

**Technical Guide to the
CalQualityCare.org Ratings:
Nursing Facilities**

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INTRODUCTION

Since 2002 the California HealthCare Foundation (CHCF) has partnered with the Department of Social and Behavioral Sciences at the University of California, San Francisco (UCSF-SBS) to develop a resource for consumers on long-term care providers throughout the state. CHCF sponsors the project and manages the website www.CalQualityCare.org on which data about long-term care facilities are displayed to improve quality and inform consumer decision-making. The UCSF-SBS team provides the data content for the website, including developing the ratings methods and scoring the facilities. The data are obtained from California and United States federal government sources, as well as from recognized accrediting organizations.

CalQualityCare.org provides “Performance Ratings” on important measures of the quality of long term care provided by nursing homes, home health care agencies, and hospice programs. The goal of these ratings is to provide clear, directional information to consumers about facilities (e.g., individuals in need of long-term care, family members, friends of individuals in need of long-term care, health care professionals needing to find long-term care resources for clients). The provider ratings are based on the most recent data from California and U.S. government sources. The data are updated quarterly with the most current information available.

The methodological foundation used to calculate the CalQualityCare.org provider ratings are based on existing algorithms, such as the procedures used by the Centers for Medicare and Medicaid Services (CMS) used for nursing homes; research literature; and expertise and knowledge in long-term care, research design, and program evaluation. In order to provide a common metric across all facility types rated, CalQualityCare.org has adopted the following five-level rating system CMS uses for nursing homes: Superior, Above Average, Average, Below Average, Poor, or not rated.

The number of ratings presented for each provider type is dependent on the available information. For example, nursing facilities have a significant amount of California state and U.S. government data available and receive performance ratings in four areas: Overall, Quality of Facility, Staffing, and Quality of Care. Intermediate care facilities for the developmentally disabled (ICF/DD) receive performance ratings in three domains: Overall, Quality of Facility, and Staffing. However, Home Health Care agencies have less data available and receive performance ratings in only two areas: Quality of Agency and Quality of Care. Hospice programs have information to provide a performance rating in only a single area: the Quality of Program. The website does not give performance ratings for assisted living, congregate living health facilities, continuing care retirement communities, adult day health care, or adult day care because these providers are subject to different standards that do not allow for collecting similar performance data. As data on these facilities become available, ratings will be developed and assigned to those providers.

OVERVIEW OF NURSING FACILITY RATINGS

As noted above, CalQualityCare.org provides Performance Ratings for nursing facilities in four areas: Overall, Quality of Facility, Staffing, and Quality of Care.

The Overall, composite, rating is based on three primary components that are used to measure quality: (1) facility quality from federal and state health inspection reports and complaints; (2) staffing levels and turnover rates; and (3) quality measures.

The CalQualityCare ratings are similar to those used by the Centers for Medicare and Medicaid Services (CMS) for its Medicare Nursing Home Compare website but the ratings are not the same. The CalQualityCare ratings differ from the CMS ratings on both the data and methods used to construct the ratings for facility quality and for staffing. There are two primary reasons why these ratings are different.

First, California has more detailed data available on nursing homes than are available for the CMS rating and these are used to make the system more informative. Specifically, California state citations and complaints and incidents are used in addition to the federal deficiencies. For the staffing data, CalQualityCare uses cost report data that includes all staffing for a full year for RNs and for total staffing which have been documented to be more accurate than the on-line survey, certification and reporting system data used by CMS (Hash et al., 2007). Moreover, the California cost report data have turnover rates that are not available to CMS. Therefore the California rating system uses more complete information on facility quality and staffing than are used by the CMS rating.

Second, the ratings for CalQualityCare are different from the CMS ratings because they take into account the distribution of scores in California. For the staffing ratings, actual reported staffing data are used with a threshold set that are based on the research literature. Finally, the ratings are constructed so that only the nursing facilities with the very highest scores are given four or five points.

Although the facility quality and staffing ratings are different from the CMS ratings, the ratings for the quality measures are the same as those developed for the CMS ratings using data collected by CMS. Finally, the procedures for constructing the overall composite rating across the three components are the same as the procedures used by CMS for its composite rating.

All data for the ratings are obtained from federal and state public reports from official government sources. The ratings are updated on a quarterly basis using the latest available public data. The following guide explains how each of the three component ratings are calculated and how the overall rating is calculated.

OVERALL NURSING HOME RATING (COMPOSITE MEASURE)

The method for assigning the overall rating is the same method as used by CMS. Based on the five-point rating for the facility quality domain, the direct care staffing domain, and the quality measure

domain, the overall five-point rating is assigned in five steps as follows:

Step 1: Point with the Facility Quality from deficiencies, citations, and complaints five-point rating.

Step 2: Add one point to the Step 1 result if staffing rating is four or five points and greater than the Facility Quality rating; subtract one point if staffing is one point. The overall rating cannot be more than five points or less than one point.

Step 3: Add one point to the Step 2 result if Quality Measure rating is five points; subtract one point if Quality Measure rating is one point. The overall rating cannot be more than five points or less than one point.

Step 4: If the Facility Quality rating is one point, then the Overall Quality rating cannot be upgraded by more than one point based on the Staffing and Quality Measure ratings.

Step 5: If the nursing home is a Special Focus Facility (SFF) that has not graduated, the maximum Overall Quality rating is three points.

The rationale for upgrading facilities in Step 2 that receive either a four- or five-point rating for staffing (rather than limiting the upgrade to those with five points) is that the criteria for the staffing rating are quite stringent. To earn four points on the staffing measure, a facility must meet or exceed the thresholds for RN or total staffing; to earn five points on the staffing measure, a facility must meet or exceed the thresholds for both RN and total staffing. However, requiring that the staffing rating be greater than the deficiency rating in order for the score to be upgraded ensures that a facility with four points on deficiencies and four points on staffing (and more than one point on MDS) will not receive a five-point overall rating.

The rationale for limiting upgrades in Step 4 is that two self-reported data domains should not significantly outweigh the rating from actual onsite visits from trained surveyors who have found very serious quality of care problems. And since the health inspection rating is heavily weighted toward the most recent findings, a one-point health rating reflects both a serious and recent finding. The rationale for limiting the overall rating of special focus facilities in Step 5 is to take into account facilities that have had a history of poor compliance with federal regulations.

The method for determining the overall nursing home rating does not assign specific weights to the survey, staffing, and QM domains. The survey rating is the most important dimension in determining the overall rating, but, depending on their performance on the staffing and QM domains, a facility's overall rating may be up to two points higher or lower than their survey rating.

STAFFING RATING

There is considerable evidence of the importance of nursing home staffing levels and staffing turnover on resident outcomes. The CMS Staffing Study found a clear association between nurse staffing ratios and nursing home quality of care, identifying specific ratios of staff to residents below

which residents are at substantially higher risk of quality problems (Kramer and Fish 2001). In addition, experts have recommended minimum staffing levels (Harrington et al. 2000; Schnelle, 2001; Schnelle et al., 2004). Because of the evidence on the importance of staffing at threshold levels, the California staff ratings are based on thresholds as well as the distribution of facility staffing. The rating for staffing takes into account three measures: RN staffing levels, total nurse staffing levels, and staff turnover rates.

Resident Care Needs. Facilities should adjust staffing levels to ensure adequate staff to meet the needs of all the residents living in a facility. In order to take into account differences in the resident care needs, we divided nursing homes into two groups: those with high percentages of Medicare resident days (defined as 25% or more resident days paid by Medicare) and those with low percentages of Medicare resident days (defined as having less than 25% of resident days paid by Medicare). Medicare residents tend to be short-stay residents (less than 100 days of nursing home care) and they have higher resident acuity or casemix.

In California, 97 freestanding nursing homes (9%) out of 1092 facilities in 2007 had 25% or more days paid by Medicare. Of the 108 hospital-based nursing homes in California, 55 facilities (51%) had more than 25% of resident days paid by Medicare in 2007. Residents in nursing homes with more than 25% of Medicare resident days were primarily classified as needing rehabilitation services (52%) and complex nursing care (35%), while the remainder of the residents needed assistance with physical care. In contrast, residents in nursing homes with less than 25% Medicare resident days were more likely to need physical care, had behavioral problems, or were mentally impaired and less likely to need rehabilitation services.

Facilities with high Medicare resident days were expected to have higher RN and total nurse staffing hours in order to meet the needs of these residents for care. In contrast, facilities with less Medicare days of care were expected to need somewhat less RN and total nursing hours. Therefore, the rating system established two different RN and total staffing ratings for high and low Medicare facilities, considering research-based thresholds as well as the distribution of average staffing hours for the two types of nursing homes.

RN Staffing: RN staffing levels are the average number of hours of RN time available to care for residents per day over a one-year period, based on California cost report data. All RN hours including the Directors of Nursing and nursing supervisor hours were calculated by dividing the total RN hours worked (excluding time for vacations, sick time, disability, and other paid time off) (and including employees and contract RNs) by the total resident days of care during the year. In California, the average RN hours per resident day were 1.2 for facilities with high Medicare days and 0.39 for facilities with low Medicare days in 2007. The Kramer and Fish (2001) study showed that 0.75 RN hours per resident day were necessary to prevent harm or jeopardy to residents in the average nursing home regardless of resident casemix. Taking into account the distribution of RN staffing in California and the CMS rating methods, the threshold was set at 0.55 RN hours per resident day for low Medicare facilities and at 3.0 hours for high Medicare facilities for the five-point rating. The following thresholds were set for low and high Medicare facilities (See Appendix A and B for more details).

Table 4:
RN Staffing Scores and Ratings in California
Low Medicare Facilities

Low Medicare Facilities		High Medicare Facilities	
RN Hours Per Day	Points	RN Hours Per Day	Points
0.55 hours or higher	5 points	3.0 hours or higher	5 points
0.40 to 0.54 hours	4 points	1.51 to 2.99 hours	4 points
0.30 to 0.39 hours	3 points	0.56 to 1.50 hours	3 points
0.21 to 0.29 hours	2 points	0.30 to 0.55 hours	2 points
0.20 hours or less	1 point	0.29 hours or less	1 point

Total Nurse Staffing: Total staffing includes all RNs, licensed vocational or practical nurses (LVNs) and nursing assistants (NAs). Nurse staffing levels are the average number of hours of nursing staff time available to care for residents per day over a year based on California cost report data. The total nursing hours include all licensed nurses, nursing assistants, and directors of nursing, including part-time, full time, and temporary employees. Hours per resident day were calculated by dividing the total nursing hours worked (excluding time for vacations, sick time, disability, and other paid time off) by the total resident days of care during the year.

The Kramer and Fish (2001) and the Schnelle et al. (2004) studies showed that 4.1 total hours per resident day were necessary to prevent harm or jeopardy to residents in the average nursing home regardless of casemix. In California, the average total staffing hours were 3.8 hours per resident day for facilities with low percentages of Medicare resident days and 4.9 for facilities with high Medicare resident days in 2007. Because the average facility in California was 3.8 hours in low Medicare facilities, we used the expert recommendations and the CMS rating methodology to set a minimum of 4.1 hours per resident day for the five point rating (Harrington et al., 2000). For facilities with high Medicare resident days which averaged 4.9 hours, we used 6.5 hours for the highest rating level.

The Schnelle (2001) study identified the need for a minimum of 2.8-3.0 nursing assistant hours per resident day to carry out five basic care activities in all nursing homes. Moreover, the California state minimum standard for direct care staffing is 3.2 hprd. Therefore, the lowest staffing level for a one point rating in the California guide was set at 3.26 for total staffing in low Medicare facilities to include both direct care and administrative nursing. The lowest rating for high Medicare facilities was set at 3.5 hours or lower.

Table 5:
Total Nurse Staffing Scores and Ratings in California
Low Medicare Facilities

Low Medicare Facilities		High Medicare Facilities	
Total Hours Per Day	Points	Total Hours Per Day	Points
4.10 hours or higher	5 points	6.5 hours or higher	5 points
3.60 to 4.09 hours	4 points	5.10 to 6.49 hours	4 points
3.40 to 3.59 hours	3 points	3.73 to 5.09 hours	3 points
3.27 to 3.39 hours	2 points	3.51 to 3.72 hours	2 points
3.26 hours or lower	1 point	3.50 hours or less	1 point

Nursing Staff Turnover. Turnover rates have been found to be associated with nursing home quality, where high rates may result in poor quality, low continuity of care, and low staffing levels (Castle et al, 2007; Feuerberg, 2001; Harrington and Swan, 2003). Low turnover may reflect better management, wages and benefits or other enhanced employment conditions. Low turnover rates may result in improved patient outcomes and quality.

The percent of change in nursing staff (turnover) indicates the stability of care in a facility. Turnover is reported by facilities as the percent of all nurses (not including supervisors) who leave employment with the facility during the year (turnover rate) prior to the day the facility completed its most recent cost report for the Office of Statewide Health Planning and Development. Turnover levels in California on average were high at 66% and the median was 53% in 2007.

Table 6. Nurse Staff Turnover Rates in California

Turnover Rates	Levels
90% or higher	Worst rates
60-89	
45-59	
30-44	
1-29%	Best rates

Facilities with 90% turnover or higher were in the bottom one-fifth of homes in California. To take into account high turnover levels of 90% or higher, facilities with this level of turnover had their total overall staffing rating reduced by one point unless they already received one point. We did not adjust for other turnover rates because turnover at the highest levels have the most impact on quality.

Rating Methodology: Facility rating for overall staffing is based on the combination of RN and total staffing (RNs, LPNs/ LVNs, CNAs) ratings for each facility with equal weights given to the RN and the total staffing ratings. To receive a five-point rating, facilities must meet both RN and total nursing thresholds. In addition to meeting those ratings, nursing homes with turnover rates greater than 90% during the most recent year receive a reduction of one point. All ratings are based on the most recent fiscal year reported by each facility on its annual cost report for the Office of Statewide Health Planning and Development.

QUALITY OF FACILITY RATING

Nursing homes that participate in the Medicare or Medicaid programs are required to meet federal standards for quality and life safety requirements. In addition, all nursing homes in California must meet state standards for nursing home quality and safety. The California state Licensing and Certification program conducts federal and state surveys (inspections) of nursing homes on an annual basis, but at least every fifteen months. These are unannounced and are conducted by a team of health care professionals who spend several days in the nursing home to assess whether the nursing home is in compliance with federal and state requirements. The surveys evaluate nursing home quality based on specific regulations regarding: quality of care, quality of life, resident rights, administration, environment,

nutrition, pharmacy, life safety and other areas.

The facility quality rating system uses a five-point rating as described below that takes into account three measures: (1) federal inspection reports; (2) state citations; and (3) substantiated complaint and incident reports. The rating takes into account the scope and severity of federal deficiencies and state citations, which are rated by the state surveyors. The rating is based on the most recent three standard surveys for each nursing home and any complaint investigations during the most recent three-year period.

Federal Inspection Results: The federal health inspection score is calculated based on points assigned to deficiencies identified in each active provider's current health inspection survey. Points are assigned to individual health deficiencies according to their scope and severity – more points are assigned for more serious, widespread deficiencies, fewer points for less serious, isolated deficiencies (see Table 1). If the deficiency generates a finding of substandard quality of care, additional points are assigned.

Table 1
Health Inspection Score: Weights for Different Types of Federal Deficiencies

Severity	Scope		
	Isolated	Pattern	Widespread
Immediate jeopardy to resident health or safety	J 50 points (75 points)	K 100 points (125 points)	L 150 points (175 points)
Actual harm that is not immediate jeopardy	G 20 points	H 35 points (40 points)	I 45 points (50 points)
No actual harm with potential for more than minimal harm that is not immediate jeopardy	D 4 points	E 8 points	F 16 points (20 points)
No actual harm with potential for minimal harm	A 0 point	B 0 points	C 0 points

Note: Figures in parentheses indicate points for deficiencies that are for substandard quality of care that fall under the following federal categories: resident behavior and nursing home practices; quality life; or quality of care.

State Inspection Results: In addition to federal deficiencies, points are assigned for the number and types of state citations as shown in Table 2. State citations require the payment of fines based on the severity of the violations. These state citations include those identified during standard nursing home surveys and state complaint investigations.

Table 2 Definitions and Weights for State Citations

Class	Severity	Definition	Points
B	No Imminent Danger- Potential for Actual Harm	Violations of standards that have a direct or immediate relationship to health, safety, or security, but do not result in death or present imminent danger. (\$100-1,000 penalty)	30 points
A	Imminent Danger- Substantial Probability for Actual Harm	Violations of a standard that causes imminent danger to residents or the substantial probability of death or serious harm. (\$2,000-20,000 penalty)	75 points
AA	Immediate Jeopardy- Actual Harm	The most serious violation. This citation class is given when there is evidence that the facility is responsible for a resident death. (\$25,000-100,000 penalty)	175 points

Substantiated Complaints and Incident Reports: A complaint is a formal grievance against a facility that is filed with the state Licensing and Certification (L&C) Program. Complaints about poor care or safety may be filed by patients, family members, local ombudsmen or other individuals. In addition, nursing homes are required by law to file a report whenever there has been an incident where suspected or alleged abuse has occurred or where a resident has been injured (e.g. falls) or harmed.

Serious complaints and incidents must be investigated by the L&C program within a 2 day period, but most complaints are investigated within 10 days. Some complaints and incidents that are not serious may not be investigated because of limited L&C resources. When complaints are investigated by L&C, they are deemed either substantiated (if the inspector found the claim to be true) or unsubstantiated (if there was no proof to support the complaint). If a complaint is substantiated, a deficiency or citation may be given to the facility.

Because facilities with more beds and nursing home residents may have more complaints, we standardized the number of substantiated complaints and incidents by the total number of beds. The average number of complaints per bed in 2007 was 0.04 complaints. The number of complaints per bed in each facility was multiplied by 100 points. These points were then added to the total number of points for the federal and state deficiencies for each facility in each of the last three survey periods.

Thus, the total combined federal and state total health inspection score for each facility was based on the weighted deficiencies and their number of complaints and incidents. A lower survey score corresponds to fewer federal deficiencies and state citations and complaints/incidents, and thus better performance on the health inspection domain.

In calculating the total score for federal deficiencies, state citations, and complaints/incidents, more recent surveys were weighted more heavily than earlier surveys. The most recent period was assigned a weighting factor of 1/2, the previous period had a weighting factor of 1/3, and the second prior survey had a weighting factor of 1/6. The weighted scores for each time period were then summed to create the survey score for each facility.

Rating Methodology

Five-point quality ratings on the health inspection domain were based on the relative performance of facilities within California.

The top 10% (lowest 10% in terms of the number of points for federal deficiencies, state citations, and complaints) of facilities received a five-point rating.

The middle 70% of facilities received a rating of two, three, or four points, with an equal number (approximately 23.3%) in each rating category.

The bottom 20% of facilities received a one-point rating.

This distribution is based on the summary rating methodology used by the Centers for Medicare and Medicaid Services. A facility's rating may change with each new update of data.

The weighted average scores for the most recent three periods were:

**Table 3:
Weighted Average Federal Deficiencies, State Citations and Complaint/ Incident Scores
in California**

Weighted Scores	Points
0- 20.3	5 points
20.4-45.9	4 points
46.0 –74.9	3 points
75.0 –134.9	2 points
135.0 +	1 point

The mean for the weighted average scores for the three periods was 92.5 and the median was 64.6. The minimum weighted score was zero and the maximum was 786.

QUALITY OF CARE RATING

The Centers for Medicare and Medicaid Services (CMS) developed a set of quality measures from the Minimum Data Set (MDS) to describe the quality of care provided in nursing homes. These measures address a broad range of functioning and health status in multiple care areas. The facility rating for the Quality of Care domain is based on performance on a subset of 10 (out of 19) of the quality measures (QM) currently posted on Nursing Home Compare. All measures have been validated. The measures were selected based on their validity and reliability, the extent to which the measure is under the facility's control, statistical performance, and importance. **The California rating uses the same rating as CMS uses for its Medicare Nursing Home Compare website.**

Long-stay residents:

- Percent of residents whose need for help with daily activities has increased

- Percent of residents whose ability to move about in and around their room got worse
- Percent of high risk residents who have pressure sores
- Percent of residents who had a catheter inserted and left in their bladder
- Percent of residents who were physically restrained
- Percent of residents with urinary tract infection
- Percent of residents with moderate to severe pain

Short-stay residents:

- Percent of residents with pressure ulcers (sores)
- Percent of residents with moderate to severe pain
- Percent of residents with delirium

The long-stay measures are similar to those used for the Nursing Home Value-Based Purchasing (NHVBP) demonstration except that NHVBP does not include the urinary tract infection measure or pain measure. Note that the two ADL-related long-stay measures (percent of residents whose need for help with daily activities has increased, percent of residents whose ability to move about in and around their room got worse) are incidence measures that are based on change across two MDS assessments. The pressure ulcer measure does not activate until the 90-day assessment, thereby reducing the influence of pressure ulcers that may be present upon admission and affording the nursing home about three months to treat such present-on-admission sores before the measure takes effect for the resident in question. Table 6 contains more information on these measures. Technical specifications for the QMs are available on the CMS website ([http://www.cms.hhs.gov/NursingHomeQualityInits/Downloads/NHQR\)MUsersManual.pdf](http://www.cms.hhs.gov/NursingHomeQualityInits/Downloads/NHQR)MUsersManual.pdf)).

The Quality of Care rating is calculated using the three most recent quarters for which data are available. This time period specification was selected to increase the number of assessments available for calculating the Quality of Care rating, increasing the stability of estimates and reducing the amount of missing data.

Table 6
MDS-Based Quality Measures

Measure	Comments
Long-Stay Measures:	
Percent of residents whose need for help with daily activities has increased'	This is a change measure that was endorsed by the National Quality Forum (NQF). Maintenance of ADLs is also related to an environment in which the resident is up and out of bed and engaged in activities. The CMS Staffing Study found that higher staffing levels were associated with lower rates of increasing dependence in activities of daily living.
Percent of residents whose ability to move about in and around their room got worse'	This is a change measure that measures nursing home rules/practices related to use of mobility aides. Residents who lose mobility may also lose the ability to perform other activities of daily living, like eating, dressing, or getting to the bathroom.

Percent of high-risk residents who have pressure sores	The QM Validation Study identified a number of nursing home care practices that were associated with lower pressure sore prevalence rates including more frequent scheduling of assessments for suspicious skin areas, observations on the environmental assessment of residents, and care practices related to how the nursing home manages clinical, psychosocial, and nutritional complications.
Percent of residents who have/had a catheter inserted and left in their bladder	Using a catheter may result in complications, like urinary tract or blood infections, physical injury, skin problems, bladder stones, or blood in the urine.
Percent of residents who were physically restrained	A resident who is restrained daily can become weak, lose his or her ability to go to the bathroom by themselves, and develop pressure sores or other medical complications.
Percent of residents with urinary tract infection	Urinary tract infections can often be prevented through hygiene and drinking enough fluid. Urinary tract infections are relatively minor but can lead to more serious problems and cause complications like delirium if not treated.
Percent of residents with moderate to severe pain	This measure examines whether patients are in moderate to severe pain every day over the last 7 days. Many nursing home residents have poorly controlled pain, and this pain can be managed by nursing homes through appropriate medications and other types of therapy. Poor pain management can have a significant impact on resident quality of life.
Short-Stay Measures	
Percent of residents with pressure sores	Pressure sores can lead to complications such as skin and bone infections.
Percent of residents with moderate to severe pain	This measure examines whether patients are in moderate to severe pain every day over the last 7 days. Many nursing home residents have poorly controlled pain, and this pain can be managed by nursing homes through appropriate medications and other types of therapy. Poor pain management can have a significant impact on resident quality of life.
Percent of residents with delirium	Delirium is not a normal part of aging and residents with delirium should receive emergency medical attention. Facility practices can help prevent delirium.

Indicates ADL QMs as referenced in scoring rules
Sources: Based on information from the AHRQ Measures Clearinghouse and the NHVBP Draft Design Report

Scoring Rules

Consistent with the specifications used for the CMS Nursing Home Compare, long-stay measures are included in the score if the measure can be calculated for at least 30 assessments (summed across three quarters of data to enhance measurement stability). Short-stay measures are included in the score only if data are available for at least 20 assessments.

For each measure, points are assigned based on the facility quintile. Based on input from the project's TEP, performance on the two ADL-related measures is weighted 1.6667 times as high as the other measures. This higher weighting reflects the greater importance of these measures to many nursing home residents and ensures that the two ADL measures count for 40% of the overall weight on the long-stay measures. Table 6 shows the points assigned for each category for the ADL QMs and for the other QMs. The points are summed across all QMs to create a total score for each facility. Note that the total possible score ranges between 0 and 136 points.

Note that the percentiles are based on the national distribution for all of the QMs except for the two ADL measures, for which percentiles are set on a state-specific basis using the state distribution. The two ADL measures are based on within-state quintile distributions because these two measures appear to be more affected by case-mix variation, particularly influenced by differences in state Medicaid policies governing long term care.

Cut points for the two ADL QMs are reset with each quarterly update of the QM data based on the state-specific distribution of these measures. Cut points for the other QMs remain fixed at the baseline national values for a period of two years. Note that the cut points are determined prior to any imputation for missing data. The cut points that are used when public reporting begins are shown below.

Table 7
Points received for QMs based on the QMs percentile'

	ADL QMs	Other QMs
Less than 20 th percentile	20	12
20 th - <40 th percentile	15	9
40 th - <60 th percentile	10	6
60 th - <80 th percentile	5	3
Greater than 80 th percentile	0	0

'Note that percentiles are determined on a Statewide basis for ADL QMs and on a national basis all other QMs.

Missing Data and Imputation

Some facilities have missing data for one or more QM, usually because of an insufficient number of residents available for calculating the QM. Missing values are imputed based on the Statewide average for the measure. The imputation strategy for these missing values depends on the pattern of missing data.

- For facilities that have data for at least four of the seven long-stay QMs, missing values are imputed based on the statewide average for the measure. Points are assigned as shown in Table 7, meaning that facilities will typically receive the middle number of points (10 for the ADL measures and 6 for the other measures) for QMs for which values are imputed.
- Similarly, for facilities with data on at least two out of three post-acute QMs, missing values are imputed based on the state average for the QM and points are assigned as shown in Table 7.
- The QM rating for facilities with data on three or fewer long-stay QMs is based only on

- the short-stay measures. Mean values for the missing long-stay QMs are not imputed.
- Similarly, the QM rating for facilities with data with zero or one short-stay QM is based only on the long-stay measures. Mean values for the missing short-stay QMs are not imputed.

Based on these rules, after imputation, facilities are in one of three categories:

- They have points for all of the QMs.
- They have points only for the 7 long-stay QMs (long-stay facilities).
- They have points only for the 3 short-stay QMs (short-stay facilities)

So that all facilities are scored on the same 136 point scale, points are rescaled for long and short-stay facilities:

- If the facility had data only for the three short-stay measures (total of 36 possible points), its score was multiplied by $136/36$.
- If the facility had data for only the seven long-stay measures (total of 100 possible points), its score was multiplied by $136/100$.

Overall, 5.18% of facilities had data for one or more QM imputed, and most of these facilities had imputed data for only one QM at the national level.

Rating Methodology

The guide uses the same rating methodology as CMS for the QMs. Once the summary QM score is computed for each facility as described above, the five-point QM rating is assigned based on the nationwide distribution of these scores, as follow:

- The top 10% received a five-point rating.
- The middle 70% of facilities received a rating of two, three, or four points, with an equal number (23.33%) in each rating category.
- The bottom 20% received a one-point rating.

The cut points associated with these point ratings are held constant for a period of two years, allowing the distribution of the QM rating to change over time.

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**APPENDIX A:
STAFFING RATING FOR LOW MEDICARE FACILITIES (N = 1,044)**

Reported Staffing from the California Cost Reports

Total Staffing	Range	Percent	Mean 3.76 Median 3.45
One point	3.26 hrpd or less	20	
Two points	3.27-3.39	21	
Three points	3.40- 3.59	24	
Four points	3.60- 4.09	20	
Five points	4.1 hrpd or more	15	

RN Staffing	Range	Percent	Mean 0.39 Median 0.30
One point	0.20 hrpd or less	27	
Two points	0.21-0.29	22	
Three points	0.30- 0.39	20	
Four points	0.40- 0.54	15	
Five points	0.55 hrpd or more	16	

Overall Staffing Rating	Percent
One point	22
Two points	32
Three points	23
Four points	15
Five points	8

Turnover Rates	Range	Percent
One point	90% or higher	19
Two points	60-89	23
Three points	45-59	20
Four points	30-44	22
Five points	1-29	16

Overall Staffing Rating with turnover	Percent
One point	28
Two points	30
Three points	21
Four points	13
Five points	8

**APPENDIX B:
STAFFING RATING FOR HIGH MEDICARE FACILITIES (N = 152)**

Reported Staffing from the California Cost Reports

Total Staffing	Range	Percent	Mean 4.89 hrpd Median 3.93
One point	3.50 hrpd or less	20	
Two points	3.51-3.72	22	
Three points	3.73-5.09	24	
Four points	5.10-6.49	11	
Five points	6.5 hrpd or more	23	

RN Staffing	Range	Percent	Mean 1.21 Median 0.54
One point	0.29 hrpd or less	24	
Two points	0.30-0.55	28	
Three points	0.56- 1.50	19	
Four points	1.51- 2.99	13	
Five points	3.0 hrpd or more	16	

Overall Staffing Rating	Percent
One point	25
Two points	34
Three points	13
Four points	14
Five points	14

Turnover Rates	Range	Percent
One point	90% or higher	22
Two points	60-89	16
Three points	45-59	19
Four points	30-44	23
Five points	1-29	20

Overall Staffing Rating with turnover	Percent
One point	30
Two points	31
Three points	11
Four points	14
Five points	14