED TO DEVELOP RECOMMENDED ARM LEVEL 2 AND LEVEL 3 RATES

A) Assumptions Used to Develop Traditional Rates

1. ARM Level 2 and 3 data represents combination of Traditional and ARM facilities in 1988 rate study sample.	
2. Number of days in month is assumed to be 30.42	30.42
3. Estimated change in Calif. CPI (All Urban Consumers) 7/1/87 to 12/31/89 is 12.5%. (Comm. on State Finance)	12.5%
4. Assumes a proprietary fee calculated as a 4.97% pre-tax return on sample net assets per client.	4.97%
5. All cost data presented below are in 1987 dollars as reported by sample facilities particpating in this study.	

B) Basic Living Needs (WIC Sec. 4681.1(b) (1))

1) Based on data collected from the 1988 Study

Facility Operation Type	Sample Med./High	Sample Mean BLN Cost per Month Med.FMV	High FMV	Sample Median BLN Cost per Month Med.FMV	High FMV	Combined Groups Mean	Median
Owner Op.	{Med.=222 {High= 138	$483	$490	$444	$472	$486	$452
Staff Op.	{Med.=79 {High=98	$436	$485	$407	$469	$463	$446
Total	N=537	$471 N=301	$488 N=236	$437 N=301	$471 N=236	$478 N=537	$448 N=537

C) Direct Supervision (WIC Sec. 4681.1(b) (2))

1) ARM Direct Supervision Standards

Number of Hours of Direct Supervision per Client Day

ARM Rate Level	Operation Type	Daytime	Night	Coverage	Total	Hours Per Month
Level 2	Owner	1.71	0.00	0.10	1.81	55.1
	Staff	1.71	0.50	0.13	2.34	71.2
Level 3	Owner	2.71	0.00	0.17	2.88	87.6
	Staff	2.71	0.50	0.20	3.41	103.7

2) Sample Mean and Median Hourly Wages and Benefits for Direct Supervision Staff

a) Sample wages and benefits without respect to minimum wage or tax law requirements.

	Mean Wage Rate		Median Wage Rate		Combined Groups	
	Med. FMV	High FMV	Med. FMV	High FMV	Mean	Median
Hourly wage rate (including facilities paying subminimum wages in 1987)	$4.47	$4.62	$4.25	$4.61	$4.54	$4.50
Employer taxes and benefits per hour (includes facilities paying $0 benefits) (72 Med. FMV & 58 High FMV pay $0)	$0.47	$0.45	$0.31	$0.27	$0.46	$0.31
Total compensation cost per hour:	$4.94	$5.07	$4.56	$4.88	$5.00	$4.81
Number of facilities in sample with this data:	N=164	N=149	N=164	N=149	N=313	N=313

3) Sample wages and benefits with adjustments to reflect minimum wage and tax law requirements.
(Facilities paying sub-minimum wages were brought up to minimum wages.)
(All benefits based on legal 18.383% requirements.)

	Mean Wage Rate		Median Wage Rate		Combined Groups	
	Med. FMV	High FMV	Med. FMV	High FMV	Mean	Median
Hourly wage rate (adjusted for facilities paying subminimum wages in 1987)	$4.66	$4.81	$4.25	$4.61	$4.73	$4.50
Employer taxes and benefits per hour (18.383% of hourly wage)	$0.86	$0.88	$0.78	$0.85	$0.87	$0.83
Total compensation cost per hour:	$5.52	$5.69	$5.03	$5.46	$5.60	$5.33
Number of facilities in sample with this data:	N=164	N=149	N=164	N=149	N=313	N=313

4) Cost per month of Direct Supervision using ARM standards and alternative wage rates.

a) Actual wage and benefit rates found in sample facilities

ARM Rate Level	Operation Type	Sample Means Medium	Sample Means High	Sample Medians Medium	Sample Medians High	Combined Groups Mean	Combined Groups Median
Level 2	Owner	$272	$279	$251	$269	$276	$265
	Staff	$352	$361	$325	$347	$356	$342
Level 3	Owner	$433	$444	$399	$427	$438	$421
	Staff	$512	$526	$473	$506	$519	$499

b) Legal wage and benefit rates (adjusted for subminimum wage and benefit levels)

ARM Rate Level	Operation Type	Sample Means Medium	Sample Means High	Sample Medians Medium	Sample Medians High	Combined Groups Mean	Combined Groups Median
Level 2	Owner	$304	$314	$277	$301	$309	$294
	Staff	$393	$405	$358	$389	$399	$379
Level 3	Owner	$484	$498	$441	$478	$491	$467
	Staff	$572	$590	$522	$566	$581	$553

D) Special Services (WIC 4681.1 (b) (3))

ARM Level 2 or Level 3 facilities are not authorized to provide special services.
As a result, no rate component is included. See separate Special Services rate table.

E) Unallocated Services (WIC Sec. 4681.1 (b) (4))

Facility Operation Type	Sample Med./High	Sample Mean Unallocated Cost per Month Med.FMV	High FMV	Sample Median Unallocated Cost per Month Med.FMV	High FMV	Unallocated Cost Combined Groups Mean	Median
Owner Op.	{Med.=222 {High= 138	$94	$83	$74	$68	$90	$70
Staff Op.	{Med.=79 {High=98	$173	$187	$137	$145	$181	$140
Total	N=537	$115 N=301	$126 N=236	$86 N=301	$87 N=236	$120 N=537	$87 N=537

F) Mandated Capital Improvements (WIC Sec. 4681.1 (b) (5))

All capital improvement costs (mandated or not) related to the provision of client services are included in the Basic Living Needs or Unallocated Services Cost components above. As a result, no separate component is presented.

G) Proprietary Fee (WIC Sec. 4681.1 (b) (6))

a) Sample Mean Net Assets per Client

Facility Operation Type	Sample Size	Sample Net Assets Per Client	Pre - Tax Return on Assets	Sample Prop. Fee Per Month
Owner Op.	N=360	$10,016	4.97%	$41
Staff Op.	N=177	$8,256	4.97%	$34
Total	N=537	$9,435	4.97%	$39

b) Sample Median Net Assets per Client

Facility Operation Type	Sample Size	Sample Net Assets Per Client	Pre - Tax Return on Assets	Sample Prop. Fee Per Month
Owner Op.	N=360	$8,753	4.97%	$36
Staff Op.	N=177	$7,293	4.97%	$30
Total	N=537	$8,293	4.97%	$34

Facility Operation Type	Sample Med./High	Sample Mean Net Assets Per Client Med.FMV	High FMV	Sample Median Net Assets Per Client Med.FMV	High FMV	Combined Groups Mean	Median
Owner Op.	{Med.=222 {High= 138	$10,359	$9,457	$8,877	$8,548	$10,016	$8,753
Staff Op.	{Med.=79 {High=98	$7,118	$9,172	$6,979	$7,377	$8,256	$7,293
Total	N=537	$9,508 N=301	$9,340 N=236	$8,483 N=301	$7,931 N=236	$9,435 N=537	$8,296 N=537

Pre-Tax rate of return for calculating the proprietary fee: 4.97%

Facility Operation Type	Sample Med./High	Sample Mean Proprietary Fee Med.FMV	High FMV	Sample Median Proprietary Fee Med.FMV	High FMV	Combined Groups Mean	Median
Owner Op.	{Med.=222 {High= 138	$43	$39	$37	$35	$41	$36
Staff Op.	{Med.=79 {High=98	$29	$38	$29	$31	$34	$30
Total	N=537	$39 N=301	$39 N=236	$35 N=301	$33 N=236	$39 N=537	$34 N=537

H) Geographic Adjustment Factor (WIC 4681.1 (b) (7))

No statistical evidence has been found in this study to support inclusion of a geographic adjustment factor.
WIC 4681.1 requires a geographic adjustment factor hence, we have presented and used sample means and medians to compute rates by geographic area.
These geographic adjustments have been included in BLN, Direct Supervision, and Unallocated Costs.

The High FMV group includes all facilities in the following counties: Alameda, Contra Costa, Los Angeles, Marin, Orange, San Diego, San Francisco, San Mateo, Santa Clara, Santa Cruz, and Ventura. All other counties are in the Medium FMV group.

I) Dual Diagnosis Rate (WIC Sec. 4681.1 (b) (8))

No data were collected or analyzed during this study pertaining to this component.
It is our understanding that DDS has determined that such a rate component is not necessary.

K) Allowance for Additional ARM Required Training

The ARM system will require a higher level of staff training than was required under the previous rate system.
As a result, facilities will have to incurr additional training expenses not reflected in the sample data collected in this project.
Consequently, DDS has estimated the additional expense per client per month for such training. The following allowances will be added to facility Unallocated Services costs to reflect such training expense.

ARM Level 2 facilities:	$1 per client per month
ARM Level 3 facilities:	$2 per client per month

ARM REPORT -- APPENDIX C: DATA USED TO DEVELOP ARM 2 and 3 RATES

ARM LEVEL 2 AND 3 RATES IF SET USING MEANS
(Illustration only)

Assumptions:
1) Mean costs are used for all elements
2) ARM direct supervision model used
3) Legal wages & benefits per hour
4) BLN varies by geography but not by operation type.
5) UC, D.S., and Prop. Fee vary by operation type & geography

1. Study Data Findings (1987 dollars)

	Medium FMV Counties		High FMV Counties	
ARM Level 2	**Owner Op.**	**Staff Op.**	**Owner Op.**	**Staff Op.**
Basic Living Needs	$471	$471	$488	$488
Direct Supervision	$304	$393	$314	$405
Unallocated Services	$95	$174	$84	$188
Proprietary Fee	$43	$29	$39	$38
Mandated Improvements	N/A	N/A	N/A	N/A
Special Services	N/A	N/A	N/A	N/A
Dual Diagnosis	N/A	N/A	N/A	N/A
Total	$913	$1,067	$925	$1,119

	Medium FMV Counties		High FMV Counties	
ARM Level 3	**Owner Op.**	**Staff Op.**	**Owner Op.**	**Staff Op.**
Basic Living Needs	$471	$471	$488	$488
Direct Supervision	$484	$572	$498	$590
Unallocated Services	$96	$175	$85	$189
Proprietary Fee	$43	$29	$39	$38
Mandated Improvements	N/A	N/A	N/A	N/A
Special Services	N/A	N/A	N/A	N/A
Dual Diagnosis	N/A	N/A	N/A	N/A
Total	$1,094	$1,247	$1,110	$1,305

2. Summary of Estimated ARM Rates Using 1987 Data from 1988 Rate Study

	Medium FMV Counties		High FMV Counties	
	Owner Op.	**Staff Op.**	**Owner Op.**	**Staff Op.**
ARM Level 2	$913	$1,067	$925	$1,119
ARM Level 3	$1,094	$1,247	$1,110	$1,305

3. Recommended ARM Rates for FY 1989-90 Based on Study Sample Data

	Medium FMV Counties		High FMV Counties	
	Owner Op.	**Staff Op.**	**Owner Op.**	**Staff Op.**
ARM Level 2	$1,028	$1,202	$1,042	$1,261
ARM Level 3	$1,233	$1,405	$1,251	$1,471

4. Actual ARM Rates Effective April 1, 1988

	Owner Op.	**Staff Op.**
ARM Level 2	$933	$1,084
ARM Level 3	$1,214	$1,410

Note: Current ARM rates do not provide for geographic variation in rates.

5. Percentage Change in 1988 ARM Rates Required to Match Projected FY 1989-90 Rates Based on 1988 Rate Study Sample

	Medium FMV Counties		High FMV Counties	
	Owner Op.	**Staff Op.**	**Owner Op.**	**Staff Op.**
ARM Level 2	10.18%	10.89%	11.68%	16.33%
ARM Level 3	1.57%	-0.35%	3.05%	4.33%

COMPARISON OF DDS ARM RATES AS OF APRIL 1, 1988 TO RATES REQUIRED IF BASED ON SAMPLE DATA FINDINGS

ACTUAL ARM RATES AS OF APRIL 1, 1988

	LEVEL 2 OWNER OP	LEVEL 2 STAFF OP	LEVEL 3 OWNER OP	LEVEL 3 STAFF OP
BASIC LIVING NEEDS	$454	$454	$454	$454
DIRECT SUPERVISION	$293	$336	$554	$656
UNALLOCATED COSTS	$186	$294	$206	$300
TOTAL COSTS	$933	$1,084	$1,214	$1,410

ARM LEVEL 2 AND 3 RATES IF SET USING SAMPLE MEANS UPDATED TO APRIL 1, 1988

	MEDIUM FMV COUNTIES		HIGH FMV COUNTIES	
	LEVEL 2 OWNER OP	LEVEL 2 STAFF OP	LEVEL 2 OWNER OP	LEVEL 2 STAFF OP
ARM LEVEL 2				
BASIC LIVING NEEDS	$487	$487	$505	$505
DIRECT SUPERVISION	$315	$407	$325	$419
UNALLOCATED SERVICE	$98	$180	$87	$195
PROPRIETARY FEE	$45	$30	$40	$39
TOTAL COSTS	$945	$1,104	$957	$1,158
	LEVEL 3 OWNER OP	LEVEL 3 STAFF OP	LEVEL 3 OWNER OP	LEVEL 3 STAFF OP
ARM LEVEL 3				
BASIC LIVING NEEDS	$487	$487	$505	$505
DIRECT SUPERVISION	$501	$592	$515	$611
UNALLOCATED SERVICE	$99	$181	$88	$196
PROPRIETARY FEE	$45	$30	$40	$39
TOTAL COSTS	$1,132	$1,290	$1,148	$1,351

PERCENTAGE CHANGE TO MATCH APRIL 1, 1988 ACTUAL RATES

	MEDIUM FMV COUNTIES		HIGH FMV COUNTIES	
	OWNER OPERATED	STAFF OPERATED	OWNER OPERATED	STAFF OPERATED
LEVEL 2	1.29%	1.85%	2.57%	6.83%
LEVEL 3	-6.75%	-8.51%	-5.44%	-4.18%

DEPARTMENT OF DEVELOPMENTAL SERVICES

ARM Levels 2, 3, and 4
Direct Supervision
Staffing Model

Prepared by:

Department of Developmental Services

Office of Planning and Policy Development

CALCULATIONS FOR PROPOSED ARM DIRECT SUPERVISION ELEMENT

There are two components of this element: direct care staff wages (including benefits) and number of hours of direct supervision delivered to each client per day. The hours of supervision are multiplied by the hourly wages and benefits and by the number of days per month as follows:

> Total direct supervision cost = # hours of direct supervision per client per day x hourly wages and benefits x 30.42 days per average month

The result is an element which represents the cost of delivering one month of direct care staff time to a client at each facility level, in each type of facility.

Each of these components is discussed below.

I. HOURS OF DIRECT SUPERVISION

This is a modelled amount. The model is the sum of daytime supervision, night supervision, and a coverage factor which allows for substitute staff regularly-scheduled staff are absent. The model varies by facility level (Levels 2-4) and facility type (owner-operated or staff-operated). The table below summarizes the direct supervision amounts for each facility level and for each type of facility. The remainder of this section of the attachment describes in detail how this summary table was developed.

NUMBER OF HOURS OF DIRECT SUPERVISION PER CLIENT PER DAY

Level and Type of Facility	Daytime Hrs.	Night Hrs.	Coverage	TOTAL
Level 2, Owner	1.71	0	0.10	1.81
Level 2, Staff	1.71	0.50	0.13	2.34
Level 3, Owner	2.71	0	0.17	2.88
Level 3, Staff	2.71	0.50	0.20	3.41
Level 4A	3.00	1.33	0.27	4.60
Level 4B	3.43	1.33	0.29	5.05
Level 4C	3.86	1.33	0.32	5.51
Level 4D	4.29	1.33	0.35	5.97
Level 4E	4.86	1.33	0.38	6.57
Level 4F	5.43	1.33	0.42	7.18
Level 4G	6.00	1.33	0.45	7.78
Level 4H	6.71	1.33	0.50	8.54
Level 4I	7.71	1.33	0.56	9.60

A. Level 2

1. Owner-Operated Facilities

a. Daytime supervision. Level 2 provides one staff person for eight hours, seven days a week, for each six clients, or a 1:6 staff-to-client ratio. This results in 1.33 hours of staff time per client per day when expressed on a one-to-one basis. Expressed mathematically:

$$\frac{\text{8 hours of staff time per day}}{\text{6 clients}} = \begin{array}{c}1.33\\ \text{hours/client/day}\end{array}$$

In addition to this regular daily staffing, the Level 2 rate pays for a staff-to-client ratio of 1:6 for an additional eight hours each weekend day. This results in an additional .38 hours of staff time per client per day when expressed on a one-to-one basis. Expressed mathematically:

$$\frac{\text{16 hours of staff time per weekend}}{\text{6 clients}} \div \text{7 days/week} = \begin{array}{c}.38\\ \text{hrs/cl/day}\end{array}$$

The total number of hours of staff time is 1.33 + .38 = 1.71 hours per client per day.

b. Night supervision. There are no night supervision requirements for this type of facility in the Community Care Facility (CCF) licensing regulations. See Attachment D. It is assumed that the owner sleeps at home at night, and that no staff is awake and on duty. The federal Fair Labor Standards Act (FLSA) does not require that this sleep time be reimbursed as "hours worked".

c. Coverage factor. The coverage factor provides for the cost of providing substitute staff when regularly-scheduled staff are absent. The model allows 22 days per year of absence for each regular staff. The 22 days are based on ten days of vacation, ten federal holidays, plus two days (16 hours)in training. Level 2 training time is based on the DDS quality assurance (QA) standards and includes 8 hours of ongoing annual training for all staff, and 16 hours of initial training for new staff, assuming a 50% staff turnover annually.

$$\begin{array}{c}1.71\\ \text{hrs/cl/day}\end{array} \times \begin{array}{c}22\\ \text{absent days/year}\end{array} \div \begin{array}{c}365\\ \text{days/yr}\end{array} = \begin{array}{c}.10\\ \text{hrs/cl/day}\end{array}$$

2. <u>Staff-Operated Facilities</u>

a. Daytime supervision. This sub-element is the same as for owner-operated facilities: 1.71 hours per client per day.

b. Night supervision. One staff awake and on duty per 16 clients, for a 1:16 staff-to-client ratio, for eight hours per night, seven days per week. This conforms to Title 22 CCF licensing standards and to the federal FLSA. Expressed mathematically:

$$\frac{\text{8 hours of staff time per day}}{\text{16 clients}} = .50 \text{ hours/cl/day}$$

c. Coverage factor. The coverage factor allows 22 days per year, as discussed above for owner-operated Level 2 facilities. Since coverage must be provided for night as well as daytime supervision, the calculation is based on 1.71 + .50 = 2.21 hours per client per day. Expressed mathematically:

2.21 hrs/cl/day	x	22 absent days/yr	÷	365 days/yr	=	.13 hrs/cl/day

B. <u>Level 3</u>

1. <u>Owner-Operated Facilities</u>

a. Daytime supervision. Level 3 provides these activities eight hours per day using the following staffing standard seven days a week: two staff persons for each six clients for six hours a day (a 1:3 staff-to-client ratio), and one staff person for the remaining two hours per day (a 1:6 staff-to-client ratio). This is a total of 14 hours of paid staff time for each six clients, each day of the month. It results in 2.33 hours of staff time per client per day when expressed on a one-to-one basis. Expressed mathematically:

$$\frac{\text{14 hours of staff time per day}}{\text{6 clients}} = 2.33 \text{ hours/cl/day}$$

In addition to this regular daily staffing, the Level 3 rate pays for a staff-to-client ratio of 1:6 for an additional eight hours each weekend day. This results in an additional .38 hours of staff time per client per day when expressed on a one-to-one basis. Expressed mathematically:

$$\frac{\text{16 hours of staff time per weekend}}{\text{6 clients}} \div 7 \text{ days/week} = .38 \text{ hrs/cl/day}$$

The total number of hours of staff time per client per day is 2.33 = .38 = 2.71 hours.

b. Night supervision. Same as for Level 2 owner-operated facilities. There are no night supervision requirements for this type of facility in the CCF licensing regulations. It is assumed that the owner lives at the home, sleeps, and that this sleep time is not considered as "hours worked" as defined by the FLSA.

c. Coverage factor. The coverage factor allows 22.5 days of absence per year per staff person. This is based on the same 20 days of vacation and holidays as Level 2, and 2.5 days per year (20 hours) in training. The Level 3 training time is based on the DDS QA standards and includes 12 hours of ongoing annual training for all staff plus 16 hours initial training for new staff each year, assuming a 50% staff turnover rate annually. Since each client in Level 3 owner-operated facilities receives 2.71 hours of staff time per day, the coverage factor was calculated as follows:

2.71	x	22.5	÷	365	=	.17
hrs/cl/day		absent days/yr		days/yr		hrs/cl/day

2. Staff-Operated Facilities

a. Daytime Supervision. This is the same as for Level 3, owner-operated facilities, 2.71 hours per client per day.

b. Night supervision. This is the same as for Level 2, staff-operated facilities, a 1:16 staff-to-client ratio for 8 hours per day. Expressed mathematically:

$$\frac{\text{8 hours of staff time per day}}{\text{16 clients}} = .50 \text{ hrs/cl/day}$$

c. Coverage factor. As with Level 3 owner-operated homes, the coverage factor is based on 22.5 days of absence per year per staff person. Since coverage must be provided for both daytime and night supervision, it is based on 2.71 + .50 = 3.21 hours of staff time per client per day. Coverage was calculated as follows:

3.21	x	22.5	÷	365	=	.20
hrs/cl/day		absent days/yr		days/yr		hrs/cl/day

C. Level 4

1. Owner-Operated Facilities

All Level 4 facilities are staff-operated. Therefore, no direct supervision staffing element was calculated for owner-operated Level 4 facilities.

2. Staff-operated Facilities

a. Daytime Supervision. The daytime supervision schedule is based on the service and rate schedule developed by the Department and the Special Services Advisory Group in 1987. It uses the same number of hours of direct care staff at each sub-level as was published in the Department's 1987 report on ARM, but the numbers are expressed as hours per client per day in this attachment, to be consistent with Levels 2 and 3. (Note: The consultant services standards have been transferred to the ARM special services rate element.) The staffing model for Level 4 direct care staff is given below:

Sublevel	Staff hours/client/day
4A	3.00
4B	3.43
4C	3.86
4D	4.29
4E	4.86
4F	5.43
4G	6.00
4H	6.71
4I	7.71

b. Night supervision. One staff awake and duty for each 6 clients, or a 1:6 staff-to-client ratio, for eight hours a night, seven days a week. Expressed mathematically:

$$\frac{\text{8 hours of staff time per day}}{\text{6 clients}} = \text{1.33 hours/cl/day}$$

c. Coverage factor. The coverage factor allows for 22.5 days of absence per year per staff person. This is based on 20 days per year on vacation and holidays plus 2.5 days (20 hours) of training per year. The staff training is the same as for Level 3 facilities because the Department's QA standards for staff training are the same for Levels 3 and 4. Since both daytime and night supervision standards are richer than Level 3, the amount of coverage per client is correspondingly higher. The coverage for each sublevel is as follows:

Sublevel	hrs/cl/day x (day + night)	absence days per yr	÷ 365 days/yr	= hrs/cl/day coverage
4A	4.33	22.5	365	0.27
4B	4.76	22.5	365	0.29
4C	5.19	22.5	365	0.32
4D	5.62	22.5	365	0.35
4E	6.19	22.5	365	0.38
4F	6.76	22.5	365	0.42
4G	7.33	22.5	365	0.45
4H	8.04	22.5	365	0.50
4I	9.04	22.5	365	0.56

II. Direct care staff wages and benefits.

A. Staff salaries. The 1988 residential care cost study will determine the average hourly wages of direct care staff in ARM facilities. Only those ARM facilities that had paid staff will be included in the calculation, and any direct care staff salaries that were beneath the minimum wage will be excluded.

First, the Department wants to know if staff wages differ by level of facility. When DDS developed the current ARM rates, it used the statewide average wage for Level 2 staff, a slightly higher wage for Level 3 staff, and an even higher wage for Level 4 staff (one wage for all sublevels). Price Waterhouse should use ARM facilities to identify the average wages for Levels 2 and 3, and use special services and negotiated rates facilities to represent Level 4 facilities.

Second, the Department wants to know if the average wages in ARM facilities (Levels 2 and 3) differed from the average wage in the CCF traditional facilities.

Third , the Department wants to know how the wages collected from the facility sample compare with comparable wages in the industry. See Attachment H.

B. Staff benefits. Price Waterhouse has collected information on staff benefits paid. Develop average staff benefits paid, after excluding any facilities paying less than the minimum required benefits. Then compare these average actual staff benefits data with a modelled staff benefits package representing required benefits only (See Attachment F). Price Waterhouse will recommend a staff benefits factor based on this analysis.

File ATTE.REC

DATA USED TO DEVELOP RECOMMENDED ARM LEVEL 4 RATES

A) Assumptions Used to Develop Traditional Rates

1. ARM Level 4 data represents combination of Negotiated Rate and Special Services facilities in 1988 rate study sample.	
2. All but 2 of the 77 facilities in Negotiated Rate or Special Services groups are staff operated, hence operation type is not an issue.	
3. Number of days in month is assumed to be 30.42	30.42
4. Estimated change in Calif. CPI (All Urban Consumers) 7/1/87 to 12/31/89 is 12.5%. (Comm. on State Finance)	12.5%
Estimated change in Calif. CPI (All Urban Consumers) 7/1/87 to 4/1/88 is 3.5% (Comm. on State Finance)	
5. Assumes a proprietary fee calculated as a 4.97% pre-tax return on sample net assets per client.	4.97%
6. All cost data presented below are in 1987 dollars as reported by sample facilities particpating in this study.	

B) Basic Living Needs (WIC Sec. 4681.1(b) (1))

1) Based on data collected from the 1988 Study

	Sample Mean BLN Cost per Month		Sample Median BLN Cost per Month		Combined Groups	
	Med.FMV	High FMV	Med.FMV	High FMV	Mean	Median
Total	$558	$648	$521	$597	$619	$576
N=77	N=25	N=52	N=25	N=52	N=77	N=77

C) Direct Supervision (WIC Sec. 4681.1(b) (2))

1) ARM Direct Supervision Standards

Number of Hours of Direct Supervision per Client Day

ARM Rate Level		Daytime	Night	Coverage	Total	Hours Per Month
Level 4	4A	3.00	1.33	0.27	4.60	139.9
	4B	3.43	1.33	0.29	5.05	153.6
	4C	3.86	1.33	0.32	5.51	167.6
	4D	4.29	1.33	0.35	5.97	181.6
	4E	4.86	1.33	0.38	6.57	199.9
	4F	5.43	1.33	0.42	7.18	218.4
	4G	6.00	1.33	0.45	7.78	236.7
	4H	6.71	1.33	0.50	8.54	259.8
	4I	7.71	1.33	0.56	9.60	292.0

2) Sample Mean and Median Hourly Wages and Benefits for Direct Supervision Staff

a) Sample wages and benefits without respect to minimum wage or tax law requirements.

	Mean Wage Rate		Median Wage Rate		Combined Groups	
	Med. FMV	High FMV	Med. FMV	High FMV	Mean	Median
Hourly wage rate (including facilities paying subminimum wages in 1987)	$5.75	$5.96	$5.61	$6.06	$5.81	$5.82
Employer taxes and benefits per hour (includes facilities paying $0 benefits) (1 Med. FMV & 0 High FMV pay $0)	$1.14	$1.16	$1.12	$1.17	$1.09	$1.10
Total compensation cost per hour:	$6.89	$7.12	$6.73	$7.23	$6.90	$6.92
Number of facilities in sample with this data:	N=25	N=52	N=25	N=52	N=76	N=76

3) Sample wages and benefits with adjustments to reflect minimum wage and tax law requirements.
(Facilities paying sub-minimum wages were brought up to minimum wages.)
(All benefits based on actual sample results since all are above 18.383% legal minimum.)

	Mean Wage Rate		Median Wage Rate		Combined Groups	
	Med. FMV	High FMV	Med. FMV	High FMV	Mean	Median
Hourly wage rate (adjusted for facilities paying subminimum wages in 1987)	$5.80	$5.96	$5.61	$6.06	$5.82	$5.82
Employer taxes and benefits per hour (based on actual sample data)	$1.14	$1.16	$1.12	$1.17	$1.10	$1.11
Total compensation cost per hour:	$6.94	$7.12	$6.73	$7.23	$6.92	$6.93
Number of facilities in sample with this data:	N=25	N=52	N=25	N=51	N=76	N=76

4) Cost per month of Direct Supervision using ARM standards and alternative wage rates.

a) Actual wage and benefit rates found in sample facilities

ARM Rate Level		Sample Means		Sample Medians		Combined Groups	
		Medium	High	Medium	High	Mean	Median
Level 4	4A	$964	$996	$942	$1,012	$966	$968
	4B	$1,058	$1,094	$1,034	$1,111	$1,060	$1,063
	4C	$1,155	$1,193	$1,128	$1,212	$1,157	$1,160
	4D	$1,251	$1,293	$1,222	$1,313	$1,253	$1,257
	4E	$1,377	$1,423	$1,345	$1,445	$1,379	$1,383
	4F	$1,505	$1,555	$1,470	$1,579	$1,507	$1,511
	4G	$1,631	$1,685	$1,593	$1,711	$1,633	$1,638
	4H	$1,790	$1,850	$1,748	$1,878	$1,793	$1,798
	4I	$2,012	$2,079	$1,965	$2,111	$2,015	$2,021

b) Legal wage and benefit rates (adjusted for subminimum wage and benefit levels)

ARM Rate Level		Sample Means		Sample Medians		Combined Groups	
		Medium	High	Medium	High	Mean	Median
Level 4	4A	$971	$996	$942	$1,012	$968	$970
	4B	$1,066	$1,094	$1,034	$1,111	$1,063	$1,065
	4C	$1,163	$1,193	$1,128	$1,212	$1,160	$1,162
	4D	$1,260	$1,293	$1,222	$1,313	$1,257	$1,259
	4E	$1,387	$1,423	$1,345	$1,445	$1,383	$1,385
	4F	$1,516	$1,555	$1,470	$1,579	$1,511	$1,514
	4G	$1,642	$1,685	$1,593	$1,711	$1,638	$1,640
	4H	$1,803	$1,850	$1,748	$1,878	$1,798	$1,800
	4I	$2,027	$2,079	$1,965	$2,111	$2,021	$2,024

D) Special Services (WIC 4681.1 (b) (3))

1) Modelled allowance for outside clinical consultants.

(Based on DDS supplied $28.04 per hour cost for clinical consultants.)
Cost per consultant hour: $28.04

ARM Rate Level		Consultant Hours Per Client Month	Cost Per Client Month
Level 4	4A	2	$56
	4B	2	$56
	4C	2	$56
	4D	3	$84
	4E	3	$84
	4F	3	$84
	4G	4	$112
	4H	4	$112
	4I	4	$112

2) Actual Study Findings for Special Supplies and Equipment Expenses

	Sample Mean Spec. Sup. Cost per Month		Sample Median Spec. Sup. Cost per Month		Combined Groups	
	Med.FMV	High FMV	Med.FMV	High FMV	Mean	Median
Total	$5	$13	$0	$6	$11	$4
N=77	N=25	N=52	N=25	N=52	N=77	N=77

Note: 16 of the 25 Medium FMV facilities spend $0. 13 of 52 in the High FMV spend $0.

3) Total Special Services Expenses (combines 1(b) & 2 above) (using legal wage and actual benefit rates)

ARM Rate Level		Sample Means		Sample Medians		Combined Groups	
		Medium	High	Medium	High	Mean	Median
Level 4	4A	$61	$69	$56	$62	$67	$60
	4B	$61	$69	$56	$62	$67	$60
	4C	$61	$69	$56	$62	$67	$60
	4D	$89	$97	$84	$90	$95	$88
	4E	$89	$97	$84	$90	$95	$88
	4F	$89	$97	$84	$90	$95	$88
	4G	$117	$125	$112	$118	$123	$116
	4H	$117	$125	$112	$118	$123	$116
	4I	$117	$125	$112	$118	$123	$116

E) Unallocated Services (WIC Sec. 4681.1 (b) (4))

1) Including Unallocated wages and benefits

	Sample Mean Unallocated Cost per Month		Sample Median Unallocated Cost per Month		Unallocated Cost Combined Groups	
	Med.FMV	High FMV	Med.FMV	High FMV	Mean	Median
Total N=77	$486 N=25	$570 N=52	$403 N=25	$476 N=52	$543 N=77	$469 N=77

F) Mandated Capital Improvements (WIC Sec. 4681.1 (b) (5))

All capital improvement costs (mandated or not) related to the provision of client services are included in the Basic Living Needs or Unallocated Services Cost components above. As a result, no separate component is presented.

G) Proprietary Fee (WIC Sec. 4681.1 (b) (6))

a) Sample Mean Net Assets per Client

		Sample Net Assets Per Client	Pre - Tax Return on Assets	Sample Prop. Fee Per Month
Total	N=77	$5,311	4.97%	$22

b) Sample Median Net Assets per Client

Facility Operation Type	Sample Size	Sample Net Assets Per Client	Pre - Tax Return on Assets	Sample Prop. Fee Per Month
Total	N=77	$2,756	4.97%	$11

		Sample Mean Net Assets Per Client		Sample Median Net Assets Per Client		Combined Groups	
		Med.FMV	High FMV	Med.FMV	High FMV	Mean	Median
Total	N=77	$5,205 N=25	$5,362 N=52	$2,840 N=25	$2,712 N=52	$5,311 N=77	$2,756 N=77

Pre-Tax rate of return for calculating the proprietary fee: 4.97%

Facility Operation Type	Sample Med./High	Sample Mean Proprietary Fee Med.FMV	Sample Mean Proprietary Fee High FMV	Sample Median Proprietary Fee Med.FMV	Sample Median Proprietary Fee High FMV	Combined Groups Mean	Combined Groups Median
Total	N=77	\$22 N=25	\$22 N=52	\$12 N=25	\$11 N=52	\$22 N=77	\$11 N=77

H) Geographic Adjustment Factor (WIC 4681.1 (b) (7))

WIC 4681.1 requires a geographic adjustment factor hence, we have presented and used sample means and medians to compute rates by geographic area. These geographic adjustments have been included in BLN, Direct Supervision, Special Services, and Unallocated Costs.

The High FMV group includes all facilities in the following counties: Alameda, Contra Costa, Los Angeles, Marin, Orange, San Diego, San Francisco, San Mateo, Santa Clara, Santa Cruz, and Ventura. All other counties are in the Medium FMV group.

I) Dual Diagnosis Rate (WIC Sec. 4681.1 (b) (8))

No data were collected or analyzed during this study pertaining to this component.
It is our understanding that DDS has determined that such a rate component is not necessary.

Appendix D: Data Used to Develop ARM Level 4 Rates

ARM LEVEL 4 RATES IF SET USING MEANS (Illustration only)

Assumptions:
1) Mean costs used for all elements
2) ARM direct supervision model used
3) Legal wages and actual benefits per hour
4) BLN, UC, DS, SS, Prop. Fee vary by geographic region

1. Study Data Findings

A) Medium FMV Counties

ARM Rate	WIC 4681.1 Rate Elements							
Level 4	BLN	Direct Supv.	Spec. Svcs.	Unalloc.Sv.	Man. Cap.	Prop. Fee	Dual Diag.	Total
4A	$558	$971	$61	$486	N/A	$22	N/A	$2,098
4B	$558	$1,066	$61	$486	N/A	$22	N/A	$2,193
4C	$558	$1,163	$61	$486	N/A	$22	N/A	$2,290
4D	$558	$1,260	$89	$486	N/A	$22	N/A	$2,415
4E	$558	$1,387	$89	$486	N/A	$22	N/A	$2,542
4F	$558	$1,516	$89	$486	N/A	$22	N/A	$2,671
4G	$558	$1,642	$117	$486	N/A	$22	N/A	$2,825
4H	$558	$1,803	$117	$486	N/A	$22	N/A	$2,986
4I	$558	$2,027	$117	$486	N/A	$22	N/A	$3,210

B) High FMV Counties

ARM Rate	WIC 4681.1 Rate Elements							
Level 4	BLN	Direct Supv.	Spec. Svcs.	Unalloc.Sv.	Man. Cap.	Prop. Fee	Dual Diag.	Total
4A	$648	$996	$69	$570	N/A	$22	N/A	$2,306
4B	$648	$1,094	$69	$570	N/A	$22	N/A	$2,403
4C	$648	$1,193	$69	$570	N/A	$22	N/A	$2,503
4D	$648	$1,293	$97	$570	N/A	$22	N/A	$2,630
4E	$648	$1,423	$97	$570	N/A	$22	N/A	$2,760
4F	$648	$1,555	$97	$570	N/A	$22	N/A	$2,893
4G	$648	$1,685	$125	$570	N/A	$22	N/A	$3,051
4H	$648	$1,850	$125	$570	N/A	$22	N/A	$3,215
4I	$648	$2,079	$125	$570	N/A	$22	N/A	$3,445

2) Study data findings updated to April 1, 1988

ARM Rate	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
Level 4			
4A	$2,171	$2,386	$1,946
4B	$2,270	$2,487	$2,081
4C	$2,370	$2,590	$2,215
4D	$2,500	$2,723	$2,382
4E	$2,631	$2,857	$2,562
4F	$2,764	$2,994	$2,742
4G	$2,924	$3,157	$2,953
4H	$3,090	$3,328	$3,178
4I	$3,322	$3,565	$3,493

3) Percentage Change in Actual 87-88 ARM Level 4 Rates Required to Match Study Data Findings Updated to April 1, 1988 Levels

ARM Rate	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
Level 4			
4A	11.6%	22.6%	$1,946
4B	9.1%	19.5%	$2,081
4C	7.0%	16.9%	$2,215
4D	4.9%	14.3%	$2,382
4E	2.7%	11.5%	$2,562
4F	0.8%	9.2%	$2,742
4G	-1.0%	6.9%	$2,953
4H	-2.8%	4.7%	$3,178
4I	-4.9%	2.1%	$3,493

4) Recommended ARM Level 4 Rates for FY 1989-90 Based on Study Sample Data

ARM Rate Level 4	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
4A	$2,364	$2,598	$1,946
4B	$2,471	$2,708	$2,081
4C	$2,581	$2,820	$2,215
4D	$2,722	$2,964	$2,382
4E	$2,865	$3,111	$2,562
4F	$3,011	$3,260	$2,742
4G	$3,185	$3,439	$2,953
4H	$3,366	$3,625	$3,178
4I	$3,619	$3,884	$3,493

5) Percentage Change in 1987-88 ARM 4 Rates Required to Match Projected FY 1989-90 Rates Based on 1988 Rate Study Sample

ARM Rate Level 4	Medium FMV Counties	High FMV Counties	Actual 87-88 ARM Level 4 Rate
4A	21.5%	33.5%	$1,946
4B	18.8%	30.1%	$2,081
4C	16.5%	27.3%	$2,215
4D	14.3%	24.5%	$2,382
4E	11.8%	21.4%	$2,562
4F	9.8%	18.9%	$2,742
4G	7.9%	16.4%	$2,953
4H	5.9%	14.1%	$3,178
4I	3.6%	11.2%	$3,493