Outcome-Based Quality Improvement (OBQI)

IMPLEMENTATION MANUAL

Supplement

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SUPPLEMENT TO THE *OBQI IMPLEMENTATION MANUAL*

INTERPRETING AND USING THE 3-BAR OUTCOME REPORTS

A. INTRODUCTION

In early 2002, Medicare-certified home health agencies were able to access the first feedback reports depicting agency-specific patient outcomes derived from the OASIS data collected and transmitted to their respective state agencies. These reports included the 41 outcome measures that form the basis for outcome-based quality improvement (OBQI). Each report was presented in two sections, 29 outcomes risk-adjusted to take into account the unique characteristics of an agency's patients and 12 outcomes presented in a descriptive report section. Each outcome measure had a separate bar graph, presenting the agency's rate for outcome achievement compared to the reference rate. Because the two rates being compared were displayed side-by-side, this first OBQI report was known as a "two-bar report."

As agencies became familiar with the reports and used them for outcome enhancement purposes, a natural next step was to evaluate the impact of their quality improvement activities on patient outcomes. To facilitate this evaluation, an updated "three-bar" version of the OBQI report is now available. This new version presents the agency's outcome rate for the most recent 12-month period compared to the agency's rate in the prior 12-month period and to a reference rate for each separate outcome measure. An agency thus has two points of comparison for each outcome measure -- a comparison of its own performance over time (from one year to the next) and a comparison to a reference value for the current period.

One change is included in both these reports and the existing two-bar report -- namely, the addition of one outcome measure to the risk-adjusted report. The risk-adjusted report thus contains 30 outcome measures, and the descriptive report includes 11 measures. The additional measure included in the risk-adjusted report is the utilization outcome of Any Emergent Care. All utilization outcomes now will be found on the risk-adjusted report.

This supplement to the *OBQI Implementation Manual* includes information on interpreting the three-bar report and on choosing a target outcome now that additional comparisons are possible. In addition, new guidelines for reviewing the three-bar outcome report and the three-column case mix report that accompanies it also are presented. The addition of a new bar (on the outcome report) and a new column (on the case mix report) greatly increases the number of comparisons that are presented in this information. You are encouraged to carefully review this material so that you can continue to make the best use of these reports in your agency's ongoing quality improvement activities.

B. INTERPRETING THE 3-BAR OUTCOME REPORT AND THE 3-COLUMN CASE MIX REPORT

Nearly all the information displayed in the new three-bar outcome and three-column case mix reports (illustrative reports are found in Appendix A of this supplement) will be familiar to you from previous reviews of the two-bar outcome and two-column case mix reports. The report format, report sections, and the measures/variables included in each report are the same (with the exception of the move of Any Emergent Care from the descriptive to the risk-adjusted outcome report section). The definitions and computations of the report periods, the eligible cases, and the outcome measures/case mix variables also are the same as with the prior reports. (See Chapter 3 of the *Outcome-Based Quality Improvement Implementation Manual* and Section 2 of *Quality Monitoring Using Case Mix and Adverse Event Outcome Reports*, both of which are available on the OASIS Web site at http://www.cms.hhs.gov/oasis/.) The primary difference in the new reports concerns the information displayed by the additional bar (or additional column), its source, and meaning of the information for the agency.

The "Adjusted Prior/Prior" Bar in the Outcome Report

The new bar in the bar graph for each outcome measure, which is labeled "adjusted prior" in the risk-adjusted report and "prior" in the descriptive report, represents the outcome rate calculated from the agency's patient care episodes reported for the previous period. For example, if you request an outcome report for the 12-month period ending May 31, 2003, your agency's current period will include episodes of care that began and ended between June 1, 2002 and May 31, 2003. The prior period will include episodes between June 1, 2001 and May 31, 2002, and the reference period will include episodes between June 1, 2002 and May 31, 2003. The "reference" rate will always apply to the same period as the "current" outcome rate.

Because it is possible for the agency's case mix (overall patient characteristics) to change from one year to the next, and because some of these changes may impact patient outcomes, such changes must be taken into consideration when the prior year's outcome rates are displayed in conjunction with current rates in the **risk-adjusted report**. All outcomes included in the risk-adjusted section of the report will have their prior rates adjusted to take into account any changes in patient risk factors between the agency's prior and current periods. For example, if your agency has begun serving a new patient population that has very unique characteristics (e.g., more frail, experiencing unique medical diagnoses or care needs), this case mix change will be considered when presenting your prior values on the three-bar report. While major case mix changes do not typically occur for a single agency in a single year, they are possible, and taking these factors into account provides the most accurate comparison rate for your agency.

As with the two-bar report, the reference rate also is risk-adjusted to take into account any differences between the agency and the national reference population. Thus, both sets of comparisons presented in the three-bar risk-adjusted outcome report (i.e., current to prior and current to reference) have risk adjustment applied to them.

The current rate remains the agency's actual or observed outcome rate for the current period. The reference rate is the observed national rate adjusted to reflect the difference between the agency's predicted rate and that of the national home health patient population. The adjusted prior rate is the prior year's observed outcome rate, adjusted by the difference between the predicted rates for the prior and current years' patients, respectively. (For additional discussion of risk adjustment, refer to Chapter 3 of the *OBQI Implementation Manual* or to the explanatory document on risk adjustment found on the OASIS web site.)

On the **descriptive report**, no case mix changes have been taken into account in presenting the results. Only the observed rates are displayed for the current, the prior, and the national reference groups. You will need to consider the potential impact of such changes when evaluating the rates displayed in this report. A review of the three-column case mix report, comparing the "current" to the "prior" column will reveal whether any significant changes in case mix have occurred from one year to the next.

The "Prior" Column in the Case Mix Report

The case mix report includes a new column, with values listed for every case mix variable. The new column is entitled "Prior Mean" and, like the three-bar outcome report, the values in this column are based on the agency's patient care episodes during the previous 12 month period. When you request a case mix report to accompany your OBQI outcome report, the dates for the "current," "prior," and "reference" periods will be exactly the same on the two reports.

Notations of Statistical Significance

Because additional comparisons (across outcome rates or case mix values) are possible with these reports, additional notations of statistical significance are displayed. In the three-bar outcome report, an agency's current outcome rate can be compared to its rate from the prior period and (separately) to the reference rate. Thus, two different markers of statistical significance are included in the "Signif." column of the outcome report. The level of statistical significance for the comparison between the agency's current outcome rate and the prior period's rate is displayed next to the "adjusted prior" (or "prior") bar, while the significance level for the comparison between the agency's current outcome rate and the reference rate is displayed next to the "reference" bar. In either case, the comparison being made is that of the agency's current rate with one of the

other rates (i.e., either prior or reference). When the probability value of the comparison is low (.10 or less), the value will be marked. Similar to the two-bar outcome report, probability levels between .05 and .10 for the comparison between the current and national reference rates are marked with a single asterisk (*), while those less than .05 are noted with two asterisks (**). In the comparison between the current and adjusted prior (or prior) rates, probability levels between .05 and .10 are noted with a single plus sign (+), while those less than .05 are marked with two plus signs (++).

Comparisons across case mix values also can be made to compare "current" values to "prior" values or to "reference" values in the three-column case mix report. Within this report, the reference sample typically consists of many thousands of patient care episodes, while the number of agency episodes is considerably smaller. Because statistical significance is highly impacted by sample size, the significance levels marked for the "current-prior" comparison are different than those noted for the "current-reference" comparison. Agency case or episode numbers are more likely to be similar from one year to the next, so the significance levels for the "current - prior" comparison use the same conventions as included in the outcome report (i.e., one plus sign for significance levels between .05 and .10; two plus signs for significance levels less than .05). The "current - reference" comparison utilizes one asterisk for a significance level between .001 and .01 and a double asterisk for a significance level less than .001.

In Appendix B of this supplement you will find *Basic Information Regarding the Outcome and Case Mix Reports*. These guidelines are important to increase your understanding of the various report components. The guidelines are similar to those written for the two-bar outcome and two-column case mix reports, but they have been adapted for the three-bar outcome and three-column case mix reports. You are strongly advised to reproduce these guidelines and to share them with any individual or groups who review your reports.

Evaluating My Agency's Outcome Enhancement Activities

When reviewing your agency's three-bar outcome report, your most likely interest is in examining the effects of your quality improvement activities. That is, you want to review your success in improving (or maintaining) the outcomes that you previously selected as target outcomes -- and which were the focus of your outcome enhancement activities. This evaluation can occur relatively easily as you review this single report, as it allows you to compare your target outcome's rate from this year to the rate from last year (the prior period) at a glance.

When reviewing your outcome reports for this comparison, you should keep two specific points of information in mind:

- whether your target outcome was selected for remediation (i.e., to improve your outcome rate) or for reinforcement (i.e., to maintain your outcome rate relative to the reference rate), and

- the date you implemented your prior period's plan of action (which should be available from the plan of action form).

If your target outcome was selected for **remediation**, you will be looking for positive change in the outcome rate for the current period compared to the adjusted prior rate on the risk-adjusted report (or prior rate on the descriptive report). Positive change will be a longer bar for the end-result outcomes or the utilization outcome of Discharged to the Community. A shorter bar for the two utilization outcomes of Acute Care Hospitalization or Any Emergent Care also is a positive change.

Alternatively, if your target outcome was selected for **reinforcement**, you will be looking to see whether you maintained your agency's performance relative to the reference rate. Notice that the primary comparison group for these two enhancement variations is different -- in the case of the outcome for remediation, your primary comparison is with your own performance last year; in the case of the outcome for reinforcement, your primary comparison remains with the reference rate.

The **date of plan of action implementation** is important in understanding whether you are likely to see successful outcome enhancement in the time period reflected in your report. Remember that the OBQI reports contain patient care episodes that are included within a 12-month period and that these care episodes include patients with both a start and end to the episode (i.e., each patient included has a SOC/ROC and a transfer/discharge). Only those patients who have a SOC/ROC after your plan of action implementation date have the opportunity to show a change in outcome rate that results from the new/modified clinical actions you implemented with your staff. If your new outcome report has a very short interval from the plan of action implementation to the end of the report period, only a small percentage of the eligible cases included in the report have the possibility to show the impacts of the new/modified clinical actions. If this is true, your agency might be better served by waiting for several months before requesting a three-bar report. A longer period would allow a larger sample of patients to show outcome change resulting from new or changed clinical actions.

An example may illustrate this more clearly:

Situation: Nicecare Home Health Agency accessed its first (two-bar) outcome report in early June 2002. (This outcome report included cases for the 12-month period ending March 31, 2002.) The Quality Improvement (QI) Team selected a target outcome (Improvement in Bathing) in June, but due to multiple within-agency situations (e.g., administrative changes, new branch office opening, extended illnesses of three staff members), the QI Team was unable to complete its process-of-care investigation and develop its plan of action until November 2002. The plan of action was fully implemented in late November. Nicecare's QI Team has been diligent in implementing and monitoring its POA and now is extremely interested in whether its target outcome has improved. The team wants to access its three-bar outcome report in June 2003, which will present the 'current' period of April 1, 2002 through March 31, 2003 and the 'prior' period of April 1, 2001 through March 31, 2002. What can you tell Nicecare's QI Team about interpreting the results for the target outcome?

Interpretation: Thinking in terms of the POA implementation date, the three-bar outcome report obtained in June 2003 will include a mix of patient care episodes in the "current" outcome rate from two separate periods -- some with outcome results from before the plan of action was implemented (April 1 through mid-November, 2002) and some with outcome results from patient episodes occurring after the plan of action was implemented. This "mixture" of outcome episodes makes it difficult to interpret the results because the outcome rates for the two periods may differ, and the impact of the outcome enhancement activities will not be apparent in the "mixed" rate. If one attempts to examine only those episodes occurring post-POA implementation (which would be only four months long, i.e., late November 2002 through March 2003), there is a bias toward shorter stay patients within that period, as well as a potential seasonal bias in the case mix of the population served. In addition, the sample size for a less than three-month period will be considerably smaller than a full-year sample, which can result in wide swings in the percentage of patients who achieve (or do not achieve) the outcome.

Alternative approach: Is there a more appropriate course to follow? A better action for Nicecare's QI Team would be to wait until they can obtain an outcome report that would contain a full year of their outcome results post-POA implementation. Such a report would include patient episodes from at least November 1, 2002 through October 31, 2003 and would provide a complete picture of the impact of the QI Team's outcome enhancement efforts. Due to the two-month data update interval, this report likely will not be available until January 2004.

What should Nicecare's QI Team do in the interim (until its full-year outcome report is available)? The QI Team should continue its activities to monitor the best practices put in place to address its target outcome. This might be a good time to implement some self-monitoring activities by the clinical staff such as incorporating relevant case situations into clinical staff/team meetings, agency newsletters, posters or storyboards, etc. Loss of motivation or interest on the part of staff is probably the greatest threat to success at this particular point in the process. This example points out the importance of striving to conduct the process-of-care investigation and to complete the plan of action development as quickly as possible after the target outcome has been selected.

Most Important Comparison

When you review your agency's three-bar outcome report, your most important comparison is that of your own patient outcomes from one time period to another. This comparison assists you to focus on continuously improving your own agency's performance, as indicated by your patients' outcomes. In making this comparison, however, you should not ignore your overall performance compared to the reference sample, as this additional information can assist you to prioritize your most relevant areas for performance improvement. For example, if your own agency's outcome rate is unchanged from one year to the next, but many of your current outcome rates are statistically significantly unfavorable to the reference group, you certainly do not want to ignore the current - reference comparison.

C. SELECTING TARGET OUTCOMES FROM THE 3-BAR REPORT

Once you review your new outcome and case mix reports, including assessing the results of prior outcome enhancement activities, your next activity is to select one to three specific target outcomes for the agency OBQI focus over the next time period. As you learned to do with the two-bar report, you will apply specific criteria to facilitate this process. The criteria are the same ones you applied when you selected target outcome(s) from the two-bar report, though you are likely to find that the addition of the adjusted prior/prior rate, as it increases the possible comparisons, can also add complexity to the target outcome selection. Before applying the criteria, you will want to consider the results of your prior QI activities. Were they successful -- fully, partially, or not at all? How should these results affect your target outcome selection? Let us consider the possibilities that you might encounter when you review the results of your prior activities.

If we begin first with an outcome that you selected for remediation (to improve), you might find that in comparison to your prior rate, this outcome:

- improved to a statistically significant extent,
- remained essentially unchanged from the prior period, or
- worsened to a statistically significant extent.

This change might have happened while (in comparison to the reference rate) you simultaneously:

- are no longer significantly unfavorable,
- remained significantly unfavorable, or
- became significantly favorable.

If we look at an outcome that you selected for reinforcement (to maintain your position relative to the reference rate), you might find that in comparison to the reference rate, this outcome:

- remained statistically significantly better,
- became no longer significantly better, or
- became statistically significantly unfavorable.

This change may have occurred while your own performance relative to the prior year simultaneously:

- remained essentially the same,
- worsened to a statistically significant extent, or
- statistically significantly improved.

How then, can you use these various possibilities in selecting target outcome(s) for your next outcome enhancement activities? Let us explore several scenarios that might assist in this process.

Scenarios and Suggested Responses

Regard the below scenarios as "If - Then" situations. Consider the scenario as an "if statement," followed by the "then statements" in the response (i.e., if the target outcome has improved from last year to a statistically significant extent, then ....). If your target outcome last year was selected for remediation (i.e., to improve), review the alternative scenarios presented in 1 (a through d). If your

target outcome last year was selected for reinforcement (i.e., to maintain at a high level relative to the reference), review the scenarios presented in 2 (a through d). Point 3 presents two other situations that may apply to your agency.

1. Target Outcome Selected for Remediation:

Scenario (If....)	Response (Then....)
a. The target outcome has improved from last year to a statistically significant extent.	• Great job! You've accomplished exactly what you intended! • Keep your designated best practices in place; check occasionally to see if they're continuing, using informal approaches. • If the target outcome is still unfavorable to the reference, you might keep it as a target outcome, do a new process-of-care investigation, and develop a new plan of action while keeping your (current) best practices in place.
b. The target outcome has improved relative to its performance last year, though it has not reached statistical significance.	• How long has your plan of action been in place? If fewer than 12 months, it's very important to check another 3-bar report at 12 months post-plan of action-implementation to truly evaluate progress. If in place for 12 months or longer, see scenario '1c' below. • You might enhance monitoring activities; are the designated best practices being consistently followed? • Add an intervention action now to increase your staff awareness of best practices.
c. The target outcome is not significantly better or worse than last year.	• Carefully review and evaluate your own progress in following the plan of action; make a decision regarding using this as a target outcome for a new plan of action (considering next bullet point). • Usually appropriate to retain this as a target outcome; do a new process-of-care investigation; develop new plan of action. Try some new intervention actions this time to focus staff attention on the best practices.
d. The target outcome has worsened from last year at a significance level equal to or lower than .10.	• Remains an appropriate target outcome for next year. • Conduct a new process-of-care investigation; develop a new plan of action. Try some different intervention actions; be sure to monitor at regular intervals from the very start of implementation (frequently at first, then tapering off). • Learn from your own past experiences re: what parts of process went well and what could be done better/more effectively. Involve some different staff members in the process this year.

2. Target Outcome Selected for Reinforcement:

Scenario (If....)	Response (Then....)
a. The target outcome is now statistically significantly better than both the adjusted prior/prior and the reference group.	• Great job! You have improved on your own performance in all ways! • Continue your designated best practices; move on to a different target outcome.
b. The target outcome remains statistically significantly better than the reference group.	• Excellent job -- you've done exactly what you intended to do! • Continue your designated best practices; move on to another target outcome.
c. The target outcome is better than the reference, but not to a statistically significant extent.	• This is probably an indication that reinforcing an outcome is not as easy as one might think. • Keep your designated best practices in place; move on to another target outcome.
d. The target outcome is now statistically significantly worse than the reference group.	• Assess your overall satisfaction with progress; what have you learned about outcome enhancement in general? • You might choose this again as a target outcome, but now you would be focusing on remediation, not reinforcement. Follow the outcome enhancement process. Your plan of action should be quite different, as the focus of your intervention activities has changed. Involve some different staff members in the process this time.

3. Special Circumstances:

Scenario (If....)	Response (Then....)
a. The sample size for the eligible cases in the current period is small (less than 30). The target outcome is not significantly better or worse than last year.	• Continue your best practices and monitoring activities. If fewer than 12 months have passed since plan of action implementation, check again at a full 12 months. • Is this sample size unusual or typical for your agency? If unusual, keep your best practices and monitoring activities in place; recheck with an outcome report requested later. Evaluate your own progress to date from your monitoring activities. • If typical, evaluate your own overall progress from the results of your monitoring activities. You might select a target outcome for the next period that is likely to have a larger sample size (e.g., a utilization outcome).
b. When chosen last year, the target outcome was not statistically significantly different than the reference. This year, it is neither better or nor worse than last year and remains nonsignificant.	• It's difficult to fully evaluate this situation, as the outcome was not a particularly good choice last year. • Review the criteria for selecting a target outcome. Select an appropriate target outcome using the criteria; follow the OBQI process.

Next Steps

From this review of alternative scenarios, you are likely to discover that you should:

- continue with what you are doing for a period of time,
- retain the same target outcome but conduct a new process-of-care investigation as a step toward a new plan of action, or
- move on to select a new target outcome, conduct a new process-of-care investigation, and develop and implement a new plan of action.

Remember to always follow the criteria for selecting a target outcome as your first step in the outcome enhancement process. You can develop a list of potential (candidate) target outcomes from the current to prior comparison or from the current to reference comparison in your outcome report. Next, apply the

selection criteria to each target outcome candidate. This will facilitate your selection of an appropriate focus outcome for your process-of-care activities.

While you move ahead in the OBQI process, continue to refer to the outcome enhancement activities described in the *OBQI Implementation Manual*. As you become more familiar (and comfortable) with the process, you can expand your staff members' involvement in and participation with the outcome enhancement activities over time, as well as extending the range and type of interventions that you utilize to change aspects of clinical care delivery. Your creativity and patient care focus will assist you in adapting the principles of outcome enhancement to your particular patients, staff, and agency. As noted earlier, OBQI will not work by itself. Only the commitment of home health agencies to the ongoing application of continuous improvement philosophy and principles will result in enhanced care provision -- as demonstrated through improved patient outcomes.

Summary

Agencies have been eagerly anticipating their three-bar outcome report to evaluate their progress in improving or maintaining patient outcomes. The new outcome and case mix reports greatly increase the quantity of information available, which usually requires careful review of the report for correct interpretation. The new report makes it possible for agencies to begin making their most important comparison -- that of their own performance over time, which will be the heart of continuous improvement. The outcome enhancement activities assist home health agencies to demonstrate the overall impacts of their care in terms of the effects on patients -- in the form of patient outcomes.

FREQUENTLY ASKED QUESTIONS

1. ***My outcome report last year had the rate of 29.5% for the outcome measure of "Improvement in Ambulation/Locomotion." My report this year, for the "prior" bar of the same measure, has a rate of 29.2%. Why aren't these rates the same?***

   A variety of factors may have resulted in slight differences in these rates from last year's report to this year's. New (or corrected) OASIS assessment data may have changed the number of your agency's complete-episode cases in the national repository for the prior year. In addition, case mix changes from the prior to the current year (and the associated risk adjustment to take this into account) and updated/revised risk models can produce slight changes in this rate. It will be most efficient if you use only one report (the new 3-bar one) in making these comparisons -- consider your last year's report as a historical document.

2. ***Why is the number of eligible cases for my target outcome reported in the prior period different from the number that were reported in my report last year?***

   In most cases, the change in eligible cases is an increase in the number of eligible cases on the most recent report. This is usually due to additional or corrected OASIS data being submitted to the national repository, which results in the creation of additional outcome episodes.

3. ***What if my agency selected Any Emergent Care as our target outcome last year? It was on the descriptive report last year and is now on the risk-adjusted report. How do I evaluate whether our quality improvement activities are having any impact?***

   You are impacted by a very unique situation, which will require somewhat careful interpretation. You might begin by requesting a new 2-bar outcome report for the same time period covered on your last year's report (Any Emergent Care will be in the risk-adjusted section of this report), which will allow you to determine the impact of risk adjustment on your outcome rate. Would this still have met the criteria for selection as a target outcome? (Remember that additional data may have increased the number of episodes included in this report as compared to your last year's report.) Then return to your 3-bar outcome report to evaluate your quality improvement activities.

FREQUENTLY ASKED QUESTIONS

4. I thought I really understood how to read the outcome report, but I get terribly confused when I look at the 3-bar report? Why do I find it more confusing?

You are not alone in finding the 3-bar report more complex to review. The number of comparisons included in the report has doubled (i.e., for every outcome, two comparisons are available), but the directions of these comparisons need not be uniform (e.g., current may be higher than prior but lower than reference rates). This typically necessitates more careful analysis of the 3-bar outcome report, where the 2-bar was usually more easily understood at a glance.

APPENDIX A

Illustrative Case Mix and Outcome Reports for Faircare Home Health Services

Agency Name: FAIRCARE HOME HEALTH SERVICES
Agency ID: HHA01
Location: ANYTOWN, USA
Medicare Number: 007001
Medicaid Number: 999888001
Date Report Printed: 03/21/2003

Requested Current Period: 01/2002 - 12/2002
Requested Prior Period: 01/2001 - 12/2001
Actual Current Period: 01/2002 - 12/2002
Actual Prior Period: 01/2001 - 12/2001
 # Cases: Curr 601 **Prior** 551
Number of Cases in Reference Sample: 3289067

Case Mix Profile at Start/Resumption of Care
For Risk-Adjusted/Descriptive Outcome Report

	Current Mean	Prior Mean	Ref. Mean
Demographics			
Age (average in years)	70.75	70.96	72.78 *
Gender: Female (%)	69.38%	66.62%	62.89% **
Race: Black (%)	1.66%	1.63%	10.71% **
Race: White (%)	97.50%	97.84%	85.48% **
Race: Other (%)	0.83%	0.67%	3.82% **
Payment Source			
Any Medicare (%)	80.43%	81.48%	82.59%
Any Medicaid (%)	12.88%	14.44%	14.30%
Any HMO (%)	3.01%	2.87%	5.76% **
Medicare HMO (%)	1.34%	1.15%	2.23%
Any third party (%)	19.90%	23.47%	21.90%
Current Residence			
Own home (%)	74.70%	73.07%	78.65% *
Family member home (%)	20.53%	21.05%	14.11% **
Current Living Situation			
Lives alone (%)	28.62%	31.17%	29.42%
With family member (%)	66.72%	62.77%	64.23%
With friend (%)	1.33%	1.27%	1.62%
With paid help (%)	2.33%	2.03%	3.28%
Assisting Persons			
Person residing in home (%)	57.00%	62.12%	55.94%
Person residing outside home (%)	44.33%	50.52% +	53.00% **
Paid help (%)	9.33%	9.56%	14.09% **
Primary Caregiver			
Spouse/significant other (%)	31.00%	30.42%	33.58%
Daughter/son (%)	33.00%	28.01%	26.37% **
Other paid help (%)	3.67%	2.78%	6.05% *
No one person (%)	21.67%	21.76%	20.19%
Primary Caregiver Assistance			
Freq. of assistance (0-6, scale avg.)	4.11	4.05	4.10
Inpatient DC within 14 Days of SOC/ROC			
From hospital (%)	69.05%	66.56%	68.41%
From rehab facility (%)	7.15%	6.99%	6.38%
From nursing home (%)	1.83%	1.59%	3.28%
Med. Reg. Chg. w/in 14 Days of SOC/ROC			
Medical regimen change (%)	67.72%	74.56% +	81.21% **
Prognoses			
Moderate recovery prognosis (%)	85.26%	82.19%	85.87%
Good rehab prognosis (%)	62.63%	64.06%	68.24% **
ADL Disabilities at SOC/ROC			
Grooming (0-3, scale average)	1.02	1.07	0.86 *
Dress upper body (0-3, scale avg.)	0.56	0.50	0.59
Dress lower body (0-3, scale avg.)	1.22	1.19	1.10
Bathing (0-5, scale average)	2.15	2.34	2.03
Toileting (0-4, scale average)	0.63	0.59	0.57
Transferring (0-5, scale average)	0.64	0.63	0.70 *
Ambulation (0-5, scale average)	1.05	1.13	1.07
Eating (0-5, scale average)	0.33	0.33	0.32

	Current Mean	Prior Mean	Ref. Mean
ADL Status Prior to SOC/ROC			
Grooming (0-3, scale average)	0.66	0.68	0.52 *
Dress upper body (0-3, scale avg.)	0.35	0.32	0.35
Dress lower body (0-3, scale avg.)	0.70	0.76 +	0.63
Bathing (0-5, scale average)	1.33	1.26	1.20
Toileting (0-4, scale average)	0.39	0.40	0.38
Transferring (0-5, scale average)	0.38	0.37	0.44 *
Ambulation (0-5, scale average)	0.70	0.72	0.71 *
Eating (0-5, scale average)	0.22	0.22	0.21
IADL Disabilities at SOC/ROC			
Light meal prep (0-2, scale avg.)	1.02	1.02	0.90
Transportation (0-2, scale avg.)	1.05	1.04	0.99
Laundry (0-2, scale average)	1.62	1.49	1.51
Housekeeping (0-4, scale avg.)	2.89	2.68	2.68
Shopping (0-3, scale average)	2.10	1.90	2.06 *
Phone use (0-5, scale average)	0.63	0.60	0.72 *
Mgmt. oral meds (0-2, scale avg.)	0.69	0.69	0.70
IADL Status Prior to SOC/ROC			
Light meal prep (0-2, scale avg.)	0.65	0.60	0.56
Transportation (0-2, scale avg.)	0.78	0.82	0.69
Laundry (0-2, scale average)	1.10	1.01	0.96
Housekeeping (0-4, scale avg.)	1.93	1.77	1.73
Shopping (0-3, scale average)	1.45	1.42	1.32
Phone use (0-5, scale average)	0.49	0.51	0.59 *
Mgmt. oral meds (0-2, scale avg.)	0.53	0.55	0.54
Respiratory Status			
Dyspnea (0-4, scale average)	1.33	1.28	1.19 *
Therapies Received at Home			
IV/infusion therapy (%)	4.33%	4.24%	3.74%
Parenteral nutrition (%)	0.50%	0.50%	0.26%
Enteral nutrition (%)	2.16%	2.18%	1.75%
Sensory Status			
Vision impairment (0-2, scale avg.)	0.32	0.34	0.30
Hearing impair. (0-4, scale avg.)	0.38	0.39	0.45 *
Speech/language (0-5, scale avg.)	0.45	0.46	0.47
Pain			
Pain interf. w/activity (0-3, scale avg.)	0.95	0.98	0.98
Intractable pain (%)	13.98%	13.28%	13.69%
Neuro/Emotional/Behavioral Status			
Moderate cognitive disability (%)	10.82%	7.82%	11.91%
Severe confusion disability (%)	5.66%	7.67%	6.87%
Severe anxiety level (%)	16.69%	20.48%	11.68% *
Behav probs > twice a week (%)	13.98%	12.36%	5.65% *
Integumentary Status			
Presence of wound/lesion (%)	31.61%	33.95%	31.20%
Stasis ulcer(s) present (%)	3.66%	4.33%	2.88%
Surgical wound(s) present (%)	21.13%	18.74%	22.33%
Pressure ulcer(s) present (%)	8.15%	7.09%	5.35% *
Stage 2-4 ulcer(s) present (%)	6.49%	7.96%	4.54% *
Stage 3-4 ulcer(s) present (%)	3.99%	4.49%	1.42% *

Agency Name: FAIRCARE HOME HEALTH SERVICES
Agency ID: HHA01
Location: ANYTOWN, USA
Medicare Number: 007001
Medicaid Number: 999888001
Date Report Printed: 03/21/2003

Requested Current Period: 01/2002 - 12/2002
Requested Prior Period: 01/2001 - 12/2001
Actual Current Period: 01/2002 - 12/2002
Actual Prior Period: 01/2001 - 12/2001
 # Cases: Curr 601 **Prior** 551
Number of Cases in Reference Sample: 3289067

Case Mix Profile at Start/Resumption of Care
For Risk-Adjusted/Descriptive Outcome Report

	Current Mean	Prior Mean	Ref. Mean
Elimination Status			
UTI within past 14 days (%)	22.53%	22.28%	9.69% **
Urinary incont./catheter present (%)	12.55%	14.72%	16.75% **
Incontinent day and night (%)	9.98%	10.63%	9.26%
Urinary catheter (%)	5.99%	7.29%	5.94%
Bowel incont. (0-5, scale avg.)	0.29	0.29	0.23 **
Acute Conditions			
Orthopedic (%)	18.47%	18.50%	21.51%
Neurologic (%)	13.14%	12.78%	9.31% **
Open wounds/lesions (%)	32.95%	34.84%	31.77%
Terminal condition (%)	5.66%	4.71%	5.63%
Cardiac/peripheral vascular (%)	26.96%	28.15%	30.93% *
Pulmonary (%)	17.30%	20.88%	16.88%
Diabetes mellitus (%)	7.65%	8.77%	8.43%
Gastrointestinal disorder (%)	12.48%	11.00%	11.51%
Contagious/communicable (%)	9.82%	8.98%	3.01% **
Urinary incont./catheter (%)	5.99%	7.10%	8.14%
Mental/emotional (%)	9.32%	11.33%	3.08% **
Oxygen therapy (%)	11.15%	13.11%	11.22%
IV/infusion therapy (%)	4.33%	3.85%	3.74%
Enteral/parenteral nutrition (%)	2.66%	2.57%	1.99%
Ventilator (%)	0.00%	0.00%	0.07%
Chronic Conditions			
Dependence in living skills (%)	42.10%	48.18% +	35.90% **
Dependence in personal care (%)	37.94%	39.55%	22.89% **
Impaired ambulation/mobility (%)	13.98%	13.03%	13.44%
Eating disability (%)	4.16%	4.29%	3.23%
Urinary incontinence/catheter (%)	13.14%	10.23%	13.67%
Dependence in med. admin. (%)	44.09%	48.04%	39.88% *
Chronic pain (%)	7.65%	7.92%	5.66% *
Cognitive/mental/behavioral (%)	28.62%	22.48% +	23.53% **
Chronic pt. with caregiver (%)	40.43%	31.81% ++	33.95% **
Home Care Diagnoses			
Infectious/parasitic diseases (%)	12.98%	14.41%	4.46% **
Neoplasms (%)	11.81%	8.40%	12.33%
Endocrine/nutrit./metabolic (%)	28.95%	20.88% ++	27.13%
Blood diseases (%)	8.15%	6.36%	6.73%
Mental diseases (%)	20.13%	19.84%	9.90% **
Nervous system diseases (%)	13.81%	14.80%	9.35% **
Circulatory system diseases (%)	61.56%	53.94% +	55.29% **
Respiratory system diseases (%)	24.29%	26.09%	19.45% **
Digestive system diseases (%)	13.81%	18.62% +	11.95%
Genitourinary sys. diseases (%)	10.65%	13.91%	10.44%
Pregnancy problems (%)	0.50%	0.63%	0.22%
Skin/subcutaneous diseases (%)	6.16%	6.44%	7.36%
Musculoskeletal sys. diseases (%)	26.12%	31.92% +	23.50%
Congenital anomalies (%)	1.83%	1.21%	0.82% *
Ill-defined conditions (%)	24.13%	17.51% ++	19.60% **
Fractures (%)	11.98%	12.92%	9.11% *
Intracranial injury (%)	0.17%	0.18%	0.32%
Other injury (%)	9.48%	6.80%	5.88% **
Iatrogenic conditions (%)	2.16%	2.54%	3.09%

	Current Mean	Prior Mean	Ref. Mean
Length of Stay			
LOS until discharge (avg. in days)	49.52	46.54 +	40.35 *
LOS from 1 to 31 days (%)	46.59%	49.00%	54.00% *
LOS from 32 to 62 days (%)	27.95%	26.69%	29.95%
LOS from 63 to 124 days (%)	17.80%	17.00%	11.77% *
LOS more than 124 days (%)	7.65%	7.31%	4.28% *

The pluses represent the significance levels of the current and prior data comparisons

+ The probability is 5% or less that the difference is due to chance, and 95% or more that the difference is real.

++ The probability is 1% or less that the difference is due to chance, and 99% or more that the difference is real.

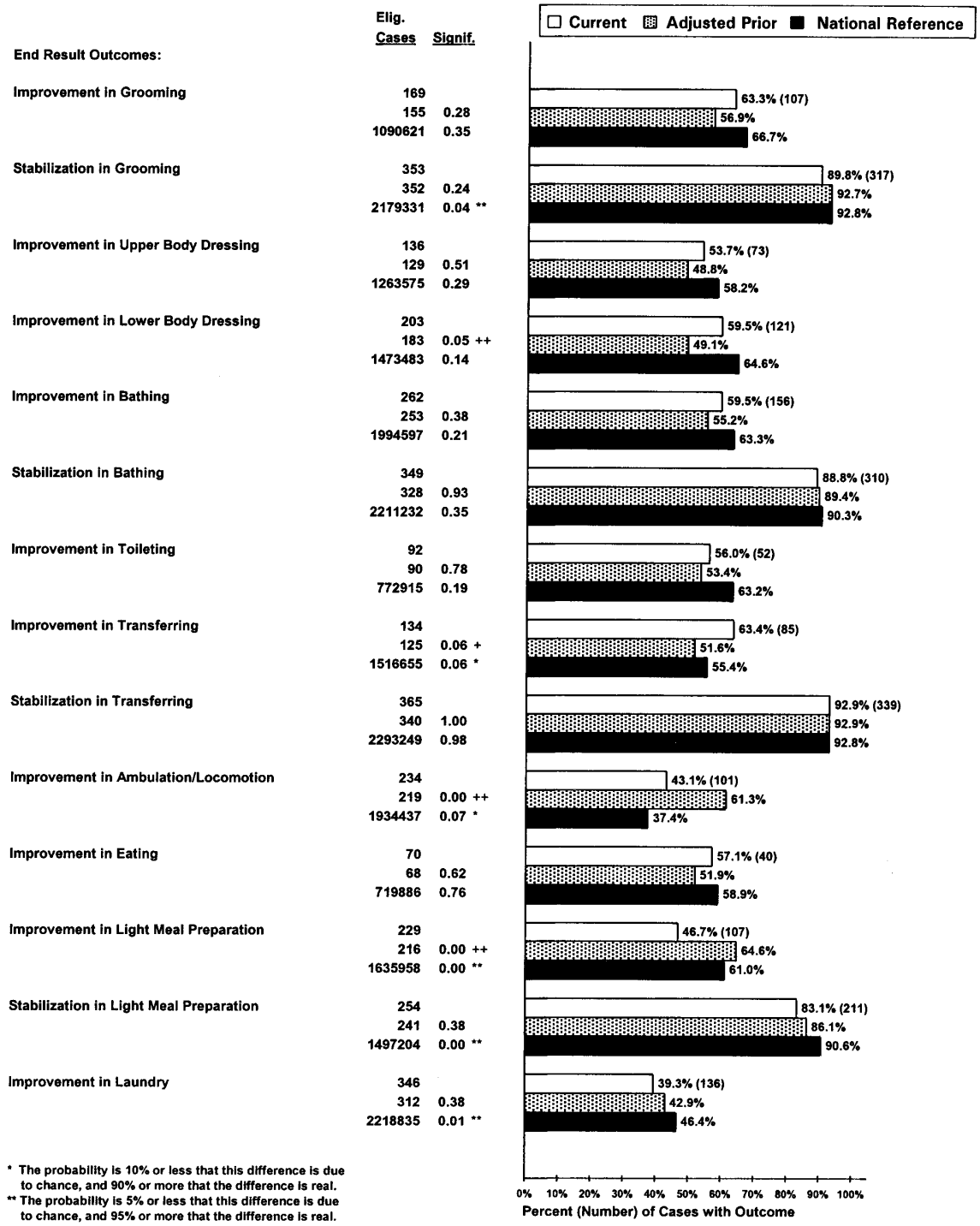
The asterisks represent the significance levels of the current and reference data comparisons

*** The probability is 1% or less that the difference is due to chance, and 99% or more that the difference is real.**

**** The probability is 0.1% or less that the difference is due to chance, and 99.9% or more that the difference is real.**

Agency Name:	FAIRCARE HOME HEALTH SERVICES	**Requested Current Period:**	01/2002 - 12/2002
Agency ID:	HHA01	**Requested Prior Period:**	01/2001 - 12/2001
Location:	ANYTOWN, USA	**Actual Current Period:**	01/2002 - 12/2002
Medicare Number:	007001	**Actual Prior Period:**	01/2001 - 12/2001
Medicaid Number:	999888001	**# Cases: Curr** 402	**Prior** 374
Date Report Printed:	03/21/2003	**Number of Cases in Reference Sample:**	2325615

All Patients' Risk Adjusted Outcome Report



* The probability is 10% or less that this difference is due to chance, and 90% or more that the difference is real.
** The probability is 5% or less that this difference is due to chance, and 95% or more that the difference is real.
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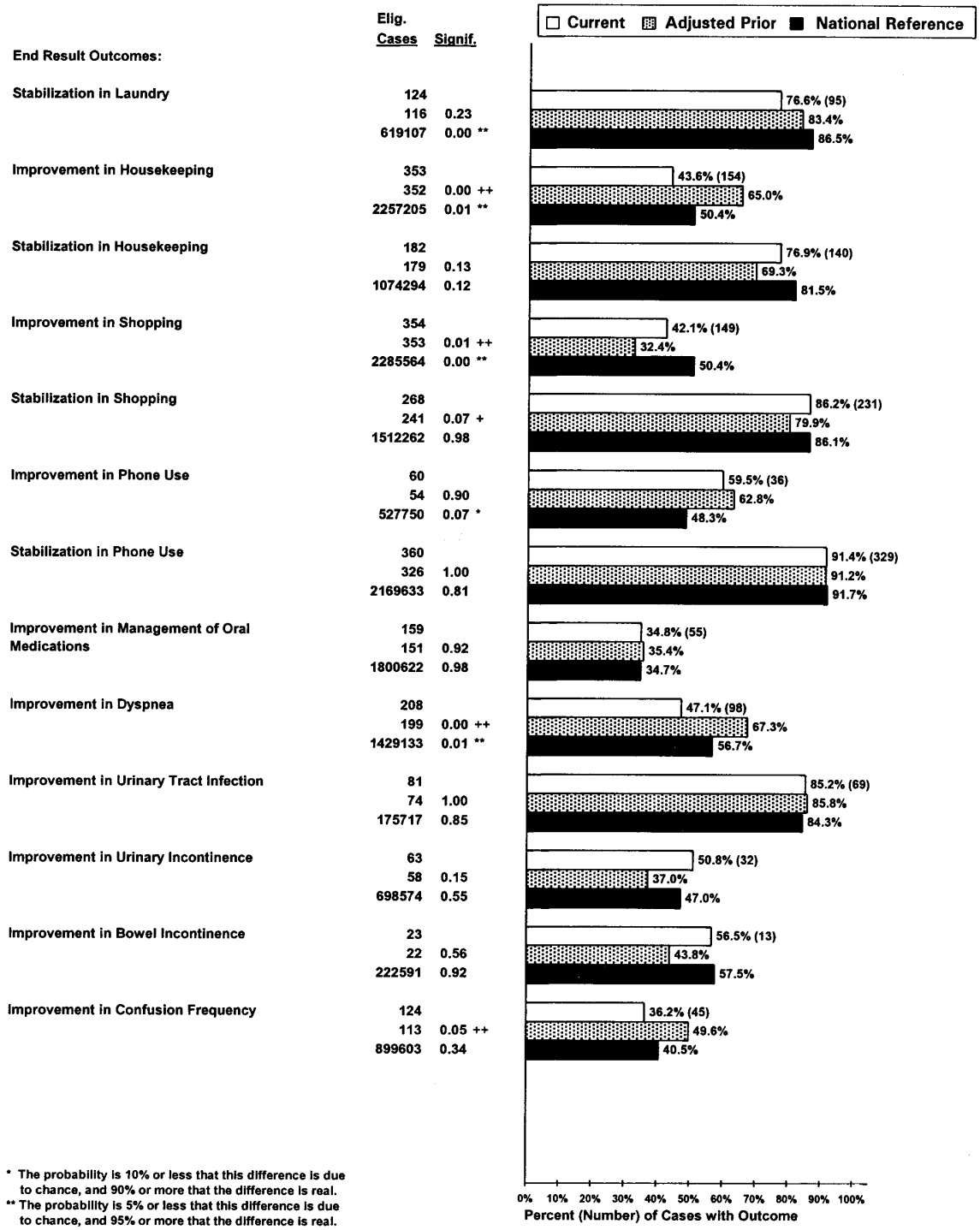
Agency Name: FAIRCARE HOME HEALTH SERVICES
Agency ID: HHA01
Location: ANYTOWN, USA
Medicare Number: 007001
Medicaid Number: 999888001
Date Report Printed: 03/21/2003

Requested Current Period: 01/2002 - 12/2002
Requested Prior Period: 01/2001 - 12/2001
Actual Current Period: 01/2002 - 12/2002
Actual Prior Period: 01/2001 - 12/2001
Cases: Curr 402 Prior 374
Number of Cases in Reference Sample: 2325615

All Patients' Risk Adjusted Outcome Report



* The probability is 10% or less that this difference is due to chance, and 90% or more that the difference is real.
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Agency Name: FAIRCARE HOME HEALTH SERVICES
Agency ID: HHA01
Location: ANYTOWN, USA
Medicare Number: 007001
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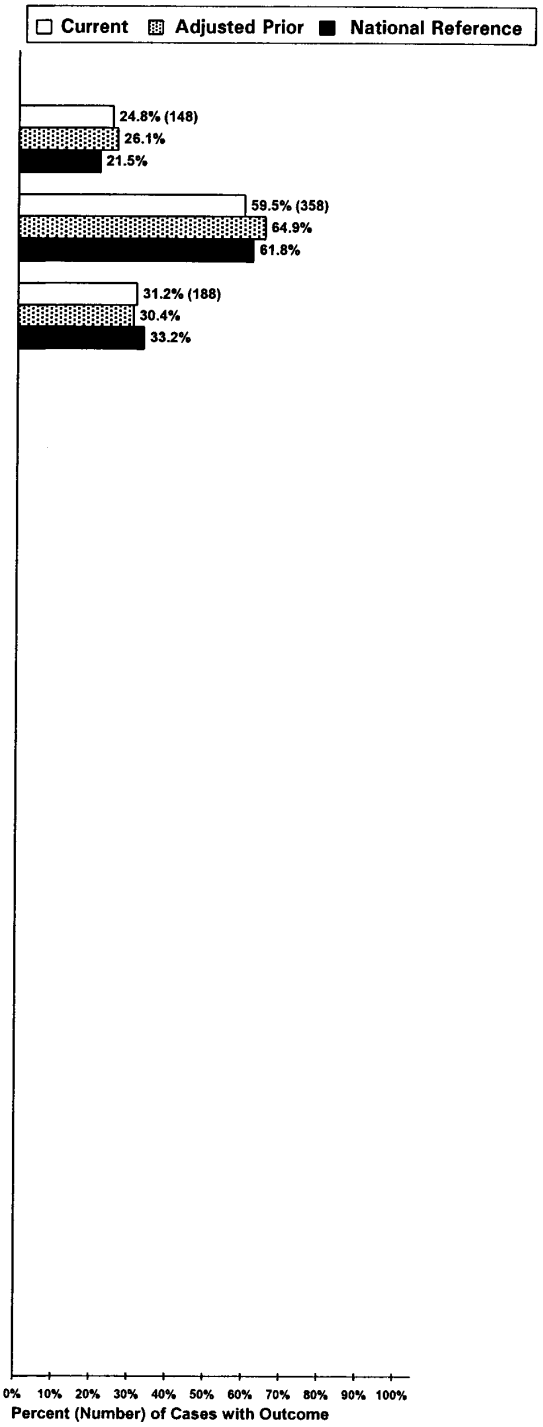
Date Report Printed: 03/21/2003

Requested Current Period: 01/2002 - 12/2002
Requested Prior Period: 01/2001 - 12/2001
Actual Current Period: 01/2002 - 12/2002
Actual Prior Period: 01/2001 - 12/2001
Cases: Curr 601 Prior 551
Number of Cases in Reference Sample: 3289067

All Patients' Risk Adjusted Outcome Report

	Elig. Cases	Signif.	
Utilization Outcomes:			
Any Emergent Care	598		24.8% (148)
	545	0.89	26.1%
	3215221	0.06 *	21.5%
Discharged to Community	601		59.5% (358)
	551	0.13	64.9%
	3273660	0.00 **	61.8%
Acute Care Hospitalization	601		31.2% (188)
	551	0.85	30.4%
	3289067	0.00 **	33.2%



This report has not been approved to meet privacy requirements and can only be used by the home health agency and state agency for defined purposes.

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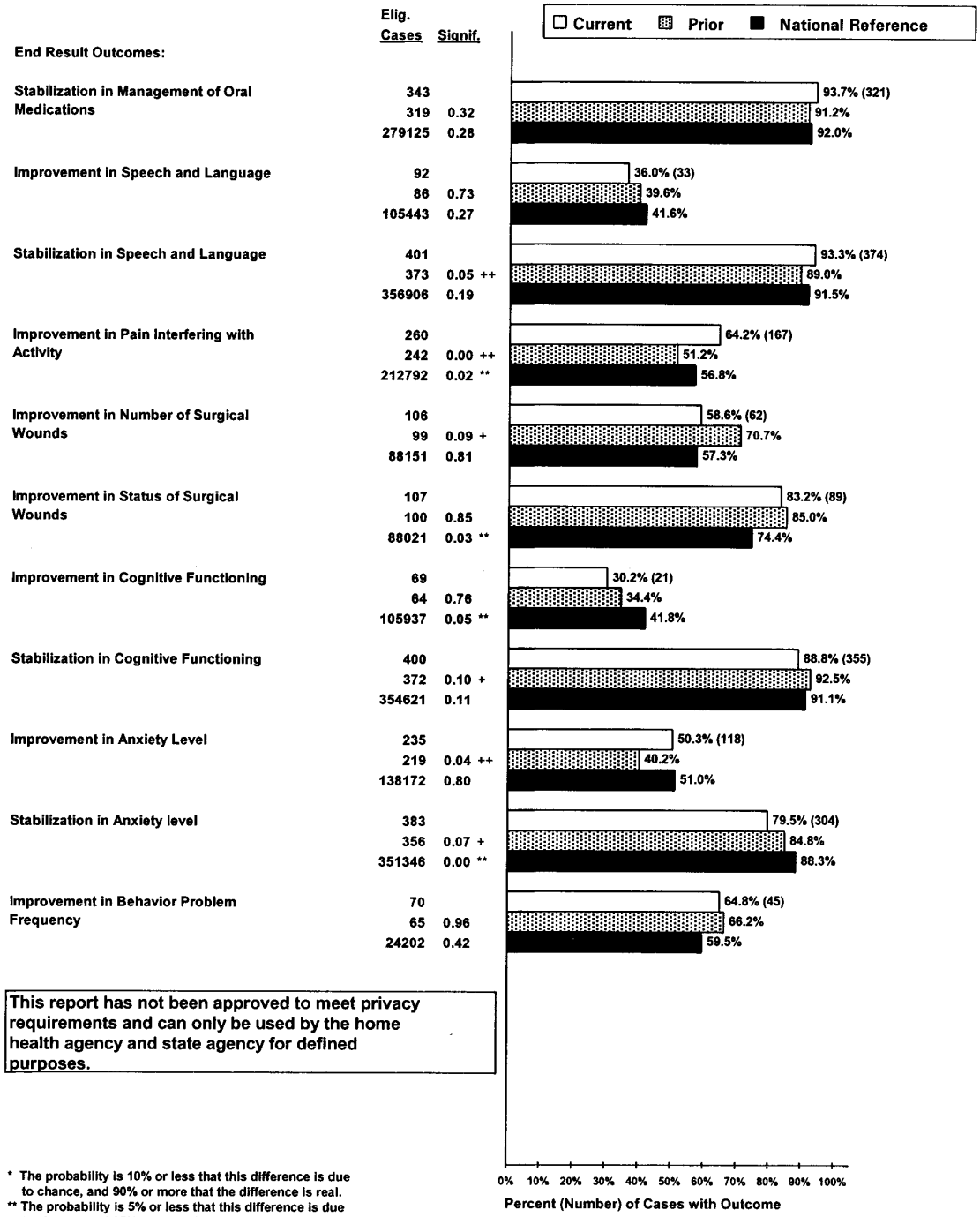
Actual Current Period: 01/2002 - 12/2002
Actual Prior Period: 01/2001 - 12/2001
Cases: Curr 402 Prior 374
Number of Cases in Reference Sample: 2325615

All Patients' Descriptive Outcome Report



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++ The probability is 5% or less that this difference is due to chance, and 95% or more that the difference is real.
Note: The reference value is not risk adjusted.

APPENDIX B

Basic Information Regarding the Outcome and Case Mix Reports

Basic Information Regarding the Outcome and Case Mix Reports

The *Outcome and Case Mix Reports* are included in the report series produced by CMS for home health agency use in Outcome-Based Quality Improvement (OBQI). In these guidelines, the reports are described, key terms are defined, and "How to Read" instructions are presented for each report.

The outcome report has two sections (each of which is requested and printed or downloaded separately), one containing 30 risk-adjusted outcome measures and the other with 11 descriptive outcome results. For each outcome measure, a bar graph is presented. The first of the three bars reflects the actual percentage of your patients that attained the outcome in your "current" reporting period. The second bar reflects the outcome rate calculated from the agency's patient care episodes reported for the "prior" period. In the report section containing risk-adjusted outcomes, this rate is adjusted to take into account any changes in patient risk factors between the two reporting periods. The third bar reflects a reference value against which your outcome rate is compared. For the risk-adjusted outcomes, this bar represents what your expected outcome rate would be given your case mix or risk factor distribution for that outcome. For the descriptive outcomes, this bar represents the average outcome rate across all patients nationwide whose episodes of care occurred during the reporting period and for whom OASIS data were submitted to the national OASIS repository. In short, the white bars in the outcome report represent your actual outcome rates, the shaded bars represent the rates that occurred in the prior period, and the darkened bars represent your expected outcome rates (for the risk-adjusted outcomes, calculated using a statistical prediction model based on a random sample of patients from all home health agencies) or the reference sample average rate (for the descriptive outcomes).

Utilization outcomes pertaining to discharge to the community, hospitalization, and emergent care were computed for all patients in your agency sample. Results for these measures appear on the final page of the risk-adjusted report section. The results for improvement and stabilization measures (end result outcomes), appearing at the beginning of the report sections, were computed only for those patients not discharged to an inpatient facility. Therefore, the results for these end result outcome measures are based on fewer patient episodes than the results for the utilization outcome measures.

Within the reports, significance levels are presented for each measure when the sample size corresponding to the measure is at least 10. If you had nine or fewer patients on whom the outcome measure could be computed validly, statistical significance is not provided.

The case mix report shows patient attributes or circumstances present at start of care (or resumption of care) that are likely to impact health status (such as a patient's environmental or living conditions, demographics, and baseline health status). For the report, individual (patient-level) case mix information is aggregated to the agency level to describe the health status of all the agency's patients at admission/resumption of care. Average values or percentages for case mix measures then are compared to the reference sample (and to the prior period) so that differences between the agency's patients and the comparison sample of patients are identified.

In view of the large number of factors included in the case mix reports, as well as the large size of the reference sample, it is natural that a number of statistically significant differences will

appear between a single agency's case mix and the average case mix of the total reference sample. In comparing "current" to "reference" data in the case mix reports, a single asterisk [*] corresponds to the .01 level of significance (i.e., a 1% probability that the observed difference is due to chance) and the double asterisk [**] corresponds to the .001 level. Even relatively small case mix differences are sometimes statistically significant because of the large reference sample size. Agencies, particularly those with a large number of patient episodes in a year, are cautioned not to "overinfer" about relatively small case mix differences simply because of statistical significance. Agency cases or episode numbers are likely to be similar from one year to the next, so statistical significance tends to occur less often when comparing "current" to "prior" case mix values. For this comparison, a single plus sign (+) corresponds to the .10 level of significance (i.e., a 10% probability that the observed difference is due to chance) and a double plus sign (++) corresponds to the .05 level.

The case mix report can serve multiple purposes independent of other reports produced for OBQI, such as providing a descriptive overview of the types of patients admitted to an agency, monitoring the extent of changes in the population served over the course of time, and aiding public relations or marketing to payers and consumers. Agencies will also find it useful for staffing or clinical programmatic needs to monitor changes in agency case mix over time.

Key Terms

The following definitions of several key terms may help you to better understand the reports.

- **Improvement and Stabilization**: In the outcome reports, a patient *improves* if he/she is less severely ill, disabled, or dependent at discharge than at start (or resumption) of care. A patient has *stabilized* if he/she is no more disabled/dependent (that is, has not worsened) at discharge than at start of care. For example, a patient who was disabled in bathing at start of care and became less disabled at discharge has improved in bathing. If the patient did not worsen (but either improved or remained at the same level), then he/she stabilized. Thus, the opposite of stabilization is decline or worsening.

  The actual measures that correspond to improvement or stabilization quantify the above concepts. Consider again the improvement measure for bathing. The bathing scale used for data collection takes on values between 0 and 5, with higher values indicating progressively higher disability or dependence. A patient whose ability on this scale at start of care is 4, and whose value at discharge is 2, has improved in bathing, and therefore the improvement measure is 1 (if the patient had not improved, the improvement measure would be 0). Note that this outcome measure does not apply to patients who are initially independent in bathing (i.e., at a level 0 on the scale), because they cannot improve. Such patients are excluded from the calculation of the improvement measure.

  A patient has stabilized in bathing if, from start of care to discharge, the value on the bathing scale decreases or moves toward 0 (reflecting improvement) or remains the same. When stabilization occurs, the stabilization measure is 1 (when it does not occur, the stabilization measure is 0). Patients are excluded from the calculation of the measure if they cannot worsen because they are already at the most dependent level at start of care (i.e., at a level 5 on the scale for bathing).

  The number of patients excluded from the outcome calculations varies depending on the specific measure. For this reason, the number of patients included in the calculations also varies. The precise number of patients used in a calculation for any measure is presented in the column labeled "Elig. Cases" in the outcome report.

  Taking the average of the values for an improvement measure (or stabilization measure) for a group of patients yields the improvement rate (or stabilization rate) for that group. These rates are presented as percentages in the outcome reports.

  It should be noted that stabilization rates are typically substantially higher than improvement rates. This is due to the fact that stabilization rates reflect both patients who improve and patients who stay the same on a specific outcome. Care providers should not think in terms of a "grading system" for improvement rates; e.g., one must be above 90% to receive an 'A' or above 80% to receive a 'B.' Improvement rates are often below 50% and usually range from 25% to 60%, depending on the health status attribute of interest. On the other hand, stabilization measures typically tend to be above 75%, and some are even above 90% (Shaughnessy and Crisler, 1995, p. 6-8).

- **Significance***:* Statistical significance is relevant when comparing the "current" values to "reference" values (or the "current" values to "prior" values) in the outcome and case mix reports. It can be understood as the probability that a difference between two rates or averages is due to chance rather than due to a "real" difference between the two populations compared. If the statistical significance value is numerically high, then we consider it likely that any difference observed is due to chance. Statistical significance is related to the magnitude of the observed difference and the number of cases. A relatively large difference may be non-significant (have a high probability) when sample size is low, while a large sample size will produce significant (low probability) results with a smaller observed difference.

- **Criteria for Acute Conditions**: On the second page of the case mix reports, prevalence values are given for patients categorized with acute conditions. The inclusion of patients in these groups is based on the following criteria. The categories are not mutually exclusive.

  Orthopedic Conditions
  Patients who were discharged from a hospital, rehabilitation facility, or nursing home within 14 days of start or resumption of care (SOC/ROC), or who experienced a medical or treatment regimen change within 14 days of SOC/ROC are included in this group if any medical diagnosis pertaining to those events is related to the musculoskeletal system, including disorders of cartilage or other connective and soft tissues.

  Neurologic Conditions
  Patients who were discharged from a hospital, rehabilitation facility, or nursing home within 14 days of SOC/ROC, or who experienced a medical or treatment regimen change within 14 days of SOC/ROC are included in this group if any medical diagnosis pertaining to those events relates to the nervous system.

  Open Wounds or Lesions
  Patients are included in this group if they have an open wound or skin lesion. Also, patients who were discharged from a hospital, rehabilitation facility, or nursing home within 14 days of SOC/ROC, or who experienced a medical or treatment regimen change within 14 days of SOC/ROC are included in this group if any medical diagnosis pertaining to those events relates to an open wound or skin lesion.

  Terminal Conditions
  Patients who have a life expectancy of six months or less are included in this group. These patients usually are receiving palliative care for terminal illnesses such as malignant neoplasms, end-stage cardiopulmonary disease, or end-stage renal disease.

  Cardiac/Peripheral Vascular Conditions
  Patients who were discharged from a hospital, rehabilitation facility, or nursing home within 14 days of SOC/ROC or who experienced a medical or treatment regimen change within 14 days of SOC/ROC are included in this group if any medical diagnosis pertaining to those events relates to the circulatory system.

  Pulmonary Conditions
  Patients who were discharged from a hospital, rehabilitation facility, or nursing home within 14 days of SOC/ROC, or who experienced a medical or treatment regimen change within 14 days of SOC/ROC are included in this group if any medical diagnosis pertaining to those events relates to respiratory function.

Diabetes Mellitus
Patients who were discharged from a hospital, rehabilitation facility, or nursing home within 14 days of SOC/ROC, or who experienced a medical or treatment regimen change within 14 days of SOC/ROC are included in this group if any medical diagnosis pertaining to those events is diabetes mellitus.

Acute Gastrointestinal Disorders
Patients who were discharged from a hospital, rehabilitation facility, or nursing home within 14 days of SOC/ROC, or who experienced a medical or treatment regimen change within 14 days of SOC/ROC are included in this group if any medical diagnosis pertaining to those events is related to the digestive system.

Contagious/Communicable Conditions
Patients who were discharged from a hospital, rehabilitation facility, or nursing home within 14 days of SOC/ROC, or who experienced a medical or treatment regimen change within 14 days of SOC/ROC are included in this group if any medical diagnosis pertaining to those events is related to infections or parasitic diseases.

Acute Urinary Incontinence/Catheter
Patients who were discharged from a hospital, rehabilitation facility, or nursing home within 14 days of SOC/ROC, or who experienced a medical or treatment regimen change within 14 days of SOC/ROC are included in this group if the patient is incontinent of urine or if the patient has a new indwelling catheter.

Acute Mental/Emotional Conditions
Patients receiving psychiatric nursing services at home are included in this group.

Oxygen Therapy
Patients receiving either intermittent or continuous oxygen therapy at home are included in this group.

IV/Infusion Therapy
Patients receiving intravenous or infusion therapy at home, such as hydration, or intravenous, subcutaneous, or intrathecal therapy for pain control, are included in this group.

Enteral/Parenteral Nutrition Therapy
Patients receiving enteral or parenteral nutrition at home, such as gastrostomy tube feedings or hyperalimentation, are included in this group.

Ventilator Therapy
Patients receiving continuous or intermittent ventilation therapy at home are included in this group.

- **Criteria for Chronic Conditions**: Patients who were not discharged from an inpatient facility (hospital, rehabilitation facility, or nursing home) within 14 days of SOC/ROC, and who did not experience a change in medical or treatment regimen within 14 days of SOC/ROC are assigned to a chronic group if they meet specified levels of dependency (or conditions for membership) for that group. Patients who were discharged from an inpatient facility within 14 days of SOC/ROC or who did experience a change in medical or treatment regimen within 14 days of SOC/ROC are assigned to a chronic group if and only if they met the specified levels of dependency/conditions for membership for that condition prior to the inpatient stay/medical regimen change.

The inclusion of patients in these groups is based on the following criteria. These categories are not mutually exclusive.

Dependence in Living Skills
Patients who meet the criteria for inclusion in chronic conditions are assigned to this group if they are unable to prepare main meals on a regular basis and require the assistance of another person for at least two of the following: laundry, transportation, housekeeping, shopping, or ability to use the telephone. The assistance required is necessary for routine or normal performance of the activity.

Dependence in Personal Care
Patients who meet the criteria for inclusion in chronic conditions are assigned to this group if they require the assistance of another person for bathing; or if they require assistance for grooming (combing or brushing hair, shaving or applying makeup, cleaning teeth or dentures, or trimming fingernails) plus dressing of upper or lower body.

Impaired Ambulation/Mobility
Patients who meet the criteria for inclusion in chronic conditions are assigned to this group if they require the routine assistance of another person for toileting, transferring, or ambulation.

Eating Disability
Patients who meet the criteria for inclusion in chronic conditions are assigned to this group if they are unable to feed themselves without constant supervision or assistance, or if they receive nutrients through a nasogastric or gastrostomy tube.

Urinary Incontinence/Catheter Use
Patients who meet the criteria for inclusion in chronic conditions are assigned to this group if they are incontinent of urine or have an indwelling/suprapubic catheter.

Dependence in Medication Administration
Patients who meet the criteria for inclusion in chronic conditions are assigned to this group if they require the assistance of another person for taking oral medications, inhalant medications, or injectable medications.

Chronic Pain
Patients who meet the criteria for inclusion in chronic conditions are assigned to this group if they are experiencing intractable pain.

Chronic Cognitive/Mental/Behavioral Problems
Patients who meet the criteria for inclusion in chronic conditions are assigned to this group if they demonstrate one or more of the following behaviors at least once a week:

1) memory deficit,
2) impaired decision making,
3) verbal disruption,
4) physical aggression,
5) disruptive, infantile, or socially inappropriate behavior (excludes verbal actions), or
6) delusions, hallucinations, or paranoid ideations.

Chronic Condition with Caregiver
Patients are included in this group if they have been assigned to one or more chronic conditions and an assisting person (caregiver) resides in the home.

- **Diagnoses for Which Patients Are Receiving Home Care**: Patients are assigned to each of these diagnostic categories if they are receiving home care for a diagnosis belonging to that category (excluding diagnoses that are currently asymptomatic). A patient may have several home care diagnoses and, therefore, may belong to more than one diagnosis category.

How to Read the Case Mix Profile

The key features of the *Case Mix Profile* are listed below. In view of the large number of factors in the case mix profile, it is natural to expect that some differences should appear between a single agency's case mix and the average case mix of the reference sample. Fewer differences typically are found in an agency's own case mix from one period to another. Each report feature is numbered and corresponds to a pointer in the sample report on the next page. This is a hypothetical *Case Mix Profile* report for "Faircare Home Health Services." Note: Both the agency data and reference values are hypothetical.

① **Current Mean:** Values in this column reflect case mix averages (means) based on data collected during the actual current period indicated in the upper right corner (in this example, this is 01/2002 to 12/2002). These values correspond to case mix means or averages at start (or resumption) of care (SOC/ROC) for all patients with a SOC/ROC assessment and a discharge (or transfer to a facility) during the report period. These are the same cases included in the outcome report.

② **Prior Mean:** Values in this column reflect case mix averages based on data collected during the prior report period indicated in the upper right corner (in this example, this is 01/2001 to 12/2001).

③ **Reference Mean:** Values in this column reflect case mix averages based on a nationally representative sample of patients from all agencies submitting OASIS data. Episode of care data starting between the beginning of January 2002 and ending by the end of December 2002 (the same time period as that represented by Faircare's current data) are included in the reference sample.

④ **Sig:** Indicates whether or not a statistically significant difference exists between the "current" and "prior" or "reference" means. In the comparison of "current" with "prior" case mix, significance levels of .10 or lower are marked with a single plus sign (+) and levels of .05 or lower are marked with a double plus sign (++). In the comparison of "current" with "reference" case mix, significance levels of .01 or lower are marked with a single asterisk (*) and levels of .001 or lower are marked with a double asterisk [**]. When a significance value is low (for example, .01), the results may be important because there is only a small likelihood (in this case, 1%) that the difference is due to chance. We suggest you examine only differences where the significance value is 1% or less, as indicated by the asterisks.

In fact, primarily because of the large reference sample, case mix reports may contain a substantial number of significant differences. When this occurs (as it frequently does, particularly for agencies with large numbers of patients), you should be attentive only to large differences between the means within the total group of asterisked differences.

⑤ **Case Mix Attributes Measured Using Scales:** Results for attributes measured using a health status scale (for example, a scale that takes on values between 0 and 5 -- as indicated by "0-5" after the attribute name) are expressed in terms of the average scale value for the attribute. **The scale values are determined by the answer options provided for the specific data item in the OASIS.** In general, higher scale values represent more impairment or a more severe condition than lower numeric values for the same measure.

Example: Under the section on ADL Disabilities at SOC/ROC (start of care/resumption of care), the sample report shows that for Transferring, which is measured on a 0-5 scale, the average scale value for the current cases of Faircare Home Health Services is 0.64, compared with a mean value of 0.63 for the agency's prior cases and 0.70 for the reference sample. This indicates slightly less disability on this measure for Faircare's patients.

⑥ **Case Mix Attributes Measured as Prevalences:** Results for attributes that are measured not by scales, but by simply presence or absence have a "%" next to them. The values in the "Current Mean," "Prior Mean," and "Reference Mean" columns provide the percentage of patients with a given attribute.

Example: Under "Pain" the percentage of patients with intractable pain at start of care for Faircare Home Health Services is 13.98% compared with 13.28% in the prior period and 13.69% in the reference sample (all nonsignificant differences).

Agency Name: FAIRCARE HOME HEALTH SERVICES
Agency ID: HHA01
Location: ANYTOWN, USA
Medicare Number: 007001
Medicaid Number: 999888001
Date Report Printed: 03/21/2003

Requested Current Period: 01/2002 - 12/2002
Requested Prior Period: 01/2001 - 12/2001
Actual Current Period: 01/2002 - 12/2002
Actual Prior Period: 01/2001 - 12/2001
 # Cases: Curr 601 **Prior** 551
Number of Cases in Reference Sample: 3289067

Case Mix Profile at Start/Resumption of Care
For Risk-Adjusted/Descriptive Outcome Report

	Current Mean	Prior Mean	Ref. Mean
Demographics			
Age (average in years)	70.75	70.96	72.78 *
Gender: Female (%)	69.38%	66.62%	62.89% **
Race: Black (%)	1.66%	1.63%	10.71% **
Race: White (%)	97.50%	97.84%	85.48% **
Race: Other (%)	0.83%	0.67%	3.82% **
Payment Source			
Any Medicare (%)	80.43%	81.48%	82.59%
Any Medicaid (%)	12.88%	14.44%	14.30%
Any HMO (%)	3.01%	2.87%	5.76% **
Medicare HMO (%)	1.34%	1.15%	2.23%
Any third party (%)	19.90%	23.47%	21.90%
Current Residence			
Own home (%)	74.70%	73.07%	78.65% *
Family member home (%)	20.53%	21.05%	14.11% **
Current Living Situation			
Lives alone (%)	28.62%	31.17%	29.42%
With family member (%)	66.72%	62.77%	64.23%
With friend (%)	1.33%	1.27%	1.62%
With paid help (%)	2.33%	2.03%	3.28%
Assisting Persons			
Person residing in home (%)	57.00%	62.12%	55.94%
Person residing outside home (%)	44.33%	50.52% +	53.00% **
Paid help (%)	9.33%	9.56%	14.09% **
Primary Caregiver			
Spouse/significant other (%)	31.00%	30.42%	33.58%
Daughter/son (%)	33.00%	28.01%	26.37% **
Other paid help (%)	3.67%	2.78%	6.05% *
No one person (%)	21.67%	21.76%	20.19%
Primary Caregiver Assistance			
Freq. of assistance (0-6, scale avg.)	4.11	4.05	4.10
Inpatient DC within 14 Days of SOC/ROC			
From hospital (%)	69.05%	66.56%	68.41%
From rehab facility (%)	7.15%	6.99%	6.38%
From nursing home (%)	1.83%	1.59%	3.28%
Med. Reg. Chg. w/in 14 Days of SOC/ROC			
Medical regimen change (%)	67.72%	74.56% +	81.21% **
Prognoses			
Moderate recovery prognosis (%)	85.26%	82.19%	85.87%
Good rehab prognosis (%)	62.63%	64.06%	68.24% **
ADL Disabilities at SOC/ROC			
Grooming (0-3, scale average)	1.02	1.07	0.86 *
Dress upper body (0-3, scale avg.)	0.56	0.50	0.59
Dress lower body (0-3, scale avg.)	1.22	1.19	1.10
Bathing (0-5, scale average)	2.15	2.34	2.03
Toileting (0-4, scale average)	0.63	0.59	0.57
Transferring (0-5, scale average)	0.64	0.63	0.70 *
Ambulation (0-5, scale average)	1.05	1.13	1.07
Eating (0-5, scale average)	0.33	0.33	0.32

	Current Mean	Prior Mean	Ref. Mean
ADL Status Prior to SOC/ROC			
Grooming (0-3, scale average)	0.66	0.68	0.52 *
Dress upper body (0-3, scale avg.)	0.35	0.32	0.35
Dress lower body (0-3, scale avg.)	0.70	0.76 +	0.63
Bathing (0-5, scale average)	1.33	1.26	1.20
Toileting (0-4, scale average)	0.39	0.40	0.38
Transferring (0-5, scale average)	0.38	0.37	0.44 *
Ambulation (0-5, scale average)	0.70	0.72	0.71 *
Eating (0-5, scale average)	0.22	0.22	0.21
IADL Disabilities at SOC/ROC			
Light meal prep (0-2, scale avg.)	1.02	1.02	0.90
Transportation (0-2, scale avg.)	1.05	1.04	0.99
Laundry (0-2, scale average)	1.62	1.49	1.51
Housekeeping (0-4, scale avg.)	2.89	2.68	2.68
Shopping (0-3, scale average)	2.10	1.90	2.06 *
Phone use (0-5, scale average)	0.63	0.60	0.72 *
Mgmt. oral meds (0-2, scale avg.)	0.69	0.69	0.70
IADL Status Prior to SOC/ROC			
Light meal prep (0-2, scale avg.)	0.65	0.60	0.56
Transportation (0-2, scale avg.)	0.78	0.82	0.69
Laundry (0-2, scale average)	1.10	1.01	0.96
Housekeeping (0-4, scale avg.)	1.93	1.77	1.73
Shopping (0-3, scale average)	1.45	1.42	1.32
Phone use (0-5, scale average)	0.49	0.51	0.59 *
Mgmt. oral meds (0-2, scale avg.)	0.53	0.55	0.54
Respiratory Status			
Dyspnea (0-4, scale average)	1.33	1.28	1.19 *
Therapies Received at Home			
IV/infusion therapy (%)	4.33%	4.24%	3.74%
Parenteral nutrition (%)	0.50%	0.50%	0.26%
Enteral nutrition (%)	2.16%	2.18%	1.75%
Sensory Status			
Vision impairment (0-2, scale avg.)	0.32	0.34	0.30
Hearing impair. (0-4, scale avg.)	0.38	0.39	0.45 *
Speech/language (0-5, scale avg.)	0.45	0.46	0.47
Pain			
Pain interf. w/activity (0-3, scale avg.)	0.95	0.98	0.98
Intractable pain (%)	13.98%	13.28%	13.69%
Neuro/Emotional/Behavioral Status			
Moderate cognitive disability (%)	10.82%	7.82%	11.91%
Severe confusion disability (%)	5.66%	7.67%	6.87%
Severe anxiety level (%)	16.69%	20.48%	11.68% *
Behav probs > twice a week (%)	13.98%	12.36%	5.65% *
Integumentary Status			
Presence of wound/lesion (%)	31.61%	33.95%	31.20%
Stasis ulcer(s) present (%)	3.66%	4.33%	2.88%
Surgical wound(s) present (%)	21.13%	18.74%	22.33%
Pressure ulcer(s) present (%)	8.15%	7.09%	5.35% *
Stage 2-4 ulcer(s) present (%)	6.49%	7.96%	4.54% *
Stage 3-4 ulcer(s) present (%)	3.99%	4.49%	1.42% *

How to Read the Outcome Report

The most important features of the *All Patients' Outcome Report* are listed below. Each feature is numbered and corresponds to a pointer in the sample report on the next page.

① **Report Section:** The outcome report has two sections, one containing risk adjusted outcome rates and the other displaying descriptive outcome results. There are 30 measures included in the risk-adjusted report section, and 11 outcomes are displayed in the descriptive report section. Each section is requested and printed or downloaded separately.

② **Key to Shades Used in the Bar Chart**: "Current" values are actual agency outcome rates for episodes during the requested time period. "Adjusted Prior" and "Reference" values reflect your agency's prior year and current national rates, adjusted to reflect the case mix or risk factor distribution of your agency's patients for that outcome (for the risk-adjusted outcomes) or the observed prior year and national rate (for the descriptive outcomes).

③ **Outcome Headers**: Describe the types of outcome measures listed immediately below the heading. Two types of outcome measures are used in the reports: end result (reflecting changes in health status) and utilization outcomes.

④ **Bar Graphs**: Indicate the percentage of patient cases that achieved the outcome for the given measure. For each measure, three bars are presented, corresponding to the "current," "prior," and "reference" groups.

Example: For the measure "Improvement in Toileting," the first bar shows that 56.0% of the "current" patients improved, the second bar shows that 53.4% of the "adjusted prior" patients improved, and the third bar shows that 63.2% of the "reference" patients improved.

⑤ **Eligible Cases**: The number of patient cases included in the group for which the outcome was computed.

Example: For the measure "Improvement in Toileting," there were 92 cases from "current" data, 56.0% of which improved; there were 90 cases from the "adjusted prior" data, 53.4% of which improved; and there were 772,915 cases from the "reference" data, 63.2% of which improved.

Note: It is quite likely that the "adjusted prior" outcome rate is different than the "current" rate from the previous year's report. This is because (1) this rate is risk adjusted, and (2) it may be based on more (or fewer) cases than last year due to late-arriving data or data reductions that took place in the current year of data collection.

⑥ **Significance**: This is relevant when outcomes are compared between sets of patient cases (for example, "current" vs. "reference") and indicates the level of statistical significance for the comparison. This value will always be between 0.00 and 1.00 and can be readily translated to percentage. The percentage is the probability that the result occurred by chance.

Example: For the measure "Improvement in Lower Body Dressing," 59.5% of "current" patient cases improved, compared with 49.1% of "adjusted prior" cases who improved. The "0.05" value in the significance column means that there is a 5% probability that this difference (between 49.1% and 59.5%) is due to chance. Consequently, there is a 95% probability that the difference is not due to chance, but is a real phenomenon.

When a significance value is high (for example, .90), any difference should be disregarded or interpreted conservatively because there is a greater likelihood that the difference is due to chance (a 90% likelihood, in this case). When a significance value is low (for example, .01), the result should be considered important because there is almost no likelihood (for example, 1%) that the difference is due to chance. We suggest that you concentrate on differences where the significance value is 10% or less, as indicated by the asterisks or plus signs.

Agency Name: FAIRCARE HOME HEALTH SERVICES
Agency ID: HHA01
Location: ANYTOWN, USA
Medicare Number: 007001
Medicaid Number: 999888001
Date Report Printed: 03/21/2003

Requested Current Period: 01/2002 - 12/2002
Requested Prior Period: 01/2001 - 12/2001
Actual Current Period: 01/2002 - 12/2002
Actual Prior Period: 01/2001 - 12/2001
Cases: Curr 402 Prior 374
Number of Cases in Reference Sample: 2325615

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All Patients' Risk Adjusted Outcome Report

2

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End Result Outcomes:	Elig. Cases	Signif.	
Improvement in Grooming	169		63.3% (107)
	155	0.28	56.9%
	1090621	0.35	66.7%
Stabilization in Grooming	353		89.8% (317)
	352	0.24	92.7%
	2179331	0.04 **	92.8%
Improvement in Upper Body Dressing	136		53.7% (73)
	129	0.51	48.8%
	1263575	0.29	58.2%
Improvement in Lower Body Dressing	203		59.5% (121)
	183	0.05 ++	49.1%
	1473483	0.14	64.6%
Improvement in Bathing	262		59.5% (156)
	253	0.38	55.2%
	1994597	0.21	63.3%
Stabilization in Bathing	349		88.8% (310)
	328	0.93	89.4%
	2211232	0.35	90.3%
Improvement in Toileting	92		56.0% (52)
	90	0.78	53.4%
	772915	0.19	63.2%
Improvement in Transferring	134		63.4% (85)
	125	0.06 +	51.6%
	1516655	0.06 *	55.4%
Stabilization in Transferring	365		92.9% (339)
	340	1.00	92.9%
	2293249	0.98	92.8%
Improvement in Ambulation/Locomotion	234		43.1% (101)
	219	0.00 ++	61.3%
	1934437	0.07 *	37.4%
Improvement in Eating	70		57.1% (40)
	68	0.62	51.9%
	719886	0.76	58.9%
Improvement in Light Meal Preparation	229		46.7% (107)
	216	0.00 ++	64.6%
	1635958	0.00 **	61.0%
Stabilization in Light Meal Preparation	254		83.1% (211)
	241	0.38	86.1%
	1497204	0.00 **	90.6%
Improvement in Laundry	346		39.3% (136)
	312	0.38	42.9%
	2218835	0.01 **	46.4%

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0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Percent (Number) of Cases with Outcome

* The probability is 10% or less that this difference is due to chance, and 90% or more that the difference is real.
** The probability is 5% or less that this difference is due to chance, and 95% or more that the difference is real.
\+ The probability is 10% or less that this difference is due to chance, and 90% or more that the difference is real.
++ The probability is 5% or less that this difference is due to chance, and 95% or more that the difference is real.