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Executive Summary

The objective of this study was to examine and report the costs and benefits associated with the collection of Outcome and Assessment Information Set (OASIS) data on non-Medicare/non-Medicaid (private pay) home health patients. The results of the study will be used by the Center for Medicare and Medicaid Services (CMS) and Congress to inform their decision about whether to reinstate or permanently suspend the requirement for Medicare-certified home health agencies to collect OASIS data for private pay home health patients.

Background

In response to Section 704 of the Medicare Modernization Act of 2003 (MMA), CMS contracted with Abt Associates Inc., a research and consulting firm in Cambridge, Mass, to conduct a study examining the costs and benefits associated with the collection of OASIS data on private pay patients. The collection and submission of OASIS data for Medicare and Medicaid patients is mandatory for Medicare-certified home health agencies. OASIS data are used by CMS to calculate the home health prospective payment rate, outcome reports used by agencies for quality improvement, and the information on home health quality available to consumers on the Home Health Compare website. Collection of OASIS data for private pay patients was mandatory from 1999 until December 2003, when Congress suspended the requirement pending the results of this study.

Methods

The study was conducted from October 2004 to October 2005 and consisted of a literature review, a national mail survey of 1200 Medicare-certified home health agencies, and analysis of outcomes data from Medicare/Medicaid and private pay home health patients obtained from a private vendor. Interviews were conducted with representatives of Quality Improvement Organizations, accrediting organizations, CMS staff, and representatives of home health agencies and home health industry groups. A Technical Expert Panel (TEP) consisting of representatives of large and small home health agencies, home health researchers, and a consumer representative met twice to assist with design of the study and review and comment on results.

Limitations

Since agency-specific labor rates were not collected in the survey, labor costs were imputed using average wage figures from the Bureau of Labor Statistics. In addition, members of the TEP expressed concern that survey respondents may have overestimated agency time spent on OASIS data collection, training and data quality review due to inclusion of non-OASIS related activities and the difficulty of estimating annual hours spent on activities by payer source.

Key findings

Status of OASIS data collection on private pay patients

- Approximately two-thirds of the Medicare-certified home health agencies that serve private pay patients continue to collect OASIS data on those patients.
- The reasons that were rated as most important by agencies in their decision to continue private pay OASIS data collection were fewer training issues when one data collection tool is used, and fewer training issues when their data collection processes remain unchanged.
- The reasons that were rated as most important by agencies in their decision to suspend private pay OASIS data collection were the cost of OASIS data collection and the demands on staff time required for collection.

Benefits derived from OASIS data collection on Medicare/Medicaid and private pay patients

- The majority of survey respondents whose agencies continued OASIS data collection on private pay patients agreed or strongly agreed that continued collection provides them with a better picture of overall agency performance; that OASIS data are valuable for assessing the needs, planning care and assessing outcomes for their private pay patients; and that OASIS data are valuable for determining appropriate quality monitoring or improvement activities for those patients.
- Even those agencies that suspended OASIS collection for their private pay patients reported using and benefiting significantly from OASIS data collection on their Medicare/Medicaid patients. The most highly rated benefit related to Medicare/Medicaid OASIS data collection was that collecting OASIS data helps to standardize the agency comprehensive assessment process. In addition, a majority of agencies reported that OASIS data help them identify a patient's need for specific programs or interventions, that collecting OASIS data on their Medicare/Medicaid patients improves their agency's overall patient care planning process, and that Medicare/Medicaid OASIS data help identify the need for referrals for services such as social work or occupational therapy.
- Size and urban/rural status were not generally correlated with the decision to continue to suspend private pay OASIS data collection, or the uses or benefits derived from private pay OASIS data collection.

Potential benefits that could be derived from the collection of private pay OASIS data:

- If CMS produces case-mix, outcome and adverse event reports that included private pay data, agencies would have the ability to use the data to examine outcomes and improve care processes
- Private pay outcome reports could be used by agencies for marketing to consumers, providers and referral sources.
- Private pay outcome reports could enable consumers with private insurance to select a care provider by examining outcome reports that include patients with similar characteristics and conditions.
- Private pay OASIS data collection could potentially improve the industry's standing and negotiating position with payers and providers and assist the industry to prepare for upcoming pay for performance initiatives.

Barriers to using and benefiting from private pay OASIS data

- The most significant barrier to agencies using and benefiting from private pay OASIS data is the fact that CMS does not currently collect private pay OASIS data or produce outcome reports based on the data. Therefore, only those agencies that have the interest and resources to contract with a private benchmarking vendor or invest in benchmarking software are able to use the data to measure outcomes.
- Potential barriers to the use of private pay OASIS data are a lack of understanding and commitment to the OBQI process at the agency management level, and the shorter stays, lower reimbursement, and lower frequency of private pay patient home care admissions that may make evaluating and impacting care difficult.

- Since the advent of HIPAA, privacy issues do not appear to be a barrier to private pay OASIS data collection and transmission. However, masking of identifiers on OASIS records submitted to the state and national Data Repositories may create some problems for data reporting and analysis.

Costs and burdens associated with OASIS

- Adjusting for other factors, agencies that continued to collect OASIS for private pay patients had 36 more RN minutes per Start of Care assessment than those that suspended collection. Staff time costs for agencies that continued to collect private pay OASIS were \$19 higher per Start of Care assessment than for agencies that suspended collection.
- Agencies that suspended collecting OASIS on private pay patients had lower labor costs per assessment for conducting the assessments and for data quality review, but the savings were partially offset by the costs of training on a different assessment protocol.
- Additional assessment time for OASIS collection (in percentage terms) is not correlated with agency size, so that a decision to reinstitute private pay OASIS data collection would not create a disproportional burden on small (or large) agencies.
- Rural agencies were associated with higher RN time for private pay OASIS assessments, but not for total staff time or for other cost measures.
- A decision to reinstitute private pay OASIS data collection would impact agencies differently depending on patient volume, use of nurses versus therapists (and full-time versus part-time staff) in conducting assessments, and payer mix (which determines the number of additional OASIS assessments to be conducted.)
- A decision to permanently suspend the requirement for OASIS collection on private pay patients may be perceived as a burden by agencies that would prefer to continue collection. Those agencies would have a choice between switching to a non-OASIS tool for their private pay patients or being placed in competition with agencies that would have potentially lower costs, and competing for staff with agencies that would be offering a “reduced paperwork” environment.

Results of analysis of private pay and Medicare/Medicaid OASIS data

- There are significant differences between private pay and Medicare/Medicaid patients in terms of diagnosis, patient characteristics, and patient outcomes. Within-agency correlation between Medicare/Medicaid and private pay patients outcomes was low, indicating that outcomes based on Medicare/Medicaid patient data cannot be generalized to serve as a proxy for private pay patients.
- Current risk adjustment models do not account for all of the sources in variation in outcomes across the different payer groups, so that comparisons of agency performance based on data that are aggregated across private pay, Medicare, and Medicaid patients could produce misleading information, particularly if the comparisons are made between agencies with large differences in the proportion of private pay patients.

Potential impacts of reinstating or permanently suspending private pay OASIS data collection

- A decision to require OASIS data collection on all patients would prevent negative incentives to caring for Medicare/Medicaid beneficiaries that might result from the

requirement for a more resource-intensive comprehensive assessment being applied only to Medicare/Medicaid patients;

- Conversely, a decision to permanently suspend collection could create negative incentives to caring for Medicare/Medicaid beneficiaries and result in reduced access and inferior outcomes for Medicare/Medicaid patients;
- Requiring OASIS data collection on private pay patients has the potential to improve care for that patient population because agencies could target the specific characteristics and needs of the private pay patient population. It also may assist in protecting private pay patients from under-provision of services.
- Requiring private pay OASIS assessment could increase staff and patient burdens; since OASIS typically takes longer to complete than the average non-OASIS assessment, clinician productivity would necessarily be somewhat reduced and patients would undergo a longer and more intensive assessment process.
- If private pay OASIS data collection is reinstated, agencies would have expectations that CMS would develop a mechanism for agencies to receive reports on their private pay patients. This may require refinements to the current risk adjustment models.

1.0 Introduction

The ability to monitor and improve the quality of home health care provided by Medicare-certified Home Health Agencies (HHAs) has undergone tremendous advances within the past six years. The environment has been transformed from one in which little or no information on quality of care was available or disseminated, to one in which clinical data are collected uniformly by all Medicare-certified agencies, using the Outcome and Assessment Information Set (OASIS). Measures of patient outcomes have been derived from these data and made available to HHAs through outcomes-based quality improvement and monitoring (OBQI and OBQM) reports, and to consumers and the general public through the Home Health Compare website.

Findings from demonstration trials indicate that OBQI can have a substantial impact on patient outcomes (Shaughnessy et al, 2002). Currently, however, these outcome data are available only for Medicare and Medicaid patients, which has raised concerns about the inability to measure the quality of care provided to home health patients with other payment sources. Sections 1861 and 1891 of the Social Security Act establish the responsibility of CMS to monitor the quality of care provided by Medicare-certified HHAs to all patients, regardless of payment source.

OASIS data collection, outcome monitoring and public reporting for not only the Medicare home health population, but for all adult skilled service patients, is one way to ensure that this vulnerable group of patients receives high quality care. Collection of this uniformly defined clinical data would also increase the value of OASIS information to HHAs, since it would provide a more comprehensive view of the care their patients receive.

OASIS data on private pay (non-Medicare/non-Medicaid) patients have never been encoded and transmitted to CMS for inclusion in quality reports, however. Initially the requirement to transmit the data on these patients was delayed due to concerns about the ability to protect patient privacy. Although data masking procedures were developed, transmission of OASIS data on private pay patients was never mandated. Consequently, data on private pay patients have been collected but have remained unused at many HHAs, and have not been available for analysis by CMS for all HHAs.

In light of the fact that OASIS data on this set of patients was being collected but not used, and amid concerns that OASIS data collection for these patients was burdensome for HHAs, legislation was passed in December of 2003 suspending OASIS collection for private pay patients. Section 704 of The Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003 suspended the mandatory collection of OASIS data for private pay home health patients until a study has been conducted, on the value and burden related to the collection of OASIS data on private pay patients for large and small HHAs. The legislation states, in part, “Such study shall examine...whether there are unique benefits from the analysis of such information that cannot be derived from other information available to, or collected by, such agencies; and ...the value of collecting such information by small home health agencies compared to the administrative burden related to such collection”. The legislation directs the HHS Secretary to report to Congress on the results of the study. The full text of the legislation can be found in Appendix A.

In response to this congressional mandate, the Centers for Medicare and Medicaid Services (CMS) funded a study on the value and burden of collecting the OASIS dataset for private pay home health patients and selected Abt Associates Inc. of Cambridge, Massachusetts to perform the study. Under this contract, Abt Associates collected and analyzed data needed to address the two main issues that are posed by the legislation and that must be resolved before CMS can consider re-instituting the requirement for OASIS data collection for all patients cared for by Medicare-certified HHAs. The

first is whether the potential benefits obtained by the collection of OASIS data on private pay patients outweigh the burden and costs associated with collection efforts, and whether this would be true for only some HHAs or for all. The second is whether the risk-adjustment approach used in current outcome measurement reports adequately compensates for possible casemix differences by payor, and consequently whether including private pay patients in outcome reports would provide valid outcome measures.

1.1 Background

There are approximately 8,000 active Medicare-certified home health agencies (HHAs).¹ These agencies serve a vital role in the country's health care system by enabling Medicare beneficiaries and others to receive skilled nursing, rehabilitation therapy, aide services, or medical social services in their homes.

To be eligible for Medicare's home health benefit, beneficiaries must have a physician order for home care, must demonstrate a need for part-time (fewer than eight hours per day) or intermittent (not daily) skilled care to treat their illness or injury, and must be unable to leave their homes without considerable effort. The total number of Medicare beneficiaries using the Medicare Home Health benefit grew between 2001 and 2002, from about 2.4 million users to 2.5 million, and again in 2003 to 2.6 million.²

Although Medicare is a substantial payer of home health services, most Medicare-certified agencies also serve patients whose care is paid for either by Medicaid, by private fee-for-service insurers and HMOs, or directly by patients as an out-of-pocket expense. Some private insurers require that home health services be provided by Medicare-certified agencies. CMS estimated in 2002 that among the six largest publicly traded HHAs, Medicare's share of payments ranged from less than 5 percent to nearly 90 percent.³ Among all agencies that are Medicare certified, it was estimated that 70 percent of patients are Medicare fee-for-service beneficiaries. Medicare Plus Choice enrollees, Medicaid recipients, and patients with private pay sources each comprise about 10 percent of the remainder of the caseload of Medicare-certified agencies.⁴

Section 1861(m) of the Social Security Act establishes the requirements that an HHA must meet to be Medicare-certified, set forth at 42 CFR Part 484 and 488 in the Conditions of Participation (COPs). The COPs are intended to ensure that, among other things, HHAs have the appropriate staff, are following the plan of care specified by a physician, maintain medical records to document the care provided, and periodically reassess each patient's condition. The COPs apply to an HHA as an entity and to the services it provides to all individuals under its care, *regardless of payment source*.

In 1999, as part of the COPs, CMS mandated Medicare-certified HHAs to develop a patient specific, comprehensive assessment that identifies each patient's need for home care and that meets the patient's medical, nursing, rehabilitative, social and discharge planning needs. As part of the comprehensive assessment, HHAs were mandated to use a standard core assessment data set, the

¹ CMS Provider of Service file, September 2005.

² Medicare Payment Advisory Commission. 2005. *Report to the Congress: Medicare payment policy*. Washington, DC: MedPAC.

³ Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2003. *Health care industry market update: Home health*. Baltimore: CMS. September 22.

⁴ Outcome Concept Systems, Inc. 2002. *PPS & patient outcomes: A year in review*. Seattle, WA: Outcome Concept Systems, Inc

“Outcome and Assessment Information Set” (OASIS) when evaluating adult, non-maternity patients. OASIS data must be collected at specific time points (admission, transfer, resumption of care after an inpatient stay, recertification every 60 days that the patient remains in care, at the time of a significant change of condition, and at discharge) for all adult non-maternity patients receiving skilled services.

HHAs are required to encode and transmit Medicare patient OASIS data to a state OASIS repository. As mentioned in the introduction, transmission of data from private pay patients was never required, initially due to concerns about privacy. A suspension of the mandate to collect OASIS data on these patients was initiated by the passage of the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003.

Since 2000, elements of the OASIS data set have also served as the basis for the Prospective Payment System (PPS) that determines home health reimbursement for Medicare patients. PPS replaced a cost-based system with one that provides HHAs a fixed, predetermined payment for each 60-day “episode of care.” The amount of the payment is adjusted for the severity of the patient’s condition using OASIS data. While encouraging efficiency, the new prospective payment system also provides HHAs an incentive to reduce services in order to increase net revenues.⁵

Despite the suspension of the requirement for OASIS data collection on private pay patients, anecdotal evidence suggested that half or more of the Medicare-certified HHAs continued data collection. Reasons offered for this continued collection include convenience of using one data collection form for all patients, fewer training issues when one data collection form is used for all patients and if collection policies remain unchanged, the importance of data for patient care planning and quality monitoring or improvement, and the improved ability to obtain a picture of overall agency performance.

1.1.1 OASIS data and quality improvement

Although the OASIS data set serves as the foundation for Home Health PPS, it was originally designed for measurement of patient home health outcomes and quality improvement. Using the OASIS data submitted by agencies, CMS began generating agency-specific Outcome-Based Quality Monitoring (OBQM) reports in January 2001. These reports are available to Medicare-approved HHAs through the “QIES to Success” website and CASPER reporting system. The OBQM reports include a casemix report that presents the profile of an agency’s patients derived from the agency’s OASIS patient assessments transmitted to the state. OBQM reports also include the Adverse Event Report, which presents the rates for 13 infrequent events that were potentially either caused by or could have been avoided with appropriate care, such as falls, wound infections and urinary tract infections. Agencies can download and review their Adverse Event Reports and develop a plan of action if appropriate. None of the adverse event measures are risk-adjusted, however and their occurrence is reportedly extremely rare (less than 1.5 percent) (Fortinsky and Madigan, 2004).

With the release of CMS’s OBQI reports in February 2002, Medicare-approved HHAs were given their first opportunity to compare their clinical performance to a national benchmark. OBQI reports provide HHAs the ability to access reports identifying their performance compared to their prior performance and the national average on 41 OASIS-derived measures. There are 30 outcomes displayed in the risk-adjusted section of the report, and 11 outcomes that appear in the descriptive section. Risk adjustment accounts for differences in the agency’s patients versus the reference sample, and minimizes the possibility that the differences are due to factors other than the care provided by the agency. The majority of the OBQI measures are related to functional

⁵ U.S. General Accounting Office. (July 2002). Medicare home health agencies: Weaknesses in federal and state oversight mask potential quality issues. GAO-02-382.

status (25 of 41). The remainder of the measures are clinical items (7), cognitive/behavioral items (6), and utilization of other services (3). The agency's current outcome data are presented in a bar graph format and outcomes that are statistically significant when compared to the national reference, either favorably or unfavorably, are asterisked.

1.1.2 Using OBQI reports to improve patient outcomes

OBQI reports provide HHAs with a data-driven basis for quality improvement activities. While the OBQI process is currently voluntary, HHAs typically run the reports once a year as part of the quality improvement (QI) process. The reports are analyzed, and target outcomes are selected for improvement. Once a target outcome is selected, HHAs can use the Patient Tally Reports, accessed using the same system used for submitting OASIS data to the state, to select patients who achieved a target outcome and compare them to patients who did not achieve that outcome. A Patient Tally workbook tool, also available from CMS, can then be used to help agencies examine attributes related to groups of patients with the same outcome or casemix characteristics to discover potential areas for process-of-care adjustments. A process of care investigation is conducted to determine why performance is below the national reference or benchmark, and a plan of action is developed to improve the agency's performance on the target outcomes. As of May 2004 the top five quality measures chosen by HHAs as target outcomes are: Improvement in Pain Interfering with Activity; Any Emergent Care; Improvement in Dyspnea; Improvement in Management of Oral Medications; and Acute Care Hospitalization (Dietz and Ng, 2004).

Since 2002, QIOs (Quality Improvement Organizations formerly known as Peer Review Organizations or PROs), have been assisting HHAs in the use of the OBQI process. Task 1b of the 7th Statement of Work (SOW) charged the QIOs to provide education and training to all HHAs on OBQI methodology in each state, recruit HHAs to participate in the Quality Improvement project, and improve the quality of care related to publicly reported measures. As of spring 2004, 70 percent of HHAs had been trained in OBQI and over 50 percent of HHAs had submitted plans of action with assistance from QIOs (Dietz and Ng, 2004). For the 8th Statement of Work, QIO efforts are focused on increasing home health agencies' ability and proficiency in using quality improvement methodologies, with emphasis on OBQI. CMS has selected two OASIS quality measures for national focus: acute care hospitalization and emergent care utilization.

On CMS's MedQIC website [<http://www.medqic.org/portal/homepage.jsp>], OBQI is described as "a rigorously designed, repeatedly validated, reproducible quality improvement program that positively impacts the health outcomes attained by home health care patients." Findings from demonstration projects administered by the University of Colorado Center for Health Services Research from 1995 – 2001 showed improvements in care from use of the OBQI process (Shaughnessy et al., 2002) including decline in hospitalization and improvement or stabilization in functional status measures such as ambulation, dressing, management of oral medications, and clinical measures such as status of surgical wounds, anxiety level, and improvement in urinary tract infection.

HHAs have also provided testimony on the value of OBQI in improving the patient care they deliver. In these testimonials, the word "goldmine" frequently is used, as agency staff report that the OASIS data they have collected provides valuable insights into patterns of patient care that lead to better patient outcomes. In a newsletter from the Minnesota QIO, the administrator of one HHA which showed improvement in patient outcomes was quoted as saying, "Everyone was excited to see all the work they put into OASIS and OBQI bearing results—that they could really improve outcomes for their clients." (Stratis Health OBQI Update, Spring 2004).

1.1.3 Public reporting

Since 2003, a subset of the OBQI outcomes has been publicly reported on the Home Health Compare website. In September 2005, the list of measures selected for reporting was revised based on recommendations from the National Quality Forum. The website provides information for consumers and their families about the quality of care provided by individual HHAs, allowing consumers to see how well patients of one agency fare compared to other agencies and to the state and national average. The website presents the quality measures in consumer-friendly language and provides a tool to assist consumers in the selection of an HHA. Since OASIS data are collected and submitted only for Medicare and Medicaid patients, the measures reported on Home Health Compare only provide outcomes on Medicare and Medicaid patients. Furthermore, since it is currently unknown whether the statistical relationships between Medicare/Medicaid patients and private pay patients are comparable, it is unknown whether including private pay patients in outcome reports would provide valid outcome measures that would be usable for public reporting. In the Request for Proposal for the OASIS Study, CMS identified one goal of the study was to determine whether patient outcomes currently collected for Medicare/Medicaid patients can be generalized to serve as a report for all patients or if another tactic is necessary to determine outcome measures for private pay patients.

1.1.4 Enhanced state survey protocols

State survey agencies conduct surveys of HHAs to determine whether they are complying with the conditions of participation. In 2003, in an effort to make the survey process more data-driven, patient-centered and outcome oriented, survey agencies began using selected outcome measures from OBQM, OBQI and HHA Provider Reports as a focus for onsite survey activities. Measures used by surveyors include Adverse Events, measures from the agency's Risk-adjusted and Descriptive Outcomes Report that are significantly worse than the national reference rate, and indications of agency population trends that vary significantly from the national reference rate.

Although HHAs are surveyed to determine if they meet Medicare COPs, the medical record and patient visit samples may include individuals from any payer group. Thus, Medicare quality standards protect not only Medicare beneficiaries but other home health users as well.⁶ Currently, however, surveyors do not have access to OBQI measures that include private pay patients because OASIS data on these patients are not collected, transmitted or analyzed.

1.1.5 Concerns about OASIS data collection for private pay patients

Despite the anecdotal evidence and studies regarding the value of OASIS and OBQI in improving the care provided to home health patients, there are still questions about whether re-instituting OASIS data collection for private pay patients is appropriate and in the best interests of home health agencies, home health patients and CMS. There is little reliable data about either the benefits or the burdens related to OASIS data collection now that the OASIS and OBQI systems have matured. Of the previous studies that found that the burden of OASIS data collection is minimal, several were done either prior to the implementation of PPS or in a demonstration setting, and none include a large sample.

Many representatives of the home health industry continue to express concern that the burden of OASIS data collection has been underestimated. They cite the un-reimbursed agency expenses for data collection for private pay patients to agencies, the burden on staff related to time spent on patient

⁶ U.S. General Accounting Office. (July 2002). Medicare home health agencies: Weaknesses in federal and state oversight mask potential quality issues. GAO-02-382

assessment, data encoding and transmission, problems retaining or recruiting staff related to burden of data collection activities, and the burden on patients to provide OASIS data.

Some home health industry representatives also question the value of using OASIS data on private pay patients for outcome analysis, suggesting that the case-mix characteristics of patients differ significantly across payment sources and that these differences may not be adequately addressed by the current risk adjustment process. This has led to concern that reports including private pay patients would be difficult to interpret, and potentially give advantages to certain agencies depending on the mix of patients by payment source.

Based on these concerns and issues, the OASIS Study was designed to clarify the issues of the burden and value of OASIS, by obtaining data from a large number of HHAs. Such a research study was necessary in order to determine whether the added cost of collecting and submitting data on private pay patients is justified by the unique benefits that the data may provide. The study involved several components: a mail survey of 1200 HHAs to determine the processes, benefits, costs and administrative burden related to OASIS; interviews with HHAs and Quality Improvement Organizations (QIOs) to determine the value of the data to the agencies; examining patient outcome data for private pay patients and comparing the data to those for Medicare/Medicaid patients; and writing a final report as a template for the CMS Report to Congress.

1.2 Literature Review

Our literature review focused on issues related to the benefits, costs, burdens and practices of OASIS data collection and Outcome Based Quality Improvement (OBQI) for non-Medicare/Medicaid patients and the implications of these issues for the development of the study's survey instrument and interview protocols. We conducted a review of academic journals, newspaper reports through Lexis Nexus, home health industry/affiliated groups' publications, federal government reports, and home health industry group discussion forums (such as list serves). We limited our investigation to sources since 1999 (the period in which collection of OASIS data was first mandated nationally as well as the period during which transmission of OASIS data was suspended for non-Medicare/Medicaid patients). Issues such as alternative methods of measuring the quality of home care services, the reliability of the OASIS instrument and estimated startup costs for implementing OASIS were outside of the scope of this review.

Given that only five years have elapsed since CMS required HHAs to collect OASIS data on all participants - and only three years have passed since CMS instituted the Outcome-Based Quality Monitoring (OBQM) reports - there are few formal studies on the benefits, burdens, cost, or the utilization of OASIS data. Of the studies that we were able to locate related to burden or costs, we found competing conclusions on the costs of OASIS to HHAs. The literature contains little discussion about whether OASIS and the outcomes derived from OASIS data apply to non-Medicare/Medicaid recipients.

The following sections summarize the literature reviewed regarding the two primary issues of: 1) burden and costs related to OASIS data collection, and 2) benefits attributable to OASIS data collection. A complete listing of all sources used in this review may be found in the "References" section at the end of this report.

1.2.1 Burden and costs of OASIS data collection

There have been a handful of studies that have examined the burden of OASIS. Most of them have framed costs in terms of the time required to complete the assessment (rather than the costs in terms of dollars). While the estimates may no longer be current (as agencies have become more

comfortable and proficient in OASIS data collection), the approaches used in these studies to measuring costs were useful in determining the methodology for our current study.

Studies of the time burden associated with OASIS data collection have reported inconsistent results. This is due in part to differences in when the data were collected (near start of OASIS implementation or after agency is experienced with OASIS), types of assessments measured (start of care vs. all types), and inclusiveness of cost factors (clinical assessment time vs. supervisory time, training, etc.).

Three main studies are cited in the literature: the OBQI study conducted by CHSR, a U.S. General Accounting Office (GAO) study and a study by the National Association for Home Care (NAHC). There also are additional articles and testimony on specific agency experiences with OASIS costs.

OBQI Cost Study

This study examined self-reported assessment times for home health patient assessments at start of care and at discharge, for assessments conducted with and without OASIS. A total of 31 OASIS and 27 non-OASIS users were interviewed, from 10 agencies participating in the National OBQI Demonstration. To account for any changes in provider practices or policies, the study used a matched control design to compare OASIS and non-OASIS assessments conducted during the same period of time. Time estimates were collected after the agencies had been performing OASIS data collection for about eight months.

Findings from the study are summarized in Table 1.1 below. No statistically significant differences were evident between the clinicians using OASIS and clinicians conducting assessments without OASIS, either for the start of care or discharge assessments. OASIS start of care assessments averaged 155 – 167 minutes, compared to 162 minutes for those conducted without OASIS. Times for discharge assessments were virtually identical, for those conducted with or without OASIS. The study concluded that OASIS did not require more overall time for conducting and documenting an assessment. It noted that while more time may be required in the home to complete the OASIS items, less time was required for narrative documentation that usually occurred outside of the home for non-OASIS assessments. However, the study acknowledged that additional time outside of direct patient assessment, such as encoding and transmitting OASIS data, may not have been thoroughly accounted for and perhaps should be examined in the future.⁷

⁷ Shaughnessy. Op cit. and Hittle D.F., Shaughnessy P.W., Crisler KS, Powell MC, Richard AA, Conway KS, Stearns PM, Engle K. (2003) *A Study of Reliability and Burden of Home Health Assessment Using OASIS*. Home Health Care Services Quarterly, 22 (4): 43-63.

Table 1.1: OBQI Demonstration: Comparison of Amount of Time Spent on Home Health Visits With and Without OASIS

Reason for Assessment	Mean Amount of Time Spent (Minutes)					
	Average Assessment Visit			Most Recent Assessment Visit		
	OASIS	Non-OASIS	Sig.*	OASIS	Non-OASIS	Sig.*
Start of Care						
In-home time	93.9	85.6	0.26	97.6	86.1	0.22
Documentation time	61.3	75.9	0.14	69.2	75.6	0.61
Total time	155.2	161.5	0.60	166.8	161.7	0.75
Discharge						
In-home time	41.3	41.1	0.95	41.0	40.8	0.97
Documentation time	25.6	27.2	0.72	25.3	27.8	0.59
Total time	66.9	68.3	0.82	66.3	67.3	0.88

* Significance levels are for a two-sample t test.

Source: Shaughnessy et al vol. III pg. 2.24

GAO Study

A 2000 GAO study focused on measuring the additional time incurred on major OASIS activities (compared to pre-OASIS) that would affect costs, such as: clinician time for start of care visits; supervisor time related to assessments; time required to train new hires about OASIS; and time for data entry and transmitting OASIS assessments. A total of 32 agencies (out of 50 in the original sample) responded to the survey. The GAO noted that because of the small sample size, estimates were somewhat imprecise.

Results of the study are displayed in Table 1.2. While total time for start of care assessments using OASIS was about 150 minutes (similar to the OBQI Cost Study), respondents to the GAO survey reported that this represented an increase of 40 minutes from the pre-OASIS period. The GAO study also found that additional time was involved to verify and transmit the data and train new staff. Overall, the study concluded that OASIS did require an increased amount of time. The GAO also noted that it anticipated that subsequent OASIS assessments after the start of care would take less time because the clinicians already knew the patient.

Table 1.2: GAO Study of Time Required for OASIS Activities

OASIS Activity	Median	Mean	Std Error	95% Confidence Interval
<i>Start of Care Assessment</i>				
Clinician time for visit and documentation post-OASIS, minutes	150.0	142.9	8.7	125.4 – 160.4
<i>Additional</i> time using OASIS, minutes	40.0	43.9	5.6	32.6 – 55.2
OASIS data review, entry, transmission				
Supervisor time reviewing start of care assessment post-OASIS, minutes	30.0	31.8	3.2	25.3 – 38.2
<i>Additional</i> time for supervisory review of OASIS data, minutes	15.0	16.0	2.8	10.5 – 21.6
Time to enter and check OASIS data, minutes/assessment ¹	28.7	40.4	5.6	29.4 – 51.6
Time to transmit OASIS data, minutes/assessment ²	3.8	5.4	1.1	3.2 – 7.6
<i>Staff Training</i>				
Training new hires on OASIS, hours	8.0	11.9	2.3	7.3 – 16.6
<i>Additional</i> new hire training time post-OASIS, hours	6.0	8.3	1.4	5.5 – 11.2

1. Recalculated with two outliers removed.

Recalculated with one outlier removed.

Source: GAO Medicare Home Health Care: OASIS Data, Use, Cost and Privacy Implications

In its January 2001 response to the GAO, CMS (formerly HCFA) pointed out that based on findings from its OBQI demonstrations it anticipated that OASIS times would be reduced once agencies became familiar with OASIS and integrated the assessment into their processes.

NAHC Study

In 2001 the National Association for Home Care (NAHC) gathered information on assessments by posting a list of questions on its member listserv. The questions asked how much time it takes to carry out assessments at the various assessment points, train new staff, and conduct quality review on completed assessments. NAHC gathered time data for more areas than other studies had; however, the NAHC study was less structured than either of the above two studies.

NAHC pointed out that HCFA's calculations (based on the CHSR/OBQI study noted above) were limited to start of care assessments and concluded that HCFA did not account for the full cost of OASIS assessments, because it did not include ongoing training and the time involved to complete the assessments, particularly at new time points required by OASIS (recertification, post inpatient stay, etc.). The NAHC study included time estimates for all assessments, as well as for training. Results are displayed in Table 1.3 below.

Table 1.3: NAHC Study of Time Required for OASIS Activities

OASIS-related Activity	Average Time	Range
Admission/start of care assessment	1 hr. 44 mins.	45 mins. – 4 hrs.
Recertification assessment	1 hr. 5 mins.	25 mins. – 3 hrs.
Transfer to Inpatient Facility assessment	19 mins.	5 mins. – 1 hr.
Resumption of Care assessment	1 hr. 19 mins.	30 mins. – 3.5 hrs.
Change in condition assessment	1 hr. 7 mins.	30 mins. – 2 hrs.
Discharge assessment	42 mins.	10 mins. – 1.5 hrs.
Discharge assessment when no visits after SoC/RoC or death	26 mins.	5 mins. – 2 hrs.
Training new staff	10 hrs. 45 mins.	2 hrs. – 30 hrs.
Review/validation	54 mins.	10 mins. – 6 hrs.

Source: NAHC Report, 901, 4-5.

NAHC estimated that there was an added burden of 6.75 hours to complete assessments at all of the other required time points. When commenting on this study, CHSR researchers pointed out that NAHC did not account for the fact that assessments typically are not done at all 10 time points for a patient, and if they had, the study's total time estimate would have been lower.⁸

It should be pointed out that all of these studies were conducted prior to the burden reduction act enacted by CMS in December of 2002. The changes involved reducing the likely number of intermittent assessments between intake and discharge, and also reducing the number of OASIS items on Follow-up assessments. Overall, CMS projected these changes would reduce burden by 28.65 percent of the original OASIS assessment protocol and save the home health industry nearly 56 million dollars each year, with each HHA saving approximately \$8,079 based on the number of HHAs functioning in 2002.⁹

Other literature on OASIS costs

In 2001, the University of Pittsburgh Center for Rural Health Practice conducted a study that included a statewide survey of rural home health agency administrators, fielded by the Pennsylvania Office of Rural Health. Two thirds of the administrators noted that OASIS added a “heavy burden” on their resources and one third indicated it added “somewhat of a burden”. The researchers noted that particularly for rural agencies, supports are not as well developed as they are in larger agencies.¹⁰

In 1999 the VNA of Western Pennsylvania, a participant in the OBQI Demonstration Project (Medicare Quality Assurance Project) reported on its ongoing OASIS costs (i.e., coordination and training) and compared them to those estimated by HCFA (adjusted for the VNA's large size). While

⁸ Shaughnessy op cit Vol III p. 2.12, and Hittle op cit.

⁹ E-mail communication from CMS

¹⁰ Lin et. al, (2003) University of Pittsburgh Center for Rural Health, *The Impact of Interim and Prospective Payment Systems on Home Health Providers and Medicare Beneficiaries in Rural Pennsylvania*.

it supported the goals of OASIS, it pointed out that HCFA's estimated costs were far less than actual costs encountered (\$948 vs. \$30,809 per year), as shown in Table 1.4.

Table 1.4: VNA of Western PA Estimated On Going Costs for OASIS Activities

Activity	Adjusted HCFA Estimated Cost	Actual VNA Costs
Coordinator	\$948	\$20,000
Training updates	--	6,480
Training new employees	--	
Training		1,924
Learning curve		2,405
Total On-going Costs per Year	\$948	\$30,809

Source: VNA of Western Pennsylvania¹¹

Also in 2001, Craig Jeffries of Healthspan testified that OASIS required one additional FTE for data entry and administrative support in his agency, that it doubled the amount of time of a field nurse for a new admission and that 30 percent of the OASIS paperwork required correction time from the nurse.¹²

Other OASIS-related burdens

Other burdens cited in the literature include concerns about negative impact on staff recruitment and retention, data confidentiality, and patient burden.

For example:

- In 2001, the OASIS Provider Task Force, consisting of organizations affiliated with home care¹³, voiced concerns to CMS about the need for streamlining OASIS. In addition to concerns about costs, the Task Force stated that OASIS has a negative effect on agency ability to recruit and retain nurses because of paperwork requirements and the decreased time for direct patient care.
- Craig Jeffries of Healthspan reported in his 2001 testimony at the US House of Representatives Hearing on HCFA Paperwork Reductions, that the "length and overuse"

¹¹ Testimony of Kristy Wright (May 24, 1999) President/CEO VNA, Western Pennsylvania, to Senate Committee on Aging, <http://aging.senate.gov/events/hr32kw.htm>, accessed October 5, 2004.

¹² Testimony of Craig Jeffries to US House of Representatives Hearing on HCFA Paperwork Reductions (May 9, 2001) <http://www.house.gov/smbiz/hearings/107th/2001/010509/jeffries.asp>, accessed October 05, 2004.

¹³ The organizations included the American Hospital Association, American Home Care Association, American Association for Homecare, Connecticut Association for Home Care, Gentiva Health Services, Medstar Health VNA, National Association for Home Care and the Visiting Nurse Associations of America.

of OASIS assessment tool had contributed to a decline in nurses entering the home health field and to nurses leaving the field because of data collection and procedural burdens.¹⁴

- Testimony on behalf of NAHC in 2003 to the Subcommittee on Health of the House Committee on Ways and Means indicated that while NAHC supported an outcome-based assessment, OASIS was “the number one reason for nurses leaving the home health setting”, and needed further streamlining.¹⁵
- In 1999 the Citizen’s Council on Health Care raised concerns about privacy and whether the federal government should have health information on every citizen; that OASIS oversteps federal law because it required unconsented data collection on all home health patients not just those whose coverage was publicly subsidized and that it violates patient privacy and grants broad access to confidential records.¹⁶
- In his 1999 testimony to the Senate Committee on Aging, James Pyles, representing the Home Health Services and Staffing Association and the American Psychoanalytic Association, voiced concerns about privacy protections in dimensions such as mental health, family and financial information.¹⁷
- In her 1999 testimony to the Senate Committee on Aging, Cynthia Kail, Associate Administrator of the Greene County Medical Center in Jefferson, IA, noted that the home health admission process is a particular burden on frail elders, it can be exhausting and sometimes necessitates repeat visits. Says the burden of OASIS means decrease in access to services: devoting more resources to data collection and less to direct care.¹⁸

Since the time of these comments, some of the confidentiality concerns have been addressed through the Health Insurance Portability and Accountability Act (HIPAA) and by CMS through masking of data to protect confidentiality, and OASIS burden on staff and patients has been addressed through streamlining of the OASIS assessments as part of the burden reduction act.

1.2.2 Benefits of OASIS data collection

There have been several formal studies of the benefits of collecting OASIS and using OBQI. The key evidence of benefits comes from three evaluations of demonstration projects, as well as articles and testimonies from some of the demonstration agencies. The National Medicare Quality Assurance and Improvement Demonstration and the New York State Department of Health’s Outcome Based Quality Improvement Demonstration (both occurring around 1995-2000) are cited in a number of the

¹⁴ Jeffries op cit

¹⁵ Testimony of Janet Wolf (February 13, 2003) on Behalf of the National Association for Home Care and Hospice, before the Subcommittee on Health of the House Committee on Ways and Means, <http://waysandmeans.house.gov/hearings.asp?formmode=printfriendly&id=78>, Accessed December 2, 2004.

¹⁶ Citizens Council on Healthcare Comments to HCFA 1999. www.aapsonline.org/medicare/oasiscom.htm, last accessed October 25, 2004.

¹⁷ Testimony of James Pyles (May 24, 1999) Home Health Services and Staffing Association and the American Psychoanalytic Association, to US Senate Committee on Aging, <http://aging.senate.gov/events/hr32jp.htm>, accessed September 30, 2004.

¹⁸ Testimony of Cynthia Kail, (May 24, 1999) Associate Administrator of the Greene County Medical Center, Jefferson, IA, to US Senate Committee on Aging, <http://aging.senate.gov/events/hr32jp.htm>, accessed September 30, 2004.

articles. Both demonstrations were administered by University of Colorado's Center for Health Services Research (CHSR), and both collected data on all patients regardless of payer, so that agencies could receive reports on their entire caseload. Results were based on over 157,000 patients in 54 agencies in the National Demonstration, over 248,000 patients in non-OBQI certified control agencies in the 27 National Demonstration states, and over 105,000 patients admitted to the New York study agencies. The studies found improvements in care in those agencies that used OBQI, including statistically significant reductions in hospitalization rates and success in improving outcomes for targeted measures¹⁹:

- In the National Demonstration, risk-adjusted hospitalization rates dropped from 32.5 percent in Year 1 to 25.3 percent in Year 3 (compared to much smaller changes for non-OBQI patients). In the New York State Demonstration, the rates declined from 30.1 percent in Year 1 to 22.2 percent in Year 4.
- Risk adjusted results for target outcomes²⁰ showed statistically significant positive benefits: National Demonstration patients had a 7.7 percent improvement in target outcomes from Year 1 to Year 2 and 5.8 percent improvement from Year 2 to Year 3. New York State Demonstration patients also showed improvements in target outcomes of about 6.0 percent each year.
- About 70 to 90 percent of the demonstration agencies were able to positively impact their target outcomes.

In addition to measurable changes in outcomes, the demonstrations found other benefits. CHSR researchers observed that OASIS and the reports derived from OASIS data were used by agencies in reallocating resources to improve outcomes and control costs, helping agencies modify approaches to care.

The Home Health Outcome Based Quality Improvement System Pilot Project, conducted by the Delmarva Foundation, involved Quality Improvement Organizations (QIOs) in five states and 417 HHAs in those states: Maryland, Michigan, New York, Rhode Island, and Virginia (conducted in 2000-2002). The pilot found that 54 percent of HHAs improved their targeted outcomes and that there was a 6.7 percent improvement in risk-adjusted outcomes.²¹

CHSR and Delmarva researchers observed that support for OASIS tended to increase as the demonstration agencies became aware of its benefits, and posited that as OBQI evolves and providers understand the use of OASIS, sentiments about the data collection burden may decline. CHSR researchers concluded that OASIS will likely be perceived as a burden if viewed as meeting regulatory compliance; however, when used for OBQI, it would likely be seen as a useful tool for patient care and HHA management. CHSR researchers noted that most of the demonstration agencies continued to use OBQI even after the demonstrations were completed.

¹⁹ Shaughnessy P.W., Crisler K.S., Hittle D.F., et al, (2002) *OASIS and Outcome-Based Quality Improvement in Home Health Care: Research and Demonstration Findings, Policy Implications and Considerations for Future Change, Volumes I - IV*, Center for Health Services Research, University of Colorado Health Sciences Center Denver, Colorado.

²⁰ Demonstration agencies were asked to select two target outcomes as the focus of their OBQI activities. Hospitalization was recommended as one of the target outcomes for the first year's activities. Other than hospitalizations, no single target outcome was chosen by a majority of agencies.

²¹ Delmarva Foundation (2002) *Final Report: Home Health Outcome Based Quality Improvement System Pilot Project*. Delmarva Foundation.

A discussion of findings from the National Medicare Home Health Quality Assurance and Quality Improvement Project by Conway and Richard suggested that benefits from OASIS data collection were felt by patients and staff at all levels of the home health agencies, including clinicians, clinical managers, and administrators.

- Benefits to patients included improved care and improved outcomes based on the improved ability to evaluate clinical performance by how care actually affects patients' health;
- Benefits to clinicians included improved clinician assessment and care planning skills; strengthened evaluation of patient progress; improved documentation; identification of best practices; and enhanced teamwork and coordination;
- Benefits to clinical managers included the development of streamlined training programs; increased clinical role in QI programs; and an enhanced sense of teamwork as all clinicians were involved in efforts to improve care;
- Administrative benefits included the use of outcome data and reports to support targeting resources and increasing efficiencies; outcome data used for marketing and to satisfy managed care quality reporting requirements and accreditation requirements; time-series case mix evaluations enhance strategic planning and program development; the linkage of outcome data to other data provides decision support information for investing resources for improved patient care.²²

Anecdotal articles also attest that OASIS and OBQI enhance processes of care and outcomes, help agencies identify where to focus improvement efforts, and stimulate improvement in continuity of care and measurement of improvement in patient outcomes.²³ For example, Kristy Wright, as President/CEO of the VNA of Western Pennsylvania, testified that her VNA found many benefits to using OASIS as an OBQI Demonstration Projects participant. Benefits cited from OASIS and OBQI included:

- Creation of a database for identifying patient problems that improves uniformity and objectivity;
- Improved continuity of care for patients seen by more than one clinician;
- Information and reports from the data that enable evaluation and comparisons;
- Measurable improvement in patient outcomes: 4 percent increase in patients' ability to ambulate and a 10 percent reduction in re-hospitalizations; and
- An objective measurable report card that agencies and others can use to compare quality.²⁴

²² Conway K., Richard A., (2000) *Unexpected Benefits of OASIS and OBQI* Home Healthcare Nurse (18) 4:255-257.

²³ Chisolm D, Murdock K (2002) *The Outcome-Based Quality Improvement Pilot Project: A Perspective from Maryland Home Health Care Management & Practice* (14) 3:179-184.

²⁴ Testimony of Kristy Wright (May 24, 1999) President/CEO VNA, Western Pennsylvania, to Senate Committee on Aging, <http://aging.senate.gov/events/hr32kw.htm>, accessed October 5, 2004.

Other potential benefits of OASIS data collection that have been mentioned in the literature include:

- Enhancing quality of care by strengthening the monitoring of HHAs – state surveyors use OBQI outcome reports to help strengthen and streamline the survey and certification process, by targeting HHAs in need of improvement;
- Increasing accountability for patient outcomes – OASIS data may provide an objective measure of the benefits of homecare and may be used to strengthen the value of homecare services to purchasers and payers;²⁵
- Providing an objective measure of the benefits of homecare – OASIS can help ensure that key aspects of care are being addressed and can enable benchmarking of treatment strategies;²⁶ and
- Supporting examination of variations in homecare quality regionally as well as serve as a tool to measure changes across agencies and over time.²⁷

Benefits of OASIS data collection for private pay patients

Our literature search did not locate formal findings in the literature about OASIS benefits for the non-Medicare/Medicaid patient population, or any systematic studies to date that measure the extent of variation of benefits accruing to different types of agencies, payers and patients. A few demonstration studies (which included all patients) included references to potential benefits for private pay patients, but no studies on the population have yet been undertaken. For example, researchers from the University of Colorado's Center for Health Services Research (CHSR) pointed out that most OBQI Demonstration agencies found that including all patients in assessment data collection contributed to the effectiveness of the QI efforts and that it was more cost effective to use the same forms and protocols for all patients. Collection of data for all patients also enabled the agencies to receive reports on their entire caseload, which would support a broader picture of resource allocations and other management decisions.²⁸

The literature also contains evidence of concerns from home health researchers and legislators about the potential negative impacts of discontinuing OASIS data collection for private pay patients. Researchers from the CHSR have stated:

“Without OASIS data collected on Medicare and non-Medicare skilled care patients alike, PPS may create an undetected two-class home health care delivery system for public- vs. nonpublic-pay (skilled care) patients. We may not learn definitively of this system or how to remedy it until it has caused many years of damage. Because home care serves a highly vulnerable population, this is an extremely serious concern. Further, public or consumer reporting on outcome indicators based only on Medicare patients will not be nearly as informative to consumers as reporting based on an agency's entire caseload, or at least its skilled care caseload. Therefore, it would not be advisable to eliminate Medicaid

²⁵ Penz C., Wilson A., (1999) *Assuring the Quality of OASIS Data: One Agency's Plan* Home Healthcare Nurse Manager 3, (4): 18-23

²⁶ Testimony of George Taler, MD (May 24, 1999) President, American Academy of Home Care Physicians, to Senate Committee on Aging, <http://aging.senate.gov/events/hr32gt.htm>, accessed September 30, 2004.

²⁷ Ibid.

²⁸ Shaughnessy op cit

patients from the current reporting requirement. Further, it would be beneficial to proceed with data transmission for non-Medicare and non-Medicaid skilled care patients as soon as methods to ensure confidentiality of data for such patients are sufficiently developed.”²⁹

These concerns are echoed in a May 2003 letter from Senator Chuck Grassley, Chairman of the Senate Committee on Finance, to Health and Human Services Secretary Tommy Thompson.³⁰ In his letter, advocating against the suspension of OASIS data collection for private pay patients, Sen. Grassley states that:

- monitoring the quality of care furnished in an individual's home is particularly challenging due to variation in conditions, compared to an institutional setting, such as a nursing home or a hospital;
- home health agencies should have the tools to improve quality for all the patients they serve, just as nursing homes requires the collection of assessment data from private pay patients,
- public reporting of quality measures in several health sectors – nursing homes, home health, and hospitals – help patients and their families find the best care for their needs;
- steps have been taken to streamline the OASIS patient assessment process, making the instrument less burdensome;
- privacy issues raised about transmission of OASIS data for private pay patients have been allayed through the use of encryption technology;
- continued data collection is important to ensure that Medicare-covered home health patients get the same quality of care as those with private insurance; and
- eliminating OASIS requirements for private pay patients conflicts with CMS’s goals to report quality measures for the Medicare program.

Senator Grassley concludes by stating that consumers should have public access to data on provider quality and that CMS should begin collecting and analyzing data submitted by private patients in the OASIS format to use in its quality improvement activities.

²⁹ Ibid

³⁰ Letter from Sen. Chuck Grassley, Chairman of the Senate Committee on Finance, to Health and Human Services Secretary Tommy Thompson, May 1, 2003. Accessed at <http://grassley.senate.gov/releases/2003/p03r05-01.htm>

1.3 Research Questions

Based on the issues documented in the literature review and the Congressional mandate in Section 704 of the MMA, a list of research questions to be addressed by the OASIS Study was developed by Abt Associates and approved by CMS. These questions are listed below.

What is the status of agency OASIS collection on private pay patients post-suspension?

- What proportion of agencies has suspended collection of OASIS data on their private pay patients?
- What factors influenced agency decisions to suspend or continue collection of OASIS data on their private pay patients?
- What agency characteristics (such as size) are associated with agencies that have elected to suspend or continue collection of OASIS data on their private pay patients?

What unique benefits can be obtained through collection of OASIS data on private pay patients?

- What benefits are agencies deriving from the analysis of Medicare/Medicaid OASIS data?
- What benefits are agencies deriving from the analysis of private pay OASIS data?
- What benefits *could* agencies potentially be deriving from the collection of private pay OASIS data that they are not currently receiving?
- What factors and agency characteristics (such as size) influence the degree of benefit realized by agencies?
- What barriers prevent agencies from using and benefiting from private pay OASIS data?

What are the costs associated with OASIS data collection?

- What is the incremental cost associated with OASIS assessment versus non-OASIS assessment for private pay patients?
- What factors and agency characteristics (such as size) influence agency costs related to OASIS data collection?

What would be the impact of including private pay patients in outcome reports on the validity of reported home health outcome measures?

- How do case-mix and outcomes differ for Medicare/Medicaid and private pay patients?
- Can patient outcomes currently collected for Medicare/Medicaid patients at the agency level be generalized to serve as a report for all adult non-maternity patients receiving skilled services from an agency?

- Does the risk-adjustment approach used in the current outcome reports perform adequately for private pay patients?

What might be the positive and/or negative outcomes of future Congressional decisions regarding the collection of OASIS data for private pay patients?

- What might be positive and/or negative outcomes if the requirement for OASIS data collection on private pay patients were reinstated?
- What might be positive and/or negative outcomes if the requirement for OASIS data collection on private pay patients were permanently suspended?

1.4 Role of the Technical Expert Panel

A Technical Expert Panel (TEP) was convened to advise Abt project staff on the overall study implementation process and on each of the project's major tasks.³¹ TEP members were selected to be representative of constituencies with expertise in the issues surrounding OASIS data collection, home health quality assessment, measurement and reporting. The TEP included experts from both large and small HHAs, academic researchers, and a Medicare consumer advocate. Individuals serving on the TEP were:

Kathryn Collins, RN, MS

Director

Baltimore County Home Health

Baltimore, MD

Paul Cotton

Senior Legislative Representative

AARP

Washington, DC

Dan Fish

Administrator

McLean Home Health Agency

McLean, TX

Richard H. Fortinsky, PhD

Professor of Medicine

Center on Aging

University of Connecticut Health Center

Farmington, CT

³¹ Note that the TEP was not subject to the provisions of the Federal Advisory Committee Act (FACA) as it was convened and managed by Abt Associates and there was no requirement for the panel to reach consensus about any of the issues that came before it.

David Hittle, PhD

Assistant Director of the Center for Health Services Research
Division of Health Care Policy and Research
University of Colorado Health Sciences Center
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Sharon E. Johnson, MSN, RNC, CNA

Director, Home Health
The Home Care Network Jefferson Health System
Wayne, PA

Elizabeth A. Madigan, PhD, RN

Associate Professor of Nursing and Associate Dean for International Health
Case Western Reserve University
Cleveland, OH

Barbara McCann, MSW

Vice President of Professional Services and Chief Clinical Officer
Interim HealthCare
Sunrise, FL

Two one-day TEP meetings were held in the Baltimore/Washington, D.C. metropolitan area, one in December 2004 prior to data collection, and one in September 2005 once data collection was completed. TEP meetings were attended and run by Abt project staff; the CMS Project Officer, and other relevant CMS personnel attended as observers.

At the first TEP meeting we asked members to review and comment on the literature review to ensure we included all relevant publications and sources and to comment on our findings. We also sought TEP guidance on the proposed content, methodology and administration of the HHA survey and the interview protocols for HHAs and QIOs. To assist us with developing the sampling plan, we asked for TEP assistance in developing the definition and estimation of small and large HHAs. We also asked the TEP to advise us on our proposed approach to risk adjustment of patient outcomes and survey data, and analysis of case-mix and patient outcomes between Medicare, Medicaid and other payer groups.

At the second TEP meeting, we presented the results our data collection and analysis efforts regarding the percentage of HHAs that have continued to collect OASIS data on private pay populations, and asked TEP members to assist in the interpretation of our findings. We sought TEP input in defining and identifying both the differential burden for large and small HHAs associated with OASIS data collection for private pay patients, and the value provided to agencies by the analysis of that data. We also shared the results of our comparison of case-mix and outcomes reports for different payor groups and ask for TEP guidance on the potential impacts on large and small HHAs. Finally, we shared the results with of our review of OASIS-related privacy and security practices in the industry and received comments on our findings about issues related to the safeguarding OASIS information. TEP members also advised us on approaches to dissemination of findings to CMS, to the public and to stakeholder groups.

1.5 Study Overview

The OASIS Study began in October 2004 with a review of literature to identify relevant findings on the value of OASIS and OBQI data to HHAs, the burden associated with OASIS data collection, and current practices on collection and analysis of OASIS data for private pay patients. The results of the literature review assisted with initial development of a national HHA mail survey and telephone interview protocols for use with Quality Improvement Organizations and HHAs.

In December 2004, a sample of OASIS data for Medicare and other patients was obtained from a private home health benchmarking vendor, Outcomes Concept Systems. These data were analyzed to determine the differences in case-mix between Medicare, Medicaid and private pay patients, whether the outcomes for private pay patients are different for the outcomes of Medicare and Medicaid patients, and the extent to which any differences remain after applying the current OBQI risk adjustment models. A discussion of the methodology and findings of these is presented in Section 2.

Also in December 2004, the first meeting of the OASIS Study TEP was convened to comment on the literature review and Abt staff's initial efforts to develop content for the survey and interview protocols, as well as plans for analysis of private pay OASIS outcomes data. A revised version of the HHA survey was created based on feedback from the TEP and from cognitive testing with home health agency representatives. Once OMB approval was obtained, the survey was fielded in the spring and summer of 2005. A more thorough description of survey development and implementation is included in Section 3 of this report. Section 4 contains an analysis of survey data.

To supplement the data collected in the survey, telephone interviews were conducted with home health agencies, Quality Improvement Organizations and Accrediting Organizations. The results of these interviews are presented in Section 5. We also reviewed privacy and security issues relating to the collection, transmission and storage of OASIS data with representatives of the national home health industry organizations and agencies charged with collecting and maintaining the privacy of OASIS data. The results of these discussions are presented in Section 6.

In September 2005, the OASIS Study Technical Expert panel met again in Baltimore to review the results of the study. The results of these discussions informed our analysis of study findings and their implications for future CMS policy, which are included in Section 7.

2.0 Analysis of OASIS Casemix, Outcomes and Risk Adjustment by Payment Source

One task of the OASIS Study was to examine the differences in case-mix between Medicare, Medicaid and private pay patients and examine the following research questions:

- Whether the outcomes for private pay patients are different for the outcomes of Medicare and Medicaid patients, and the extent to which any differences remain after applying the Outcome-based Quality Improvement (OBQI) risk adjustment models developed by the Center for Health Services Research that are used to create outcome measures;
- Whether the risk-adjustment approach used in the current outcome reports performs adequately for private pay patients; and
- What the impact would be of including private pay patients in outcome reports on the validity of reported outcome measures.

The data source for these analyses is OASIS assessments data acquired from Outcome Concept Systems (OCS), a private vendor that provides benchmarking services to home health agencies and other providers. The OCS data include both government and private pay assessments, allowing comparison of outcomes and case mix profiles by payment source. For this analysis, we obtained OCS OASIS data for all of calendar year 2003 and the 1st three quarters of 2004. While the OCS dataset used for our analysis does not represent a nationally representative sample of agencies, it does include data from more than 700 home health agencies from across the country.

2.1 Methodology

Translation of OASIS case-mix and outcomes programs

The OBQI Case Mix Profile and Risk Adjusted Outcome Reports are produced using algorithms created by the University of Colorado Health Sciences Center (UCHSC) and maintained by the Iowa Foundation for Medical Care (IFMC). In order to be able to perform the outcomes and case mix analysis by payment source, we translated the original code specifications provided by UCHSC into SAS code. Once the translation was complete, we tested the SAS version of the code on a dataset obtained from IFMC containing all OASIS records from 2 states for February 2005. Using the Abt SAS code, we were able to match the IFMC results for case mix, unadjusted outcomes and adjusted outcomes. The differences between our results and those of IFMC were extremely small and can most likely be attributed to rounding errors. The median absolute difference across all measures was .0012, ranging from a high of .1114 for improvement in toileting to a low of 0 for stabilization in grooming and shopping and improvement in transferring, light meal preparation, dyspnea, and urinary incontinence.

Creation of the sample file

Defining and identifying payer

We identified payer based on response to M0150 on the discharge assessment as shown in Table 2.1 below. If response 1 or 2 (FFS or HMO Medicare) were checked, the payer for the episode was classified as Medicare, regardless of whether other responses were also marked. If responses 1 or 2 were NOT checked, but responses 3 or 4 (FFS or HMO Medicaid) were checked, the episode was

classified as Medicaid, again regardless if other non-Medicare payment sources were marked. Episodes were classified as private pay when ONLY responses 8 or 9 (private insurance/private HMO) were marked. While this approach does not create mutually exclusive groupings, it was selected because performing an analysis on each of the many permutations of possible payers would have produced statistically meaningless results due to small sample sizes. Also, although the episodes classified as Medicare may have other payment sources, they represent the episodes for which OASIS data collection is required under current law. The decision to derive the payer classification on the M0150 response from both assessments was made to allow us to focus on those assessments for which we have the greatest confidence about the payment source.

Table 2.1: Identifying Payment Source from OASIS Item M0150

	M0150 at Adm + D/C = 1 or 2	M0150 at Adm + D/C = 3 or 4	M0150 at Adm + D/C = 5, 6, or 7	M0150 at Adm + D/C = 8 or 9
Classified as Medicare	Y	n/a	n/a	n/a
Classified as Medicaid	N	Y	n/a	n/a
Classified as Private Pay	N	N	N	Y

Cleaning and pairing of OASIS Data

The unit of analysis for outcome and case mix reports is an episode of care starting with an admission to home health care (M0100 = 1 or 2) or resumption of care after an inpatient stay (M0100 = 3), and ending with a discharge from home health care, including discharge due to death, or admission to inpatient facility for 24 hours or more (M0100 = 6, 7, 8, or 9). We therefore eliminated assessments for which the response to M100 was other than 1, 2, 3, 6, 7, 8, or 9. We also eliminated admission assessments with no matching discharge, and discharges with no matching admission assessments, assessments in which the admission or discharge assessments were out of sequence, as well as records with invalid patient IDs and dates.

Our OASIS data consisted of 4,607,171 OASIS assessments submitted to OCS from January 2003 through September 2004. The data cleaning and pairing process described above resulted in a universe of 1,547,634 unique pairs of OASIS assessments representing episodes of care, of which 1,395,940 (90.2percent) were identified as Medicare or Medicaid and 111,836 (7.3percent) were identified as private pay. For our sample, we selected all the episodes identified as private pay, plus a random sample of 137,448 episodes classified as Medicare or Medicaid to create a total sample of 250,000 episodes.

2.1.1 Characteristics of agencies in the sample file

Table 2.2 below compares the characteristics of the agencies in the OCS data set to those in the Medicare Provider of Service files. Agency size is defined based on the total number of annual visits, across all visit types and payers, derived from the most recent Medicare Cost Report. For non-hospital based agencies, number of visits is reported in Worksheet S-3, Line 8, Column 5. For hospital-based agencies, number of visits is reported in Worksheet H6, Part I, Line 7, Column 4. Agencies for which there was no size information available (i.e., no match between the agency's provider number and a Cost Report from either HCRIS or the HHA Cost Reports) are classified as "Size Unknown". We define urban and rural counties based on the Rural-Urban Continuum developed by the Economic Research Service of the U.S. Department of Agriculture.

Table 2.2: Comparison of Agency Characteristics - Medicare POS and Sample

Agency Characteristic	OCS Sample %	POS File %
Size		
SMALL (<i>< 4,830 VISITS</i>)	5.9	22.5
MEDIUM (<i>4,830 TO 21,468 VISITS</i>)	41.6	39.7
LARGE (<i>> 21,468 VISITS</i>)	46.5	19.8
UNKNOWN (<i>TOTAL VISITS MISSING</i>)	5.9	18.1
Census Region		
NORTHEAST	19.7	11.0
SOUTH	16.0	44.9
MIDWEST	38.8	27.2
WEST	22.5	16.3
UNKNOWN	3.0	0.7
Urban/Rural		
URBAN	76.5	71.6
NON-URBAN	19.9	27.7
UNKNOWN	3.5	0.7
Type of Facility		
VISITING NURSE ASSOCIATION	13.4	5.8
COMBINATION GOVERNMENT VOLUNTARY	0.1	0.4
OFFICIAL HEALTH AGENCY	4.3	12.2
HOSPITAL BASED	34.6	22.3
SKILLED NURSING FACILITY BASED	1.9	1.4
OTHER	42.6	57.9
UNKNOWN	3.0	0
Type of Control		
VOL. NON-PROF. - RELIGIOUS AFF.	14.9	6.0
VOLUNTARY NON-PROFIT - PRIVATE	27.8	15.1
VOLUNTARY NON-PROFIT - OTHER	10.8	8.2
PROPRIETARY	38.9	58.6
GOVERNMENT - STATE/COUNTY	1.5	8.1
GOVERNMENT - COMB. GOVT & VOL.	0.2	0.3
GOVERNMENT - LOCAL	2.9	3.8
UNKNOWN	3.0	0

Census region refers to the four geographic regions of the United States that correspond to those used by the U.S. Census Bureau.

- Northeast – Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont
- Midwest – Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin
- South – Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.
- West – Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming.

As expected, agencies in the OCS sample tend to be larger and more urban. They are less likely to be located in the South and to be for-profit, and more likely to be a VNA or affiliated with a hospital.

2.1.2 Calculation of case-mix and outcomes measures

Our calculation of the case mix, outcomes and risk-adjusted outcomes used the translated UCHSC specifications and followed the parameters set forth in the original code, applied to the whole sample described above, and subsetting as required in the code. Throughout the derivation of the measures, missing and invalid measures were tracked to determine if critical measures were missing and/or data not meeting the published data specifications were present. A final check for these was conducted at the end of the data processing.

The first set of variables calculated were the End Result Outcomes, which are the measures related to activities of daily living, instrumental activities of daily living, physiologic outcomes, and cognitive/social/behavioral outcomes. End Result Outcomes are not computed for patients who were transferred to inpatient facility (M100 = 06, 07) or for patients who died (M100 = 8). Utilization Outcomes are measurements of patients' usage of additional health care services while on service or upon leaving the care of the home health agency. Utilization Outcomes are not computed for patients who died (M100 = 8). As indicated in the pseudo-code, outcome measures were set to missing for pediatric cases, patients with age above 120, and patients where measures for confusion or anxiety were not available.

The next set of variables calculated were the case mix variables, which were calculated for all pairs using the first time point, except for those measures related to length of stay. Following the case mix calculations were the risk factor measures used in risk adjustment of outcome measures. Risk factor measures were also calculated using the first time point in all cases, except for those measures related to length of stay.

Before calculating the predicted outcomes, the pediatric patients and patients with age above 120 years, were excluded from the sample. The pseudo-code for this section required no changes other than appropriate SAS punctuation, and therefore, was used as is. Once the predicted outcomes were calculated, the final sample was set by excluding pairs that had critical values missing or five or more invalid non-critical measures.

2.2 Case-mix profile by payment source

We examined patient characteristics by payer, using the variables in the OBQI Case Mix Profile report. The report shows patient attributes that are likely to impact health status, such as demographics, living conditions, and baseline health. We also examined patient diagnosis (as recorded in M0230 and M0240). As expected, significant differences were seen between the patients based on payment source. Our findings are displayed in Tables 2.3 and 2.4 below.

In comparison to Medicare/Medicaid patients, private pay patients are more likely to be male, white and living in their own home. Private pay patients are, on average, younger than Medicare patients by more than a decade, though they are slightly older than Medicaid patients. They are much less likely to live alone, and they receive care from a primary caretaker more frequently – 4.07 times per week on average, versus 3.79 for Medicare patients and 3.10 for Medicaid patients. They are more likely to have a spouse or significant other as their primary caretaker (and less likely to have a son, daughter or paid help).

Private pay patients are more likely to have had a change in their medical regimen in the 14 days prior to SOC/ROC and their prognosis for recovery and rehabilitation are rated as higher. Examination of functional status measures – ADLs and IADLs – shows private pay patients scoring closer to independent functioning for all measures, both at SOC/ROC and 2 weeks prior to SOC/ROC. Patients tend to have less dyspnea and fewer sensory impairments such as low vision, impaired hearing or speech language disabilities.

Private pay patients are much more likely to be receiving IV therapy and parenteral nutrition than Medicare/Medicaid patients. They are also much more likely to have surgical wounds, and less likely to have pressure or stasis ulcers. Private pay patients are more likely to report pain interfering with functioning and intractable pain, and have lower levels of cognitive impairment, confusion, anxiety and behavior problems than Medicare/Medicaid patients. Together, these analyses support the perception that private pay patients are commonly acute post-operative patients, with fewer chronic functional and cognitive disabilities and a greater level of natural support in the home.

Table 2.3: Case-mix Profile by Payment Source

	Private Pay	Medicare	Medicaid
Demographics			
Age	55.0	76.9	53.4
Gender: Female (%)	55.0%	63.3%	65.5%
Race: White (%)	83.1%	75.9%	44.8%
Race: Black (%)	9.0%	9.6%	22.2%
Race: Other (%)	7.9%	14.4%	33.1%
	0.4%	0.4%	0.6%
Current Residence			
Own home (%)	88.6%	78.2%	72.1%
Family member home (%)	9.2%	13.3%	21.6%
Current Living Situation			
Lives alone (%)	12.6%	27.8%	26.4%
With family member (%)	29.5%	28.8%	46.8%

	Private Pay	Medicare	Medicaid
With paid help (%)	1.4%	8.6%	2.9%
With friend (%)	2.0%	1.3%	3.4%
Primary Caregiver			
Spouse/significant other (%)	59.5%	31.0%	22.0%
Daughter/Son (%)	10.4%	31.2%	24.1%
Other paid help (%)	1.8%	10.9%	6.1%
No one person (%)	15.2%	15.5%	21.8%
Primary Caregiver Assistance			
Frequency of Assistance	4.07	3.79	3.10
Med. Reg. Chg. within 14 days of ROC/SOC			
Medical regimen change (%)	89.7%	85.5%	78.1%
Prognoses			
Moderate recovery prognosis (%)	94.7%	91.4%	88.8%
Good rehab prognosis (%)	87.9%	77.3%	73.7%
ADL Disabilities at SOC/ROC			
Grooming (0-3, scale average)	0.51	0.88	0.72
Dress upper body (0-3, scale average)	0.65	1.04	0.83
Dress lower body (0-3, scale average)	1.06	1.35	1.10
Bathing (0-5, scale average)	2.04	2.51	2.01
Toileting (0-4, scale average)	0.34	0.68	0.56
Transferring (0-5, scale average)	0.63	0.96	0.76
Ambulation (0-5, scale average)	0.89	1.34	1.11
Eating (0-5, scale average)	0.29	0.44	0.38
ADL Disabilities Prior to SOC/ROC			
Grooming (0-3, scale average)	0.33	0.73	0.63
Dress upper body (0-3, scale average)	0.38	0.82	0.71
Dress lower body (0-3, scale average)	0.49	0.97	0.87
Bathing (0-5, scale average)	0.91	1.82	1.53
Toileting (0-4, scale average)	0.31	0.64	0.55
Transferring (0-5, scale average)	0.43	0.83	0.71
Ambulation (0-5, scale average)	0.58	1.13	0.99
Eating (0-5, scale average)	0.24	0.44	0.39
IADL Disabilities at SOC/ROC			
Light meal preparation (0-2, scale average)	0.86	1.14	0.95
Transportation (0-2, scale average)	0.96	1.03	0.98
Laundry (0-2, scale average)	1.60	1.75	1.58
Housekeeping (0-4, scale average)	2.71	3.08	2.75
Shopping (0-3, scale average)	1.98	2.26	1.96
Phone use (0-5, scale average)	0.23	0.81	0.63
Mgmt oral meds (0-2, scale average)	0.36	0.84	0.63

	Private Pay	Medicare	Medicaid
IADL Disabilities Prior to SOC/ROC			
Light meal preparation (0-2, scale average)	0.43	0.89	0.77
Transportation (0-2, scale average)	0.46	0.87	0.87
Laundry (0-2, scale average)	0.71	1.32	1.23
Housekeeping (0-4, scale average)	1.21	2.31	2.12
Shopping (0-3, scale average)	0.86	1.68	1.49
Phone use (0-5, scale average)	0.28	0.87	0.67
Mgmt oral meds (0-2, scale average)	0.43	0.84	0.68
Respiratory Status			
Dyspnea (0-4, scale average)	0.72	1.19	1.04
Therapies Received at Home			
IV Infusion Therapy (%)	13.10%	2.75%	8.61%
Enteral Nutrition (%)	2.08%	1.74%	2.26%
Parenteral nutrition (%)	1.32%	0.23%	0.62%
Sensory Status			
Vision impairment (0-2, scale average)	0.09	0.26	0.19
Hearing impairment (0-4, scale average)	0.11	0.47	0.18
Speech/language (0-5, scale average)	0.15	0.45	0.40
Pain			
Pain interferes with activity (0-3, scale average)	1.53	1.18	1.30
Intractable pain (%)	16.38%	13.65%	18.93%
Neuro/Emotional/Behavioral Status			
Moderate cognitive disability (%)	0.03	0.12	0.08
Severe confusion disability (%)	0.03	0.11	0.05
Severe anxiety level (%)	0.15	0.17	0.21
Behavior problems > twice a week (%)	0.03	0.07	0.06
Integumentary Status			
Presence of wound/lesion (%)	76.96%	56.39%	54.40%
Pressure ulcer(s) present (%)	5.35%	13.89%	11.55%
Stasis ulcer(s) present (%)	1.64%	4.31%	4.66%
Surgical wound(s) present (%)	82.10%	53.50%	59.25%
Stage 2-4 ulcer(s) present	3.26%	6.09%	5.37%
Stage 3-4 ulcer(s) present	3.00%	5.77%	4.71%

We focused our analysis on the differences seen between the private pay and Medicare/Medicaid populations, but there are obviously some significant differences noted between Medicare and Medicaid patients as well. Medicaid patients are younger by an average of 23.5 years and are more likely to be non-White. They live in their own home less frequently, and are much more likely to live with a family member. Medicaid patients are less likely to have had a change in their medical

regimen in the 14 days prior to SOC/ROC, and they have a poorer prognosis for recovery and rehabilitation. Medicaid patients score closer to independent on all ADL and IADL functioning, both at SOC/ROC and 14 days prior, except for transportation 14 days prior, when scores are equal. Medicaid patients are more likely than Medicare patients to be receiving IV therapy and enteral or parenteral nutrition. They have much less sensory impairment than Medicare patients, and fewer cognitive, emotional and behavioral problems, although they have higher levels of severe anxiety. Finally, Medicaid patients are less likely to have pressure ulcers, but more likely to have surgical wounds and stasis ulcers. Medicaid patients are also more likely to report that they have “no one person” as their primary caregiver.

2.2.1 Diagnosis by payment source

We examined diagnosis by payment source for private pay, Medicare and Medicaid episodes, using patient diagnosis as recorded in M0230, M0240 and M0245. Each diagnosis with a corresponding severity rating greater than 1 was assigned to a diagnostic grouping based on the ICD-9 categories used in the Case-Mix Profile. Results are displayed in Table 2.4. A few of the more noticeable variations in diagnosis are the much higher rates of infectious, endocrine, mental and congenital disorders and intracranial injuries reported for Medicaid patients; the higher number of cancer diagnoses among the private pay patients; and the comparatively high rates of circulatory disorders, fractures and “ill-defined conditions” in the Medicare population.

Table 2.4: Diagnostic Group by Payment Source

Diagnostic Group	Private Pay %	Medicare %	Medicaid %
Infectious/parasitic diseases	4.97%	3.06%	10.47%
Neoplasms	17.01%	10.51%	11.78%
Endocrine/nutrition/metabolic	23.44%	28.30%	39.30%
Blood diseases	5.08%	6.66%	6.76%
Mental diseases	5.05%	9.30%	14.97%
Nervous system diseases	7.68%	10.07%	12.28%
Circulatory system diseases	34.45%	55.14%	47.82%
Respiratory system diseases	10.25%	18.91%	20.33%
Digestive system diseases	11.73%	9.80%	12.67%
Genitourinary system Diseases	6.97%	11.40%	12.51%
Pregnancy problems	0.50%	0.02%	0.77%
Skin/subcutaneous diseases	9.66%	10.58%	13.19%
Musculoskeletal system diseases	27.36%	29.40%	18.61%
Congenital anomalies	0.94%	0.56%	1.29%
Ill-defined conditions	28.82%	41.83%	27.21%
Fractures	6.98%	7.72%	3.87%
Intracranial injury	0.31%	0.30%	0.42%
Other injury	4.49%	3.96%	4.61%

2.3 Outcomes for private pay and Medicare/Medicaid patients

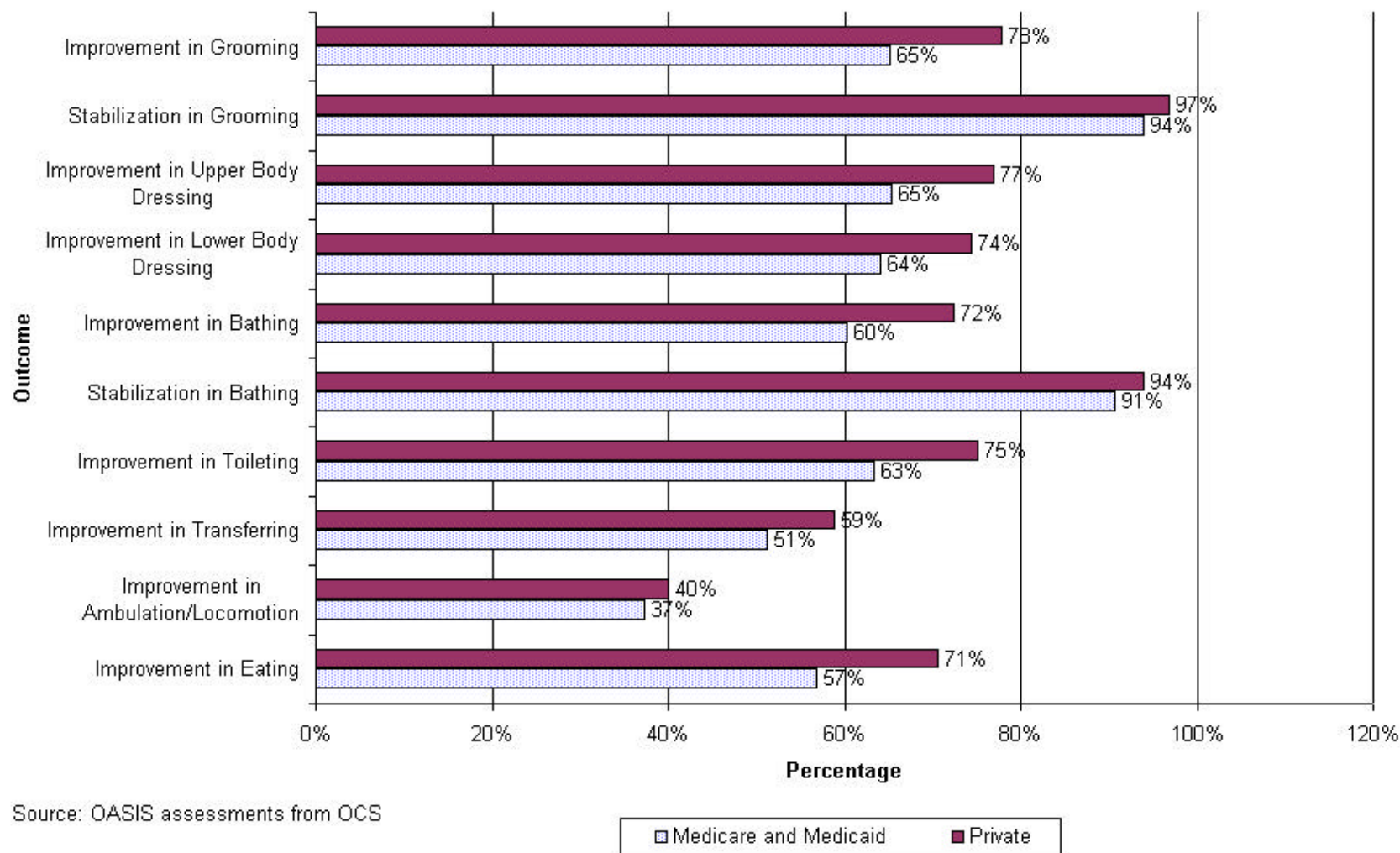
To examine differences in outcomes between private pay and Medicare/Medicaid episodes, we first compare descriptive (or non-risk-adjusted) outcomes between the two types of episodes. We examined these non risk-adjusted outcomes even for the outcomes for which risk adjustment is typically used, so as to be able to understand how the two groups differ.

Descriptive (non-risk adjusted) outcomes

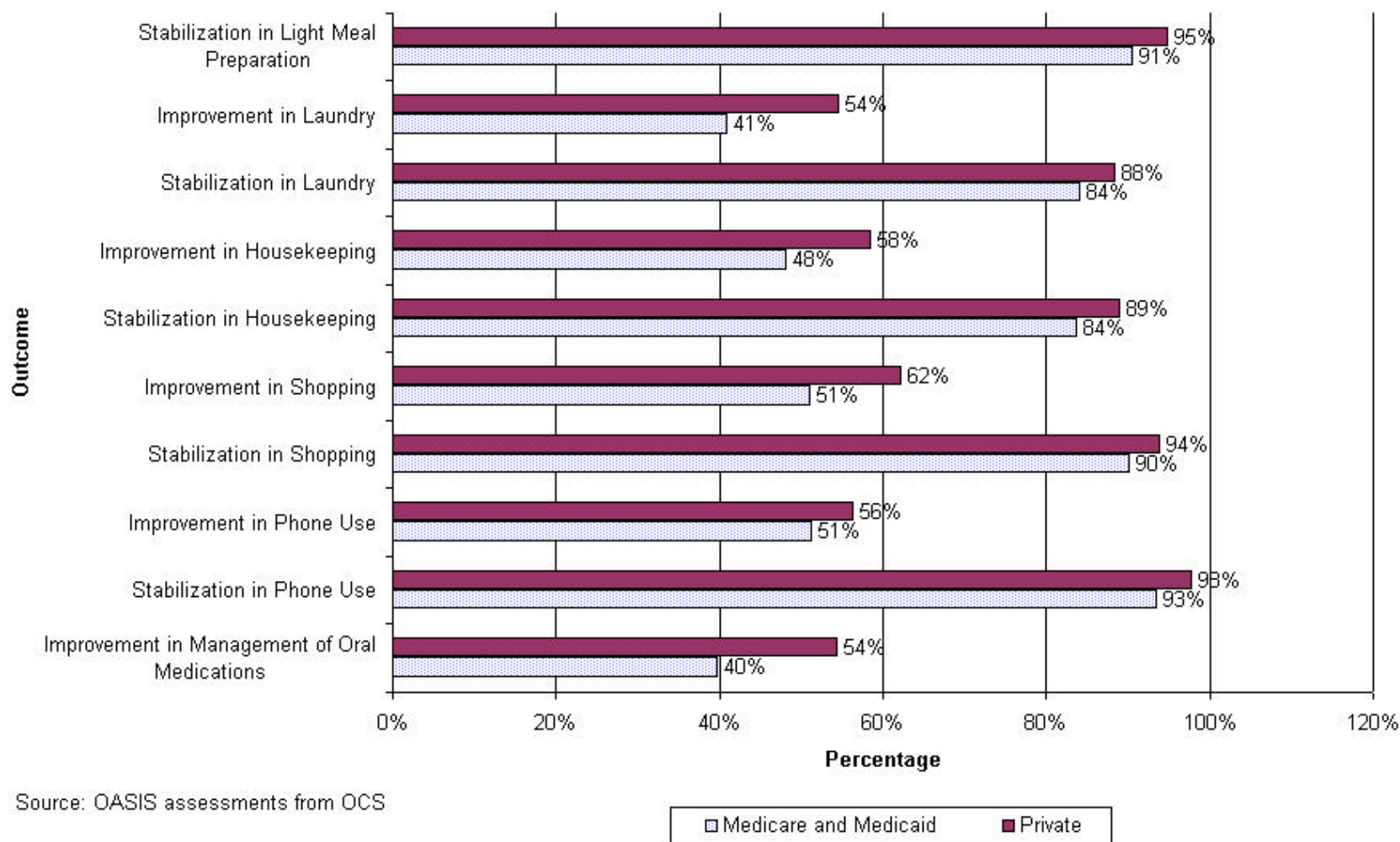
Not surprisingly, with no risk adjustment model applied, private pay patients did better on most outcome measures than Medicare or Medicaid patients. This is consistent with the characteristics of private pay patients discussed in the Case Mix Profile above. Private pay patients tend to have more supports, to be younger and healthier than Medicare/Medicaid patients, and to have better performance on both activities of daily living and instrumental activities of daily living:

- Private pay patients performed better than Medicare/Medicaid patients for all of the activity of daily living outcomes (Figure 1). The differences were particularly large for stabilization in grooming, improvement in dressing (upper and lower body), improvement in bathing, improvement in toileting, improvement in transferring, and improvement in eating.
- Similarly, private pay patients did better on all of the instrumental activity of daily living (IADL) outcomes (Figure 2). The difference was largest for improvement in laundry, improvement in housekeeping, improvement in shopping, and improvement in management of oral medications.
- Among the other end result outcomes, private pay patients did better than Medicare/Medicaid patients for all measures except for improvement in urinary tract infection (Figure 3), a measure that could not be created for more than 96 percent of private pay patients because they did not have a urinary tract infection on their initial assessment.
- Private pay patients had considerably better performance on the utilization outcome measures. More than 80 percent of private pay patients were discharged to the community, compared to 69 percent of Medicare/Medicaid patients (Figure 3). Reflecting the poorer health of the Medicare population, 28 percent of Medicare/Medicaid patients had an acute care hospitalization, compared to 17 percent of private pay patients.
- For the non-casemix adjusted outcomes that are included in the Descriptive Outcome Report, private pay patients had better performance on stabilization in management of oral medications, improvement and stabilization in speech and language, improvement and stabilization in cognitive functioning, and improvement in behavior problem frequency (Figure 4). Medicare/Medicaid patients did better than private pay patients on improvement in pain interfering with activity, improvement in the number and status of surgical wounds, and any emergent care.

Figure 1: Outcomes for Private Pay and Medicare/Medicaid Patients Activities of Daily Living: Non-Risk Adjusted Outcomes



**Figure 2: Outcomes for Private Pay and Medicare/Medicaid Patients
Instrumental Activities of Daily Living: Non-Risk Adjusted Outcomes**



**Figure 3: Outcomes for Private Pay and Medicare/Medicaid Patients
Other Outcomes (No Risk Adjustment)**

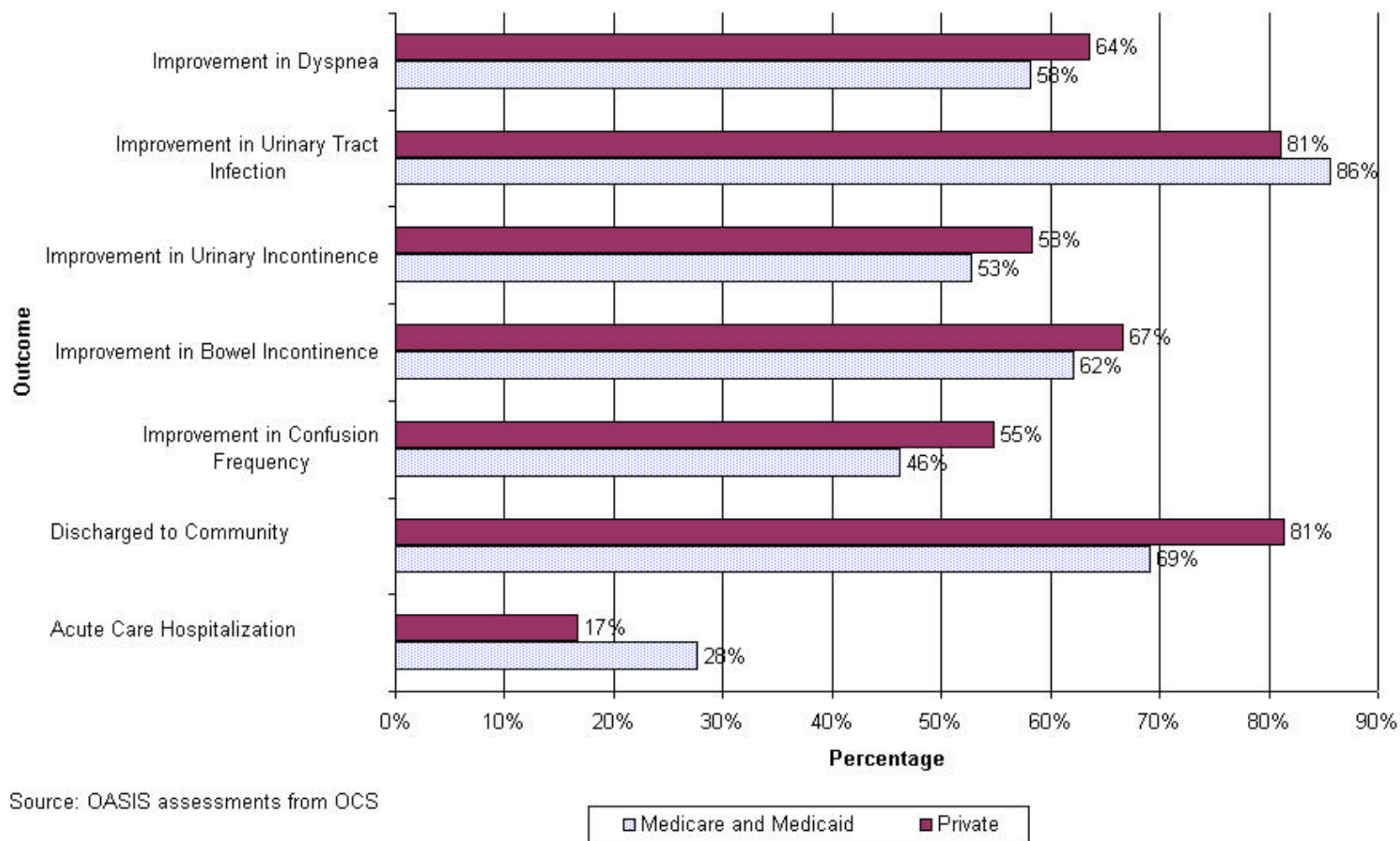
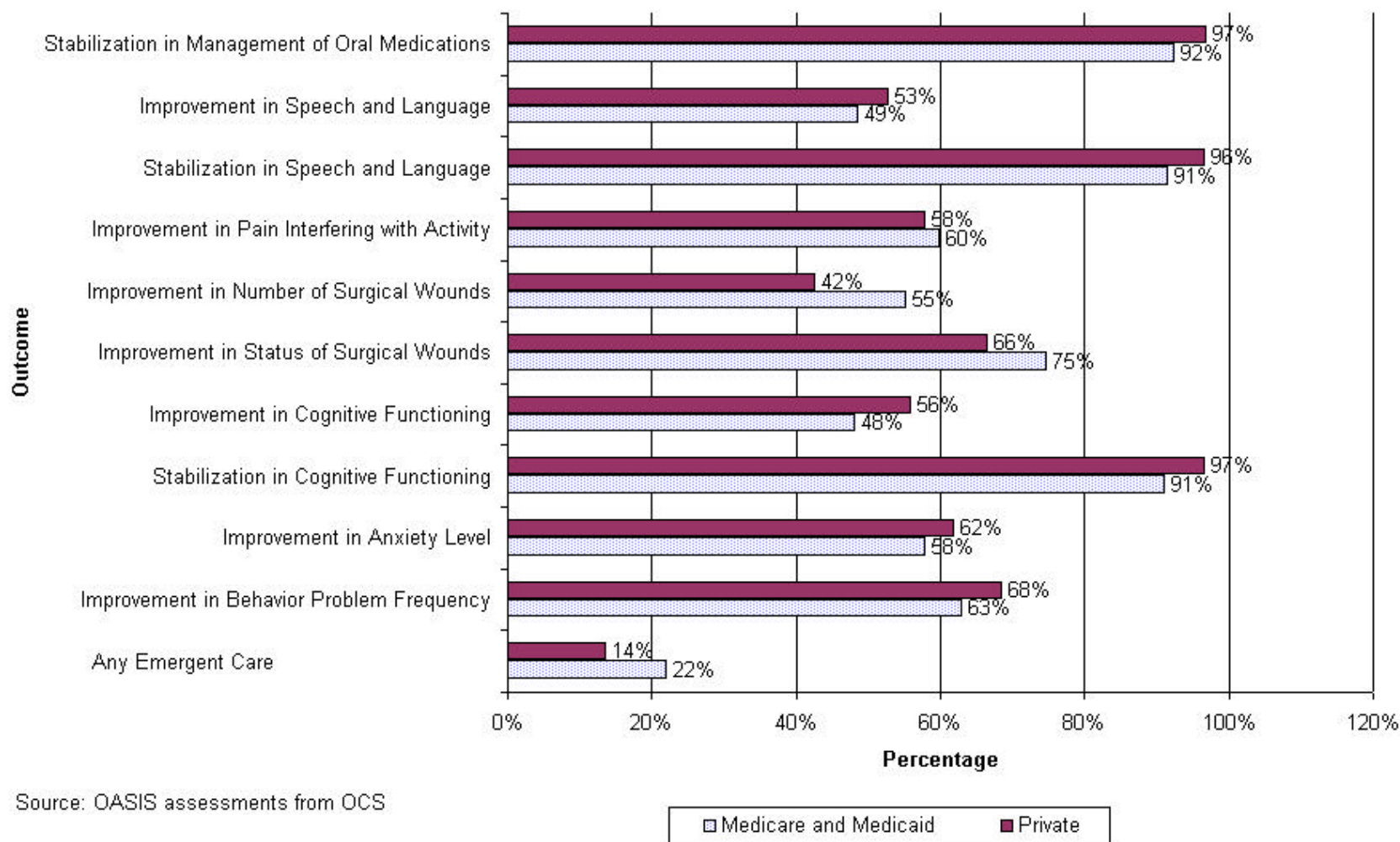


Figure 4: Outcomes for Private Pay and Medicare/Medicaid Patients
Descriptive Outcome Report



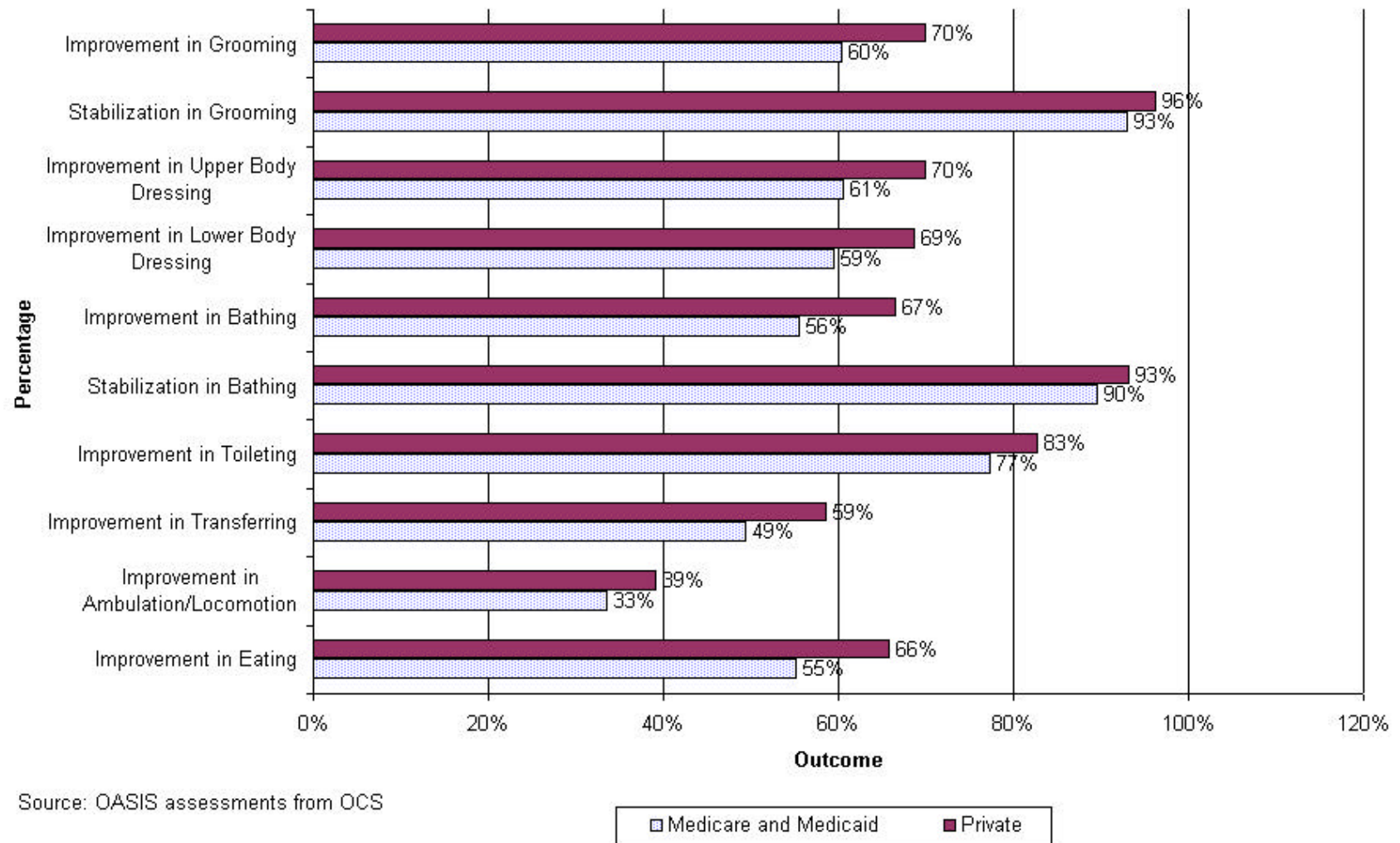
2.3.1 Risk-adjusted outcomes

Some but not all of the differences between private pay and Medicare/Medicaid patients were due to differences in patient characteristics that are accounted for in the risk adjustment models. As a result, application of the risk adjustment models reduced the difference between the two groups.

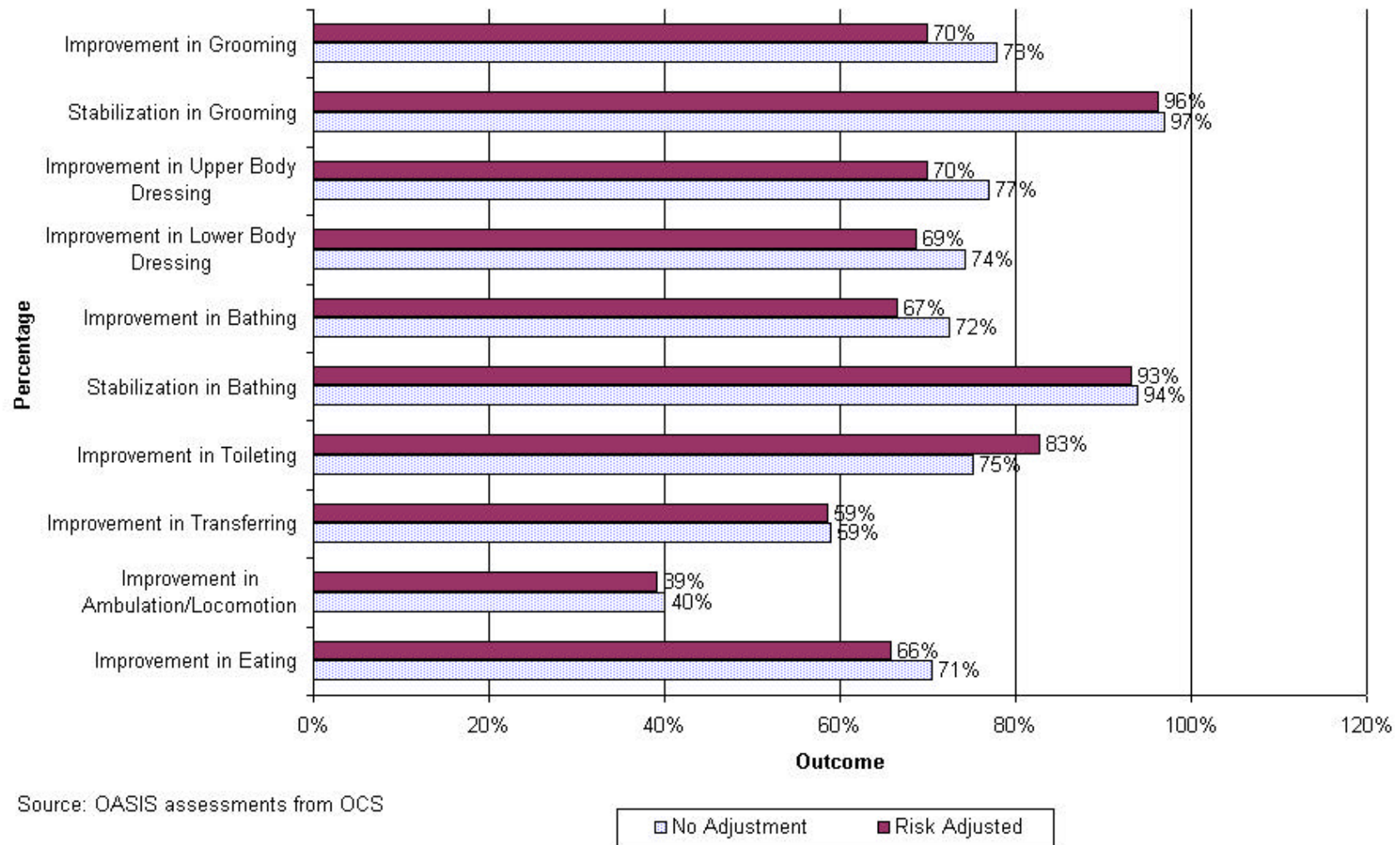
- Even after applying the risk-adjustment model, private pay patients had better performance on all of the activity of daily living outcome measures (Figure 5). Fairly large differences remained in the stabilization in grooming, improvement in dressing (upper and lower body), improvement in bathing, improvement in toileting, improvement in transferring, and improvement in eating measures.
- For most of the activity of daily living outcomes, risk adjusted measures were lower than their non risk-adjusted counterparts (Figure 6). Improvement in toileting was an exception to this pattern.
- For all of the IADL measures, risk-adjusted outcomes for private pay patients were better than those of Medicare/Medicaid patients (Figure 7). In general, the risk adjustment models had only a small impact on the difference between private pay and Medicare/Medicaid patients.

Risk adjustment had a particularly large impact on improvement in the management of oral medications, reducing the proportion of private pay patients with this outcome from 54 to 45 percent (Figure 8). Reflecting their better health status, risk adjustment tended to lower the outcomes for private pay patients. A notable exception was improvement in phone use for which the risk adjusted outcome measure for private pay patients was higher than the non risk-adjusted measure.

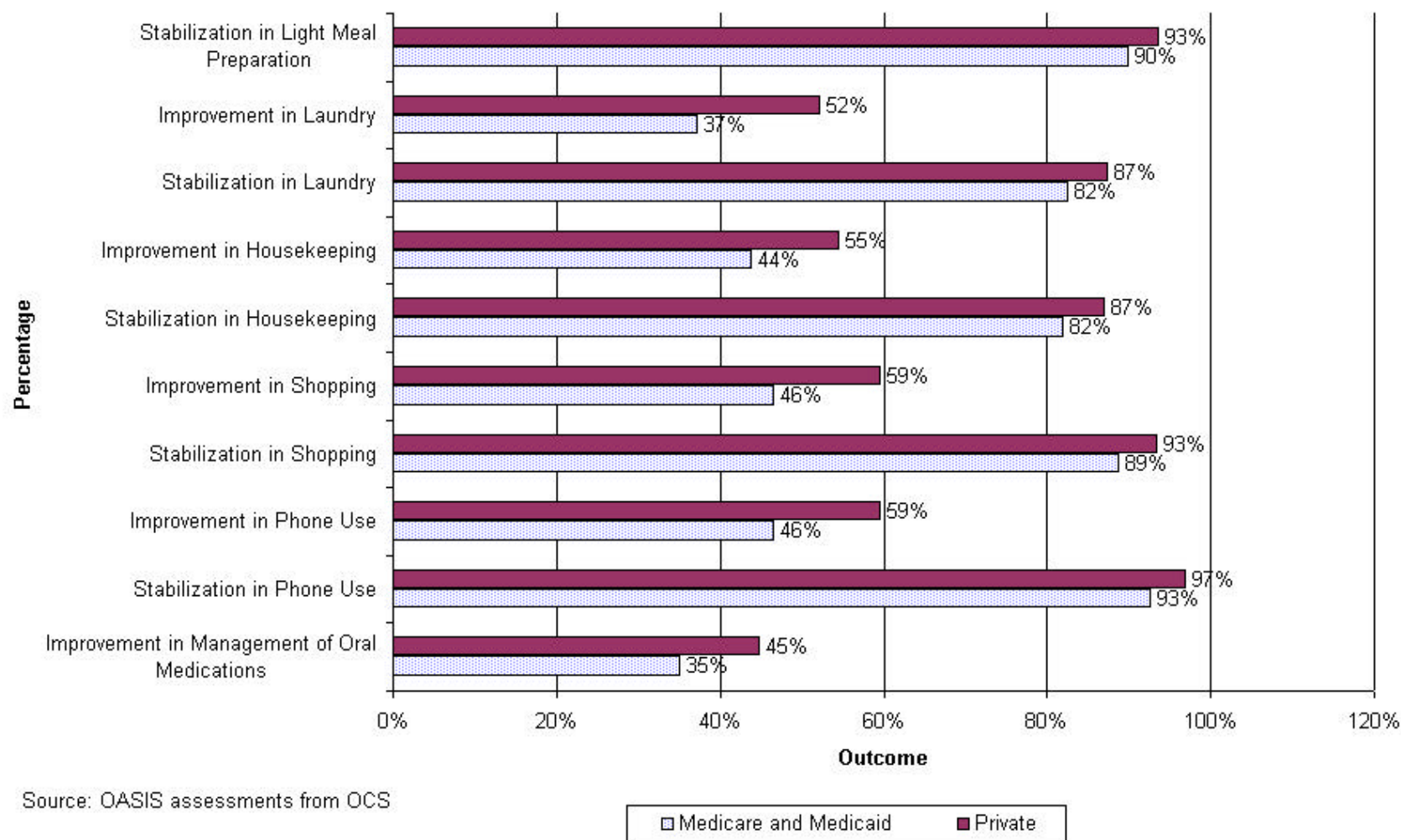
**Figure 5: Outcomes for Private Pay and Medicare/Medicaid Patients
Activities of Daily Living: Risk Adjusted Outcomes**



**Figure 6: Impact of Risk Adjustment for Private Pay Patients
Activities of Daily Living**



**Figure 7: Outcomes for Private Pay and Medicare/Medicaid Patients
Instrumental Activities of Daily Living: Risk Adjusted Outcomes**



**Figure 8: Impact of Risk Adjustment for Private Pay Patients
Instrumental Activities of Daily Living**

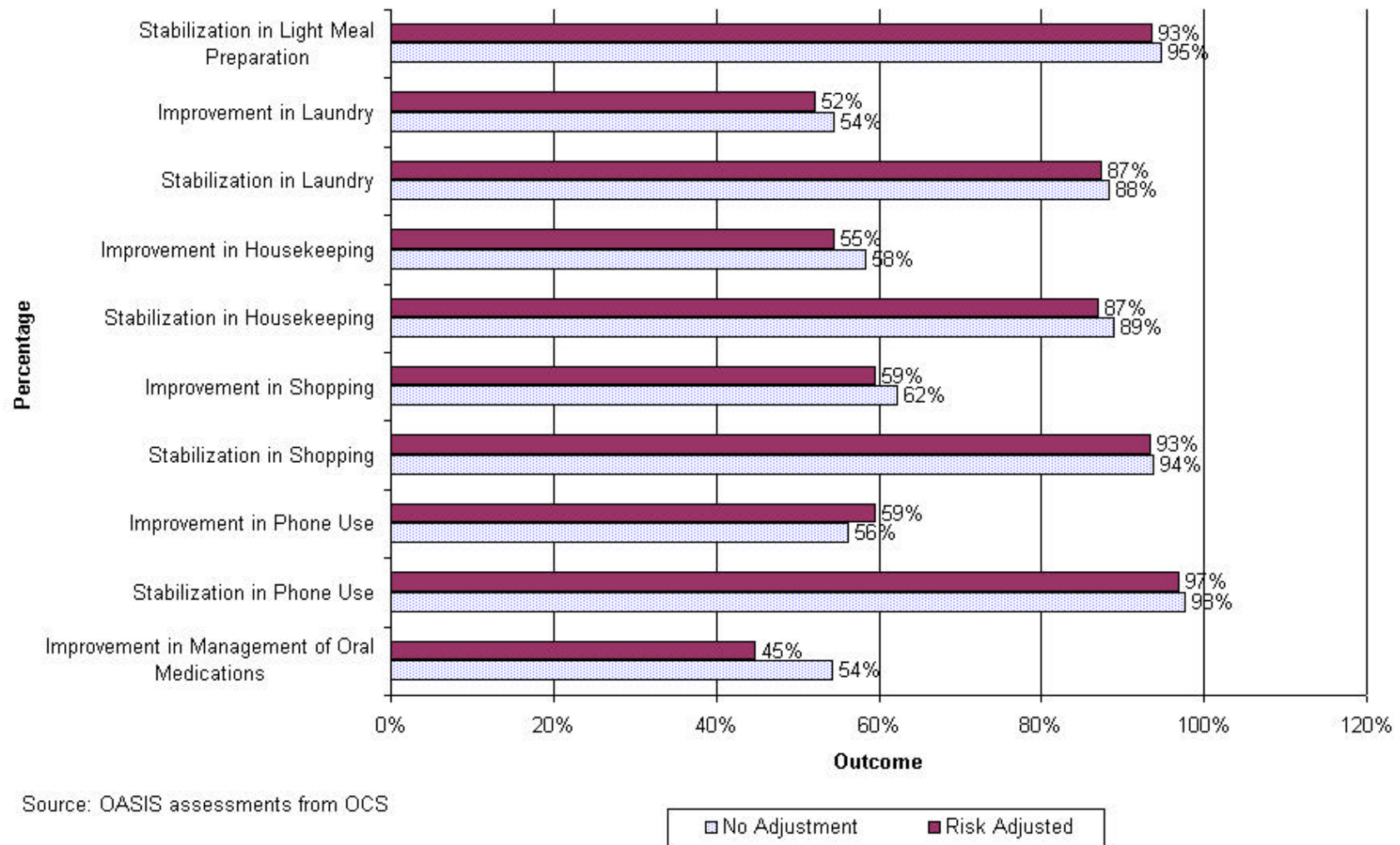
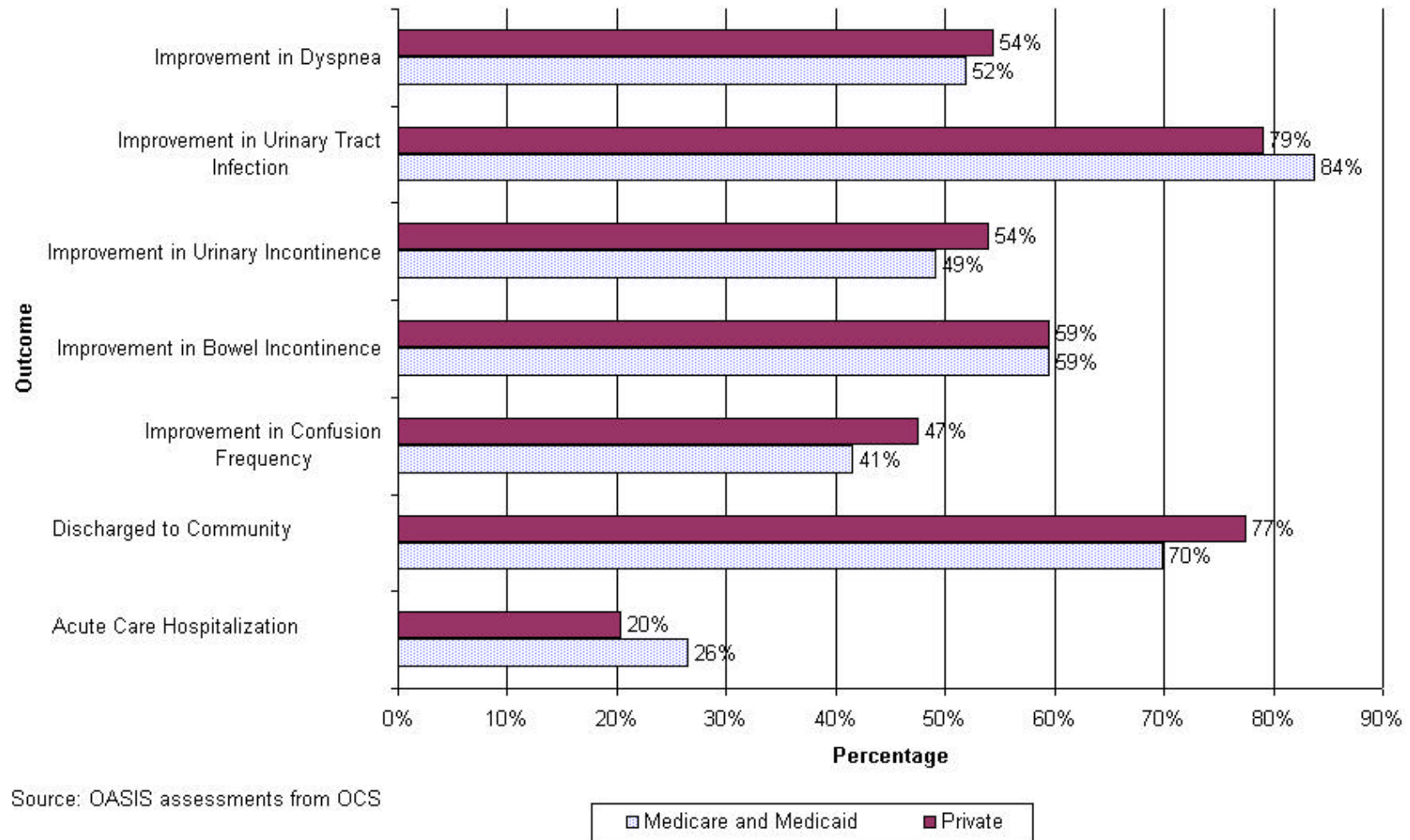
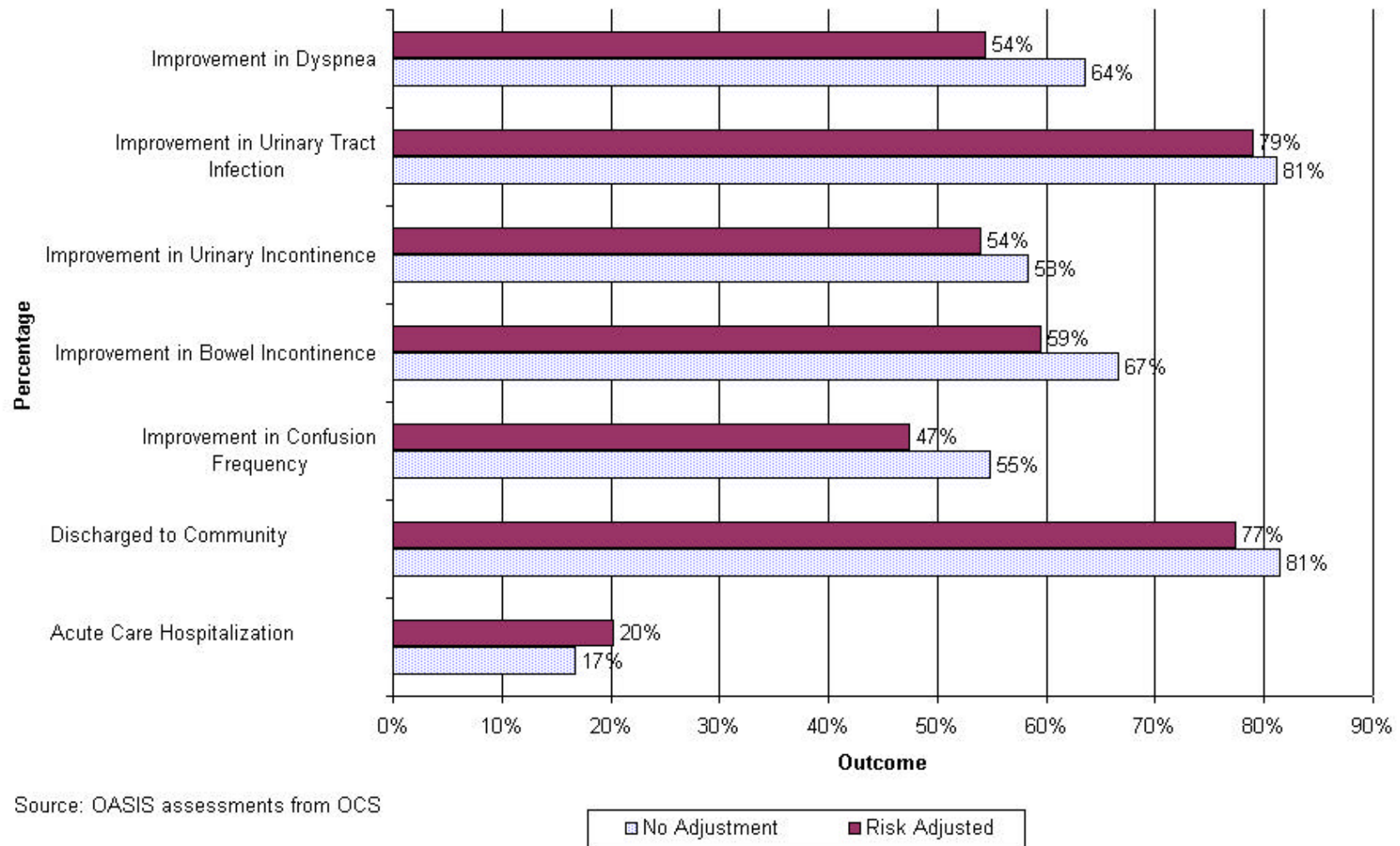


Figure 9: Outcomes for Private Pay and Medicare/Medicaid Patients
Other Risk Adjusted Outcomes



**Figure 10: Impact of Risk Adjustment for Private Pay Patients
Other Outcomes**

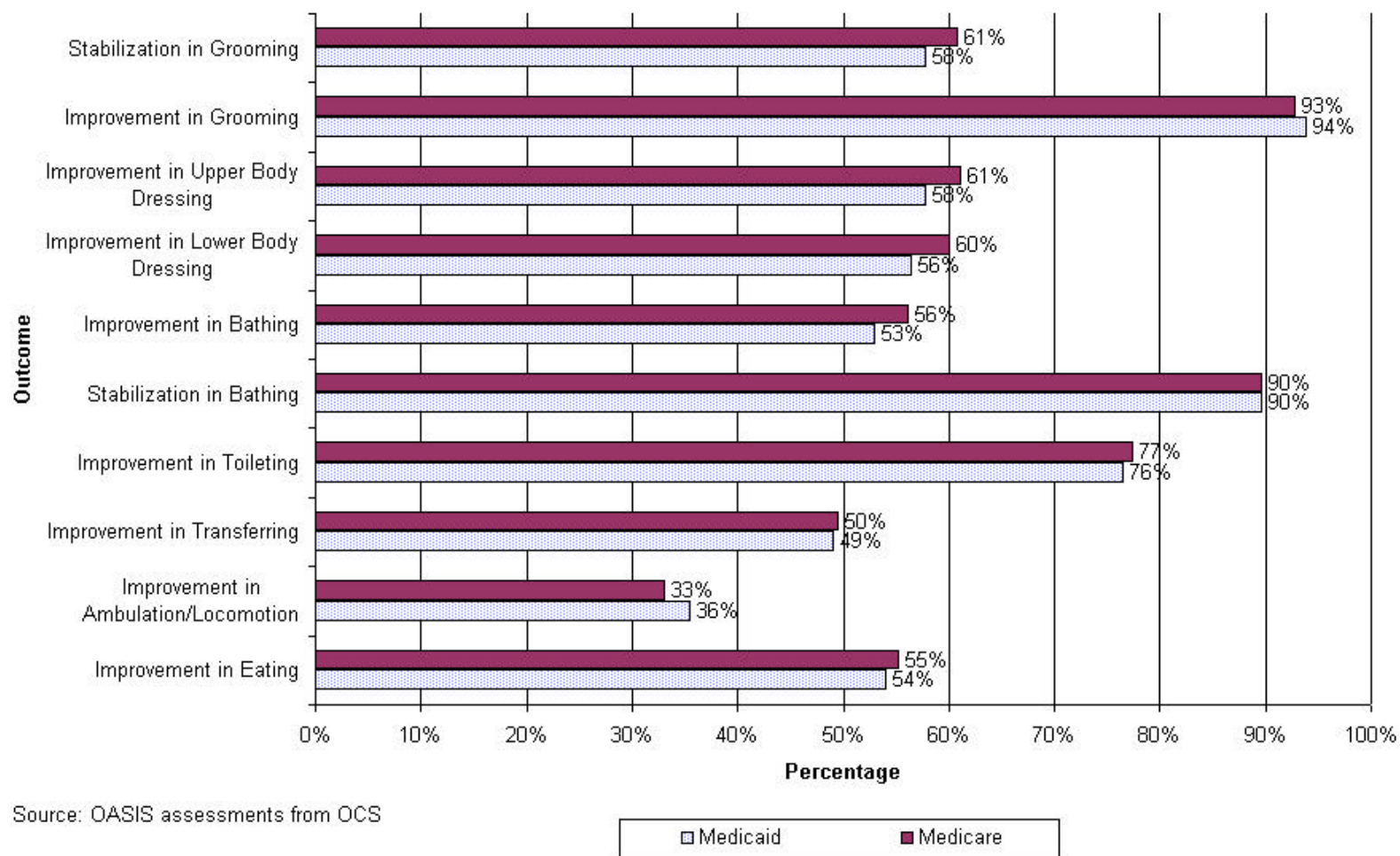


2.4 Outcomes for Medicare and Medicaid patients

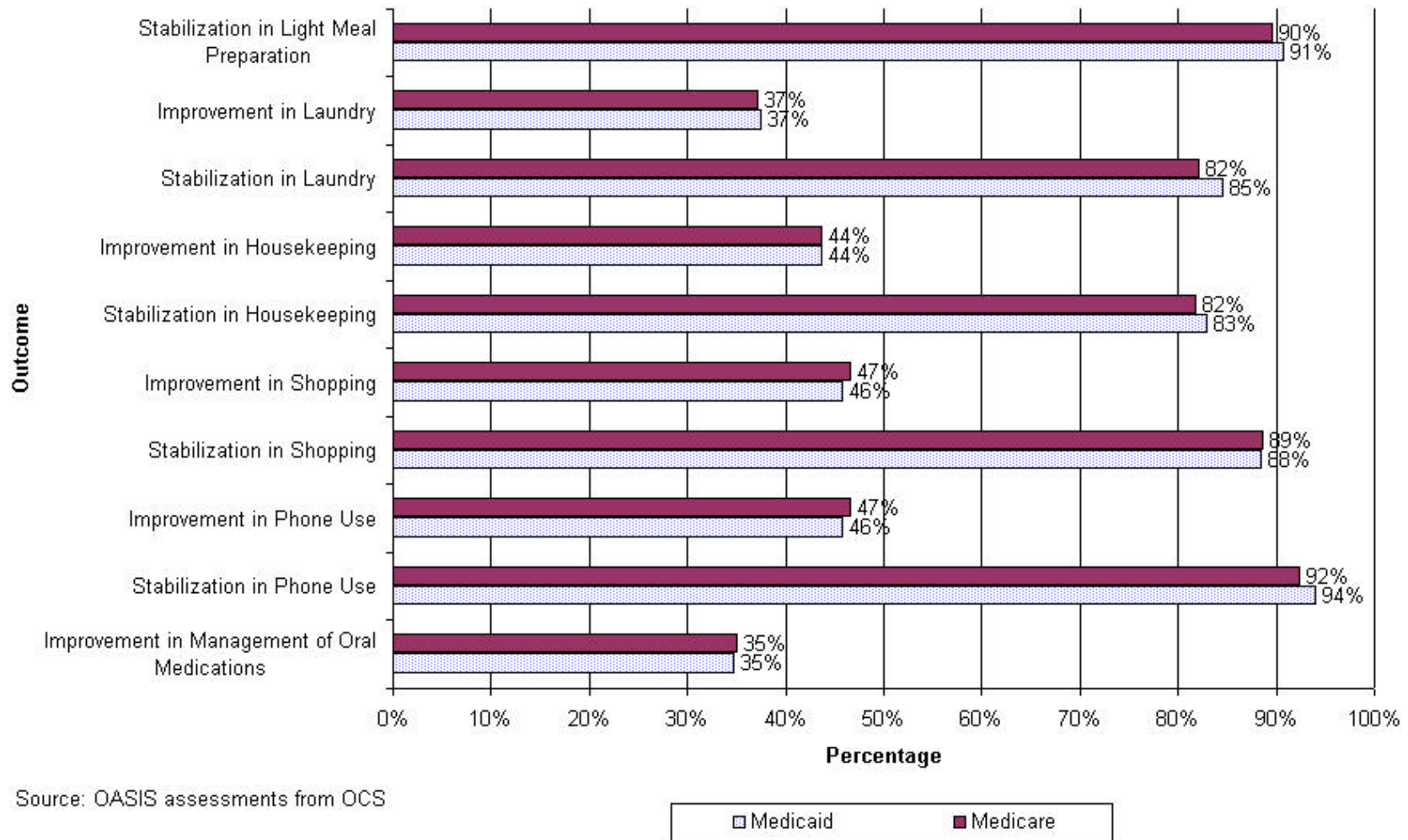
We also compared outcomes for Medicare and Medicaid patients, using risk adjusted outcomes (except for the descriptive outcomes for which no risk adjustment model exists).

- Differences in ADL outcomes between the two groups of patients were generally small. Medicare patients were more likely to have stabilization in grooming and improvement in upper and lower body dressing, while Medicaid residents were more likely to have improvement in ambulation/locomotion (Figure 11).
- Medicare and Medicaid patients were virtually identical with respect to IADL outcomes (Figure 12).
- Medicare patients were more likely to have improvement in urinary tract infection, incontinence, and dyspnea (outcomes that could be calculated for the relatively small proportion that had these conditions present on the first assessment) (Figure 13). Medicare patients were also slightly more likely to be discharged to the community and slightly less likely to have an acute care hospitalization.
- With respect to the descriptive outcomes, differences between Medicare and Medicaid patients tended to be small. Medicare patients were somewhat more likely to have improvement in anxiety level, stabilization in management of oral medications, and improvement in the presence of pain that interferes with daily activities (Figure 14). Medicaid patients were considerably more likely to have emergent care.

**Figure 11: Outcomes for Medicare and Medicaid Patients
Activities of Daily Living: Risk Adjusted Outcomes**



**Figure 12: Outcomes for Medicare and Medicaid Patients
Instrumental Activities of Daily Living: Risk Adjusted Outcomes**



Source: OASIS assessments from OCS

**Figure 13: Outcomes for Medicare and Medicaid Patients
Other Risk Adjusted Outcomes**

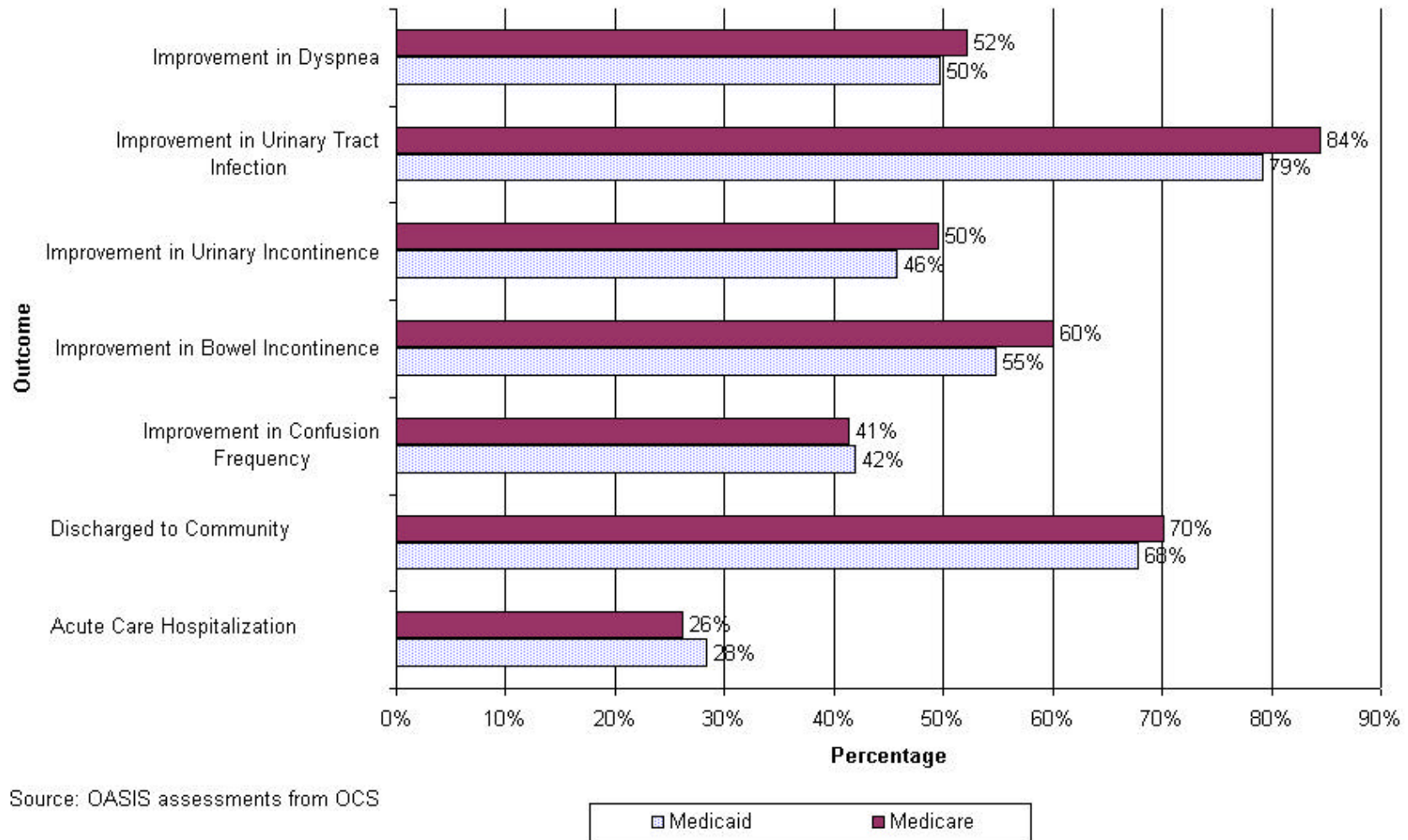
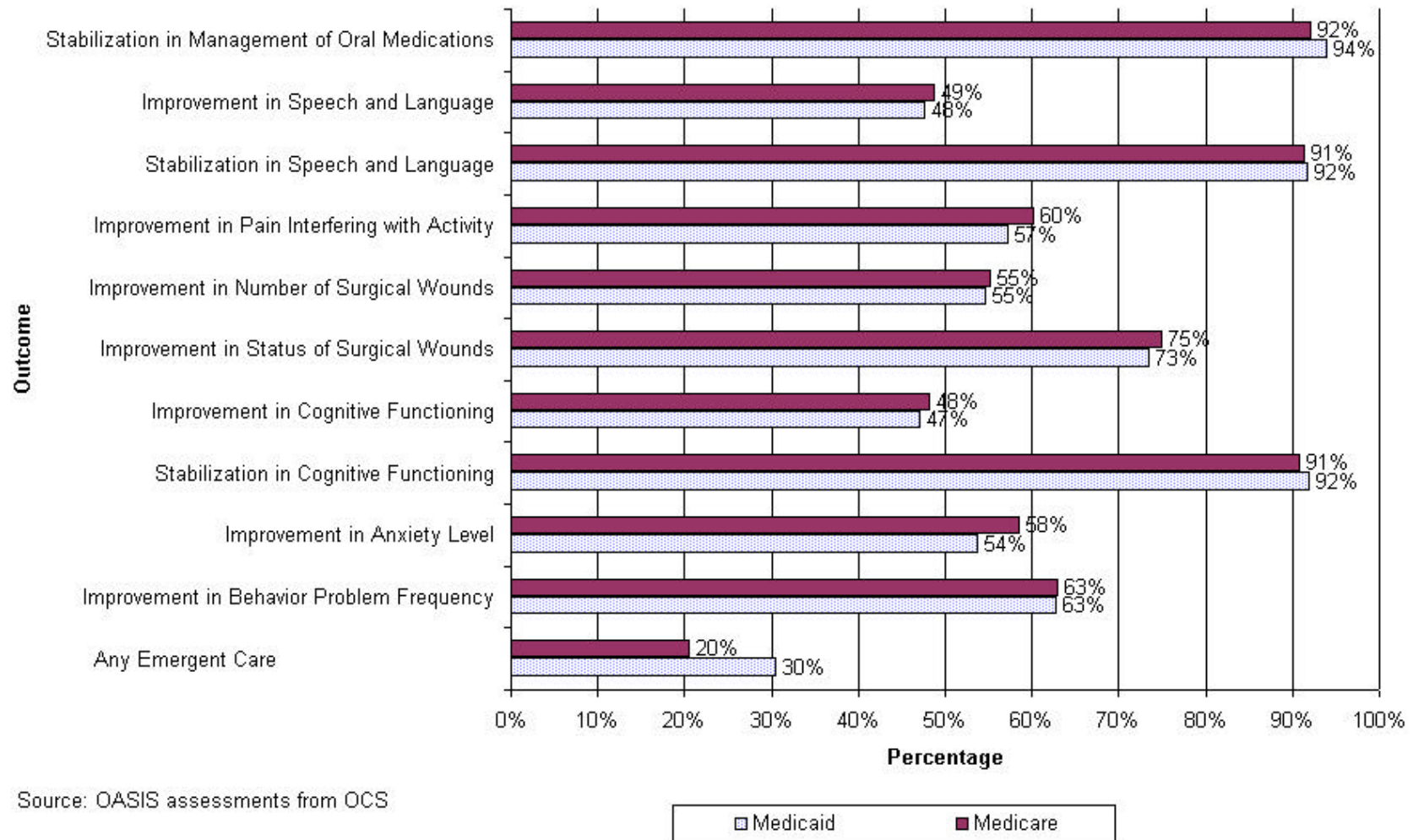


Figure 14: Outcomes for Medicare and Medicaid Patients
Descriptive Outcome Report



Source: OASIS assessments from OCS

2.4.1 Performance of risk adjustment models

To investigate the appropriateness of the risk adjustment models for private pay patients, we analyzed how well the models performed for private pay, Medicare, and Medicaid patients. The key measure of statistical performance was R-square measure, a statistic that reports how much of the variance in a given outcome can be explained or predicted by the independent variables in the model. All of the OASIS outcomes are binary measures and the risk adjustment is based on logistic regression models. While logistic regression models do not have a direct counterpart to the R-square statistic in ordinary least squares models, there are approximations to the R-square statistic that are available.³² This is what we use to compare the performance of risk adjustment models across payers.

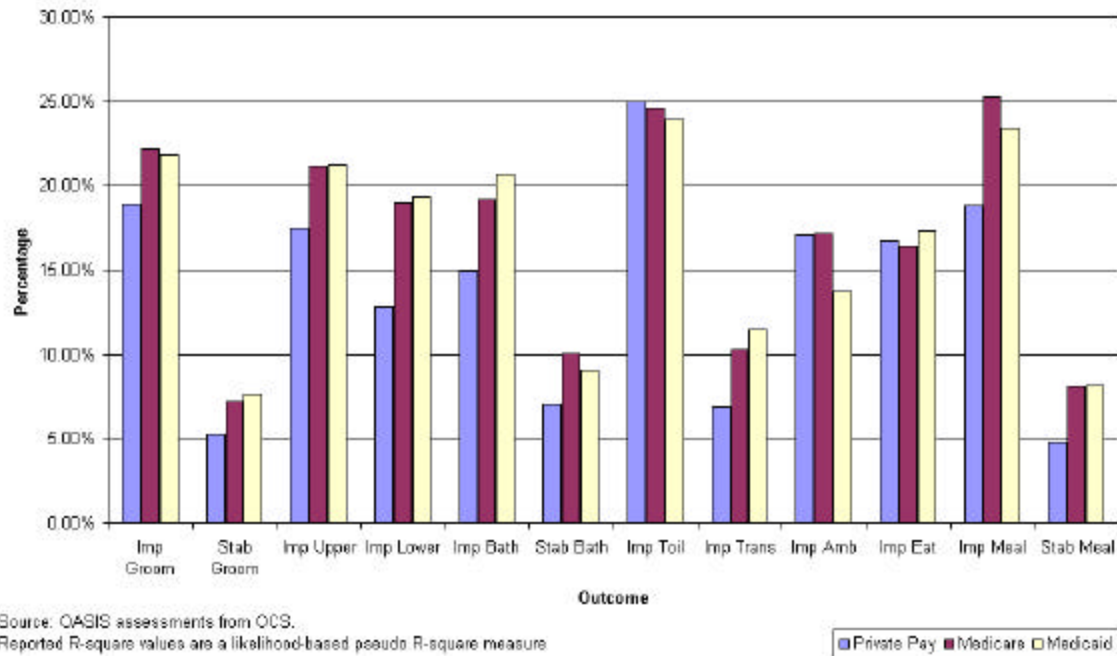
In general, the statistical performance of the risk adjustment models was somewhat lower for private pay patients than for Medicare or Medicaid patients, although these differences tended to be small and do not suggest that the risk adjustment models are inappropriate for private pay patients.

- The performance (pseudo R-square) of the risk adjustment models for improvement in upper body dressing and improvement in light meal preparation were more than 6 percent lower for private pay patients than for Medicare patients (Figure 15). For a number of the other outcomes reported in Figure 15, the R-square for private pay patients was 3 to 4 percentage points lower for private pay patients than for Medicare or Medicaid patients.
- There were a few outcomes for which the risk adjustment model performed slightly better for private pay patients than for Medicare and Medicaid patients. The two most prominent examples are improvement in phone use and improvement in management of oral medications (Figure 16).

R-square comparisons are also reported in Table 2.5 below.

³² In an ordinary least squares regression, the R-square gives a measure of the percentage of the variation in the dependent model that is accounted for by the independent variables. With a binary dependent variable, the variance depends on the frequency distribution of that variable. The R-square measure that we report is an approximation of the R-square for an ordinary least squares model, but it should not be regarded as the percent variance explanation of the model. SAS produces an R-square statistic using the method proposed by Cox and Snell, which is an attempt to imitate the interpretation of multiple R-Square based on the likelihood, but its maximum is less than one, making it difficult to interpret.

**Figure 15: Statistical Performance of Risk Adjustment Models:
Generalized R-Square By Payor Source**



**Figure 16: Statistical Performance of Risk Adjustment Models:
Generalized R-Square By Payor Source**

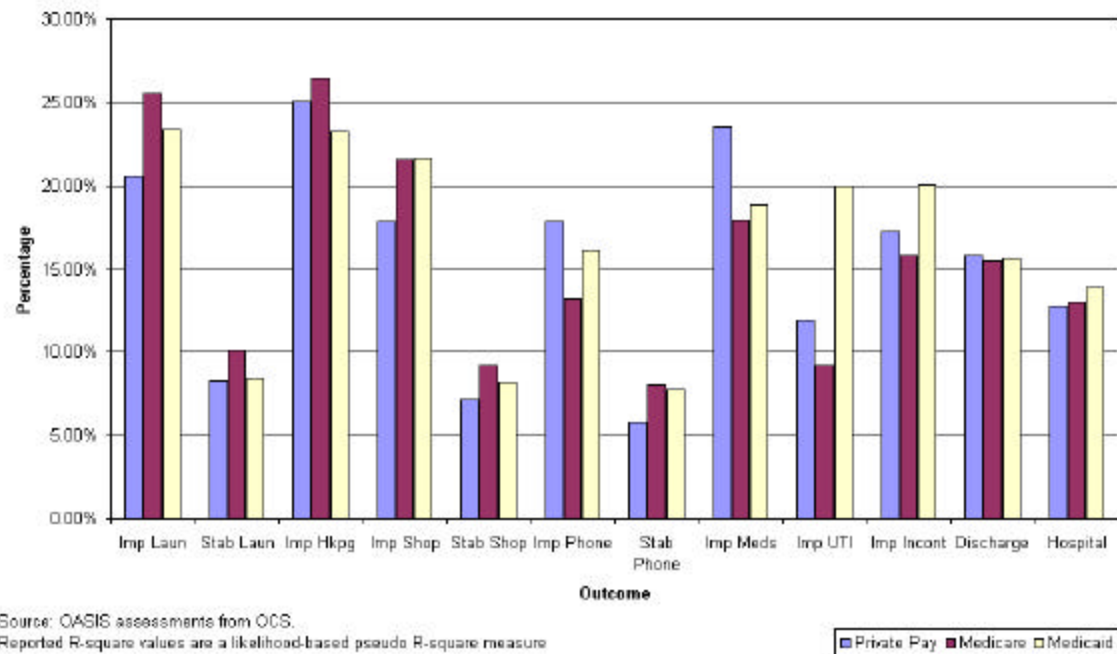


Table 2.5: Statistical Performance of Risk Adjustment Models: Generalized R-Square Statistic By Payment Source

	Private Pay	Medicare	Medicaid
Improvement in Grooming	18.87%	22.20%	21.83%
Stabilization in Grooming	5.26%	7.17%	7.68%
Improvement in Upper Body Dressing	17.47%	21.12%	21.19%
Improvement in Lower Body Dressing	12.82%	18.95%	19.37%
Improvement in Bathing	14.94%	19.24%	20.69%
Stabilization in Bathing	14.94%	19.24%	20.69%
Improvement in Toileting	25.00%	24.58%	23.91%
Improvement in Transferring	6.91%	10.31%	11.48%
Improvement in Ambulation/Locomotion	17.09%	17.19%	13.72%
Improvement in Eating	16.72%	16.42%	17.35%
Improvement in Light Meal Preparation	18.81%	25.27%	23.39%
Improvement in Laundry	20.61%	25.50%	23.37%
Stabilization in Laundry	8.26%	10.08%	8.41%
Improvement in Housekeeping	25.05%	26.42%	23.22%
Improvement in Shopping	17.89%	21.56%	21.65%
Stabilization in Shopping	7.13%	9.21%	8.23%
Improvement in Phone Use	17.85%	13.24%	16.07%
Stabilization in Phone Use	5.79%	8.08%	7.73%
Improvement in Management of Oral Medications	23.52%	17.95%	18.80%
Improvement in Urinary Tract Infection	11.91%	9.17%	19.95%
Improvement in Bowel Incontinence	17.21%	15.77%	20.07%
Discharged to Community	15.82%	15.49%	15.66%
Acute Care Hospitalization	12.76%	12.99%	13.93%

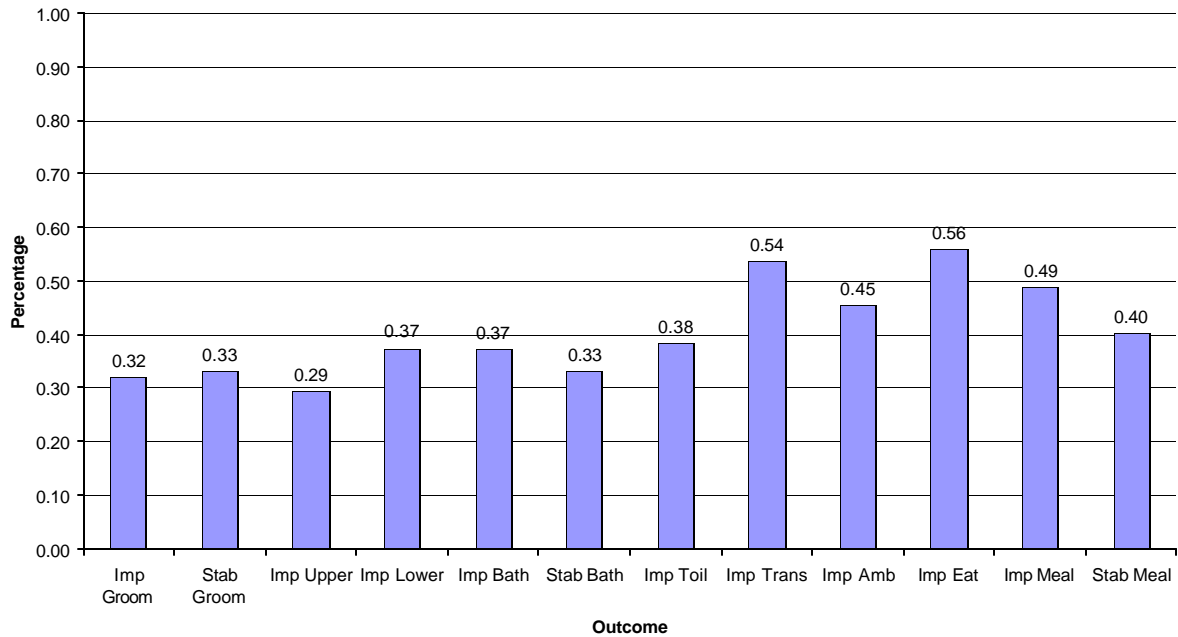
Note: Reported R-square is the likelihood-based pseudo R-square measure.

Sources: Abt Associates analysis of OASIS data from OCS

2.5 Correlation between outcomes by payer at the agency level

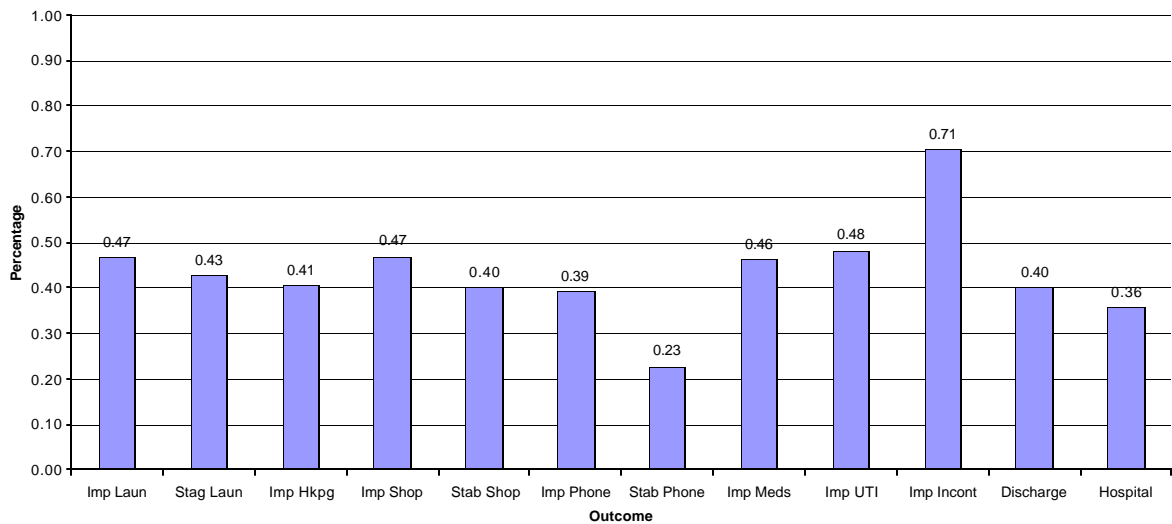
CMS is also interested in whether patient outcomes currently collected for Medicare/Medicaid patients at the agency level can be generalized to serve as a report for all adult non-maternity patients receiving skilled services from the agency. To assess this, we analyzed a subset of the OCS data set to examine the correlation between outcomes for Medicare/Medicaid and private pay patients at the agency level. As can be seen in Figures 17 and 18, correlation between the two payer groups was less than 50% for 21 of the 24 outcomes examined. Correlation ranged from a low of 0.23 for stabilization of telephone use, to a high of 0.71 for improvement in incontinence. Based on this analysis, it is evident that outcomes based on Medicare/Medicaid patient data cannot be generalized to serve as a proxy for private pay patients.

Figure 17: Agency-Level Correlation Between Outcomes for Medicare/Medicaid and Private Pay Patients



Source: OASIS assessments from OCS.
Correlations are for agencies that had at least 25 private pay and 25 Medicare/Medicaid assessments in our analytic file.

Figure 18: Agency-Level Correlation Between Outcomes for Medicare/Medicaid and Private Pay Patients



Source: OASIS assessments from OCS.
Correlations are for agencies that had at least 25 private pay and 25 Medicare/Medicaid assessments in our analytic file.

3.0 OASIS Survey Design and Implementation

3.1 Survey design

The CMS contract with Abt Associates called for a national mail survey to assess the burdens and benefits associated with OASIS data collection. Based on the literature review and the issues identified in Section 704, an initial version of the survey instrument was developed by Abt staff and presented to the TEP at the December 2004 meeting. TEP members provided input and feedback on several important development issues including the content and format of key questions and the definitions of key terms.

Defining key terms

In order to answer the primary research questions posed by this study, we needed working definitions of several key terms. At the TEP meeting, we sought input on how to define a home health agency, large and small agencies, “OASIS collection”, and “private pay patients”. The following definitions were determined to be appropriate for use in the survey and consistent with the way the terms are used by agencies.

Agency. For the purposes of the survey, agency was defined as a Medicare-certified agency that provides a full range of home health services. In addition a parent agency and its branches (offices of a parent home health agency located at a different site, but sufficiently close to share administration, supervision and services with the parent agency on a daily basis) were considered as one agency for the purposes of the study. If a home health agency had both a Medicare-certified entity and a private or non-Medicare entity, we collected data on the Medicare-certified entity only.

OASIS data collection. OASIS data collection was defined as collecting OASIS data in a manner and at the required time points sufficient to support the measurement of outcomes, (i.e.; assessments on private pay patients are performed so that all required items in all sections of the OASIS are completed without skipping or omitting any items, at all the required time points.)

Private pay patients. Non-Medicare/Non-Medicaid or “private pay” patients were defined as all adult non-maternity patients receiving skilled services from the agency’s Medicare-certified component whose services were not billable to Medicare or Medicaid. We also excluded patients whose care is covered by TRICARE, although OASIS data collection is mandated for these patients. Throughout this report, the term “private pay patients” refers to adult, non-maternity, home health patients receiving skilled services.

Agency size . Congress specifically mandated that the study examine how the costs and benefits associated with OASIS data collection for private pay patients differ for “large” and “small” agencies. We asked the TEP to assist us in developing working definitions of large and small agencies that could be derived from currently available data sources. We considered using OASIS assessment volume (total assessments or total episodes) based on Medicare assessments obtained from the CMS Data Repository, however this would not include counts of private pay assessments, so this would not be a true measure of size. We also considered using number of agency staff from the Provider of Service file, but the TEP believed that defining size based on staffing would provide a measure that was a combination of staffing intensity and service volume. Also, many HHAs use contract therapists, aides, or nurses to meet their patients’ needs. Therefore, it was decided that the number of visits and the unduplicated patient census count were the best available measures on agency size. For the stratification of the survey sample, we used number of visits obtained from the Medicare Cost Reports. A discussion of agency size and sample selection is included in Section 3.2. For survey

analysis, we collected size information on the survey and ultimately used the reported number of patient admissions (adult, non-maternity patients receiving skilled services in the previous calendar year) to define size.

Survey question development

TEP members were also asked for feedback on the proposed survey questions to ensure that they would make sense to survey respondents and that the listed response categories were appropriate. Some questions were eliminated because they were felt to be confusing, burdensome to answer, or that agencies would be unlikely to provide accurate or honest responses. Other questions were eliminated because it was felt they were more appropriately dealt with in the in-depth interviews.

Once TEP feedback had been incorporated into the draft questionnaire, cognitive testing was begun. Between January 12 and January 26, 2005, seven cognitive interviews were conducted in the Abt Cognitive Testing Laboratory (CTL) with representatives recruited from HHAs in Maryland, Virginia and the District of Columbia. A list of HHAs serving patients in the Bethesda area was obtained from the Center for Medicare and Medicaid Services' "Home Health Compare" website. Names of prospective respondents were also obtained from the Delmarva Foundation and the National Association of Home Care (NAHC) who informed area HHAs about the study via email announcements and listservs.

Cognitive testing provides an efficient, valid method to identify problems that respondents have answering questions. Respondents can provide accurate answers to a survey question to the extent that they can perform four response tasks: comprehension, recall, response formation and reporting. It is first necessary that respondents understand the question as intended by the researcher (comprehension), then that they can recall or retrieve the relevant information (recall), use that information to come up with an answer (response formation), and report that answer in the format the interview or questionnaire requires (reporting). Inability to perform any of these tasks can result in answers that are inaccurate, sometimes in a minor way, sometimes seriously. In some instances, a respondent may not be able to answer an item at all.

Information collected during the cognitive testing indicated that there were several areas that could be addressed to reduce the burden of the survey on respondents, improve clarity and comprehension and improve overall response rates. The most significant change was to convert the survey from one long instrument to two shorter survey instruments, one to be answered by agencies that continue to collect OASIS data on private pay patients and one for agencies that have suspended OASIS data collection on those patients. This change was intended to reduce the confusion agencies experienced when asked to either answer or skip questions that were not relevant to their agency. It also reduced the length and burden of the survey.

Other changes to the survey were as follows:

- *Reduction in the number of survey items.* Questions that were considered confusing or problematic by respondents and were not critical for cost analysis were dropped from the survey. Other questions were shortened or condensed.
- *Clarification in wording of questions and response categories.* Questions in which respondents indicated that wording was unclear or confusing, the timeframe or patient universe was ambiguous, or that additional response categories were necessary were revised accordingly.
- *Revision of language introducing sections of the survey.* Wording and format were revised in some sections of the survey to make it more user-friendly.

OMB and IRB approval

The OMB notice of survey data collection was published in the Federal Register on February 3, 2005. One comment was received during the 30-day comment period which addressed the topic of OASIS burden in general rather than the survey content. Once the survey instruments were revised based on cognitive laboratory feedback, copies of the new survey instruments and a map identifying all changes from the original instruments were delivered to CMS on March 11, 2005. Approval of the advance letters and survey tool was also obtained from Abt's Internal Review Board (IRB), the revised survey tool was cleared internally at CMS, and final clearance was given by OMB on April 15, 2005.

Questionnaire format

The questionnaire was produced in booklet form. The survey for agencies that suspended OASIS data collection for their private pay patients was blue and was 15 pages long, including the cover and an instruction page. The survey for agencies that continued OASIS data collection for their private pay patients was yellow and was 14 pages long. It showed the standard CMS logo on the cover, along with instructions about which survey an agency should complete.

The survey included questions in the following domains:

- Agency characteristics
- Patients served
- OASIS data collection practices
- Time spent and non-labor costs associated with OASIS data collection and related tasks
- Time spent and non-labor costs associated with non-OASIS assessments and related tasks
- Anticipated costs if OASIS were mandated for all adult, non-maternity skilled service patients
- Uses of OASIS data
- Benefits of OASIS data collection
- Factors influencing decisions to continue or suspend OASIS data collection

Copies of both questionnaires are included in Appendix B of this report.

3.2 Sample selection

The target population for the OASIS Cost and Benefit Survey was all Medicare-certified HHAs in the U.S. that serve at least some private pay patients, including both hospital-based and freestanding agencies. We identified 7,651 non-terminated agencies in the December 2003 version of the Provider of Service (POS) file that were eligible for the survey sample. Before selecting the survey sample, we removed non-continental US (PR, VI, territories) agencies, Medicaid-only agencies, and agencies whose names indicated they served a pediatric population.

Sample size

The sample size was increased from the originally proposed 1,000 agencies to 1,200 agencies. Based on information from the Medicare Cost Reports, we estimated that 75 percent of agencies have private pay patients and that this does not vary based on agency size. Therefore, the sample size was increased to compensate for the fact that most of the survey questions would not be relevant for agencies that do not serve any private pay patients. Directions for completing the survey informed

agencies that do not provide care to private pay patients that they should not complete the survey, but instead check off a box on the front page of the survey indicating they were ineligible and return it to Abt Associates.

Sampling strata

In order to select the survey sample, we created a file with agency contact information from the CMS Provider of Service File, agency size (for agencies that had a HCRIS Cost Report record), urban/rural status, and Census Region. We defined agency size based on the total number of annual visits, across all visit types and payor sources, from the most recent Cost Report record.

For 18.1 percent of agencies, there was no size information available (i.e., no match between the agency's provider number and a Cost Report from the Cost Reports files). These agencies were classified as "size unknown". Other agencies were classified as either small, medium, or large:

- Small: Lowest quartile of total visits (up to 4,830)
- Medium: Middle two quartiles of total visits (more than 4,830 and less than 21,468)
- Large: Highest quartile (21,468 and more visits)

The original sample design called for stratification by size category, urban/rural status and census region. Urban/rural status was based on the Rural –Urban Continuum developed by the Economic Research Service of the U.S. Department of Agriculture. Census region refers to the region in which the agency is located, corresponding to those used by the U.S. Census Bureau.

- Northeast – Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont
- Midwest – Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin
- South – Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.
- West – Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming.

However, the results of drawing the sample using this stratification would have rendered the sampling frame unusable for another upcoming CMS-sponsored home health survey whose primary stratifying variable was state. The revised sample design stratified by size category and state. When sampling frame cells were small to nonexistent, states were collapsed within their census regions for the purposes of drawing the sample.

The process used to draw the sample (SAS®'s PROC SURVEYSELECT) utilizes a "serpentine sort" for control sorting to ensure that all possible values of control variables in the sampling frame are represented in the sample when the number to sample within a given strata is larger than 1. The control variable for this sample design was urban/rural status. PROC SURVEYSELECT also provides the probability of sampling for each stratum to facilitate the construction of weights.

Sample distribution

The final sample included 360 small, 360 medium, 360 large, and 120 unknown size agencies. This sample design includes a disproportionate share of small and large agencies (they represent around 20 percent of our universe of agencies but 30 percent of the sample), and under-represents medium sized and size unknown agencies. This is because we wanted to be able to contrast OASIS burden and costs between small and large agencies and were willing to sacrifice some precision in our estimates for medium sized and size unknown agencies to increase precision for small and large agencies. We also knew we would be able to identify the size of agencies in the “unknown” category that responded to the survey based on the size-related information reported in the survey.

Table 3.1
Sample Rates

Size Category	Number of Eligible Agencies	Number in Sample
Small	1,566	360
Medium	3,134	360
Large	1,566	360
Unknown	1,385	120
Total	7,651	1,200

The sample was selected so that, within each size category, the distribution is proportional with respect to state. Control sorting ensured adequate representation of both urban and rural agencies in the sample.

3.3 Survey implementation

Once OMB clearance was obtained, the survey instruments were formatted. An advance letter was sent to agencies in the sample on April 29th, containing the following information:

- A description of the survey and its purpose;
- The importance of participation in the survey;
- Assurance of confidentiality of the data;
- Directions for which survey to complete.
- Hours of operation for the toll-free line;
- Contact number to Abt Associates Inc. for any questions;
- The general time line of the study; and
- Information about the sponsor of survey (CMS) and Abt Associates Inc.

The letter was printed on CMS letterhead and signed by the Director of CMS’s Division of Continuing Care Providers. Agencies were also advised that if their agency did not provide any skilled services to adult, non-maternity, non-Medicare/non-Medicaid patients, to indicate this on the reverse side of the letter and return the letter in the postage-paid envelope provided, or contact Abt at the email or address or toll-free number listed, to avoid future mailings and reminders.

Survey data collection then followed a modified “Dillman approach”³³, with a 12-week field period from first mailing to final receipt of returned questionnaires. The first round of questionnaires was delivered to agencies via Federal Express Overnight Delivery on May 6th. Survey data collection activities were completed according to the following schedule:

6 May 2005	Fed Ex questionnaires sent to sample of 1,200
13 May 2005	Mailed reminder letter to non-responders
20 May 2005	Fed Ex Questionnaires sent to non-responders - due date extended to May 30th
30 May 2005	Began reminder calls to non-responders
10 June 2005	Fed Ex Questionnaires sent to non-responders - due date extended to June 20th
13 June 2005	Continued reminder calls to non-responders
30 June 2005	Receipt of last questionnaires

During the survey field period we maintained a telephone hotline to answer questions from agencies about the surveys and worked with home health industry representatives at NAHC, VNAA and AAHC to encourage member agencies to complete the survey.

Survey data processing

Returned surveys were logged in to a receipt control system and processed. Data preparation staff corrected skip patterns that were not followed correctly. When agencies provided information for questions that should have been skipped, the gatekeeper question was revised to allow for entry of the information. All numbers, including percents and financial information, were rounded to whole numbers. When agencies provided ranges, the midpoint of the range was calculated. Open-end answers were reviewed and coded and survey data were key entered and verified. Data were entered twice; during the second entry the computer system alerted the operator to any discrepancies. Entered data were then compiled and reviewed.

Outliers whose values were sufficiently out of the expected range to indicate that the question was answered incorrectly were replaced with missing values or values imputed from other data provided by the respondent. For example:

- Estimates of the average number of RN or PT minutes to perform a Start-of-Care or Follow-up assessment were set to missing if the estimate exceeded 400 minutes.
- Estimates of the average number of RN or PT minutes to perform a Discharge assessment were set to missing if the estimate exceeded 240 minutes.
- Estimates of the average number of clerical minutes spent on a Start-of-Care or Follow-up assessment were set to missing if the estimate exceeded 180 minutes.
- Estimates of the average number of clerical minutes spent on a Discharge assessment were set to missing if the estimate exceeded 90 minutes.

³³ Dr. Dillman suggests several rounds of mailings with cover letters followed by reminder postcards, to achieve the highest possible response rate. *Mail and Internet Surveys*, D. Dillman, 2000 Wiley, New York.

Agencies appeared to have significant difficulty estimating the number of hours spent on data quality review and training and the number of hours that would be necessary if OASIS data collection were mandated for private pay patients. Many of the rules followed to deal with outliers addressed this issue:

- For agencies that suspended OASIS data collection for private pay patients, if an agency's estimate of staff hours that are spent annually on data review for Medicare/Medicaid patients was *less* than the data review hours reported for private pay patients, and the payer mix was more than 50 percent Medicare/Medicaid, then the estimate of data review hours reported for private pay patients was set to missing.
- If an agency's estimate of staff hours that would be spent annually on data review if OASIS collection were required for all patients was *less* than the data review hours reported for Medicare/Medicaid patients alone, then the estimate of hours that would be spent annually if OASIS collection were required for all patients was considered to represent additional hours that would be required and was added to the Medicare/Medicaid hours.
- Similarly, if an agency's estimate of staff hours that would be spent annually on training if OASIS collection were required for all patients was *less* than the training hours reported for Medicare/Medicaid patients alone, then the estimate of hours that would be spent annually if OASIS collection were required for all patients was considered to represent additional hours that would be required and was added to the Medicare/Medicaid hours.
- Agency estimates of RN and therapist time for training and data review were set to missing if our analyses indicated that the hours provided equaled more than 3 hours per assessment.
- Agency estimates of clerical and other time for training and data review were set to missing if our analyses indicated that the hours provided equaled more than 1 hour per assessment.
- If the ratio of estimated data quality or training hours for private pay assessments to estimated data quality or training hours for Medicare/Medicaid assessments was more than twice as high as expected (based on agency payor mix), estimates for private pay assessments were set to missing.

3.4 Survey response rates

Of the 1200 agencies that were mailed surveys, 731 replied, for a response rate of 60.9 percent. A total of 100 agencies indicated that they did not provide any care for non-Medicare or non-Medicaid patients, and so were considered ineligible for the survey. Response rate of eligible respondents was 57.4 percent out of the sample of 1100 eligible agencies. A response rate of 52.6 percent was achieved for eligible respondents out of the total sample of 1200.

Table 3.2 shows the response rate of respondents by size category, census region and rural/urban category. Small (lowest quartile of visits) was defined as agencies with less than or equal to 4,830 visits. Medium (middle quartiles of visits) was defined as agencies with more than 4,830 and less than 21,468 visits. Large (highest quartile of visits) was defined as agencies with 21,468 or more visits. Census region refers to the region in which the agency is located, corresponding to those used

by the U.S. Census Bureau. We define urban and rural counties based on the Rural –Urban Continuum developed by the Economic Research Service of the U.S. Department of Agriculture.

Table 3.2: Respondents by Sample Strata

	All Respondents/Total Sample of 1200	Eligible Respondents/Eligible Sample of 1100*	Eligible Respondents/Total Sample of 1200
Overall	60.9%	57.4%	52.6%
Size			
Small	59.5%	53.1%	45.9%
Medium	65.6%	62.8%	58.1%
Large	60.8%	59.5%	57.7%
Unknown	43.3%	34.6%	30.0%
Census Region			
North East	61.3%	60.5%	59.3%
Midwest	66.3%	64.4%	61.0%
South	58.0%	52.7%	46.8%
West	59.8%	55.1%	49.2%
Urban/Rural			
Urban	59.0%	54.4%	48.8%
Rural	65.8%	64.5%	62.2%

** original sample of 1200 minus agencies that responded indicating they were ineligible*

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005

It is important to note that, although these are the size definitions that we used to specify the survey sample and to create survey weights, we collected size information on the survey and ultimately used the reported number of patient admissions (adult, non-maternity patients receiving skilled services in the previous calendar year) to define size.

3.5 Weighting and non-response analysis

Sampling weights

Because it was not possible to include the universe of home health agencies in the OASIS Cost and Benefit Survey of Home Health Agencies, survey responses were weighted to obtain estimates that are representative of the total population. These weights were applied to the analyses of OASIS cost and benefits described in Section 4.

Mathematically, the sampling weight for each survey consists of two components—an adjustment for the probability of selection (the base sampling weight) into the survey and the non-response adjustment.

Base sampling weight: The probability of selection for each observation is equal to the number of observations of that type in the population (i.e., the universe size for the sample cell) divided by the total number of observations of that type that were included in the sampling frame. The reciprocal of this probability is the base weight:

$$\text{Weight}_{\text{Base}_i} = \frac{(\text{universe}_i)}{(\text{sample_frame}_i)}$$

where universe is the number of home health agencies in our study population for sample cell i and sample_frame is the number of agencies that were included in the survey.

Non-response adjustment: The non-response adjustment is defined as the ratio of the number of observations of a particular type in the sample for a given cell to the number of observations of that type in the cell who returned a useable survey questionnaire:

$$\text{Weight}_{\text{Non-Response}_i} = \frac{(\text{sample_frame}_i)}{(\text{respondent s}_i)}$$

Final sampling weight: The final sampling weight is equal to the product of the base sampling weight and the non-response adjustment:

$$\text{Weight}_i = \text{Weight}_{\text{Base}_i} \bullet \text{Weight}_{\text{Non-Response}_i}$$

The sampling weight accounts for differential sampling rates and response rates within cells. We applied sampling weights to each agency so that the survey results would be nationally representative, and we could obtain population-based estimates.

Non-response analyses

To understand the extent to which systematic differences between agencies that responded to the survey and non-respondents, we compared the characteristics of respondents and non-respondents, using information in the CMS Provider of Service file that is available for all agencies. The objective of this analysis was to understand whether there might be any bias in our analyses resulting from non-response bias. We found that there were some agency characteristics that were correlated with survey response:

- Medium and large agencies were more likely to respond to the survey than small agencies. Only 30 percent of agencies for which no Medicare Cost Report information was available responded to the survey. While there is no way to know for certain, this may be because some of these agencies, though listed in the Provider of Service file, are not currently in business.
- Agencies in the Midwest and Northeast had higher response rates (61 and 59 percent respectively) than agencies in the South and West (47 and 49 percent) (Table 3.3).
- The response rate for urban agencies was 62 percent, compared to 49 percent for rural agencies.

It is important to note that these differences in response rates do not cause any bias in our analyses, since the survey sample was selected based on size, region, and urban/rural status. The non-response adjustment is larger for agencies in sampling cells with low response rates.

We also found that the response rate was higher for government and non-profit agencies (68 and 60 percent respectively) than for-profit agencies (45 percent). This difference may lead to some bias in our results, since type of control was not used as a stratum for selecting the sample and thus is not considered in the weighting.

Table 3.3:**Response Rate By Agency Characteristics**

Agency Characteristic	Number in Sample	Respondents	Response Rate
Region			
Northeast	150	89	59%
Midwest	323	197	61%
South	528	247	47%
West	199	98	49%
Urban/Rural			
Urban	336	209	62%
Rural	864	422	49%
Size Category			
Small	390	179	46%
Medium	360	209	58%
Large	390	225	58%
Unknown	60	18	30%
Non-prof: Religious	79	51	65%
Non-prof: Private	196	118	60%
Non-prof: Other	117	67	57%
Ownership Type			
Non-profit	392	236	60%
For-profit	673	302	45%
Government	134	92	69%

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005

Comparison of early and late responders

One method for detect potential non-response bias is to compare early and late responders—differences in the characteristics of early and late responders suggest potential non-response bias. The assumption underlying this analysis is that late responders are more similar to non-responders than are early responders. For these analyses, we divided respondents into three groups—early, middle, and late responders, based on whether they responded in the first, second, or third two week period of the six weeks in which survey responses were received. These analyses revealed that there were some agency characteristics that seemed to be different between the early, middle, and late responders and other characteristics in which there were not differences:

- Early and late responders were similar with respect to the proportion of agencies that continued to collect OASIS data for their private pay patients. Of those who continued to collect OASIS, 36 percent were early responders to the survey, the same as for suspended

agencies (Table 3.4). Among agencies that suspended OASIS, 20 percent were late responders. For the agencies that continued to collect OASIS, 18 percent were late responders.

- Non-profit agencies were less likely to be late responders to the survey (14 percent) than for-profit (22 percent) or government (19 percent) agencies.
- Chain-affiliated agencies were more likely to be early responders than independent agencies (40 percent vs. 34 percent).
- There was no indication that early vs. late responders was related to agency payor mix.
- Agencies that were part of an organization that included a separate non-certified provider that served private pay patients were much more likely to be late responders than other agencies (22 percent vs. 12 percent).
- Agencies that reported finding the OASIS data more useful were more likely to be early responders to the survey than agencies that found OASIS to be less useful (38 percent vs. 33 percent).
- Agencies that took longer to complete OASIS (measured based on RN minutes for start-of-care assessments) were faster to respond to the survey—39 percent of these agencies were early responders compared to 31 percent of other agencies. Agencies that had more clerical time required per assessment, however, were less likely to be early responders.

While there were differences in early and late responders with respect to some agency characteristics, the finding that the proportion of early and late responders was essentially identical for continued and suspended agencies is important, as it suggests that our estimate of the proportion of agencies that have continued to collect OASIS for their private pay patients is not affected by non-response bias.

Table 3.4:
Early, Middle, and Late Responders By Agency Characteristics

Agency Characteristic	Early	Middle	Late
Overall	35.8%	45.3%	18.8%
Continued/Suspended			
Suspended OASIS for non MCR/non-MCD patients	36.0%	44.2%	19.8%
Continued OASIS for non MCR/non-MCD patients	35.7%	45.9%	18.2%
Type of Control			
Non-profit	35.6%	50.7%	13.7%
For-profit	37.5%	41.0%	21.5%
Government	28.9%	51.9%	19.1%
Chain Affiliation			
Affiliated with a chain	40.3%	42.8%	16.9%
Not affiliated with a chain	34.4%	46.3%	19.1%
Payor Mix			
Percent Medicare/Medicaid patients < 80	38.3%	43.2%	17.9%
Percent Medicare/Medicaid patients 90 or higher	37.1%	45.2%	17.8%
Separate Provider			
Organization has a separate non-certified provider for non-MCR/non-MCD	39.4%	48.9%	11.7%
No separate non-certified provider for non-MCR/non-MCD	35.2%	42.8%	21.8%
Usefulness of OASIS			
Agency found OASIS data useful (based on survey Section K)	38.2%	43.8%	17.7%
Agency did not find OASIS data useful (based on survey Section K)	33.3%	46.9%	19.8%
RN Minutes for Start of Care Assessments			
< 120 minutes for RN Start of Care assessments	31.7%	48.6%	19.7%
120 or more minutes for RN Start of Care assessments	39.1%	42.6%	18.1%
Clerical Minutes for Start of Care Assessments			
< 15 minutes for RN Start of Care assessments	39.3%	43.7%	16.6%
15 or more minutes for RN Start of Care assessments	33.3%	46.4%	20.3%

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005

3.6 Survey analysis methodology

First, we describe the characteristics of agency survey respondents. Agency type, accreditation status, and caseload and payer mix of patients served are listed and compared by key agency factors including agency size, location and type of control. For continuous variables we present means, and for categorical variables we present frequencies.

One of the purposes of the survey was to identify agency characteristics that were associated with agency decisions on whether to continue OASIS collection for private pay patients. For this purpose, we compare the agency characteristics by suspended/continued status and fit a logistic regression model. We model the probability that an agency continued collecting OASIS data for private pay patients. We then present odds ratios (OR) and their 95% confidence intervals (CIs). The odds ratio is a statistical measure, defined as the ratio of the odds of an event occurring in one group to the odds of it occurring in another group. An odds ratio of 1 indicates that both groups of agencies were equally likely to continue OASIS collection. An odds ratio greater than 1 indicates that the agencies in the comparison group were more likely to continue OASIS collection than agencies in the referent group. And an odds ratio less than 1 indicates that the agencies in the comparison group were less likely to continue OASIS collection. The 95% CIs show the significance of the estimated ORs. The further the CIs deviate from 1, the more significant the ORs. A 95% CI including 1 suggests that the OR is not significant at $p < 0.05$.

Next, we examine the reasons for agencies continuing or suspending collection on private pay patients. For each of the 12 potential reasons, agencies were asked to choose one from the four options: “very important”, “somewhat important”, “somewhat unimportant” and “very unimportant”. We assigned the four options scores 2, 1, -1, and -2, respectively, and calculated the average scores for each potential reason. An average score greater than 0 suggests that agencies tend to agree on the potential reason, and an average score less than 0 suggests the opposite. The further deviation of the average score from 0 suggests a stronger agreement (if score > 0) or disagreement (if score < 0). We further compare the average scores by key agency characteristics. The purpose is to see whether we can identify any characteristics of agencies that are correlated with opinions regarding OASIS data collection on private pay patients.

We also examine the agency perceived uses and benefits by collecting OASIS for private pay patients. In discussing the results of these analyses, we were interested not only in the statistical significance of results and the size of effect, but also trends and patterns. The use and benefit section of the survey had two categories of survey questions: one with two answer choices (yes or no); and one with four answer choices, ranging from strongly agree to strongly disagree. For questions in the former category, we compared the proportion of agencies answered “yes” by key agency factors and fit logistic regression models. For questions in the later category, we present two types of analyses. First, we assigned each answer choice a score, ranging from -2 (strongly disagree) to 2 (strongly agree), and presented the averages. Second, we dichotomized the scale into agree (including “strongly agree” or “agree”) and disagree (including “strongly disagree” or “disagree”), present the percent of agencies that agreed, and fit logistic regression models. The interpretation of the output from logistic regression models is similar to that presented above.

Finally, we analyze the resources that agencies used to collect OASIS on private pay patients. The resources include nurse hours or minutes and cost spent on data collection and quality review. Because all the measures are continuous, we mainly present averages (means) and confidence intervals. For some variables with extremely skewed distributions (even after trimming outliers), we present quartile values.

We also built linear regression models to identify factors that are significantly associated with more (or less) resource use. We present the estimated regression coefficients, standard error and *t*-statistics obtained from the linear regression models. We designate the significance level of the coefficients using asterisks.

The interpretation of the regression coefficients depends on the outcome included in the model. For example, when modeling the RN minutes used for start of care in private pay patients, if the estimated regression coefficients for for-profit agencies is 10 with two asterisks, it suggests that on average for-profit agencies used 10 more RN minutes to do the assessment than non-for-profit agencies, and the difference is significantly different from 0 at $p < 0.05$.

3.7 Limitations

There are several limitations of the survey analysis that limit the conclusions that we can draw regarding OASIS benefits and costs.

- It is not possible to determine how agencies spent the time that they reported spending on OASIS assessments. For example, rural agencies may have included in their estimates the time spent traveling to the client's home. It appears that some agencies counted the whole visit, not just time spent on assessment – this includes developing and documenting the plan of care, etc.
- We did not have any agency-specific information on agency labor costs, but rather imputed these using average wage figures from the Bureau of Labor Statistics.
- There seem to be differences across agencies in what was counted in training and data quality review costs, and the TEP expressed concern about the reliability of these data items. TEP members think that agencies have no way to separate out the time spent on these activities and have difficulty estimating. For example, training time may have included instruction on how to fill out paperwork, or how to use a Point of Care hand-held device, as well as instruction on how to conduct the assessment.
- The TEP suggested that some of the uses of assessment data appeared inflated. For example, they conjectured that agencies reported they were working with their Quality Improvement Organization if they had any contact with the QIOs; they counted looking at HHCompare as reviewing outcomes; they counted sending data to JCAHO as benchmarking; and they counted printing HHCompare reports as producing outcome reports internally.
- The study was not designed to collect or analyze the relationship between OASIS use/benefits/costs and measures of quality of care. Therefore, the study does not provide any insights into the impact that the continuation or suspension of OASIS data collection for private pay patients may have on the care patients receive.

4.0 Survey Findings

4.1 Key characteristics of agency respondents

Agency characteristics

The first section of the survey instrument collected general agency characteristics for use as control variables in later modeling. These included chain membership, the presence of a separate non-(Medicare/Medicaid) certified agency component, recent organizational changes or initiatives that might have absorbed agency management resources, and accreditation(s) held by the agency. Overall, 26 percent of agencies reported being part of a chain of home health agencies, while 28 percent reported having a non-certified component or being part of a larger organization that also includes a non-certified agency (Table 4.2, first column). Few agencies (4 percent) reported experiencing a merger or other change of ownership in the past 12 months, and only 10 percent to 20 percent of agencies reported other events or initiatives that consume management resources (change in agency leadership, move to a new location, staff reductions, significant change in referral sources or patient severity level, or implementation of new computer systems or programs targeting specific types of patients). However, 33 percent of all agencies reported having undertaken one or more OBQM initiatives that resulted in changes in agency practice, while 47 percent of agencies reported experiencing staff shortages. About half of all agencies (54 percent) reported having no accreditation, while 34 percent reported being JCAHO accredited, 4 percent reported CHAP, and 7 percent reported being accredited by some other organization or agency.

Table 4.1 also shows the frequency of these characteristics by agency size quartile. The largest agencies are different from other agencies in many of the dimensions reported – they are most likely to have a non-certified component, they are most likely to be JCAHO or CHAP accredited, and they are more likely to have had recent management challenges, such as change in leadership, staff reductions or shortages, implementation of new computer systems, increase in patient severity, and/or initiation of OBQM initiatives or programs targeting specific patient populations. The smallest agencies are more likely than others to have moved offices to a new location, to have experienced a significant change in referral sources.

Table 4.2 shows how these agency characteristics/experiences differ by agency location. Agencies in the South (census region) are most likely to be part of a chain (32 percent) and most likely to have had a change in agency leadership (23 percent), a move to a new location (20 percent), staff reductions (19 percent), a significant change in referral sources (13 percent), or the initiation of a new program targeting specific a patient population (18 percent). They are least likely to have a non-certified component (21 percent, vs. 31 percent to 36 percent in the other regions). In contrast, agencies in the Northeast are most likely to have a non-certified component (36 percent), and are far more likely than agencies in the South to report staff shortages (65 percent vs. 42 percent) or to have implemented new computer systems for clinical records (19 percent vs. 10 percent) or other purposes (31 percent vs. 16 percent). Agencies in the other two regions (Midwest and West) generally fell between the extremes, except that agencies in the Midwest were least likely to be part of a chain (17 percent) or to have implemented new clinical or other computer systems (6 percent, 15 percent). With regard to accreditation, the incidence of JCAHO accreditation was consistent in three regions (37 percent), but only 26 percent in the Midwest; however, the Midwest agencies were most likely to report “Other accreditation” (though those respondents which specified what this meant generally reported Medicare/Medicaid certification or state licensure.)

Table 4.1: Agency Characteristics by Size Quartile

		Size Quartile			
	All Respondents	Q1 (Smallest)	Q2	Q3	Q4 (Largest)
	%	%	%	%	%
A1. HHA is part of a chain					
Part of chain with other Medicare HHAs	26%	20%	19%	38%	31%
A2. Separate non-Medicare certified component					
Part of an organization that also has non-Medicare HHAs	28%	25%	22%	30%	39%
A3. Agency experiences in recent months					
Merger/acquisition/split/demerger, change of ownership	4%	1%	8%	2%	5%
Change in agency leadership	19%	15%	18%	23%	23%
Move to a new location	15%	18%	10%	16%	11%
Staff reductions	16%	10%	17%	19%	19%
Staff shortages	47%	41%	42%	44%	75%
Significant change in referral sources	10%	14%	7%	9%	9%
Increase in average level of clinical severity/care needs of patients	19%	14%	18%	21%	24%
Implementation of new system for automating clinical records	10%	9%	7%	12%	16%
Other new software / computer systems implementation	19%	14%	19%	14%	32%
Initiation of new program(s) targeting specific patient populations	15%	5%	8%	21%	33%
OBQM initiatives resulting in practice changes	33%	18%	30%	35%	60%
A4. Type of accreditation(s) held					
JCAHO	34%	12%	29%	48%	66%
CHAP	4%	0%	1%	7%	10%
Other Accreditation	7%	9%	10%	5%	4%
No Accreditation	54%	77%	58%	42%	22%

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

Urban agencies were more likely to be members of an HHA chain, much more likely to have a non-certified component (32 percent vs. 17 percent of rural agencies) and generally more likely to have experienced the management challenges surveyed, especially staff shortages (53 percent vs. 35 percent of rural agencies). They were also slightly more likely to have JCAHO accreditation (36 percent vs. 29 percent of rural agencies).

Table 4.2: Agency Characteristics by Location

		Census Region				Urban/ Rural Status	
	All Respondents	NE	MW	S	W	Urban	Rural
	%	%	%	%	%	%	%
A1. HHA is part of a chain							
Part of chain with Medicare-certified HHAs	26%	26%	17%	32%	25%	28%	21%
A2. Separate non-Medicare certified component							
Part of an organization that has non-Medicare -certified HHAs	28%	36%	31%	21%	32%	32%	17%
A3. Agency experiences in recent months							
Merger/acquisition/split/demerger, change of ownership	4%	4%	2%	5%	5%	4%	4%
Change in agency leadership	19%	19%	13%	23%	21%	22%	14%
Move to a new location	15%	8%	10%	20%	15%	18%	8%
Staff reductions	16%	7%	17%	19%	13%	15%	18%
Staff shortages	47%	65%	40%	42%	60%	53%	35%
Significant change in referral sources	10%	4%	9%	13%	10%	12%	6%
Increase in average level of clinical severity/care needs of patients	19%	15%	19%	19%	19%	17%	22%
Implementation of new system for automating clinical records	10%	19%	6%	10%	14%	11%	9%
Other new software / computer systems implementation	19%	31%	15%	16%	23%	18%	20%
Initiation of new program(s) targeting specific patient populations	15%	14%	13%	18%	10%	16%	13%
OBQM initiatives resulting in practice changes	33%	41%	39%	29%	28%	29%	41%
A4. Type of accreditation(s) held							
JCAHO	34%	37%	26%	37%	37%	36%	29%
CHAP	4%	7%	6%	2%	1%	4%	4%
Other Accreditation	7%	7%	11%	5%	9%	5%	13%
No Accreditation	54%	50%	57%	54%	54%	55%	52%

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

When agencies are compared on type of control (for profit, nonprofit, and government), a number of systematic differences emerge. Proprietary agencies are much more likely to be part of a chain (35 percent vs. 19 percent of nonprofit) but only slightly more likely to have a non-certified component (30 percent vs. 28 percent of nonprofits). For-profit agencies are most likely to have moved to a new location (22 percent vs. 6 percent of nonprofits), but they were less likely to report other management challenges, such as staff shortages and staff reductions. They (for-profits) were also less much likely than nonprofit or government agencies to report an OBQM initiative resulting in a practice change (24 percent of for-profit agencies vs. 43 percent of nonprofits and 45 percent of government agencies.) They were also the least likely to report any accreditation – 65 percent reported no accreditation (vs. 57 percent of government agencies and only 35 percent of nonprofits.)

Table 4.3: Agency Characteristics by Control

	All	Agency Control		
		For Profit	Non Profit	Govt
	%	%	%	%
A1. HHA is part of a chain				
Part of chain with Medicare-certified HHAs	26%	35%	19%	4%
A2. Separate non-Medicare certified component				
Part of an organization that has non-Medicare-certified HHAs	28%	30%	28%	15%
A3. Agency experiences in recent months				
Merger/acquisition/split/demerger, change of ownership	4%	5%	4%	1%
Change in agency leadership	19%	19%	19%	22%
Move to a new location	15%	22%	6%	5%
Staff reductions	16%	13%	22%	16%
Staff shortages	47%	45%	56%	35%
Significant change in referral sources	10%	11%	12%	5%
Increase in average level of clinical severity/care needs of patients	19%	17%	21%	19%
Implementation of new system for automating clinical records	10%	9%	13%	12%
Other new software / computer systems implementation	19%	17%	22%	17%
Initiation of new program(s) targeting specific patient populations	15%	14%	17%	15%
OBQM initiatives resulting in practice changes	33%	24%	43%	45%
A4. Type of accreditation(s) held				
JCAHO	34%	26%	52%	23%
CHAP	4%	2%	8%	0%
Other Accreditation	7%	5%	8%	16%
No Accreditation	54%	65%	35%	57%

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

The presence of all of these observed differences by agency characteristics in variables that were considered likely to influence agencies' decisions to continue or suspend the collection of OASIS data on private pay patients suggests that they may well be useful in the multivariate analysis of those decisions.

Patients served. The second section of the instrument collected two different measures of agency size as well as agency payer mix. While agencies had already been stratified by size for the survey sample, this categorization was based on total visits as obtained from available Medicare Cost Report files (HCRIS), which were for 2003 at the latest. For the data analysis, a measure that was contemporaneous with the survey data on assessments and costs was considered preferable. In addition, survey respondents could be asked to report on the subset of each agency's caseload that was potentially subject to OASIS data collection – i.e., adult, non-maternity patients receiving skilled care. Table 4.4 shows these variables by size quartile.

Table 4.4: Caseload and Payer Mix by Size Quartile

	Size Quartile				
	TOTAL	Q1 (smallest)	Q2	Q3	Q4 (largest)
	Mean	Mean	Mean	Mean	Mean
B1a. Unduplicated patients					
Number of unduplicated adult non-maternity patients served	681	97	259	634	2,871
B1b. Admissions					
Number of total adult non-maternity patient admissions	773	84	267	686	3,210
B2. Payer Mix (adult, skilled, non-maternity)					
% Traditional Medicare admissions	70%	68%	71%	75%	65%
% Medicare HMO admissions	3%	2%	2%	3%	6%
% Traditional Medicaid admissions	10%	12%	11%	8%	7%
% Medicaid HMO admissions	1%	2%	1%	1%	2%
Subtotal, OASIS required	84%	84%	86%	86%	80%
% Other public sources (TRICARE, VA, etc.)	2%	3%	2%	2%	1%
% Private HMO / managed care	3%	2%	3%	3%	8%
% Other private insurance	6%	4%	7%	7%	8%
% Self-pay	2%	3%	2%	1%	1%
% Other	1%	1%	1%	1%	2%

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

The presence of some very large agencies in the sample is evidenced by the fact that the mean for the largest size quartile is approximately 30 to 40 times that of the smallest quartile. In the smallest size quartile, the number of unduplicated patients served (97) exceeds the average total admissions (84), suggesting that an average 13 (13 percent) of patients were on service all year and never had an admission. This seems unlikely and is likely a problem with respondent understanding of the question. Of note, however, is the lack of difference in OASIS eligibility across size categories – between 80 and 86 percent of the respondents’ patients were required to have an assessment that includes the OASIS.

As shown in Table 4.5, patient mix also differs by location. The large agencies are clearly concentrated in the Northeast (mean unduplicated patients is 1,452 vs. 536 for the South, 705 for the West). Payer mix varies from 77 percent OASIS-mandated in the West to 89 percent in the South. The Northeast has the lowest proportion of patients coming in through “regular” Medicare (only 57 percent) but this is largely offset the highest proportion of Medicare HMOs (7 percent vs. 2 percent in the South).

Table 4.5: Caseload and Payer Mix by Location

	TOTAL	Census Region				Urban/Rural Status	
		NE	MW	S	W	Urban	Rural
	Mean	Mean	Mean	Mean	Mean	Mean	Mean
B1a. Unduplicated patients							
Number of unduplicated adult non-maternity patients served	681	1,452	587	536	705	815	375
B1b. Admissions							
Number of total adult non-maternity patient admissions	773	1,705	641	611	763	939	395
B2. Payer Mix (adult, skilled, non-maternity)							
% Traditional Medicare admissions	70%	57%	66%	81%	59%	69%	74%
% Medicare HMO admissions	3%	7%	1%	2%	5%	3%	2%
% Traditional Medicaid admissions	10%	15%	14%	6%	10%	10%	10%
% Medicaid HMO admissions	1%	2%	2%	1%	2%	2%	1%
Subtotal, OASIS required	84%	81%	84%	89%	77%	84%	87%
% Other public sources (TRICARE, VA, etc.)	2%	3%	2%	2%	4%	2%	2%
% Private HMO / managed care	3%	7%	2%	2%	6%	4%	2%
% Other private insurance	6%	5%	8%	6%	4%	5%	8%
% Self-pay	2%	3%	3%	1%	1%	2%	2%
% Other	1%	1%	1%	1%	0%	1%	1%

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

Considering urban vs. rural location, we find that larger agencies are concentrated more in urban areas (average unduplicated patients = 815, vs. 375 for rural agencies). The proportion of admissions requiring OASIS is fairly comparable (84 percent of urban admissions vs. 87 percent of rural admissions).³⁴

As shown in Table 4.6, it is clear that the largest agencies tend to be non-profit (mean unduplicated patients = 1,281, vs. 427 for proprietary agencies and 349 for government agencies).

Overall, respondent agencies reported serving an average of 681 OASIS-eligible (adult, non-maternity, skilled care) patients in the previous 12 months (Table 4.6, first column), and they reported an average of 773 admissions (which would mean that an average 92 (14 percent) of patients were discharged and readmitted).

Agencies reported 70 percent Medicare fee-for-service admissions, plus 3 percent Medicare HMO, plus 11 percent Medicaid admissions, for a total of 84 percent of admissions where OASIS was required.³⁵ Among the other sources of coverage, private insurance is the most frequent (6 percent).

Table 4.6: Caseload and Payer Mix by Agency Control

		Agency Control		
	TOTAL	For Profit	Non-Profit	Govt
	Mean	Mean	Mean	Mean
B1a. Unduplicated patients				
Number of unduplicated adult non-maternity pts	681	427	1,281	349
B1b. Admissions				
Number of adult non-maternity patient admissions	773	487	1,419	363
B2. Payer Mix (adult, skilled, non-maternity)				
% Traditional Medicare admissions	70%	70%	71%	69%
% Medicare HMO admissions	3%	3%	3%	1%
% Traditional Medicaid admissions	10%	10%	8%	14%
% Medicaid HMO admissions	1%	1%	2%	1%
Subtotal, OASIS required	84%	85%	83%	85%
% Other public sources (TRICARE, VA, etc.)	2%	3%	1%	2%
% Private HMO / managed care	3%	3%	4%	1%
% Other private insurance	6%	5%	7%	7%
% Self-pay	2%	2%	3%	2%
% Other	1%	1%	1%	2%

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

³⁴ Again, note that agencies serving only Medicare/Medicaid patients were excluded from the survey.

³⁵ It is important to note that, by design, the project does not include respondent agencies who do not serve Medicare or Medicaid patients (i.e., their payment sources is 100% Medicare or Medicaid.) This means that the percentages above are not *nationally* representative. .

Agency control does not seem to affect payer mix; OASIS assessments are required for 83 to 85 percent of admissions for agencies in all payer categories.

Table 4.7 shows size and payer mix for agencies based on whether they continued or suspended OASIS data collection for private pay patients. Agencies that suspended tended to be slightly smaller, on average (606 unduplicated patients vs. 721 for agencies which continued OASIS). They also served somewhat fewer patients for whom OASIS was required (78 percent, vs. 88 percent for agencies which continued), which meant that there was relatively more effort to be saved than at the agencies which continued to collect OASIS.

Table 4.7: Caseload and Payer Mix by OASIS Collection Status

	TOTAL	Survey Type	
		Suspended	Continued
	Mean	Mean	Mean
B1a. Unduplicated patients			
Number of unduplicated adult non-maternity patients served	681	606	721
B1b. Admissions			
Number of total adult non-maternity patient admissions	773	737	792
B2. Payer Mix (adult, skilled, non-maternity)			
% Traditional Medicare admissions	70%	63%	74%
% Medicare HMO admissions	3%	3%	3%
% Traditional Medicaid admissions	10%	10%	10%
% Medicaid HMO admissions	1%	2%	1%
Subtotal, OASIS required	84%	78%	88%
% Other public sources (TRICARE, VA, etc.)	2%	3%	2%
% Private HMO / managed care	3%	4%	3%
% Other private insurance	6%	7%	6%
% Self-pay	2%	4%	1%
% Other	1%	1%	1%

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

4.2 Status of OASIS data collection on private pay patients

Anecdotal evidence available prior to the study suggested that as many as half or more agencies continued to collect OASIS data on private pay patients since mandatory collection was suspended in December 2003. Survey findings supported this estimate: 65.38 percent of agencies that responded reported that they were continuing to collect OASIS data on all adult, non-maternity patients receiving skilled service (all the OASIS items, collected at all the time points required for their Medicare patients). Based on our analysis of early and late responders (see Section 3.4), and our interviews with HHAs and Quality Improvement Organizations (see Section 5.2), we are confident that this is a reasonably accurate reflection of the status of agency data collection practices at the time of the survey.

4.2.1 Agency OASIS Data Collection Status By Key Characteristics

Table 4.8 shows how agencies who continue or suspended OASIS data collection varied by agency size and location. Agency size and urban/rural status does not appear to be related to the decision to continue or suspend OASIS collection for private pay patients.

Table 4.8:

Agencies that Suspended vs. Continued OASIS Collection by Size and Location

	Suspended Percent	Continued Percent
Continue/Suspend Status		
All agencies	34.62	65.38
Size Category		
Quartile 1 (smallest)	29.11	70.89
Quartile 2	35.53	64.47
Quartile 3	34.90	65.10
Quartile 4 (largest)	30.41	69.59
Unknown	29.17	70.83
Census Region		
Northeast	19.10	80.90
Midwest	37.06	62.94
South	29.96	70.04
West	40.82	59.18
Rural		
Yes	31.58	68.42
No	32.7	67.3

Region, however, does appear to be related, with agencies in the Northeast and South significantly more likely to have continued than those in the West. One possible explanation for this is that agencies in the Northeast and South had a much higher participation in OBQI demonstration projects and so have longer experience with OASIS, have integrated the OASIS assessment more thoroughly into their agency's operations, and may be more committed to and proficient at the use of outcomes data. We also tested selected agency characteristics in a regression model. This analysis is shown in Table 4.9.

Table 4.9:
Agencies that Continued OASIS Collection on Private Pay Patients:
Regression Results on Key Characteristics

Characteristic	OddsRatioEst	LowerCL	UpperCL
Size in 1st Quartile (smallest)	0.629	0.328	1.206
Size in 2nd Quartile	0.62	0.333	1.156
Size in 3rd Quartile	0.695	0.37	1.306
Region: Northeast	4.18*	1.88	9.295
Region: Midwest	1.127	0.61	2.082
Region: South	1.961*	1.097	3.507
Rural	1.069	0.624	1.83
Facility control: For-Profit	0.47*	0.285	0.776
Accredited: JCAHO or CHAP	0.656	0.408	1.053
Separate provider	0.776	0.455	1.322
Considers OASIS highly useful	2.339*	1.473	3.714
High number of RN minutes req for SOC	0.997	0.639	1.556
High-tech devices used to collect data	0.873	0.489	1.557
Staff reduction or shortage	0.864	0.527	1.419
Percent require OASIS: low	0.359*	0.202	0.639
Percent require OASIS: mid	0.893	0.488	1.633

**Indicates statistical significance at the 95% level when compared to agencies that suspended OASIS for private pay patients*

Based on these analyses, the following associations were noted between agency characteristics and the decision to continue or suspend OASIS.

- Region: As noted in the table above, agencies in the Northeast were approximately 4 times more likely to continue collection than those in the West, and those in the South were almost 2 times as likely to continue collection as those in the West;

- Type of Control: For-profit agencies are about half as likely to have continued collection as non-profit or government agencies;
- Agencies that considered OASIS to be “highly useful” were more than 2 times as likely to continue collection than those who did not;
- Agencies with a lower percent of patients requiring OASIS (less than 80 percent) were one third as likely to continue collection as those that had a high percent of patients requiring OASIS. In other words, the higher the percentage of private pay patients, the lower the likelihood that the agency would continue to collect OASIS data on those patients.

None of the other agency characteristics, including size, had a statistically significant relationship with the decision to continue or suspend collection.

4.2.2 Reasons for continuing or suspending collection on private pay patients

Continuing Collection

The survey asked agencies that had continued collection to rate a list of 12 potential factors, by indicating whether each was “very important”, “somewhat important”, “somewhat unimportant” or “very unimportant” in their decision to continue collection. As shown in Table 4.10 and Figure 4a:

- The most important reasons for continuing related to fewer training issues (by using a single form or by maintaining data collection policies) and the Conditions of Participation requirement of a comprehensive assessment for all patients.
- An administrative or executive decision by the corporate organization also received a relatively important rating, averaging around 1 (somewhat important) across the agencies.
- Least important were considerations of OASIS data collection requirements by other payment sources, and the interest of other payers or referral sources in outcomes data on private pay patients.

Influence of agency size and location

Agency size did not appear to contribute to the relative importance of the top 3 reasons cited for continuing collection (fewer training issues and COP requirements). The agencies in the lowest size quartile were also just as likely as agencies in the highest quartile to agree that they continued OASIS data collection on private pay patients because of their belief that the suspension might be temporary, because of their interest in outcomes data on their private pay patients, and because of interest in outcomes by referral and payment sources.

Smaller agencies were more likely to report they continue collection because OASIS data provides them with information on their private pay patients that cannot be derived from other sources. Smaller agencies also were more likely to say that their decision was influenced by an administrative decision, limitations of their electronic data collection system, and concerns about survey and certification citations. Larger agencies were more likely to report that an inability to determine payment source at admission contributed to their decision to continue.

The importance of particular factors appeared to vary by region and urban/rural status, with rural agencies and those in the Midwest less likely to report that the decision to continue was an administrative/executive decision; urban agencies and those in the South less likely to say that their

electronic data collection issues affected their decision; and those in the Northeast least likely to be concerned about being cited by survey and certification. Agencies in the Northeast were the most likely to report that referral sources were interested in outcomes data on their private pay patients.

Table 4.10:
Reasons for Continuing OASIS Data Collection on Private Pay Patients:
Mean Importance Ratings* by Size

Degree to which the following factors influenced agency's decision to continue OASIS data collection for private pay patients	All	Quartile 1 (smallest)	Quartile 2	Quartile 3	Quartile 4 (largest)
Fewer training issues when one data collection form is used for all patients	1.58	1.52	1.65	1.56	1.62
Fewer training issues when our data collection policies remain unchanged	1.54	1.52	1.57	1.52	1.54
The Conditions of Participation continue to require a comprehensive assessment for all patients	1.52	1.38	1.66	1.47	1.53
An administrative/executive decision by my corporate organization	1.03	1.23	0.91	1.15	0.77
Belief that the federal requirement to collect OASIS was only suspended on a temporary basis and the requirement for collection may be reinstated	0.78	0.73	0.93	0.66	0.82
Our own interest in outcomes data on our non-Medicare/non-Medicaid patients	0.78	0.92	0.57	0.70	0.93
Our electronic data collection does not easily accommodate the use of more than one comprehensive assessment	0.58	0.54	0.79	0.50	0.16
It is not always possible to know the payment source for a patient's episode of care at the outset	0.41	0.21	0.44	0.42	0.62
Concern that Survey and Certification may cite our agency for not having a comprehensive assessment if we use a non-OASIS assessment	0.39	0.79	0.36	-0.01	-0.02
Collecting OASIS data on non-Medicare/non-Medicaid patients provides us with information that cannot be derived from other sources	0.27	0.44	0.27	0.07	0.20
Some payment sources other than Medicare and Medicaid require OASIS data collection	-0.05	0.05	-0.19	0.06	-0.29
Some referral and payment sources other than Medicare and Medicaid are interested in outcomes data on our non-Medicare/non-Medicaid patients	-0.06	0.08	-0.25	0.03	-0.21

* Mean rating is based on values of - 2 (very unimportant) to 2 (very important)

Figure 4a

Reasons for Continuing Collection

Mean score for all respondents

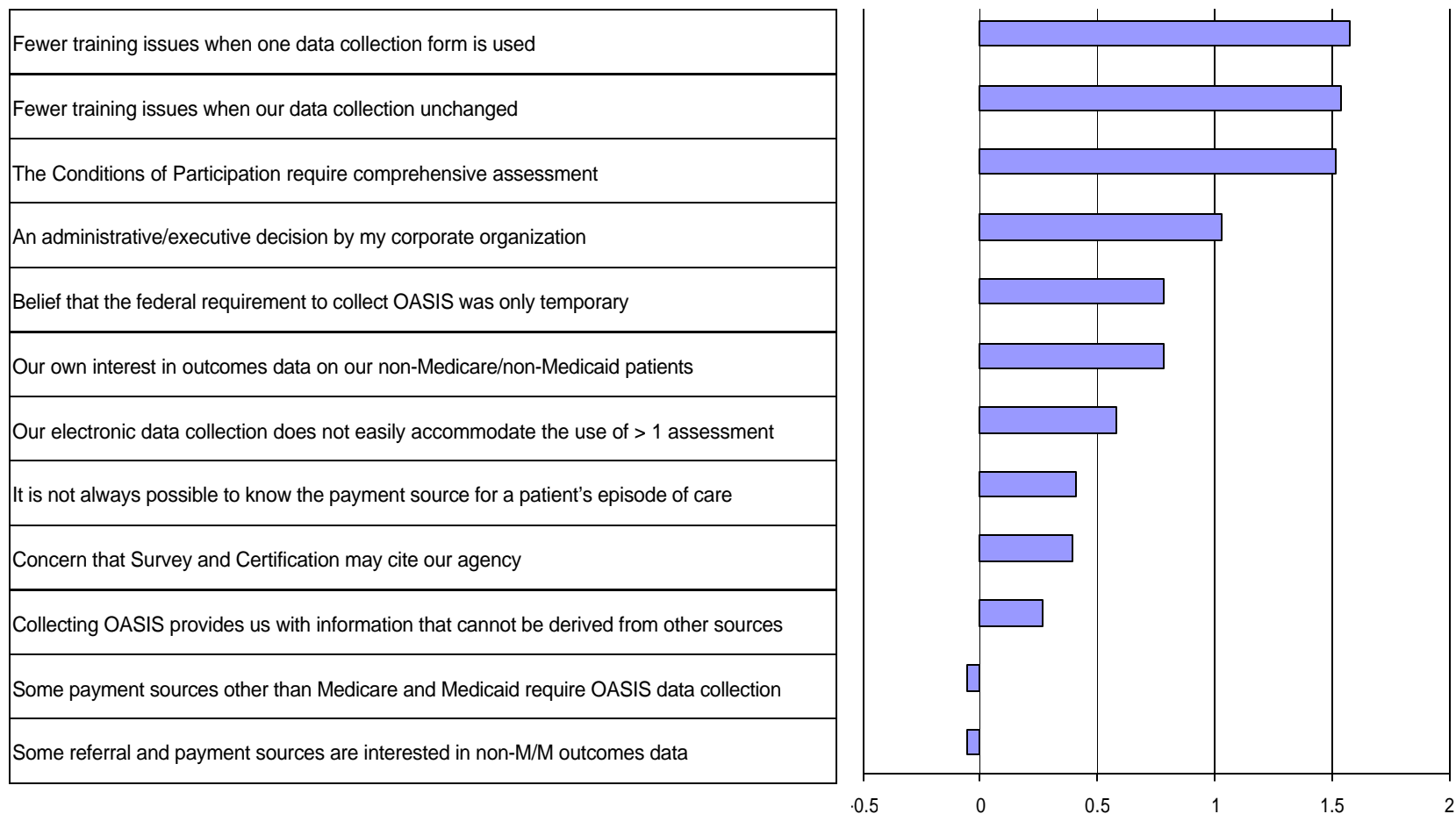


Table 4.11: Reasons for Continuing OASIS Data Collection on Private Pay Patients: Mean Importance Ratings* by Location

Degree to which the following factors influenced agency's decision to continue OASIS data collection for private pay patients	Region					Urban/Rural	
	All	NE	MW	South	West	Urban	Rural
Fewer training issues when one data collection form is used for all patients	1.58	1.57	1.56	1.59	1.61	1.60	1.55
Fewer training issues when our data collection policies remain unchanged	1.54	1.60	1.54	1.53	1.48	1.57	1.48
The Conditions of Participation continue to require a comprehensive assessment for all patients	1.52	1.53	1.48	1.53	1.54	1.46	1.63
An administrative/executive decision by my corporate organization	1.03	1.30	0.64	1.13	1.10	1.18	0.74
Belief that the federal requirement to collect OASIS was only suspended on a temporary basis and the requirement for collection may be reinstated	0.78	0.78	0.84	0.75	0.71	0.78	0.77
Our own interest in outcomes data on our non-Medicare/non-Medicaid patients	0.78	0.53	0.54	0.98	0.88	0.81	0.72
Our electronic data collection does not easily accommodate the use of more than one comprehensive assessment	0.58	0.98	0.71	0.32	0.78	0.47	0.80
It is not always possible to know the payment source for a patient's episode of care at the outset	0.41	0.36	0.56	0.38	0.20	0.35	0.52
Concern that Survey and Certification may cite our agency for not having a comprehensive assessment if we use a non-OASIS assessment	0.39	-0.16	0.57	0.47	0.36	0.38	0.40
Collecting OASIS data on non-Medicare/non-Medicaid patients provides us with information that cannot be derived from other sources	0.27	-0.09	0.22	0.34	0.55	0.35	0.11
Some payment sources other than Medicare and Medicaid require OASIS data collection	-0.05	-0.13	-0.09	-0.12	0.31	0.07	-0.29
Some referral and payment sources other than Medicare and Medicaid are interested in outcomes data on our non-Medicare/non-Medicaid patients	-0.06	0.68	-0.37	-0.22	0.11	0.14	-0.53

* Mean rating is based on values of - 2 (very unimportant) to 2 (very important)

Suspending collection

Survey respondents at agencies that suspended collection OASIS for private pay patients were also asked to rate a list of 15 potential factors, by indicating whether each was “very important”, “somewhat important”, “somewhat unimportant” or “very unimportant” in their decision to suspend collection. As shown in Figure 4b below:

- The reasons reported as most important for suspending related to burden: staff time, cost of collection, patient concerns and problems retaining and/or recruiting staff due to OASIS burden were cited as being the most important factors for suspending collection.
- Least important were confidentiality concerns, lack of outcome and case-mix reports on private pay patients and small sample sizes of private pay patients for outcome measures.

Influence of agency size and location

Smaller agencies tended to give more importance to factors relating to the availability of preferred non-OASIS assessments, the view that OASIS was not as relevant to private pay patients, and the number of private pay patients being too small and the number of visits too few for such patients

The importance of particular factors appeared to vary by region and urban/rural status. Agencies in the South and West more strongly rated administrative/executive decisions as a factor in suspending collection, compared to those in the Northeast and Midwest. The importance of this factor was almost three times as high for urban agencies compared to rural agencies.

Agencies in the Northeast appear to rate the following factors as unimportant in their decision to suspend collection, while agencies in other regions tended to rate such factors as important: OASIS does not appear relevant for private pay patients, non-OASIS outcome measures were used, use of an electronic data system that accommodated different assessments, and concerns about OASIS reliability.

Agencies in the Midwest tended to rate the factor of too few private pay patients as important, in comparison to agencies in the other three regions. Rural agencies also tended to rate this factor as important while urban agencies tended to rate it as unimportant.

Figure 4b

Reasons for Suspending Collection

Mean score for all respondents

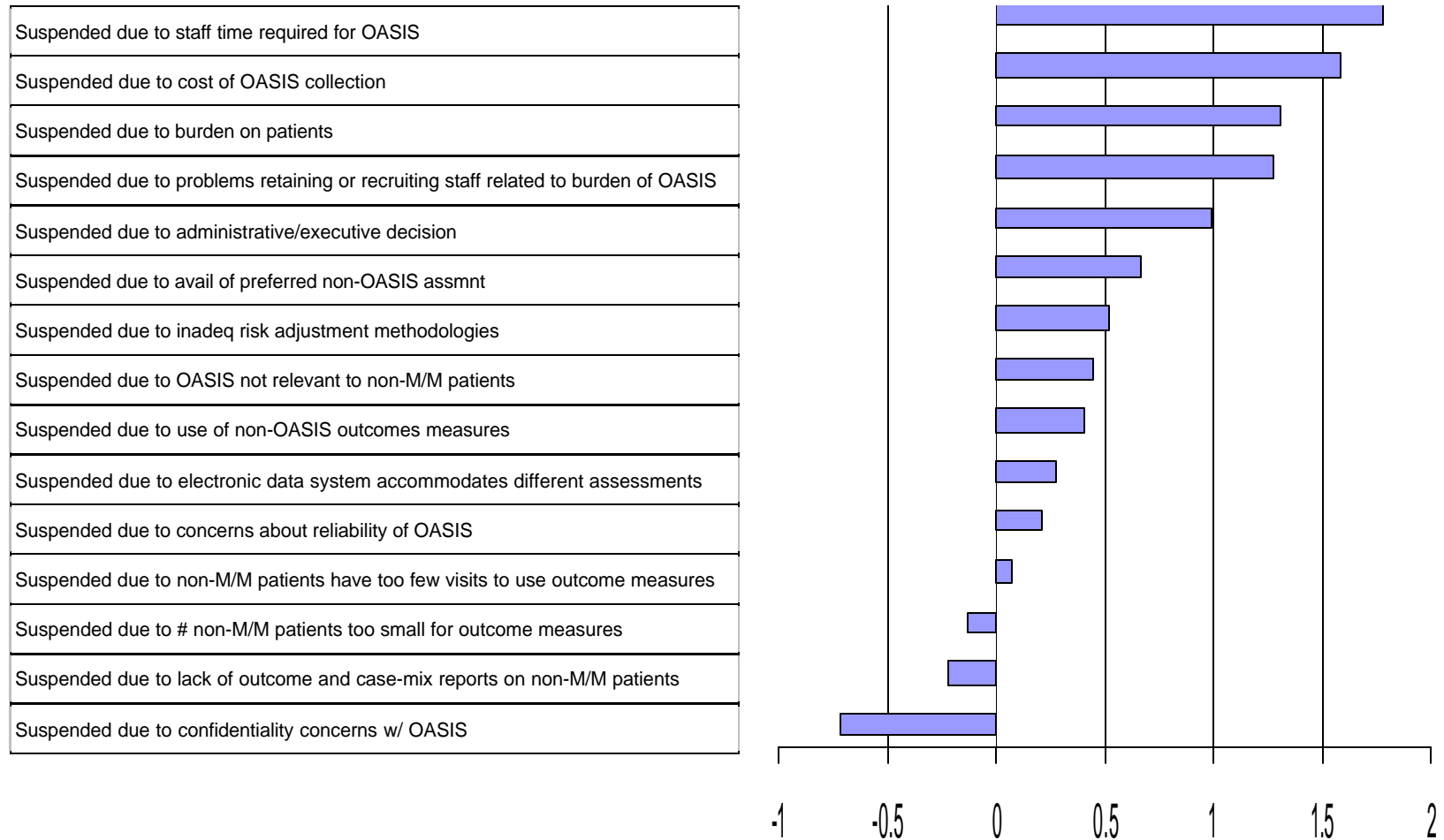


Table 4.12: Reasons for Suspending OASIS Data Collection on Private Pay Patients: Mean Importance Ratings* by Size

Degree to which the following factors influenced agency's decision to suspend OASIS data collection for private pay patients	All	Quartile 1 (smallest)	Quartile 2	Quartile 3	Quartile 4 (largest)
Suspended due to staff time required for OASIS	1.78	1.64	1.82	1.78	1.94
Suspended due to cost of OASIS collection	1.58	1.39	1.47	1.68	1.82
Suspended due to burden on patients	1.31	1.26	1.14	1.36	1.55
Suspended due to problems retaining or recruiting staff related to burden of OASIS	1.27	1.16	1.19	1.26	1.54
Suspended due to administrative/executive decision	0.99	1.17	1.01	0.87	1.14
Suspended due to avail of preferred non-OASIS assessment	0.67	0.83	0.68	0.53	0.67
Suspended due to inadequate risk adjustment methodologies	0.52	0.55	0.43	0.53	0.75
Suspended due to OASIS not relevant to private pay patients	0.45	0.86	0.40	0.33	0.32
Suspended due to use of non-OASIS outcomes measures	0.41	0.76	0.16	0.53	0.21
Suspended due to availability of electronic data system that accommodates different assessments	0.28	0.42	0.31	0.28	0.26
Suspended due to concerns about reliability of OASIS	0.21	0.23	0.28	0.10	0.37
Suspended due to private pay patients have too few visits to use outcome measures	0.07	0.46	0.47	-0.4	-0.50
Suspended due to # private pay patients too small for outcome measures	-0.13	0.26	0.45	-0.84	-0.80
Suspended due to lack of outcome and case-mix reports on private pay patients	-0.22	-0.10	-0.10	-0.58	-0.00
Suspended due to confidentiality concerns w/ OASIS	-0.72	-1.40	-0.30	-1.10	-0.30

* Mean rating is based on values of - 2 (very unimportant) to 2 (very important)

Table 4.13: Reasons for Suspending OASIS Data Collection on Private Pay Patients: Mean Importance Ratings* by Location

Degree to which the following factors influenced agency's decision to suspend OASIS data collection for private pay patients	Region					Urban/Rural	
	All	NE	MW	South	West	Urban	Rural
Suspended due to staff time required for OASIS	1.78	1.91	1.79	1.87	1.58	1.76	1.85
Suspended due to cost of OASIS collection	1.58	1.90	1.70	1.52	1.41	1.60	1.52
Suspended due to burden on patients	1.31	1.34	1.32	1.31	1.28	1.35	1.16
Suspended due to problems retaining or recruiting staff related to burden of OASIS	1.27	1.17	1.08	1.46	1.28	1.33	1.09
Suspended due to administrative/executive decision	0.99	0.50	0.50	1.34	1.05	1.13	0.53
Suspended due to avail of preferred non-OASIS assessment	0.67	0.10	0.64	0.70	0.81	0.72	0.53
Suspended due to inadequate risk adjustment methodologies	0.52	0.51	0.53	0.58	0.39	0.56	0.42
Suspended due to OASIS not relevant to private pay patients	0.45	-0.21	0.31	0.64	0.52	0.59	0.06
Suspended due to use of non-OASIS outcomes measures	0.41	-0.18	0.57	0.48	0.19	0.57	-0.05
Suspended due to availability of electronic data system that accommodates different assessments	0.28	-0.43	0.25	0.62	0.22	0.18	0.57
Suspended due to concerns about reliability of OASIS	0.21	-0.10	0.36	0.23	0.08	0.28	0.01
Suspended due to private pay patients have too few visits to use outcome measures	0.07	0.08	-0.31	0.19	0.32	-0.08	0.51
Suspended due to # private pay patients too small for outcome measures	-0.13	-0.19	0.21	-0.01	-0.91	-0.34	0.46
Suspended due to lack of outcome and case-mix reports on private pay patients	-0.22	-0.13	-0.35	0.0	-0.43	-0.33	0.01
Suspended due to confidentiality concerns w/ OASIS	-0.72	-1.10	-0.96	-0.21	-0.99	-0.64	-0.91

* Mean rating is based on values of - 2 (very unimportant) to 2 (very important)

4.3 OASIS uses and benefits as reported by respondents

In the survey, respondents were asked to indicate how their agencies review, analyze and use comprehensive assessment data (OASIS and non-OASIS) collected on Medicare/Medicaid and private pay patients. They were also asked to identify the benefits their agencies derive from the collection and use of these data. In this section, we report on the frequencies agencies reported using and benefiting from comprehensive assessment data collection, and the association between agency characteristics, use and benefits.

Multivariate analysis was also performed for each of the 24 uses and 22 potential benefits listed in the survey. Differences noted to have statistical significance at the 95 percent level are identified with an asterisk in the table. Full regression and cross-tabulation results are included in Appendix C.

4.3.1 Agency review and analysis of assessment data

Respondents were first asked how their agencies review and analyze both OASIS and non-OASIS assessment data once it is collected. As shown in the first column of the Table 4.14, close to 100 percent of respondents said their agencies review OASIS data collected on Medicare/Medicaid patients for quality and enter it into an electronic database. Almost all of respondents said their agency reviews outcome reports on their Medicare/Medicaid patients internally (98 percent), and almost 90 percent of respondents said their agency reviews outcome reports on their Medicare/Medicaid patients with a QIO.

Table 4.14: Assessment Data Review and Analysis

Percent of agencies who report...	Medicare/Medicaid patients	Private pay patients	
	OASIS assessment data	OASIS assessment data (continued agencies)	Non-OASIS assessment data (suspended agencies)
Assessment data are reviewed for quality and completeness and errors are corrected	99%	96%*	91%
Assessment data are entered into an electronic data base	97%	74%”	50%
Assessment data are submitted to a private vendor (e.g., for benchmarking)	40%	22%	13%
Outcome reports are produced by a private vendor	44%	25%	11%
Outcome reports are produced by my agency's internal systems	63%	45%	39%
Outcome reports are reviewed by my agency	98%	73%*	59%
Outcome reports are reviewed with my state's Quality Improvement Organization	88%	51%	24%

*Indicates statistical significance at the 95% level when compared to agencies that suspended OASIS for private pay patients

About 60 percent of respondents said their agency produces outcome reports on their Medicare/Medicaid patients using internal systems, and about 40 percent of respondents said their agency submits OASIS data collected on Medicare/Medicaid patients to a private vendor for benchmarking and receives OASIS-based outcome reports.

Agencies reported that assessment data collected on private pay patients are reviewed, corrected and entered into an electronic database less frequently than assessment data from Medicare/Medicaid patients. This is especially true for those agencies that have stopped collecting OASIS and are collecting another non-OASIS comprehensive assessment on their private pay patients. These differences were statistically significant in a regression model. Agencies that have suspended OASIS data collection on their private pay patients report the data are entered into an electronic database only about half the time, in comparison to the 74 percent reported by continuing agencies.

Assessment data on private pay patients are also analyzed less frequently than Medicare/Medicaid data; this is especially so for agencies that suspended OASIS data collection on their private pay patients. The percent of those who have outcomes reports produced by an outside vendor drops from 44 percent for Medicare/Medicaid patients, to 25 percent for private pay patients at continued agencies, to 11 percent for private pay patients at agencies that have suspended OASIS data collection. These differences were statistically significant in a regression model.

There are questions raised by these figures, however, since 59 percent of “suspended” agencies reported reviewing outcome reports on their non-OASIS data, something that would be difficult to do if data were not entered into an electronic database. The members of the Technical Expert Panel suggested that the trend of lower data entry and outcome review for private pay patients by “suspended” agencies is accurate, although the number of “suspended” agencies actually reviewing outcomes on private pay patients is most likely lower than reported.

Agency characteristics influencing OASIS data collected on Medicare/Medicaid patients

Large agencies (in the top size quartile) are more likely to report they submit OASIS assessment data on their Medicare/Medicaid patients to a private vendor, to receive benchmarking reports, and to review outcome reports on their Medicare/Medicaid patients with a QIO.

Other agency characteristics that showed a statistically significant association with OASIS review and analysis are:

- **Proprietary status:** For-profit agencies are more likely to report they produce Medicare/Medicaid patient outcome reports internally than not-for-profit agencies.
- **Accreditation:** Agencies accredited by JCAHO or CHAP reported more frequently than non-accredited agencies that they submit OASIS assessment data on their Medicare/Medicaid patients to a private vendor and to receive benchmarking reports. However, when the TEP reviewed these data, they suggested that these agencies may have counted sending data to JCAHO as “benchmarking.”

Agency characteristics that were tested and found not to be significant were region, rural/urban status, staff reductions or turnover, and. use of point of care (POC) technology by 50 percent or more of the clinical staff.

Table 4.15: Review and Analysis of Medicare/Medicaid Data by Size

	Size Category			
	Quartile 1 (smallest)	Quartile 2	Quartile 3	Quartile 4 (largest)
Percent of agencies who report...	%	%	%	%
Assessment data are reviewed for quality and completeness and errors are corrected	95%	100%	100%	100%
Assessment data are entered into an electronic data base	93%	97%	99%	99%
Assessment data are submitted to a private vendor (e.g., for benchmarking)	27%*	36%”	43%*	71%
Outcome reports are produced by a private vendor	30%*	39%*	49%*	70%
Outcome reports are produced by my agency's internal systems	62%	64%	65%	63%
Outcome reports are reviewed by my agency	95%	100%	100%	100%
Outcome reports are reviewed with my state's Quality Improvement Organization	85%*	90%	85%	96%

*Indicates statistical significance at the 95% level when compared to agencies in the 4th quartile

Agency characteristics correlated with OASIS data reporting and analysis on private pay patients

Smaller agencies are less like to submit their OASIS data collected on private pay patients to a private vendor for benchmarking as shown in Table 4.16. Otherwise, size is not significantly related to the way that agencies review and analyze the OASIS data collected on private pay patients.

Table 4.16: Review and Analysis of Private Pay OASIS Data by Size

	Size Category			
	Quartile 1 (smallest)	Quartile 2	Quartile 3	Quartile 4 (largest)
Percent of agencies who report...	%	%	%	%
Assessment data are reviewed for quality and completeness and errors are corrected	95%	97%	98%	94%
Assessment data are entered into an electronic data base	68%	67%	85%*	74%
Assessment data are submitted to a private vendor (e.g., for benchmarking)	11%	12%*	29%	42%
Outcome reports are produced by a private vendor	13%	20%	36%	37%
Outcome reports are produced by my agency's internal systems	48%	49%	38%	40%
Outcome reports are reviewed by my agency	75%	69%	80%	67%
Outcome reports are reviewed with my state's Quality Improvement Organization	45%	55%	61%*	43%

**Indicates statistical significance at the 95% level when compared to agencies in the 4th quartile*

Other agency characteristics that showed a statistically significant association with private pay OASIS data review and analysis are:

- Point of Care Technology: Agencies in which 50 percent or more of clinicians use point of care data technology are significantly more likely to enter private pay OASIS data into an electronic database;
- Proprietary status: For profit agencies are significantly less likely to submit private pay OASIS data to a benchmarking vendor and receive outcome reports, but more likely than non-profits to produce outcome reports using internal software;
- Accreditation: Accredited agencies are more likely to submit private pay OASIS data to a benchmarking vendor and receive outcome reports.

Agency characteristics that were tested and found not to be significant were region, rural/urban status, and staff reductions or turnover. Tables showing these analyses are located in Appendix C.

4.3.2 Uses of assessment data for Medicare/Medicaid and private pay patients

Respondents reported how their agencies used the assessment data they collect on their Medicare/Medicaid and private pay patients for care planning, case-mix analysis, OBQI, and administrative purposes such as identifying staffing and training needs. Results are displayed in Table 4.17, below. Approximately 90 percent of agencies report using assessment data (both OASIS and non-OASIS) for individualized care planning and identifying patient need for referrals. This was true for both Medicare/Medicaid and private pay patients, and for agencies that suspended and continued. Similarly, assessment data are used by 85 to 90 percent of agencies for identifying needs for special programs or interventions for Medicare/Medicaid and private pay patients.

Table 4.17: Uses of Assessment Data

Assessment data are used in...	Medicare/Medicaid patients	Private pay patients	
	OASIS assessment data	OASIS assessment data (continued agencies)	Non-OASIS assessment data (suspended agencies)
Individualized care planning	94%	94%	91%
Identifying patient need for referrals (e.g. SW or PT)	94%	91%	91%
Identifying patient need for special programs/interventions	90%	88%	85%
Case-mix analysis	90%	64%	38%
Identifying practice areas needing improvement	95%	81%	69%
Identifying target outcomes for OBQI	96%	71%	37%
Tracking patient outcomes in response to QI initiatives	94%	75%	55%
Identifying staffing needs	60%	54%	62%
Identifying staff training needs	83%	75%	72%
Assisting with agency resource allocation decisions	58%	51%	54%
Controlling costs / increasing efficiency	64%	55%	58%
Fulfilling requirements of Accrediting Organization	57%	48%	59%
Fulfilling requirements of other payers	56%	53%	66%
Comparing the quality of our agency to that of others	91%	65%	28%
Marketing to public / customers	49%	36%	29%
Marketing to referral sources	47%	33%	30%
Marketing to, or negotiating with, payers	32%	25%	29%

Agencies that have continued to collect OASIS data on private pay patients use it more frequently for case-mix analysis, identifying practice areas needing improvement, identifying and tracking outcomes for OBQI, and benchmarking than do agencies that use non-OASIS assessments for private pay patients. OASIS data are also used more frequently for marketing to consumers, referral sources and payers than is non-OASIS data.

Agency size associated with use of OASIS data collected on Medicare/Medicaid patients

- As shown in Table 4.18, large agencies are significantly more likely to report using their Medicare/ Medicaid OASIS data for case-mix analysis. They are also more likely to report using Medicare/Medicaid OASIS data for marketing to referral sources, marketing to payers, and negotiating with payers.
- Small agencies are significantly less likely to report using their Medicare/Medicaid OASIS data for tracking patient outcomes in response to QI initiatives, identifying staff training needs, and assisting with agency resource allocation decisions.

Table 4.18: Uses of OASIS Data for Medicare and Medicaid Patients by Agency Size

Assessment data are used in...	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Individualized care planning	93%	95%	94%	95%
Identifying patient need for referrals (e.g. SW or PT)	91%	93%	95%	97%
Identifying patient need for special programs/interventions	85%	92%	92%	92%
Case-mix analysis	83%*	90%*	93%*	96%
Identifying practice areas needing improvement	93%	95%	97%	96%
Identifying target outcomes for OBQI	92%	98%	98%	99%
Tracking patient outcomes in response to QI initiatives	86%*	96%	99%	97%
Identifying staffing needs	60%	63%	58%	60%
Identifying staff training needs	77%*	87%	80%	91%
Assisting with agency resource allocation decisions	49%*	63%	59%	68%
Controlling costs / increasing efficiency	62%	62%	64%	68%
Fulfilling requirements of Accrediting Organization	46%	50%	63%	80%
Fulfilling requirements of other payers	48%	56%	59%	69%
Comparing the quality of our agency to that of others	84%	91%	94%	96%
Marketing to public / customers	43%*	45%	51%	61%
Marketing to referral sources	41%	40%	48%	65%
Marketing to, or negotiating with, payers	23%	29%	37%	47%

**Indicates statistical significance at the 95% level when compared to agencies in the 4th quartile*

Table 4.19: Uses of OASIS Data for Medicare and Medicaid Patients by Location

Assessment data are used in...	Region				Rural/Urban	
	NE	MW	S	W	rural	urban
Individualized care planning	95%	94%	96%	89%	95%	94%
Identifying patient need for referrals (e.g. SW or PT)	95%	94%	96%	87%	93%	94%
Identifying patient need for special programs/interventions	92%	90%	91%	85%	91%	89%
Case-mix analysis	80%	89%	95%	84%	90%	90%
Identifying practice areas needing improvement	100%	95%	95%	87%	95%	94%
Identifying target outcomes for OBQI	99%	96%	99%*	87%	98%	96%
Tracking patient outcomes in response to QI initiatives	88%	94%	98%*	88%	96%	93%
Identifying staffing needs	49%	63%	60%	64%	58%	61%
Identifying staff training needs	92%	86%	80%	79%	84%	82%
Assisting with agency resource allocation decisions	44%*	61%	60%	57%	51%	61%
Controlling costs / increasing efficiency	69%	64%	64%	57%	61%	65%
Fulfilling requirements of Accrediting Organization	53%	58%	55%	65%	53%	59%
Fulfilling requirements of other payers	56%	56%	58%	53%	58%	55%
Comparing the quality of our agency to that of others	95%	86%	95%	84%	92%	90%
Marketing to public / customers	53%	49%	52%	37%	45%	50%
Marketing to referral sources	52%	45%	50%	37%	35%	52%
Marketing to, or negotiating with, payers	27%	34%	34%	29%	24%	36%

*Indicates statistical significance at the 95% level when compared to agencies in the West

As shown in Table 4.19, agencies in the South report using Medicare/Medicaid OASIS data significantly more frequently to identify target outcomes for QI initiatives and track patient outcomes in response to QI initiatives. Agencies in the Northeast use Medicare/Medicaid OASIS data less frequently for assisting with resource allocation decisions than do other regions. Rural /urban status is not correlated to Medicare/Medicaid OASIS use.

Other agency characteristics influencing the use of Medicare/Medicaid OASIS data are:

- Proprietary status: For-profit agencies report using Medicare/Medicaid OASIS data significantly more frequently to market to consumers, referral sources and payers.
- Accreditation: for obvious reasons, accredited agencies report using Medicare/Medicaid OASIS data significantly more frequently to fulfill accreditation requirements, but also to fulfill the requirements of other payers.

Tables showing these analyses are located in Appendix C.

Agency size associated with use of OASIS data collected on private pay patients

Large agencies reporting using OASIS data collected on private pay patients more frequently for marketing to referral sources and payers, and negotiating with payers, than did smaller agencies. Otherwise, size was not a significant influence on private pay OASIS data use. See Table 4.20, below.

Table 4.20: Uses of OASIS Data for Private Pay Patients by Agency Size

Assessment data are used in...	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Individualized care planning	96%	93%	94%	92%
Identifying patient need for referrals (e.g. SW or PT)	90%	88%	94%	94%
Identifying patient need for special programs/interventions	86%	88%	90%	90%
Case-mix analysis	66%	59%	67%	57%
Identifying practice areas needing improvement	82%	74%	87%	83%
Identifying target outcomes for OBQI	75%	62%	75%	71%
Tracking patient outcomes in response to QI initiatives	76%	68%	80%	78%
Identifying staffing needs	59%	57%	50%	47%
Identifying staff training needs	65%	82%	72%	82%
Assisting with agency resource allocation decisions	45%	55%	51%	57%
Controlling costs / increasing efficiency	55%	54%	52%	59%
Fulfilling requirements of Accrediting Organization	38%	45%	47%	70%
Fulfilling requirements of other payers	46%	49%	62%	57%
Comparing the quality of our agency to that of others	66%	57%	70%	68%
Marketing to public / customers	32%	28%	43%	45%
Marketing to referral sources	28%*	26%*	40%	44%
Marketing to, or negotiating with, payers	16%*	24%	29%	35%

*Indicates statistical significance at the 95% level when compared to agencies in the 4th quartile

Other agency characteristics associated with uses of private pay patient data

- Region: agencies in the West report using private pay OASIS data more frequently than do other areas of the country. The differences were significant for using data for case-mix analysis, identifying targets for OBQI, tracking patient outcomes in response to QI initiatives, identifying staff training needs, assisting with resource allocation decisions, and benchmarking against other agencies. Agencies in the Midwest were significantly less likely to use the data for these purposes. See Table 4.21.

Table 4.21: Uses of OASIS Data for Private Pay Patients by Location

Assessment data are used in...	Region				Rural/Urban	
	NE	MW	S	W	rural	urban
Individualized care planning	95%	90%	96%	96%	94%	94%
Identifying patient need for referrals (e.g. SW or PT)	89%	88%	93%	93%	89%	92%
Identifying patient need for special programs/interventions	88%	89%	88%	89%	88%	89%
Case-mix analysis	65%	45%*	72%	74%	56%	68%
Identifying practice areas needing improvement	87%	78%	79%	88%	79%	82%
Identifying target outcomes for OBQI	71%	57%*	76%	83%	67%	73%
Tracking patient outcomes in response to QI initiatives	76%*	61%*	80%	88%	72%	78%
Identifying staffing needs	52%	49%	55%	63%	55%	53%
Identifying staff training needs	84%	65%*	75%	86%	76%	74%
Assisting with agency resource allocation decisions	45%*	43%*	53%	69%	44%	55%
Controlling costs / increasing efficiency	51%	47%	58%	67%	54%	56%
Fulfilling requirements of Accrediting Organization	55%	46%	45%	58%	43%	51%
Fulfilling requirements of other payers	56%	48%	53%	59%	51%	54%
Comparing the quality of our agency to that of others	62%*	52%*	69%*	82%	62%	67%
Marketing to public / customers	34%	28%	43%	35%	27%	42%
Marketing to referral sources	30%	23%	41%	29%	20%	40%
Marketing to, or negotiating with, payers	27%	20%	29%	20%	17%	30%

**Indicates statistical significance at the 95% level when compared to agencies in the West*

For-profit agencies were more likely to report using private pay OASIS data for marketing to consumers. Again, for obvious reasons, accredited agencies report using Medicare/Medicaid OASIS data significantly more frequently to fulfill accreditation requirements. Agency characteristics that were tested and found not to be significant include rural/urban status, staff reductions or turnover, and use of POC technology by 50 percent or more of the clinical staff. Tables showing these analyses are located in Appendix C.

4.3.3 Agency OBQI activities

Over 95 percent of all respondents reported that their agency had read or reviewed OBQI reports within the past 12 months, and close to 90 percent reported their agency was working with a QIO, had received OBQI training, had changed or initiated care practices as part of a QI process in the past year, and had evaluated the effectiveness of care practices initiated as part of a QI process in the past year. When the TEP reviewed these data, they suggested that the percentages of agencies reporting these uses of OASIS data appear unrealistically high. They conjectured that agencies reported they were working with their Quality Improvement Organization if they had any contact with the QIOs, such as attending a training session.

Agencies that continue to collect OASIS on their private pay patients did not differ significantly in their responses from “suspenders”. Agencies did differ by size, however, as shown in Table 4.22. Smaller agencies were significantly less likely to report working with a QIO or to have evaluated the effectiveness of care practices initiated as part of a QI process in the past year.

For-profit agencies were also significantly less likely to report working with a QIO. Other agency characteristics tested did not appear to be significant.

Table 4.22: Agencies OBQI Activities by Size

Percent of agencies who report they...	All	Quartile 1 (smallest)	Quartile 2	Quartile 3	Quartile 4 (largest)
Are currently working with their state Quality Improvement Organization (QIO) to select target outcomes for Outcome Based Quality Improvement (OBQI) efforts and/or to implement quality improvement processes	86%	78%	88%	89%	93%
Have read or reviewed OBQI reports within the past 12 months	96%	89%	99%	100%	99%
Have received OBQI training in the past 12 months	87%	82%	86%	90%	96%
Have changed care practices or initiated care practices as part of a QI process in the past 12 months	89%	81%	91%	92%	94%
Have evaluated the effectiveness of care practices initiated as part of a QI process in the past 12 months	93%	86%	95%	94%	98%

4.3.4 Agency perceptions of OASIS benefits

Respondents were asked to indicate the extent to which they agreed or disagreed with listed statements about the possible benefits of OASIS. Table 4.23 shows mean ratings and the percent of agencies that agreed or disagreed with responses ranked from strongly agree (value of 2) to strongly disagree (value of -2). Figure 4c shows the information graphically. Overall, the mean value was greater than zero (indicating agreement) for 12 out of the 16 listed benefits of OASIS.

OASIS benefits that agencies were most likely to agree with were:

- Collecting OASIS data helps to standardize comprehensive assessment process;
- OASIS data help to identify care processes needing improvement;
- OASIS has helped to improve patient outcomes at their agency;
- OASIS data help to identify a patient's need for specific programs or interventions (e.g. a fall prevention program);
- Collecting OASIS data improves the agency's overall patient care planning process; and
- OASIS data help to identify the need for referrals for services such as social work or occupational therapy.

Agencies also agreed that:

- OASIS has helped the home health industry improve the quality of homecare services;
- Collecting OASIS data facilitates a multidisciplinary approach to patient care;
- OASIS data help to identify the need for developing special programs or interventions;
- OASIS has helped their agency improve the quality of its services;
- OASIS data provide increased clarity in documentation of homebound status; and
- OASIS is effective in ensuring that consumers receive quality services from home health agencies.

The four OASIS benefits that agencies were least likely to agree with were:

- OASIS has helped the agency to make efficient allocation/use of agency resources in delivering care;
- OASIS data collection helps to measure and evaluate clinical staff assessment skills and care planning competency;
- OASIS has helped foster staff team work and improve morale; and
- OASIS has helped their agency to save money.

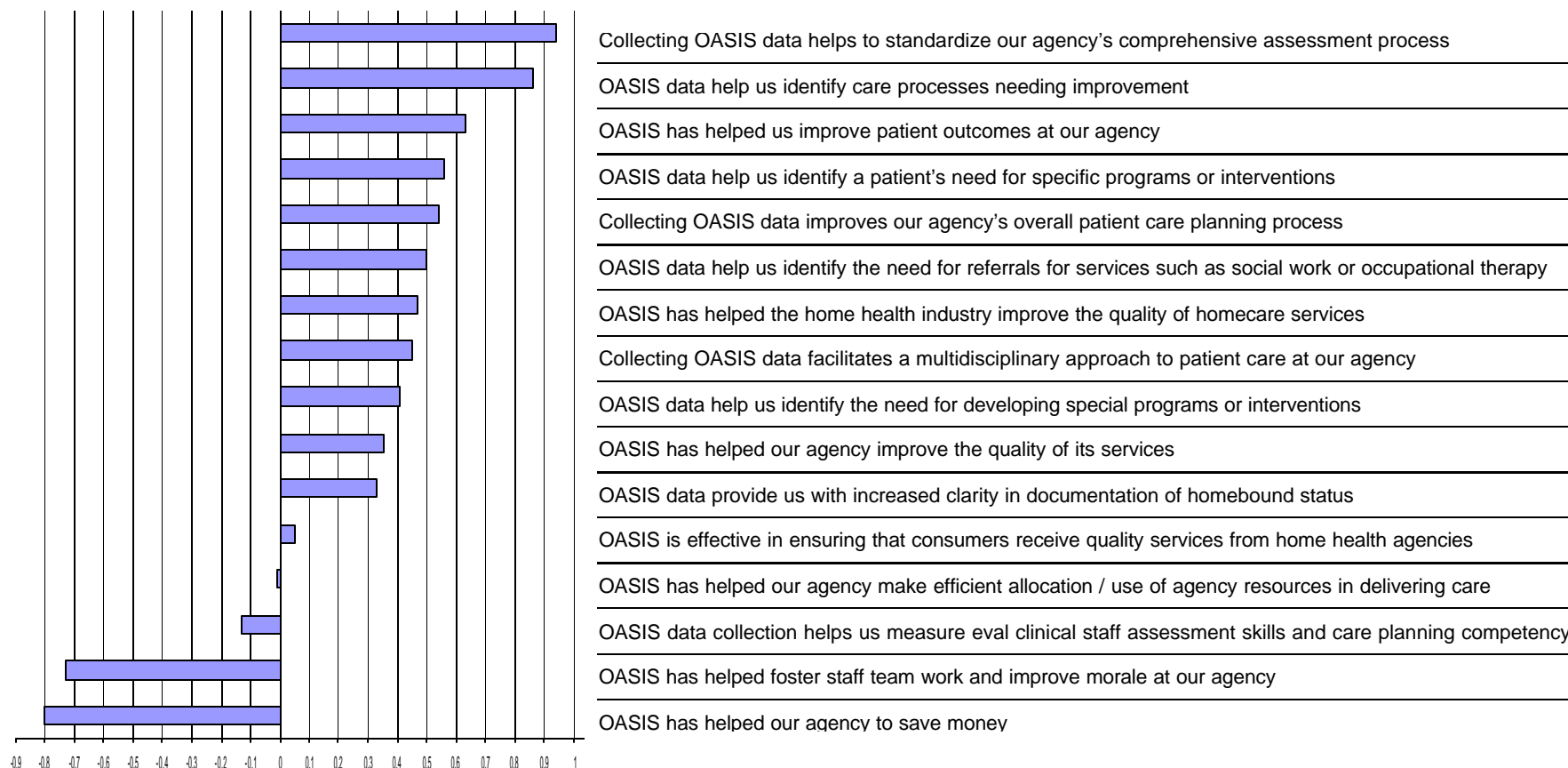
Table 4.23: Value of OASIS Data Collection - All Respondents

Based on your agency's experience, indicate the extent to which you agree or disagree with the following statements about the possible benefits of OASIS.	Mean Rating based on values of - 2 (strongly disagree) to 2 (strongly agree)	% Strongly Agree or Agree
Collecting OASIS data helps to standardize our agency's comprehensive assessment process	0.94	77%
OASIS data help us identify care processes needing improvement	0.86	76%
OASIS has helped us improve patient outcomes at our agency	0.63	66%
OASIS data help us identify a patient's need for specific programs or interventions (e.g. a fall prevention program)	0.56	61%
Collecting OASIS data improves our agency's overall patient care planning process	0.54	59%
OASIS data help us identify the need for referrals for services such as social work or occupational therapy	0.50	56%
OASIS has helped the home health industry improve the quality of homecare services	0.47	56%
Collecting OASIS data facilitates a multidisciplinary approach to patient care at our agency	0.45	55%
OASIS data help us identify the need for developing special programs or interventions	0.41	51%
OASIS has helped our agency improve the quality of its services	0.35	52%
OASIS data provide us with increased clarity in documentation of homebound status	0.33	48%
OASIS is effective in ensuring that consumers receive quality services from home health agencies	0.05	36%
OASIS has helped our agency make efficient allocation / use of agency resources in delivering care	-0.01	34%
OASIS data collection helps us measure and evaluate clinical staff assessment skills and care planning competency	-0.13	28%
OASIS has helped foster staff team work and improve morale at our agency	-0.73	10%
OASIS has helped our agency to save money	-0.80	10%

Figure 4c

Benefits of OASIS

Mean score for all respondents



Agency decision to continue OASIS data collection and perceptions of OASIS value

Agencies that continued to collect OASIS on their private pay patients agreed or strongly agreed more frequently with statements about OASIS benefits than did agencies that have suspended. (See Table 4.24, below). This was true for every statement except the three with the lowest agreement rating, where small Ns make the means unstable. But even among agencies that suspended OASIS data collection, more than half agreed or strongly agreed with the statements that collecting OASIS data helps to standardize the comprehensive assessment process, that OASIS data help to identify care processes needing improvement, and OASIS has helped to improve patient outcomes at their agency.

Table 4.24: Value of OASIS Data Collection, All Respondents by Continue/Suspend

Based on your agency's experience, indicate the extent to which you agree or disagree with the following statements about the possible benefits of OASIS.	% Strongly Agree or Agree	
	Suspended	Continued
Collecting OASIS data helps to standardize our agency's comprehensive assessment process	62%	85%
OASIS data help us identify care processes needing improvement	63%	83%
OASIS has helped us improve patient outcomes at our agency	56%	72%
OASIS data help us identify a patient's need for specific programs or interventions (e.g. a fall prevention program)	44%	70%
Collecting OASIS data improves our agency's overall patient care planning process	40%	70%
OASIS data help us identify the need for referrals for services such as social work or occupational therapy	38%	66%
OASIS has helped the home health industry improve the quality of homecare services	43%	63%
Collecting OASIS data facilitates a multidisciplinary approach to patient care at our agency	36%	65%
OASIS data help us identify the need for developing special programs or interventions	38%	59%
OASIS has helped our agency improve the quality of its services	34%	60%
OASIS data provide us with increased clarity in documentation of homebound status	35%	55%
OASIS is effective in ensuring that consumers receive quality services from home health agencies	24%	42%
OASIS has helped our agency make efficient allocation / use of agency resources in delivering care	21%	41%

Perceptions of the value of OASIS data collection by region

Other than the decision to continue or suspend OASIS data collection on private pay patients, region was the most significant predictor of agreement with statements about OASIS value, with the Northeast and South being the most likely to agree and the West being the least likely. In the

following table (4.25), items with asterisks indicate the value is statistically significant at 95 percent when compared to the reference group (the West).

Table 4.25: Value of Private Pay OASIS Data Collection, All Respondents by Region

Based on your agency's experience, indicate the extent to which you agree or disagree with the following statements about the possible benefits of OASIS.	Region			
	NE	MW	S	W
Collecting OASIS data helps to standardize our agency's comprehensive assessment process	86%*	82%*	78%*	61%
OASIS data help us identify care processes needing improvement	84%*	78%*	78%*	63%
OASIS has helped us improve patient outcomes at our agency	72%	67%	68%	55%
OASIS data help us identify a patient's need for specific programs or interventions (e.g. a fall prevention program)	72%*	62%*	63%*	45%
Collecting OASIS data improves our agency's overall patient care planning process	66%*	54%	65%*	48%
OASIS data help us identify the need for referrals for services such as social work or occupational therapy	66%*	58%	55%	48%
OASIS has helped the home health industry improve the quality of homecare services	61%*	44%	65%*	48%
Collecting OASIS data facilitates a multidisciplinary approach to patient care at our agency	53%*	52%	61%*	43%
OASIS has helped our agency improve the quality of its services	61%*	47%	56%*	42%
OASIS data help us identify the need for developing special programs or interventions	56%*	52%	53%*	39%
OASIS data provide us with increased clarity in documentation of homebound status	39%	48%	53%	41%
OASIS is effective in ensuring that consumers receive quality services from home health agencies	37%	31%	41%	31%
OASIS has helped our agency make efficient allocation / use of agency resources in delivering care	29%	29%	41%	30%
OASIS data collection helps us measure and evaluate clinical staff assessment skills and care planning competency	12%	32%	29%	31%
OASIS has helped foster staff team work and improve morale at our agency	0%	12%	12%	8%
OASIS has helped our agency to save money	2%	10%	11%	10%

**Indicates the value is statistically significant at 95% when compared to the West.*

Perceptions of the value of OASIS data collection by size

In general, agency size was not a significant predictor of agency benefits related to OASIS data collection, as shown in Table 4.26.

Table 4.26: Value of OASIS Data Collection, All Respondents by Size

Based on your agency's experience, indicate the extent to which you agree or disagree with the following statements about the possible benefits of OASIS.	% Strongly Agree or Agree			
	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Collecting OASIS data helps to standardize our agency's comprehensive assessment process	76%	80%	76%	77%
OASIS data help us identify care processes needing improvement	76%	82%	71%	77%
OASIS has helped us improve patient outcomes at our agency	68%	65%	65%	66%
OASIS data help us identify a patient's need for specific programs or interventions (e.g. a fall prevention program)	63%	60%	61%	56%
Collecting OASIS data improves our agency's overall patient care planning process	64%	66%	48%	58%
OASIS data help us identify the need for referrals for services such as social work or occupational therapy	59%	56%	53%	55%
OASIS has helped the home health industry improve the quality of homecare services	63%	50%	55%	56%
Collecting OASIS data facilitates a multidisciplinary approach to patient care at our agency	53%	60%	51%	53%
OASIS has helped our agency improve the quality of its services	58%	50%	47%	52%
OASIS data help us identify the need for developing special programs or interventions	51%	51%	49%	56%
OASIS data provide us with increased clarity in documentation of homebound status	48%	51%	47%	43%
OASIS is effective in ensuring that consumers receive quality services from home health agencies	46%*	40%	24%	30%
OASIS has helped our agency make efficient allocation / use of agency resources in delivering care	39%	34%	31%	30%
OASIS data collection helps us measure and evaluate clinical staff assessment skills and care planning competency	35%	29%	22%	23%
OASIS has helped foster staff team work and improve morale at our agency	21%*	9%	5%	2%
OASIS has helped our agency to save money	14%	7%	8%	6%

*Indicates the value is statistically significant at 95% when compared to agencies in the 4th quartile for size

Small agencies were, however, significantly more likely to report agreeing with the following statements that the majority of agencies did not agree with.

- OASIS has helped foster team work and improve morale;
- OASIS is effective in ensuring that consumers receive quality services from home health agencies; and
- OASIS has helped the home health industry improve the quality of homecare services.

Separate non-certified provider

Agencies that are part of an organization that includes a separate non-certified provider were, on average, only half as likely as other agencies to report agreeing with the following OASIS benefits:

- Collecting OASIS data facilitates a multidisciplinary approach to patient care at our agency;
- OASIS data help us identify care processes needing improvement;
- OASIS data provide us with increased clarity in documentation of homebound status;
- OASIS has helped us improve patient outcomes at our agency;
- OASIS data collection helps us measure and evaluate clinical staff assessment skills and care planning competency; and
- OASIS is effective in ensuring that consumers receive quality services from home health, agencies.

Table showing these analyses are in Appendix C.

Other agency characteristics associated with perceptions of the value of OASIS data collection

Proprietary status: For-profit agencies were less likely to agree with the statement that OASIS helps standardize our agency's comprehensive assessment.

Rural/urban status: Rural agencies were the least likely to report agreeing with the statement that OASIS helps their agency to save money.

See Appendix C for tables.

4.3.5 Value of OASIS data collected on private pay patients

In the final section of the survey, agencies that continued collecting OASIS on their private pay patients were asked to report on the usefulness of those data by indicating their level of agreement with 6 statements about OASIS value. On a scale of -2 (strongly disagree) to 2 (strongly agree) mean responses ranged from a high of 0.68 for the statement, "OASIS data are valuable for assessing the needs of our private pay patients" to a low of -0.13 for the statement, "OASIS data on our non-Medicare/non-Medicaid patients are valuable for our agency resource allocation decisions". See Table 4.27, below.

Table 4.27: Value of Private Pay OASIS Data, All Respondents Mean Rating

Indicate your level of agreement with the following statements	Mean Rating*	% Agree /Strongly Agree
OASIS data are valuable for assessing the needs of our non-Medicare/non-Medicaid patients	0.68	71%
OASIS data are valuable for care planning for our non-Medicare/non-Medicaid patients	0.55	68%
OASIS data are valuable for assessing outcomes for our non-Medicare/non-Medicaid patients	0.56	64%
OASIS data on our non-Medicare/non-Medicaid patients are valuable for determining appropriate quality monitoring or improvement activities for those patients	0.54	64%
OASIS data on our non-Medicare/non-Medicaid patients are valuable for our agency resource allocation decisions	-0.13	37%
Collecting OASIS data on non-Medicare / non-Medicaid patients provides us with a better picture of overall agency performance	0.55	64%

*On a scale of -2 (strongly disagree) to 2 (strongly agree)

Perceptions of the value of OASIS data collection on private pay patients by size

There was no association between agency size and reported agreement on the value of collecting OASIS data on private pay patients, as shown in Table 4.28.

Table 4.28: Value of Private Pay OASIS Data, All Respondents by Size

Indicate your level of agreement with the following statements.	% Strongly agree or agree			
	Quartile 1	Quartile 2	Quartile 3	Quartile 4
OASIS data are valuable for assessing the needs of our non-Medicare/non-Medicaid patients	65%	78%	74%	67%
OASIS data are valuable for care planning for our non-Medicare/non-Medicaid patients	64%	74%	73%	63%
OASIS data are valuable for assessing outcomes for our non-Medicare/non-Medicaid patients	63%	63%	63%	66%
OASIS data on our non-Medicare/non-Medicaid patients are valuable for determining appropriate quality monitoring or improvement activities for those patients	59%	64%	68%	69%
OASIS data on our non-Medicare/non-Medicaid patients are valuable for our agency resource allocation decisions	41%	36%	33%	35%
Collecting OASIS data on non-Medicare / non-Medicaid patients provides us with a better picture of overall agency performance	61%	71%	61%	61%

Perceptions of the value of OASIS data collection on private pay patients by region

Agencies in the West were significantly more likely to agree that the collection of OASIS data on private pay patients was valuable for all of the listed benefits, as shown in Table 4.29. This may be related to the increased frequency of private pay OASIS data being used for fulfilling requirements of other payers, as noted in the previous section.

Table 4.29: Value of Private Pay OASIS Data by Region

Indicate your level of agreement with the following statements.	Region			
	NE	MW	S	W
OASIS data are valuable for assessing the needs of our non-Medicare/non-Medicaid patients	59%	72%	72%	77%
OASIS data are valuable for care planning for our non-Medicare/non-Medicaid patients	58%*	68%	69%	77%
OASIS data are valuable for assessing outcomes for our non-Medicare/non-Medicaid patients	52%*	61%	67%	73%
OASIS data on our non-Medicare/non-Medicaid patients are valuable for determining appropriate quality monitoring or improvement activities for those patients	54%*	64%	64%	71%
OASIS data on our non-Medicare/non-Medicaid patients are valuable for our agency resource allocation decisions	29%*	33%*	39%*	49%
Collecting OASIS data on non-Medicare / non-Medicaid patients provides us with a better picture of overall agency performance	59%	63%*	62%*	77%

* Indicates result is statistically significant at 95% when compared to agencies in the West

Separate non-certified provider

As noted previously, being part of an organization with a separate non-certified provider was associated with a much lower agreement rating for many of the statements about the value of OASIS data. These agencies also were significantly less likely to agree that the collection of OASIS data on private pay patients was valuable for the listed benefits. See Table 4.30.

Table 4.30: Value of Private Pay OASIS Data for Agencies that have Non-Certified Providers in their Organization

Indicate your level of agreement with the following statements	Not part of an org with separate non-cert provider	Part of an org with separate non-cert provider
OASIS data are valuable for assessing the needs of our non-Medicare/non-Medicaid patients	75%	55%*
OASIS data are valuable for care planning for our non-Medicare/non-Medicaid patients	72%	54%*
OASIS data are valuable for assessing outcomes for our non-Medicare/non-Medicaid patients	69%	50%*
OASIS data on our non-Medicare/non-Medicaid patients are valuable for determining appropriate quality monitoring or improvement activities for those patients	67%	50%*
OASIS data on our non-Medicare/non-Medicaid patients are valuable for our agency resource allocation decisions	40%	29%
Collecting OASIS data on non-Medicare / non-Medicaid patients provides us with a better picture of overall agency performance	67%	52%*

* Indicates result is statistically significant at 95% in a regression model

Other agency characteristics influencing the perceived value of OASIS data collection on private pay patients

Experiencing staff reductions or shortages. This was a significant predictor of disagreeing with the statements, “OASIS data on our private pay patients are valuable for our agency resource allocation decisions” and “Collecting OASIS data on non-Medicare / non-Medicaid patients provides us with a better picture of overall agency performance”

Agency Accreditation JCAHO or CHAP accreditation was a significant predictor of agreeing with the statement “Collecting OASIS data on non-Medicare/non-Medicaid patients provides us with a better picture of overall agency performance”.

Low required OASIS: Having a low percentage of patients for whom OASIS is required (less than 80 percent) was also a significant predictor that the agency is less likely to agree that the collection of OASIS data on private pay patients was valuable for all of the listed benefits.

See Appendix C for tables.

4.4 OASIS and other assessment costs

One of the key goals of the project was to collect data on home health agencies’ costs of collecting OASIS and other assessment data. These data were used to estimate the cost impact of mandating that agencies collect OASIS data on all adult, non-maternity patients receiving skilled care, and to identify any differential cost impacts on agencies of different types. In formulating the survey, we tried to balance the goal of obtaining the most detailed data possible against the data collection burden to be imposed on HHA staff (and the likelihood of a reduced response rate to the survey.)

Primary Data Collection. The survey (Appendix B) collected data on the components of Medicare-certified home health agencies' cost of conducting comprehensive assessments on their patients – those whose care was paid by Medicare or Medicaid as well as those with other payment sources – and data on other factors potentially influencing those costs. The survey items collecting this information were as follows (Table 4.31):

Table 4.31: Survey Items Collecting Cost-related Information

	Continued Questionnaire Item #	Suspended Questionnaire Item #
Components of cost:		
OASIS assessment staffing mix	C1	C1
Other assessment staffing mix	--	E2
Minutes per assessment for Medicare/Medicaid patients & for other patients, by staff type, assessment type	D1,D3	D1,E3
Total staff hours, data quality review	AC1	F1
Total staff hours, assessment training	F1	G1
Non-labor costs for assessment	G1	H1
Estimated change in costs if OASIS mandated for all patients: – quality review hours	H2	I2
– OASIS training hours	H3	I3
– other nonlabor costs	H4	I4
Factors influencing costs:		
Total patients, admissions	B1	B1
Payer mix	B2	B2
Adoption of reduced-burden OASIS recert assessment	C2	C2
Use of point of care technology	C3	E5
Inclusion of some OASIS information in private pay assessments	--	E1
Presence of other indirect costs of OASIS data collection	G2	H2

Secondary Data. Other data utilized in the analysis of assessment costs were occupation-specific wage rates from the U.S. Department of Labor Occupational Employment Statistics (OES). The hourly rates utilized in the analysis were as follows (Table 4.32):

Table 4.32: Labor Rates Utilized in Cost Analysis

Staff type	BLS Labor Category	Hourly Rate
Registered nurse	Registered nurse	\$24.91
Therapist	Occupational therapist	\$30.59
	Physical therapist	\$33.07
	Speech Language Path	\$31.45
Clerical	Billing clerk	\$13.50
	File clerk	\$10.72

Comprehensive Assessment Staffing Mix

Since labor is the major component of home health costs, one major determinant of assessment cost is the type of staff completing the assessment. Survey respondents reported the mix of clinical staff completing the comprehensive assessments on their patients (Table 4.33).

Table 4.33: Comprehensive Assessment Staffing Mix

			Percent of assessments completed by			
			Registered Nurses	Physical Therapists	Occupational Therapists	Speech Language Pathologists
All Agencies		Mean	89.1%	10.0%	0.6%	0.3%
OASIS Data Collection Status						
	Continued	Mean	90.0%	9.0%	0.6%	0.3%
	Suspended	Mean	87.3%	11.7%	0.7%	0.4%
Size						
	Quartile 1 (smallest)	Mean	94.7%	4.9%	0.3%	0.1%
	Quartile 2	Mean	92.7%	6.9%	0.2%	0.1%
	Quartile 3	Mean	84.5%	14.2%	0.9%	0.4%
	Quartile 4 (largest)	Mean	79.1%	18.4%	1.6%	0.8%

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

Notes: Size category thresholds: Quartile 1: Up to 157 admissions; Quartile 2: 158-410 admissions; Quartile 3: 411-1235 admissions; Quartile 4: More than 1,235 admissions.

Overall, nurses completed about 89 percent of all OASIS assessments. The use of therapists to complete OASIS was correlated with agency size, ranging from 5 percent for the smallest agencies to 21 percent for the largest.

4.4.1 Staff Time Per Assessment

Data were collected on the number of assessment minutes spent by clinical staff, clerical staff, and “other staff” (managers, medical records, billing, QC staff) by type of assessment (start of care, follow-up/recertification, and discharge assessments (Table 4.34).

As shown in Table 4.34, total staff minutes per required OASIS assessment (those conducted on Medicare or Medicaid patients) were found not to differ significantly based on whether an HHA had chosen to continue or suspend collecting OASIS data collection on private pay patients. The staff minutes per required assessment did, however, differ markedly by assessment type, ranging from 156 minutes for start-of-care assessments to 108 minutes for followup/recertification assessments to 83 minutes for discharge assessments. This was not the expected pattern, as it was anticipated that most agencies would have adopted the “reduced-burden” OASIS and would be collecting only 27 items at followup while most patients would still be receiving the full discharge assessment (71 items)³⁶. We examined mean followup assessment minutes while controlling for whether the agency had reduced the number of OASIS assessment items on the followup/recertification assessment (as reported on item C2 of the survey). (Table 4.35)

Overall, we do not see the significant difference in time per assessment that would be expected to result from this significant difference in the number of OASIS assessment items to be collected. We also considered whether agencies had continued or suspended the collection of OASIS data on private pay patients. The pattern is as expected for agencies that continued OASIS data collection, but for those who suspended, the mean total minutes per assessment *increases* as more items are dropped from the followup assessment. It is not clear why this would be the case, though small sample size may contribute here – note the inability to calculate confidence intervals for the “no changes made” category. It is of course, possible that some other phenomenon is masking the effect of reducing the number of assessment items.

When considering the assessment time spent on private pay patients, we first asked agencies if they spent the same amount of assessment time on such patients as on Medicare/Medicaid patients; the results (Table 4.36) are clear – while agency size does not appear to have a substantial impact, the vast majority (over 90 percent) of agencies that had suspended data collection report a difference in their assessment time for private pay patients.

³⁶ It is possible that some agencies are including transfer assessments (which have fewer items) with the discharges.

Table 4.34: Minutes Per Assessment for OASIS Required Assessments (Medicare/Medicaid Patients)

	All Agencies			Agencies that Continued OASIS for Private Pay			Agencies that Suspended OASIS for Private Pay		
		Confidence Interval			Confidence Interval			Confidence Interval	
Start of Care/Resumption of Care	Mean	Lower	Upper	Mean	Lower	Upper	Mean	Lower	Upper
RN	122.27	118.00	126.54	121.05	116.34	125.77	124.64	117.00	132.27
Therapist (PT, OT, SLP)	108.90	103.34	114.45	113.38	107.40	119.37	101.21	94.46	107.96
Clerical staff	21.78	19.62	23.93	21.29	18.67	23.90	22.70	19.43	25.97
Other staff	18.98	16.67	21.29	16.65	14.59	18.71	23.39	18.57	28.20
Total*	156.28	148.69	163.87	153.75	146.76	160.74	161.06	145.30	176.83
Follow-Up/recertification									
RN	81.63	78.67	84.59	82.79	79.25	86.32	79.38	74.82	83.95
Therapist (PT, OT, SLP)	75.18	71.57	78.79	78.84	74.29	83.39	68.62	64.11	73.12
Clerical staff	16.95	15.16	18.75	17.12	14.96	19.29	16.63	13.18	20.08
Other staff	14.41	12.79	16.02	13.13	11.39	14.86	16.82	13.25	20.40
Total*	107.85	102.59	113.10	108.82	103.70	113.93	106.01	94.19	117.84
Discharge									
RN	59.28	56.88	61.68	58.32	55.19	61.44	61.17	57.61	64.73
Therapist (PT, OT, SLP)	54.21	50.94	57.48	55.66	51.26	60.06	51.62	47.05	56.18
Clerical staff	13.52	12.02	15.02	14.27	12.31	16.23	12.10	9.78	14.41
Other staff	11.58	9.95	13.20	10.19	8.66	11.72	14.20	10.51	17.89
Total*	80.80	75.85	85.74	79.73	74.97	84.48	82.82	71.79	93.84

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents = 631

* Note that all clinical time for a single assessment was assigned to one clinical category (nurse or therapist) and total minutes per assessment takes account of the proportion of assessments reported to be completed by RNs or therapists.

Table 4.35: Minutes per Followup OASIS Assessment by Adoption of Reduced Burden OASIS

	All Agencies			Agencies that Continued OASIS for Private Pay			Agencies that Suspended OASIS for Private Pay		
		Confidence Interval			Confidence Interval			Confidence Interval	
Adoption of “reduced burden” followup OASIS assessment	Mean	Lower	Upper	Mean	Lower	Upper	Mean	Lower	Upper
Dropped to Minimum Required									
Follow-up/recertification	107.90	103.00	112.81	103.59	98.29	108.89	114.62	105.54	123.70
Dropped Some Items									
Follow-up/recertification	110.86	101.70	120.02	114.09	102.56	125.61	100.08	94.83	105.32
No Changes Made									
Follow-up/recertification	114.90	105.29	124.50	121.15	110.51	131.78	87.05	.	.

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

Table 4.36: Agencies Reporting Same Assessment Time for Medicare/Medicaid and Other Patients

	Assessment Type		
	Start of Care	Follow-Up	Discharge
All Agencies	89.1%	10.0%	0.6%
OASIS Completion Status			
Continued	86.1%	87.2%	87.3%
Suspended	8.5%	7.7%	9.5%
Agency size			
Quartile 1 (smallest)	57.5%	58.1%	58.9%
Quartile 2	61.1%	61.2%	61.7%
Quartile 3	57.3%	57.7%	58.3%
Quartile 4 (largest)	58.2%	59.2%	61.8%

The actual minutes spent on private pay assessments are shown in Table 4.37. The difference in time between agencies that continued OASIS data collection for private pay patients and those who suspended is largest for therapists, smallest for “other” staff. The percentage savings in total assessment-related time is largest (38 percent) for the followup/recertification assessment.

Table 4.37: Minutes Per Assessment for Non-OASIS Required Assessments

	All Agencies			Agencies that Continued OASIS for Private Pay			Agencies that Suspended OASIS for Private Pay			Difference as pct. of continued
		Confidence Interval			Confidence Interval			Confidence Interval		
Start of Care	Mean	Lower	Upper	Mean	Lower	Upper	Mean	Lower	Upper	
RN	102.14	97.45	106.83	115.50	109.59	121.40	77.57	71.12	84.02	-33%
Therapist (PT, OT, SLP)	83.33	75.65	91.01	100.22	89.38	111.07	56.67	45.22	68.12	-43%
Clerical staff	17.16	15.36	18.97	19.15	16.87	21.42	13.42	10.55	16.30	-30%
Other staff	15.00	13.04	16.95	15.37	13.34	17.40	14.30	10.07	18.52	-7%
Total*	129.48	123.06	135.90	143.74	135.50	151.97	102.63	93.56	111.70	-29%
Follow-Up/recertification										
RN	66.09	62.14	70.04	77.71	73.14	82.28	44.89	41.36	48.42	-42%
Therapist (PT, OT, SLP)	56.28	50.30	62.25	68.36	60.08	76.64	36.91	31.67	42.16	-46%
Clerical staff	13.73	12.28	15.18	15.54	13.67	17.41	10.32	8.16	12.47	-34%
Other staff	11.42	9.93	12.90	12.29	10.52	14.05	9.77	7.04	12.50	-20%
Total*	88.28	82.79	93.78	101.53	95.23	107.82	63.34	56.61	70.07	-38%
Discharge										
RN	48.06	45.11	51.00	54.24	50.62	57.86	36.87	33.40	40.33	-32%
Therapist (PT, OT, SLP)	43.22	38.57	47.88	49.93	43.59	56.28	31.24	26.70	35.78	-37%
Clerical staff	11.14	9.86	12.43	12.52	11.05	14.00	8.54	6.29	10.80	-32%
Other staff	8.55	7.40	9.70	9.20	7.73	10.67	7.32	5.43	9.21	-20%
Total*	65.69	61.43	69.95	73.10	67.91	78.29	51.73	46.26	57.21	-29%

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

* Note that total minutes takes account of the proportion of assessments completed by RNs and therapists.

Assessment Labor Cost

Table 4.38 shows the estimated assessment labor costs for patient assessments. These costs were calculated using the minutes data derived above, costed out with BLS/OES hourly rates for each home health agency occupation

Though “continuing” agencies reported using OASIS for both Medicare/Medicaid and other patients, their assessment cost was slightly lower for the private pay patients. This could be due to differences in level of data review, or differences in the types of patients served that facilitate or expedite the assessment in some way. Agencies that suspended OASIS data collection for private pay patients show the expected lower assessment cost for those patients. However, they also show a slightly higher cost per OASIS assessment than agencies that continued. This is likely due to the fact that some relatively fixed costs of OASIS assessments (e.g., training the same number of nurses) are spread across a smaller number of OASIS assessments.

Table 4.38: Assessment Labor Cost for OASIS-Required and Private Pay Assessments

	Start-of-Care/Resumption of Care				Follow-Up				Discharge			
			Confidence Interval				Confidence Interval				Confidence Interval	
Cost Per Assessment	Mean	Std Error	Lower	Upper	Mean	Std Error	Lower	Upper	Mean	Std Error	Lower	Upper
<i>All Agencies</i>												
Medicare/Medicaid	\$62.49	\$1.21	\$60.11	\$64.87	\$45.06	\$30.72	\$42.68	\$56.69	\$31.81	\$21.87	\$30.07	\$37.51
Non-Medicare	\$52.77	\$1.09	\$50.63	\$54.91	\$38.37	\$23.72	\$35.53	\$51.55	\$27.17	\$16.09	\$25.32	\$33.53
<i>Agencies that continued OASIS</i>												
Medicare/Medicaid (OASIS)	\$60.65	\$1.23	\$58.23	\$63.07	\$42.79	\$0.89	\$41.04	\$44.54	\$31.26	\$0.88	\$29.54	\$32.98
Non-Medicare (OASIS)	\$58.88	\$1.29	\$56.35	\$61.41	\$41.29	\$0.91	\$39.50	\$43.08	\$29.67	\$0.87	\$27.96	\$31.39
<i>Agencies that suspended OASIS</i>												
Medicare/Medicaid (OASIS)	\$66.04	\$2.13	\$61.82	\$70.26	\$43.60	\$1.53	\$40.57	\$46.64	\$34.18	\$1.00	\$32.20	\$36.15
Non-Medicare (non-OASIS)	\$41.50	\$1.60	\$38.34	\$44.67	\$25.39	\$1.01	\$23.38	\$27.39	\$20.76	\$0.93	\$18.92	\$22.60

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

Other Labor Cost

Agencies were asked to report other labor costs related to comprehensive assessment of their patients. This is not time spent on individual assessments, but rather time spent on assessment- or data-related activities, such as (1) reviewing assessment data quality at an aggregate level (for example, reviewing clinical information system summary reports on error rates) or (2) OASIS and other assessment training time, including learning time as well as teaching time, if teacher is an agency employee. The total hours reported for these activities were converted to per-assessment minutes, and costed out using the same BLS/OES rates. Because the distribution is skewed, we present both means and medians (Table 4.39). One might expect that the resources would be lower for private pay assessments, which are not required to be encoded and transmitted to the data repository, and lower in agencies which suspended OASIS data collection. While the latter pattern is apparent, among agencies continuing OASIS data collection, both mean and median per-assessment cost are frequently higher for private pay assessments. Conceivably, this could be due to imprecision in estimating annual hours spent on data quality activities by payer source when sample sizes are relatively small.

Table 4.39: Cost Per Assessment for Reviewing Data Quality – by Continued/Suspended OASIS Data Collection

	Medicare/Medicaid Patients		Non-Medicare/Medicaid Patients	
Cost Per Assessment	Mean	Median	Mean	Median
RN	\$15.38	\$6.16	\$11.06	\$3.13
Therapist (PT, OT, SLP)	\$4.52	\$0.14	\$6.53	\$0.09
Clerical staff	\$2.34	\$0.72	\$2.32	\$0.30
Other staff	\$5.63	\$1.54	\$5.38	\$3.09
Total	\$27.87	\$8.56	\$25.29	\$6.61
Agencies that Continued OASIS				
RN	\$14.35	\$6.16	\$10.24	\$4.29
Therapist (PT, OT, SLP)	\$5.73	\$0.08	\$7.94	\$0.00
Clerical staff	\$2.78	\$0.90	\$2.71	\$0.62
Other staff	\$5.33	\$1.54	\$5.96	\$3.51
Total	\$28.18	\$8.68	\$26.85	\$8.42
Agencies that Suspended OASIS				
RN	\$17.21	\$6.11	\$12.09	\$2.06
Therapist (PT, OT, SLP)	\$2.53	\$0.17	\$4.52	\$0.10
Clerical staff	\$1.56	\$0.25	\$1.78	\$0.0
Other staff	\$6.15	\$1.60	\$4.54	\$2.13
Total	\$27.46	\$8.13	\$22.94	\$4.29

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents= 631

Considered by agency size (Table 4.40), economies of scale are apparent for both Medicare/Medicaid and private pay assessments, especially for the nursing time which comprises the bulk of these resources.

Table 4.40: Labor Cost Per Assessment for Reviewing Data Quality – by Agency Size

	Medicare/Medicaid Patients		Private Pay Patients	
	Mean	Median	Mean	Median
Quartile 1 (Smallest Agencies)				
RN	\$23.99	\$10.68	\$17.99	\$9.88
Therapist (PT, OT, SLP)	\$8.75	\$0.00	\$6.63	\$0.00
Clerical staff	\$2.68	\$0.85	\$2.22	\$0.00
Other staff	\$4.69	\$0.00	\$6.21	\$0.00
Total	\$40.11	\$11.53	\$33.05	\$9.88
Quartile 2				
RN	\$14.39	\$5.35	\$11.97	\$6.36
Therapist (PT, OT, SLP)	\$3.07	\$0.29	\$9.06	\$0.00
Clerical staff	\$2.84	\$0.92	\$3.80	\$0.87
Other staff	\$6.03	\$1.96	\$5.57	\$3.29
Total	\$26.32	\$8.51	\$30.40	\$10.52
Quartile 3				
RN	\$11.21	\$2.56	\$8.49	\$2.06
Therapist (PT, OT, SLP)	\$2.55	\$0.37	\$4.88	\$0.17
Clerical staff	\$1.72	\$0.40	\$1.79	\$0.46
Other staff	\$6.09	\$2.00	\$5.49	\$3.39
Total	\$21.57	\$5.33	\$20.65	\$6.07
Quartile 4 (Largest Agencies)				
RN	\$8.94	\$3.07	\$6.37	\$1.13
Therapist (PT, OT, SLP)	\$3.24	\$0.44	\$5.75	\$0.40
Clerical staff	\$2.18	\$0.47	\$1.62	\$0.21
Other staff	\$5.62	\$1.98	\$4.43	\$1.83
Total	\$19.97	\$5.97	\$18.16	\$3.57

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents= 631

Labor costs for assessment training activities were treated in a similar manner. By continued/suspended status (Table 4.41) they are higher for private pay assessments. While this may again be due to smaller sample size and “lumpy” time estimates, it is likely also be due to the fact that most agencies serve relatively small numbers of private pay patients, but an individual staff member must still receive a certain number of hours of training regardless of how many assessments they will actually be performing. In addition, per-diem staff or others who work part time may incur training costs but perform relatively few assessments, increasing the per-assessment costs.³⁷ OASIS training costs are higher for agencies that suspended collection (which, we know, are smaller on average than those which continued). In addition, suspending data collection further reduces the number of OASIS assessments over which the fixed costs of training can be spread.

Table 4.41: Labor Cost Per Assessment for Training Related to OASIS and Other Comprehensive Assessments – by Continued/Suspended OASIS Data Collection

	Medicare/Medicaid Patients (OASIS)		Non-Medicare/ Non-Medicaid Patients	
Agencies that Continued OASIS*				
RN	\$6.56	\$2.34	\$6.56	\$2.34
Therapist (PT, OT, SLP)	\$2.29	\$0.54	\$2.29	\$0.54
Clerical staff	\$1.11	\$0.22	\$1.11	\$0.22
Other staff	\$1.29	\$0.45	\$1.29	\$0.45
Total	\$11.24	\$3.55	\$11.24	\$3.55
Agencies that Suspended OASIS				
RN	\$7.63	\$2.33	\$11.10	\$3.07
Therapist (PT, OT, SLP)	\$2.90	\$0.89	\$5.17	\$1.08
Clerical staff	\$0.72	\$0.13	\$1.93	\$0.14
Other staff	\$2.18	\$0.67	\$4.02	\$0.86
Total	\$13.43	\$4.03	\$22.22	\$5.15

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents= 631

Notes: (1) Cost per assessment assumes 1.92 assessments per admission.

(2) Training cost per assessment for agencies that continued OASIS data collection represents OASIS costs allocated across all assessments conducted (both Medicare/Medicaid & private pay patients).

³⁷ Without knowing each agency’s staffing patterns, it was not possible to evaluate some of the large estimates that they supplied. In an effort to corroborate or refine these estimates, we informally canvassed staff from a number of providers on the TEP to solicit their estimates of annual assessment training time per staff member (new employees and others.) Even these estimates varied by a factor of 10.

When training costs are broken down by agency size category (Table 4.42), additional economies of scale can be observed. The average training cost per Medicare/Medicaid OASIS assessment for the largest agencies is only 41 percent the cost (\$7.99/\$19.51) at the smallest agencies; for private pay assessments, the cost at the largest agencies is estimated to be only 46 percent of the cost at the smallest agencies.

Table 4.42: Cost Per Assessment for Training Related to OASIS and Other Comprehensive Assessments – by Agency Size

	Medicare/Medicaid Patients (OASIS)		Private Pay Patients	
	Mean	Median	Mean	Median
Quartile 1 (Smallest Agencies)				
RN	\$12.12	\$6.64	\$12.63	\$3.64
Therapist (PT, OT, SLP)	\$3.68	\$0.46	\$8.97	\$0.00
Clerical staff	\$1.84	\$0.49	\$2.65	\$0.00
Other staff	\$1.87	\$0.81	\$5.33	\$0.00
Total	\$19.51	\$8.41	\$29.59	\$3.64
Quartile 2				
RN	\$4.65	\$2.33	\$14.21	\$6.81
Therapist (PT, OT, SLP)	\$1.82	\$0.68	\$4.57	\$2.12
Clerical staff	\$0.69	\$0.28	\$3.22	\$0.40
Other staff	\$1.28	\$0.64	\$4.29	\$1.94
Total	\$8.44	\$3.93	\$26.30	\$11.27
Quartile 3				
RN	\$4.39	\$1.89	\$9.82	\$1.90
Therapist (PT, OT, SLP)	\$2.39	\$1.08	\$3.75	\$1.33
Clerical staff	\$0.64	\$0.13	\$1.00	\$0.12
Other staff	\$2.01	\$0.62	\$3.88	\$1.35
Total	\$9.42	\$3.71	\$18.44	\$4.70
Quartile 4 (Largest Agencies)				
RN	\$4.71	\$1.18	\$6.72	\$1.29
Therapist (PT, OT, SLP)	\$1.92	\$0.58	\$3.53	\$0.73
Clerical staff	\$0.36	\$0.06	\$1.18	\$0.07
Other staff	\$1.00	\$0.21	\$2.15	\$0.28
Total	\$7.99	\$2.02	\$13.59	\$2.38

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents= 631

Note: Cost per assessment assumes 1.92 assessments per admission.

Other Assessment-Related Costs

Surveyed home health agencies were asked to report non-labor costs related to their comprehensive assessment activities. These included items such as printing, data entry, data scanning, or data validation services, software and hardware, or consultants (e.g., training.) These costs were not reported separately by payment source. For consistency, we report it on a per-assessment basis (Table 4.43.) The overall average reported cost per assessment was \$7.05, the median was \$1.00. The largest portion of these costs was software and computer costs (63 percent). Agencies that had suspended OASIS data collection for private pay patients reported costs that were 26 percent lower, with proportional differences in most of the cost components.

Table 4.43: Cost Per Assessment: Other Costs Associated with Comprehensive Assessment Data Collection

	Medicare/Medicaid AND Private Pay Patients	
	Mean	Median
All Agencies		
(External) training on OASIS and other comprehensive assessments	\$0.72	\$0.00
Data entry/scanning provided by an external vendor	\$0.18	\$0.00
Data validation analysis provided by an external vendor	\$0.14	\$0.00
Printing Costs	\$1.59	\$0.53
Internal Software and computer hardware	\$4.41	\$0.47
Other costs	\$0.01	\$0.00
Total	\$7.05	\$1.00
Agencies that Continued OASIS for Private Pay		
(External) training on OASIS and other comprehensive assessments	\$0.76	\$0.00
Data entry/scanning provided by an external vendor	\$0.20	\$0.00
Data validation analysis provided by an external vendor	\$0.14	\$0.00
Printing Costs	\$1.78	\$0.53
Internal Software and computer hardware	\$4.89	\$0.72
Other costs	\$0.01	\$0.00
Total	\$7.77	\$1.25
Agencies that Suspended OASIS for Private Pay		
(External) training on OASIS and other comprehensive assessments	\$0.65	\$0.00
Data entry/scanning provided by an external vendor	\$0.16	\$0.00
Data validation analysis provided by an external vendor	\$0.13	\$0.00
Printing Costs	\$1.26	\$0.54
Internal Software and computer hardware	\$3.55	\$0.00
Other costs	\$0.01	\$0.00
Total	\$5.75	\$0.54

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents= 631

Note: Cost per assessment assumes 1.92 assessments per admission.

Total Cost per Assessment

All of the cost components identified by the survey were aggregated to create an estimate of total cost per assessment. (Table 4.44) This incorporates labor cost for training, conducting the assessment, and data quality review, plus nonlabor costs. Agencies that suspended collecting OASIS on private pay patients had lower labor costs per assessment for conducting the assessments and for data quality review, but the savings were partially offset by the costs of training on a different assessment protocol. When spread over the generally small base of private pay assessments, this yields a high cost per assessment. Agencies that suspended collecting OASIS on all patients also had slightly higher costs per OASIS assessment of Medicare/Medicaid patients, presumably because the fixed costs of OASIS were being spread over fewer assessments.

Impact of Mandating OASIS Data Collection

In order to estimate the cost impact of mandating the collection, encoding, and transmission of OASIS data on private pay patients, we draw on two types of data. Several items on the survey solicit respondents' estimates of the impact on agency costs for data quality review, assessment training, and nonlabor costs (assuming no change in assessment volume.)

To estimate assessment labor costs under a full mandate, we assume that the cost of collecting OASIS on private pay patients will be the same as the current cost of collecting data on Medicare/Medicaid patients. For agencies that have continued OASIS data collection, the incremental cost is small; for those that have suspended OASIS collection, the cost will be more considerable (Table 4.45.) To estimate the total cost per private admission, we use an algorithm based on frequency of the various assessment types supplied by OCS.

To these labor costs must be added the other incremental costs – training, data quality review, other costs (Table 4.46.) Unlike assessment labor costs, without knowing suspended agencies' staffing patterns (e.g., Are all staff already trained on OASIS?), it was not possible to estimate incremental training costs from our existing data on current training expenditures. Therefore, we asked respondents to estimate directly the total time that would be spent on OASIS training if OASIS were mandated for private pay patients. About half of those who had suspended data collection reported that the total OASIS hours would be the same, others provided estimates of hours by staff category. If the hours reported were LESS than current OASIS training hours, we assumed they were trying to report an increment and added the figure to current OASIS hours; if they reported the same or more hours for OASIS, we assumed it was the new total for OASIS. To calculate the increment, we subtracted the sum of current assessment training hours (OASIS plus other) from this figure, and divided by total assessments. This yielded a small increase per assessment for agencies which had continued OASIS data collection, and savings for agencies which had suspended – since they would no longer need to provide two separate types of training.

Combined, these estimates yield a *per-assessment* estimate of the average per-assessment labor cost of mandating OASIS. To these must also be added HHA's estimates of other incremental costs of OASIS data collection, encoding, and transmission for all patients – such as increases in external consultants for assessment-related training, external data entry or scanning, external data validation or analysis, internal software and computer hardware, and printing. Respondents were asked to estimate the total one-time cost for the transition, plus any increase or decrease in such costs on an annual basis (Table 4.47). On a per-assessment data, these costs were estimated to be low – a mean \$.12 per assessment for transition costs, and \$.58 per assessment in ongoing costs. The total incremental cost per assessment (including one-time transition cost in the first year) is estimated to be approximately \$8 per assessment for agencies that continued to collect OASIS on their private pay patients, and at from \$22 to \$33 per assessment for agencies which suspended such data collection.

Table 4.44: Total Cost per Assessment - Labor and Other Costs

	Start of Care		Follow-Up		Discharge	
Mean Cost per Assessment	Medicare /Medicaid	Non- Medicare/ non- Medicaid	Medicare /Medicaid	Non- Medicare/ non- Medicaid	Medicare /Medicaid	Non- Medicare/ non- Medicaid
Assessment Labor Costs - per assessment						
Agencies that continued OASIS for private pay	\$60.65	\$58.88	\$42.79	\$41.29	\$31.26	\$29.67
Agencies that suspended OASIS for private pay	\$66.04	\$41.50	\$43.60	\$25.39	\$34.18	\$20.76
Data Quality Review Costs - per assessment						
Agencies that continued OASIS for private pay	\$28.18	\$26.85	\$28.18	\$26.85	\$28.18	\$26.85
Agencies that suspended OASIS for private pay	\$27.46	\$22.94	\$27.46	\$22.94	\$27.46	\$22.94
Training Labor Costs - per assessment						
Agencies that continued OASIS for private pay	\$11.24	\$11.24	\$11.24	\$11.24	\$11.24	\$11.24
Agencies that suspended OASIS for private pay	\$13.43	\$22.22	\$13.43	\$22.22	\$13.43	\$22.22
Other Costs - per assessment						
Agencies that continued OASIS for private pay	\$7.77	\$7.77	\$7.77	\$7.77	\$7.77	\$7.77
Agencies that suspended OASIS for private pay	\$5.75	\$5.75	\$5.75	\$5.75	\$5.75	\$5.75
Total Costs - per assessment						
Agencies that continued OASIS for private pay	\$107.84	\$104.74	\$89.99	\$87.15	\$78.46	\$75.53
Agencies that suspended OASIS for private pay	\$112.68	\$92.41	\$90.24	\$76.29	\$80.82	\$71.67

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents= 631

Table 4.45: Assessment Labor Costs Associated with Mandating OASIS

Labor Cost per Assessment	Start of Care	Follow-Up	Discharge
All Agencies			
Medicare/Medicaid	\$62.49	\$43.07	\$32.25
Private Pay	\$52.77	\$35.67	\$26.50
Difference	\$9.72	\$7.40	\$5.75
Agencies That Continued OASIS for Private Pay			
Medicare/Medicaid	\$60.65	\$42.79	\$31.26
Private Pay	\$58.88	\$41.29	\$29.67
Difference	\$1.77	\$1.50	\$1.59
Agencies That Suspended OASIS for Private Pay			
Medicare/Medicaid	\$66.04	\$43.60	\$34.18
Private Pay	\$41.50	\$25.39	\$20.76
Difference	\$24.54	\$18.22	\$13.42
<u>Per Admission</u> Labor Cost of Mandating OASIS for Private Pay: Assessment Costs			
All Agencies	\$14.28		
Agencies that continued OASIS for private pay	\$3.22		
Agencies that suspended OASIS for private pay	\$37.55		

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents= 631

Note: Cost per admission assumes 1 start of care + .14 followup + .78 discharge assessments per admission.

Table 4.46: Impact of Mandating OASIS: Other Costs Per Assessment

	All Agencies			Agencies that Continued OASIS for Private Pay			Agencies that Suspended OASIS for Private Pay		
		Confidence Interval			Confidence Interval			Confidence Interval	
Cost Per Assessment	Mean	Lower	Upper	Mean	Lower	Upper	Mean	Lower	Upper
Review of Data Quality									
RN	\$2.20	\$1.20	\$3.19	\$1.82	\$0.55	\$3.10	\$3.04	\$1.53	\$4.55
Therapist (PT, OT, SLP)	\$0.42	\$0.07	\$0.76	\$0.16	\$0.10	\$0.22	\$1.03	-\$0.13	\$2.20
Clerical staff	\$0.37	\$0.25	\$0.49	\$0.25	\$0.16	\$0.35	\$0.64	\$0.46	\$0.83
Other staff	\$0.60	\$0.38	\$0.82	\$0.34	\$0.18	\$0.49	\$1.20	\$0.66	\$1.73
Total Review of Data Quality	\$3.59	\$1.90	\$5.27	\$2.57	\$0.99	\$4.15	\$5.91	\$2.52	\$9.31
Training									
RN	-\$0.32	-\$0.92	\$0.28	\$0.30	-\$0.36	\$0.95	-\$1.54	-\$2.77	-\$0.31
Therapist (PT, OT, SLP)	-\$0.20	-\$0.47	\$0.07	-\$0.05	-\$0.27	\$0.17	-\$0.55	-\$1.23	\$0.13
Clerical staff	\$0.05	-\$0.09	\$0.19	\$0.10	-\$0.10	\$0.30	-\$0.06	-\$0.16	\$0.04
Other staff	\$0.03	-\$0.20	\$0.26	\$0.14	-\$0.14	\$0.42	-\$0.21	-\$0.60	\$0.19
Total Training	-\$0.44	-\$1.68	\$0.80	\$0.49	-\$0.86	\$1.84	-\$2.36	-\$4.76	\$0.05
Other costs									
One time transition	\$0.12	\$0.07	\$0.17	\$0.07	\$0.02	\$0.12	\$0.22	\$0.10	\$0.34
Annual costs	\$0.58	\$0.42	\$0.74	\$0.17	\$0.09	\$0.25	\$1.39	\$0.95	\$1.82
Total Year 1	\$3.85	\$0.71	\$6.98	\$3.30	\$0.23	\$6.36	\$5.16	-\$1.20	\$11.53
Total Annual	\$3.73	\$0.64	\$6.81	\$3.23	\$0.22	\$6.24	\$4.94	-\$1.30	\$11.18

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

Table 4.47: Assessment and Other Costs Associated with Mandating OASIS

Incremental Cost per Assessment for private pay patient	Start of Care	Follow-Up	Discharge
Assessment Costs			
All agencies	\$9.72	\$6.69	\$4.64
Agencies that continued OASIS for private pay	\$1.77	\$1.50	\$1.59
Agencies that suspended OASIS for private pay	\$24.54	\$18.22	\$13.42
Data Quality Review Costs			
All agencies	\$3.59	\$3.59	\$3.59
Agencies that continued OASIS for private pay	\$2.57	\$2.57	\$2.57
Agencies that suspended OASIS for private pay	\$5.91	\$5.91	\$5.91
Training Costs			
All agencies	-\$0.44	-\$0.44	-\$0.44
Agencies that continued OASIS for private pay	\$0.49	\$0.49	\$0.49
Agencies that suspended OASIS for private pay	-\$2.36	-\$2.36	-\$2.36
One-time Transition Costs			
One-time transition costs: All agencies	\$0.12	\$0.12	\$0.12
One-time transition costs: Agencies that continued OASIS for private pay	\$0.07	\$0.07	\$0.07
One-time transition costs: Agencies that suspended OASIS for private pay	\$0.22	\$0.22	\$0.22
Annual Costs			
Annual costs: All agencies	\$3.73	\$3.73	\$3.73
Annual costs: Agencies that continued OASIS for private pay	\$3.23	\$3.23	\$3.23
Annual costs: Agencies that suspended OASIS for private pay	\$4.94	\$4.94	\$4.94
Total Incremental Cost per Assessment			
All Agencies	\$16.71	\$13.68	\$11.63
Agencies that continued OASIS for private pay	\$8.12	\$7.86	\$7.95
Agencies that suspended OASIS for private pay	\$33.26	\$26.94	\$22.14
Per Admission Cost of Mandating OASIS for Private Pay Assessment Costs			
All Agencies	\$27.70		
Agencies that continued OASIS for private pay	\$15.42		
Agencies that suspended OASIS for private pay	\$54.30		

Note: Cost per admission assumes 1 start of care + .14 followup + .78 discharge assessment per private pay admission.

The net impact of such a mandate on any particular agency would depend on its patient volume, its use of nurses versus therapists (and full versus part-time staff) in conducting assessments, and its payer mix (which determines the number of additional OASIS assessments to be conducted.) Table 4.48 shows the mean impact on assessment minutes by agency continued/suspended status. Of course, agencies which had suspended OASIS data collection would be required to make a much greater investment for the additional OASIS assessment data collection.

Table 4.48: Impact of Requiring OASIS on Average Agency Assessment Minutes – by Continued/Suspended

	All Agencies			Agencies that Continued OASIS for Private Pay			Agencies that Suspended OASIS for Private Pay		
		Confidence Interval			Confidence Interval			Confidence Interval	
Average	Mean	Lower	Upper	Mean	Lower	Upper	Mean	Lower	Upper
Start of Care									
Average time: Medicare	156.28	148.69	163.87	153.75	146.76	160.74	161.06	145.30	176.83
Average time: Weighted average	151.80	145.18	158.42	152.68	145.70	159.65	150.15	137.63	162.66
Average time: Non-Medicare	129.48	123.06	135.90	143.74	135.50	151.97	102.63	93.56	111.70
Percent Impact on Average Time from Mandating OASIS for private pay patients	2.87%			0.70%			6.78%		
Follow-up									
Average time: Medicare	107.85	102.59	113.10	108.82	103.70	113.93	106.01	94.19	117.84
Average time: Weighted average	104.17	99.62	108.72	107.92	102.85	112.99	97.11	88.71	105.51
Average time: Non-Medicare	88.28	82.79	93.78	101.53	95.23	107.82	63.34	56.61	70.07
Percent Impact on Average Time from Mandating OASIS for private pay patients	3.41%			0.82%			8.40%		
Discharge									
Average time: Medicare	80.80	75.85	85.74	79.73	74.97	84.48	82.82	71.79	93.84
Average time: Weighted average	77.91	73.84	81.97	78.81	74.09	83.54	76.20	69.06	83.34
Average time: Non-Medicare	65.69	61.43	69.95	73.10	67.91	78.29	51.73	46.26	57.21
Percent Impact on Average Time from Mandating OASIS for private pay patients	3.57%			1.14%			7.99%		

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

* Note that total minutes takes account of the proportion of assessments completed by RNs and therapists, weighted average takes into account each agency's payer mix.

Table 4.49 shows the same information by agency size categories. The requirement for additional assessment minutes (in percentage terms) is not correlated with agency size. There does not appear to be a disproportional burden on small (or large) agencies.

Table 4.49: Impact of Requiring OASIS on Average Agency Assessment Minutes - By Agency Size

	Quartile 1 (Smallest)			Quartile 2			Quartile 3			Quartile 4 (Largest)		
		Confidence Interval			Confidence Interval			Confidence Interval			Confidence Interval	
	Mean	Lower	Upper	Mean	Lower	Upper	Mean	Lower	Upper	Mean	Lower	Upper
Start of Care/Resumption of Care												
Average time: Medicare	145.43	128.65	162.22	155.89	145.97	165.81	165.81	146.89	184.73	165.34	155.72	174.97
Average time: Weighted average	142.12	127.71	156.52	152.71	142.88	162.55	158.77	144.54	172.99	160.44	150.93	169.94
Average time: Private Pay	121.93	108.44	135.43	126.14	112.32	139.96	133.72	123.65	143.80	143.38	133.31	153.45
Percent Impact on Average Time from Mandating OASIS for Private Pay	2.33%			2.08%			4.44%			3.06%		
Follow-up												
Average time: Medicare	100.03	88.43	111.63	104.01	96.09	111.92	115.29	105.84	124.74	119.32	111.08	127.55
Average time: Weighted average	95.93	87.67	104.19	101.77	93.85	109.68	110.46	102.69	118.24	115.80	107.73	123.88
Average time: Private Pay	79.59	68.52	90.67	85.79	73.16	98.42	92.28	82.11	102.45	103.34	95.09	111.59
Percent Impact on Average Time from Mandating OASIS for Private Pay	4.27%			2.20%			4.37%			3.03%		
Discharge												
Average time: Medicare	83.69	70.86	96.53	80.99	74.97	87.01	79.84	72.76	86.91	77.60	71.85	83.34
Average time: Weighted average	79.59	70.80	88.37	79.19	73.19	85.19	76.68	70.70	82.67	75.76	70.20	81.33
Average time: Non-Medicare	64.42	55.01	73.82	66.15	57.47	74.83	64.97	59.08	70.86	69.34	63.78	74.90
Percent Impact on Average Time from Mandating OASIS for Private Pay	5.16%			2.27%			4.11%			2.42%		

Source: Abt Associates Cost and Benefit Survey of Home Health Agencies, 2005, respondents=631

4.5 Agency characteristics that impact OASIS costs

To estimate the relationship between agency characteristics and various OASIS-related outcomes, we estimated a series of multivariate regression models. The independent variables in the model included whether the agency continued to collect OASIS for private pay patients, agency size (measured based on number of admissions), region, whether the agency was rural, whether the agency was for-profit, accreditation status, whether the agency is part of an organization with a separate non-certified provider, whether the agency reported a staffing shortage over the past 12 months, percentage of Medicare/Medicaid patients, and percentage of managed care patients.

- ***RN minutes for Medicare/Medicaid Start-of-Care Assessments:*** Agencies in the South took 15 minutes longer than agencies in the West and Northeast; (Table 4.50) for-profit agencies required significantly less time; agencies that had a high proportion of staff using POC technology had significantly higher RN time; agencies reporting a staffing shortage had significantly longer RN time.
- ***RN minutes for private pay Start-of-Care Assessments:*** Adjusting for other factors, agencies that continued to collect OASIS for these patients had 36 more RN minutes than those that suspended collection, a difference that was statistically significant at the 1 percent level (Table 4.51). Rural agencies, agencies with high use of POC technology, agencies that reported a staffing shortage also had higher RN time for private pay assessments while a higher share of managed care patients was associated with lower time.
- ***Total staff costs for Medicare start-of-care assessments:*** This model examined factors related to total staff costs (including RN, therapists, clerical, and other staff). Agencies in the South and agencies reporting a staffing shortage had significantly higher total costs than other agencies, adjusting for the other factors in the model (Table 4.52).
- ***Total staff costs for private pay start-of-care assessments:*** Staff time costs for agencies that continued to collect OASIS were \$19 higher than for agencies that suspended collection, a statistically significant difference (Table 4.53). Agencies that were part of a chain, agencies with high use of POC technology, and agencies reporting a staffing shortage also had significantly higher staff costs for private pay assessments.
- ***Difference in RN minutes for Medicare/Medicaid and private pay assessments:*** Not surprisingly, this difference was much smaller for agencies that continued to collect OASIS (Table 4.54). It was also smaller for rural agencies and larger for agencies located in the South.
- ***Difference in staff costs for Medicare/Medicaid and private pay assessments:*** The difference was significantly larger for agencies that continued to collect OASIS and significantly smaller for agencies with high use of POC technology (Table 4.55).
- ***RN data quality review hours per assessment for Medicare/Medicaid assessments:*** Size was a significant predictor of RN data quality review hours for OASIS required assessments, with smaller agencies spending longer on this activity than larger agencies. Relative to agencies in the largest size quartile, agencies in the smallest quartile spent 0.64 more hours, and agencies in the second smallest size quartile spent 0.3 more hours, adjusting for the other factors in the model (Table 4.56). For-profit agencies reported

more RN data quality review hours, as did agencies in the Midwest, agencies with high use of POC technology, and agencies reporting a staffing shortage.

- ***RN data quality review hours per assessment for private pay assessments:*** As with OASIS required assessments, size was a significant predictor of data quality review time, as was for-profit status and use of POC technology (Table 4.57).
- ***RN training hours per assessment for OASIS assessments:*** RN training hours were significantly higher for agencies in the smallest size quartile, for agencies in the Northeast and the South, at for-profit agencies, and for agencies that reported a staffing shortage (Table 4.58).
- ***RN training hours per assessment for non-OASIS assessments:*** This model was estimated only for agencies that suspended OASIS data collection. Non-OASIS RN training hours were significantly higher for agencies in the South and the Midwest, as well as for agencies that reported a staffing shortage (Table 4.59).

Table 4.50
Factors Associated With RN Minutes for Start-of-Care Medicare/Medicaid Assessments

Parameter	Estimate	Standard Error	T-value
Intercept	137.568***	20.587	6.680
Agency continued to collect OASIS	-1.324	5.011	-0.260
Size: Smallest quartile	5.260	7.828	0.670
Size: Quartile 2	6.275	7.356	0.850
Size: Quartile 3	5.825	6.811	0.860
Northeast	0.474	8.111	0.060
Midwest	2.691	7.029	0.380
South	15.257***	6.697	2.280
Rural	7.974	5.478	1.460
For-profit	-11.168**	6.018	-1.860
Agency has JCAHO or CHAP accreditation	-2.672	5.437	-0.490
Includes non-certified provider	-1.362	5.169	-0.260
Agency is part of a chain	5.903	6.156	0.960
50% or more of staff use POC technology	11.748**	5.751	2.040
Agency reports staffing shortage	8.664*	4.777	1.810
Percent Medicare/Medicaid patients	-0.317	0.220	-1.440
Percent managed care patients	-0.246	0.151	-1.640

N=603

Source: OASIS Cost and Benefit Survey, 2005

*: Statistically significant at 10% level

**: Statistically significant at 5% level

***: Statistically significant at 1% level

Table 4.51
Factors Associated With RN Minutes for Start-of-Care Private Pay Assessments

Parameter	Estimate	Standard Error	T-value
Intercept	72.181***	16.761	4.310
Agency continued to collect OASIS	39.467***	4.180	9.440
Size: Smallest quartile	1.979	7.483	0.260
Size: Quartile 2	5.747	6.742	0.850
Size: Quartile 3	1.859	6.295	0.300
Northeast	-1.089	7.970	-0.140
Midwest	0.639	6.143	0.100
South	10.113	6.227	1.620
Rural	13.429***	5.097	2.630
For-profit	-7.138	5.534	-1.290
Agency has JCAHO or CHAP accreditation	0.902	5.123	0.180
Includes non-certified provider	-2.668	4.749	-0.560
Agency is part of a chain	5.893	5.826	1.010
50% or more of staff use POC technology	16.747***	5.677	2.950
Agency reports staffing shortage	10.178**	4.608	2.210
Percent Medicare/Medicaid patients	-0.102	0.180	-0.570
Percent managed care patients	-0.288**	0.141	-2.040

N=603

Source: OASIS Cost and Benefit Survey, 2005

*: Statistically significant at 10% level

**: Statistically significant at 5% level

***: Statistically significant at 1% level

Table 4.52
Factors Associated With Staff Cost for Medicare/Medicaid Start-of-Care Assessments

Parameter	Estimate	Standard Error	T-value
Intercept	68.680	10.684	6.430
Agency continued to collect OASIS	-2.356	2.444	-0.960
Size: Smallest quartile	-1.064	3.776	-0.280
Size: Quartile 2	0.061	3.624	0.020
Size: Quartile 3	2.478	3.361	0.740
Northeast	-3.703	4.238	-0.870
Midwest	-2.161	3.739	-0.580
South	6.244*	3.529	1.770
Rural	1.302	2.644	0.490
For-profit	-3.376	2.921	-1.160
Agency has JCAHO or CHAP accreditation	0.761	2.730	0.280
Includes non-certified provider	-0.125	2.492	-0.050
Agency is part of a chain	4.261	2.983	1.430
50% or more of staff use POC technology	2.753	2.849	0.970
Agency reports staffing shortage	4.146*	2.342	1.770
Percent Medicare/Medicaid patients	-0.101	0.110	-0.910
Percent managed care patients	-0.036	0.092	-0.390

N=599

Source: OASIS Cost and Benefit Survey, 2005

*: Statistically significant at 10% level

**: Statistically significant at 5% level

***: Statistically significant at 1% level

Table 4.53
Factors Associated With Staff Cost for Private Pay Start-of-Care Assessments

Parameter	Estimate	Standard Error	T-value
Intercept	43.448**	8.160	5.320
Agency continued to collect OASIS	19.028***	2.140	8.890
Size: Smallest quartile	-4.248	3.888	-1.090
Size: Quartile 2	-1.696	3.469	-0.490
Size: Quartile 3	-0.445	3.261	-0.140
Northeast	-4.811	3.988	-1.210
Midwest	-1.268	3.259	-0.390
South	4.982	3.141	1.590
Rural	2.433	2.399	1.010
For-profit	-2.242	2.730	-0.820
Agency has JCAHO or CHAP accreditation	-0.657	2.510	-0.260
Includes non-certified provider	-1.584	2.335	-0.680
Agency is part of a chain	4.747*	2.880	1.650
50% or more of staff use POC technology	5.846**	2.762	2.120
Agency reports staffing shortage	5.031**	2.228	2.260
Percent Medicare/Medicaid patients	-0.059	0.087	-0.670
Percent managed care patients	-0.083	0.073	-1.150

N=587

Source: OASIS Cost and Benefit Survey, 2005

*: Statistically significant at 10% level

**: Statistically significant at 5% level

***: Statistically significant at 1% level

Table 4.54
Difference in RN Minutes for Medicare/Medicaid and Private Pay Start-of Care Assessments

Parameter	Estimate	Standard Error	T-value
Intercept	53.695***	12.704	4.230
Agency continued to collect OASIS	-40.233***	2.990	-13.460
Size: Smallest quartile	3.523	3.693	0.950
Size: Quartile 2	1.598	3.422	0.470
Size: Quartile 3	4.252	3.381	1.260
Northeast	2.319	3.704	0.630
Midwest	3.474	3.766	0.920
South	5.825**	2.913	2.000
Rural	-5.618**	2.702	-2.080
For-profit	-4.753	3.040	-1.560
Agency has JCAHO or CHAP accreditation	-2.081	2.553	-0.820
Includes non-certified provider	1.691	2.678	0.630
Agency is part of a chain	0.174	2.900	0.060
50% or more of staff use POC technology	-4.089	2.491	-1.640
Agency reports staffing shortage	-1.567	2.412	-0.650
Percent Medicare/Medicaid patients	-0.111	0.145	-0.770
Percent managed care patients	0.073	0.094	0.780

N=602

Source: OASIS Cost and Benefit Survey, 2005

*: Statistically significant at 10% level

**: Statistically significant at 5% level

***: Statistically significant at 1% level

Table 4.55
Difference in Staff Costs for Medicare/Medicaid and Private Pay Start-of Care Assessments

Parameter	Estimate	Standard Error	T-value
Intercept	25.362***	6.093	4.160
Agency continued to collect OASIS	-21.456***	1.482	-14.480
Size: Smallest quartile	3.170*	1.771	1.790
Size: Quartile 2	1.769	1.638	1.080
Size: Quartile 3	2.724*	1.487	1.830
Northeast	0.843	1.739	0.480
Midwest	-0.866	1.630	-0.530
South	1.656	1.478	1.120
Rural	-1.229	1.246	-0.990
For-profit	-1.536	1.434	-1.070
Agency has JCAHO or CHAP accreditation	1.291	1.135	1.140
Includes non-certified provider	1.194	1.304	0.920
Agency is part of a chain	-0.159	1.269	-0.130
50% or more of staff use POC technology	-2.601**	1.206	-2.160
Percent Medicare/Medicaid patients	-0.783	1.066	-0.730
Agency reports staffing shortage	-0.043	0.066	-0.650
Percent managed care patients	0.048	0.048	1.000

N=585

Source: OASIS Cost and Benefit Survey, 2005

*: Statistically significant at 10% level

**: Statistically significant at 5% level

***: Statistically significant at 1% level

Table 4.56
RN Hours for Data Quality Review per Assessment for Medicare/Medicaid Patients

Parameter	Estimate	Standard Error	T-value
Intercept	0.466	0.336	1.390
Agency continued to collect OASIS	-0.053	0.071	-0.740
Size: Smallest quartile	0.640***	0.128	5.000
Size: Quartile 2	0.297***	0.105	2.820
Size: Quartile 3	0.166*	0.098	1.700
Northeast	-0.103	0.148	-0.700
Midwest	-0.339***	0.131	-2.580
South	-0.186	0.133	-1.410
Rural	-0.039	0.076	-0.510
For-profit	0.233***	0.084	2.770
Agency has JCAHO or CHAP accreditation	-0.012	0.083	-0.150
Includes non-certified provider	0.052	0.081	0.640
Agency is part of a chain	0.003	0.088	0.030
50% or more of staff use POC technology	0.132*	0.071	1.850
Agency reports staffing shortage	0.183***	0.072	2.520
Percent Medicare/Medicaid patients	-0.003	0.004	-0.780
Percent managed care patients	0.002	0.003	0.840

N=458

Source: OASIS Cost and Benefit Survey, 2005

*: Statistically significant at 10% level

**: Statistically significant at 5% level

***: Statistically significant at 1% level

Table 4.57
RN Hours for Data Quality Review per Assessment for Private Pay Patients

Parameter	Estimate	Standard Error	T-value
Intercept	-4.163	7.044	-0.590
Agency continued to collect OASIS	-1.844	2.023	-0.910
Size: Smallest quartile	13.913***	5.161	2.700
Size: Quartile 2	7.193**	3.163	2.270
Size: Quartile 3	3.110	2.894	1.070
Northeast	0.657	4.110	0.160
Midwest	-4.453	2.759	-1.610
South	-0.437	2.975	-0.150
Rural	-0.606	2.308	-0.260
For-profit	6.089**	2.843	2.140
Agency has JCAHO or CHAP accreditation	0.064	1.996	0.030
Includes non-certified provider	-1.941	2.141	-0.910
Agency is part of a chain	-2.486	2.421	-1.030
50% or more of staff use POC technology	5.295**	2.649	2.000
Agency reports staffing shortage	3.309	2.178	1.520
Percent Medicare/Medicaid patients	0.075	0.070	1.070
Percent managed care patients	0.122	0.093	1.310

N=244

Source: OASIS Cost and Benefit Survey, 2005

*: Statistically significant at 10% level

**: Statistically significant at 5% level

***: Statistically significant at 1% level

Table 4.58
RN OASIS Training Cost per Assessment

Parameter	Estimate	Standard Error	T-value
Intercept	0.143	0.202	0.710
Agency continued to collect OASIS	-0.081*	0.046	-1.750
Size: Smallest quartile	0.263***	0.093	2.830
Size: Quartile 2	-0.025	0.067	-0.370
Size: Quartile 3	-0.039	0.070	-0.560
Northeast	0.079*	0.043	1.850
Midwest	0.179***	0.058	3.080
South	0.150***	0.050	3.000
Rural	0.037	0.067	0.560
For-profit	0.144**	0.065	2.230
Agency has JCAHO or CHAP accreditation	-0.029	0.046	-0.630
Includes non-certified provider	0.040	0.045	0.890
Agency is part of a chain	0.043	0.059	0.730
50% or more of staff use POC technology	0.020	0.057	0.350
Agency reports staffing shortage	0.104***	0.042	2.470
Percent Medicare/Medicaid patients	-0.002	0.002	-1.010
Percent managed care patients	-0.001	0.001	-0.780

N=559

Source: OASIS Cost and Benefit Survey, 2005

*: Statistically significant at 10% level

**: Statistically significant at 5% level

***: Statistically significant at 1% level

Table 4.59
RN Non-OASIS Training Cost per Assessment

Parameter	Estimate	Standard Error	T-value
Intercept	-0.582	0.380	-1.530
Size: Smallest quartile	0.332	0.231	1.440
Size: Quartile 2	0.100	0.184	0.550
Size: Quartile 3	0.215	0.200	1.080
Northeast	0.268	0.220	1.220
Midwest	0.372**	0.179	2.090
South	0.389**	0.163	2.390
Rural	0.151	0.136	1.120
For-profit	0.162	0.150	1.080
Agency has JCAHO or CHAP accreditation	-0.113	0.144	-0.790
Includes non-certified provider	-0.028	0.128	-0.220
Agency is part of a chain	-0.219	0.146	-1.500
50% or more of staff use POC technology	-0.058	0.140	-0.410
Agency reports staffing shortage	0.253**	0.126	2.000
Percent Medicare/Medicaid patients	0.006	0.004	1.500
Percent managed care patients	0.001	0.003	0.200

N=141

Source: OASIS Cost and Benefit Survey, 2005

*: Statistically significant at 10% level

**: Statistically significant at 5% level

***: Statistically significant at 1% level

5.0 Discussions with HHAs, QIOs and Accrediting Organizations

In order to assist us with interpreting survey responses and learn more about how agencies use OASIS data collected on private pay patients, telephone interviews were conducted with representatives of eight home health agencies and five Quality Improvement Organizations during the months of June through August 2005. Discussions were also held with representatives of two Accrediting Organizations to understand the full range of data requirements that HHAs may have to satisfy for these accrediting organizations.

5.1 Discussions with Home Health Agencies

Abt staff spoke with representatives from a diverse group of home health agencies across the country. Agencies were located in all regions of the country and evenly divided in size. Urban agencies predominated, with six of the agencies serving urban populations. Six of the agencies were not-for-profit. Two agencies were part of a chain, three were hospital-based, one was a VNA and the remainder were independent. Agencies were selected based on responses to the OASIS Cost and Benefit Survey that indicated they continue to collect OASIS on all their adult, private pay, non-maternity, skilled service patients and make use of the data. Respondents were directors of quality improvement and/or administrators.

During the one-hour interviews, respondents were asked about the OASIS data collection processes at their agencies, how they made the decision to continue collecting OASIS and what factors influenced their decision most. Respondents discussed the uses of OASIS data and how their private pay patients benefit from continued OASIS data collection. Respondents were also asked about potential uses of the data, and what the barriers might be to those uses. Finally, respondents were asked for their opinions on the potential impact of future congressional action on data collection at their own agency and on the industry as a whole. The following discussion highlights the findings from these interviews.

Topic 1: Data collection processes

- All the agencies interviewed reported they used identical data collection processes for Medicare/Medicaid and private pay patients.
- Point of care (POC) technology was in use at four of the agencies and two used scannable paper forms. These agencies said the technology was an important factor in their ability to collect OASIS on all patients as it decreased or eliminated data entry. One agency said their POC vendor had both an OASIS and a non-OASIS assessment available for use, but they chose to use just the OASIS version.
- Outcome Concept Systems was used by four agencies for benchmarking and several others used software to monitor missing or inconsistent data.

Topic 2: Decision to continue private pay OASIS collection

- Most agencies made the decision to continue OASIS collection on all patients after brief internal discussions between management and the quality improvement staff. Of the hospital-based agencies, all three said the hospital was not involved in the decision.

- Several agencies said that they did not think the clinicians at their agency knew that OASIS was no longer mandated for private pay patients and they hoped it stayed that way to avoid dissension.
- Of the agencies that were part of a chain, one said they made the decision collaboratively with their “sister” agencies, while another said the decision was made at the corporate level with no input from them. This latter agency reported that staff felt burdened by the continued collection because they were not given the resources to handle the demands of completing OASIS, nor to utilize the data they collected.

Topic 3: Factors influencing the decision to continue private pay OASIS collection

- **“OASIS is a good tool and it gives us the data we need for care planning.”** The most commonly cited reason for continuing OASIS data collection was the belief that it facilitates consistent assessment and care planning. Many agencies stressed that they felt performing an OASIS assessment was part of good care and that all of their patients deserved to be treated the same. One agency noted that OASIS was especially important for their private pay patients, because it allowed the agency to identify and document all the patient’s needs, not just ones an insurance carrier might be targeting. They believed that a less comprehensive assessment would potentially lead to poorer care for these patients.
- **“It would cost us more - in time, trouble, and expense - to change.”** Several agencies used the phrase, “Why reinvent the wheel?” when discussing their decision to continue OASIS collection. Many noted that their quality monitoring and improvement programs, their orientation and continuing education training, and their point of care or benchmarking software are all OASIS-based. OASIS has been integrated into how they run their agency, care for their patients and measure their effectiveness. These agencies felt the expense of having two different assessments would outweigh any savings they might accrue from using an assessment that might take less clinician time, especially since fewer than 20 percent of their patients were private pay. Some said they simply did not have the resources necessary to train clinicians and maintain competency on two different instruments.

Approximately half the agencies mentioned that they thought it would be very confusing for their staff to decide which tool to use out in the field and that this would result in the need for belated OASIS assessments being performed on patients that were initially missed. One agency said there was frequently confusion about payment source when a patient was first admitted, especially between Medicare and non-Medicare HMOs. Two agencies also reported that there would be increased dissension among their staff if some were assigned to patients that required OASIS while others didn’t. Finally, three of the agencies said that a belief that the suspension might be only temporary did influence their thinking. “We thought it would be a huge pain for us if we changed our whole assessment process and then CMS changed their minds”.

- **“For quality improvement and benchmarking, we want to be able to look at all our patients.”** Of the agencies that are able to examine outcomes for their private pay patients, all said continued OASIS collection was important to them to understand the “big picture” of what is happening with their entire patient population. All the agencies said that their OBQI initiatives are implemented for all their patients, not just those on Medicare and Medicaid. Those that could examine outcomes believed that looking at only a portion of their patients would not give them a true understanding of the impact of

any care initiatives they undertook or where they needed to target staff educational efforts.

Topic 4: Uses of OASIS data

- **Identifying patient needs.** All the agencies we spoke to said they relied on OASIS data for assessment and care planning and they felt that OASIS was an appropriate tool for all their adult non-maternity patients, not just Medicare and Medicaid patients. Several noted that concerns about some OASIS items being inappropriate for younger patients, such as questions about incontinence, were due to a lack of education about proper assessment technique. They stated that as long as the Conditions of Participation require a comprehensive assessment, they preferred to use one that is nationally recognized as being a valid and reliable tool. Several agencies reported they use OASIS to identify specific patient needs by integrating flags into their OASIS assessments to identify patients who were at risk of falls or medication problems, or needed referrals for therapy services or specific interventions. One used OASIS to target cases in which telehealth could be instituted to decrease the use of emergent care.
- **Identifying areas for practice improvement.** Agencies reported that their quality improvement committees meet regularly to examine OASIS outcomes. Several said they prefer to look at the data they receive from their internal software or OCS because it includes their private pay patients and the data are more recent than CMS data, so they can see what is happening in “real time” for their entire patient population. None of the agencies we spoke to drill down to examine outcomes of their private pay patients separately, but all who have the capability examine combined data on their private pay and their Medicare/Medicaid patients.

Agencies reported that areas for improvement are selected based on any outcome measures that appear to be “trending badly”. They then institute educational efforts or introduce new care processes in an effort to improve the outcome selected. Examples of QI efforts that agencies report they have instituted for both their Medicare/Medicaid and private pay patients included: pain management, medication management, falls prevention, improvement in dressing, improvement in surgical wounds, and pathways for dyspnea, diabetes, and congestive heart failure.

Once practice improvements are initiated, several agencies said they post their OBQI outcomes reports for staff to see. They said staff takes pride in seeing the improvements. It helps to remind staff of the reasons why OASIS is important and functions as a morale booster, reinforcing the practice changes.

- **Marketing to providers, payers and consumers.** Three of the agencies said they use their OASIS data for public relations purposes by showing their measures to consumers, other providers and referral sources (hospice, hospitals, discharge planners and physicians). One HHA accomplishes this through meetings with their advisory counsel and another said they put advertising in their local newspaper. Another agency said their patients provide them with good “PR” because they always tell their physicians that the agency did a very thorough job on their assessment. Local physicians reportedly know the agency is doing a good job because of this.
- **Fulfillment of accreditation and payer requirements.** Three agencies said that JCAHO requires that they meet standards of care for all patients and that OASIS helps them accomplish this. Others said that their share of private pay patients is growing, that

some insurers are starting to be interested in their OASIS outcomes. One said a private payer has started requiring OASIS data.

- **Potential uses.** Agencies that currently do not have access to outcome reports for their private pay patients say they would like to be able to do benchmarking and trend analysis for their private pay patients. One said they would like to use their OASIS data to help them move to more of a disease management model. Several agencies said they would like to use private pay outcomes data more in their negotiations and marketing efforts with insurance plans. Reportedly, private payers have not seemed particularly interested in home health outcomes up to now, but agencies wonder if the advent of pay for performance will increase their interest.

Topic 5: Barriers to the use of OASIS data for private pay patients

- **Inability to generate outcomes due to low patient numbers.** Several agencies mentioned concern that the number of private pay patients they serve is so low that it's difficult to obtain meaningful numbers for outcome measures.
- **Inability to impact patient outcomes due to short stay.** Another frequently raised issue is that private payers typically will authorize fewer visits than an agency would provide for the same case with Medicare reimbursement. Agencies believe that patients are pushed so quickly from home care into outpatient setting that they rarely have time to make an impact on the patient's status and achieve improvements.
- **Low reimbursement from private payers.** Two agencies said that reimbursement from some private payers is so low that it does not cover the time needed to do a thorough comprehensive assessment. Agencies also reported providing fewer services for private pay patients than they would for comparable patients with Medicare or Medicaid coverage due to low reimbursement. This in turn makes improving patient outcomes more difficult.
- **Lack of commitment to OBQI from management.** Two agencies said that a lack of commitment to the OBQI process and the unwillingness to devote sufficient resources to OASIS data collection and analysis were the biggest barriers to use of private pay OASIS data.
- **Concerns about the OASIS instrument.** Several agencies stated that the OASIS instrument needed to be streamlined in order to be less resource-intensive. Several also mentioned that OASIS response categories, particularly for ADL activities such as toileting and ambulation, do not allow agencies to demonstrate patient progress.
- **Concerns about OASIS deadlines.** One agency stated that the time parameters and deadlines for submitting OASIS data were too restrictive and should be relaxed to reduce the burden associated with OASIS.
- **Concerns about OASIS/OBQI "gaming".** Two agencies commented that OASIS was subjective and relied on clinicians to provide accurate responses, when in fact there is a lot of pressure to manipulate OASIS responses to maximize profits. For this reason, they questioned the value and validity of OBQI reports.

Topic 6: Opinions on the impact of future congressional action on data collection

- **If OASIS data collection is reinstituted.** Agencies reported that if collection were reinstated for private pay patients, it would be important for CMS to provide agencies with outcomes and benchmarking reports on those patients. Most also thought that reports would have to be separate since private pay patients are significantly different in terms of their baseline health status and the type of care they receive while in home care.

Agencies generally agreed that while there would be many positives for patients and the industry, reinstituting OASIS collection would be perceived by some agencies as a hardship. They noted that correctly performing an OASIS assessment reduces the number of patients a nurse can see in a day and that resource demand might be hard on some agencies. One added that it would be particularly upsetting for agencies that had already invested the time, training and resources to develop a non-OASIS assessment for their private pay patients. Another commented that the biggest factors in determining level of burden for collecting OASIS on private pay patients was payer mix – the proportion of Medicare and Medicaid to private pay – and use of point of care technology. *“Home health is headed in the direction of POC, but it is costly to make the leap. Small agencies are less likely to have the needed resources to make the change to POC and will therefore be stuck with paper longer, so it will impact them more.”*

- **If the suspension of OASIS data collection is made permanent.** The majority of the agencies we spoke to said they would continue to collect OASIS on their private pay patients if Congress made the suspension permanent, but one said that they would suspend data collection. This agency representative said that they could not currently examine outcomes on their private pay patients because there were too few of them; the same agency did not believe patient care would suffer if a non-OASIS assessment were used because their nurses would continue to provide quality care to all agency patients.

Three agencies voiced serious concerns about the way a decision to permanently suspend OASIS data collection on private pay patients would impact agency behavior and the home health industry in general. The following quotes are from representatives of these three agencies.

“This [a permanent suspension of OASIS collection for private pay patients] would be a big mistake because the quality of patient care would suffer. All of home health quality improvement is based on OASIS. Right now, the home health industry is ahead of other health care settings in terms of benchmarking because of OASIS. We need consistent benchmarks - this will only become more true as managed care grows.”

“Congress should think about the message they are sending. They say they want to achieve system transformation in areas such as reduction in unnecessary emergent and inpatient care, but [if OASIS collection were permanently suspended] they won't be able to see what's going on with private pay patients and would be sending the message that they don't really care about the quality of care for all patients”.

“If OASIS is not collected on private pay patients, they could start getting substandard care - patient care and consistency would suffer, especially for those patients with poor reimbursement. Discontinuing OASIS on private pay patients would further decrease people's confidence that agencies provide high quality care. Insurance might not improve their reimbursement rates for home health care, and physicians would be more reluctant to refer patients. Without OASIS you don't get a clear picture of how beneficial home

health can be for a patient. How can agencies know how they are doing without outcomes?”

5.2 Discussions with Quality Improvement Organizations

Representatives from five Quality Improvement Organizations (QIOs) participated in interviews with Abt staff about the impact of the suspension of mandatory OASIS data collection for private pay home health patients. The QIOs interviewed serve states located in the four geographic regions of the United States that correspond to those used by the U.S. Census Bureau – Northeast, South, Midwest and West. Interviews were conducted by phone and lasted approximately one hour.

The QIO discussions covered four main topics: observed changes in patterns of data collection since the December 2003 suspension of mandatory collection on private pay patients; factors influencing Home Health Agency (HHA) decisions to continue or suspend OASIS collection for their private pay patients; current uses of OASIS data collected for both private pay and Medicare/Medicaid patients; and the potential impact of future Congressional action. A summary of the discussions is provided below.

Topic 1: Changes in patterns of OASIS data collection for private pay patients

- The QIOs in the Northeast were most likely to report that OASIS data collection has changed little since the suspension, and that most HHAs have continued to collect OASIS on private pay patients. QIOs in the South, Midwest and Western states reported more agencies discontinuing collection.
- Small agencies may be more likely to discontinue OASIS collection on private pay patients for two reasons. The first is that small agencies tend to have fewer resources, both for doing the OASIS assessments and in using the data OASIS provides. Secondly, they have fewer staff to coordinate, making it easier for them to manage the use of different assessment tools.

Topic 2: Factors influencing an agency's decision to continue or suspend OASIS

- A desire to maintain consistency of care and to have access to outcome data on private pay patients influenced many agencies to continue collection of OASIS on private pay patients.
- Many agencies continued OASIS collection on private pay patients because they believed that the suspension is only temporary and did not want to have to change data collection practices twice.
- Many agencies continued OASIS collection on private pay patients due to convenience issues related to not wanting to train and manage staff in the use of multiple assessment tools.
- The perceived costs and burden of OASIS collection are significant factors for agencies that decide to suspend OASIS collection on private pay patients.
- Lack of confidence in OASIS reliability and the validity of OBQI reports play a part in decisions to suspend OASIS collection on private pay patients.

- Agencies are not concerned that they would be cited by State Survey and Certification if they use a non-OASIS assessment for their private pay patients.
- The use of POC technology may influence agencies to collect OASIS data on all patients, but POC technology seems to be used less commonly outside northeastern and/or urban agencies.

Topic 3: Current uses of OASIS data collected on private pay patients

- Agencies have widely varying levels of interest in looking at OASIS data, and their levels of sophistication in using data also vary significantly. The range extends from HHAs that do not understand the OBQI process and have never invested the time or energy needed to understand outcome reports, to those that carefully track outcome measures of both Medicare/Medicaid and private pay patients using benchmarking vendors or in-house software systems.
- Agency leadership and the availability of QI staff have the greatest impact on an agency's interest in using, and ability to use, OASIS data.
- OASIS data collected on Medicare/Medicaid beneficiaries is being used almost exclusively to drive selection of areas for quality improvement, but when these QI efforts are instituted they improve patient care in ways that benefit private pay patients as well.
- Home Health Compare measures are used by many agencies for marketing purposes and some agencies are thinking ahead to pay for performance initiatives. Private payers and accrediting organizations currently appear to have little interest in data from private pay patient data, however, perhaps because they believe that data on Medicare/Medicaid patients accurately reflects the care received by all patients.

Topic 4: Potential impact of future Congressional action

- If Congress were to reinstitute OASIS collection for private pay patients, there would be a great deal of resistance from agencies unless the data were reported back to agencies.
- If Congress were to reinstitute OASIS collection for private pay patients, there would be concern about mixing Medicare/Medicaid and private pay patients in the same report. But agencies believe that there are already patient groups with different characteristics – Medicare and Medicaid, Fee for Service and Managed Care – that are grouped together in the current OBQI reporting process.
- If Congress were to reinstitute OASIS collection for private pay patients, some agencies – especially those who have dropped OASIS collection for private pay patients – would view this as a burden.
- If Congress makes the suspension permanent, more agencies will drop collection, especially small ones.
- All the QIOs interviewed see value in the continued collection of OASIS data on private pay patients for the purposes of care planning, quality improvement and benchmarking. Their statements follow.

“It’s important for agencies to have a complete picture of their performance and outcomes, across all payers. Quality of care should be the same for all patients.”

“There may be benefits to mandate OASIS for all; then all payer sources could be included in the reports and all outcomes by age groups could be viewed. This would help the national health initiative, for example.”

“As a QI person, I feel it would benefit agencies to be able to measure improvements in outcomes for their private pay patients.”

“It should be mandatory for all patients. Health care is more than just Medicare and Medicaid.”

5.3 Discussions with Accrediting Organizations

Many HHAs obtain accreditation from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) or the Community Health Accrediting Program (CHAP), either in response to competitive pressures or because managed care payers contractually require such accreditation. JCAHO or CHAP accreditation can grant these agencies “deemed status”; in other words, accredited HHAs are considered to have met Medicare certification requirements if they have met the JCAHO or CHAP requirements for deemed status. Agencies that serve veterans and their families, and/or contract with TRICARE, may also receive more favorable contract terms if they have met CHAP or JCAHO requirements.

Both CHAP and JCAHO have their own clinical data maintenance and submittal requirements. In order to learn how these data submission requirements may overlap or intersect with those of CMS, specifically regarding OASIS collection for private pay patients, a review of publicly available information about each of the organization’s assessment data requirements was performed. Relevant sections of JCAHO’s Comprehensive Accreditation Manual for Home Care were also reviewed. Finally, telephone discussions were also conducted with representatives of JCAHO and CHAP in order to understand the full range of data requirements that HHAs may have to satisfy for these accrediting organizations and we were interested to learn

JCAHO

The 2005 JCAHO manual specifically states that agencies are required to “select and use performance measures relevant to the services provided and populations served”. It also states that Medicare-certified home health agencies are required to collect and submit OASIS data to a state agency per CMS regulations. Agencies are required to share OBQI measures with JCAHO surveyors, and to discuss how the data were used to identify and prioritize performance improvement activities.

The JCAHO 2005 standards for Performance Improvement require a home health agency to: collect data to monitor its performance; systematically aggregate and analyze data; analyze any unfavorable patterns or trends; define and implement processes for identifying and managing sentinel events; use the information from data analysis to make changes that improve performance and patient safety and reduce the risk of sentinel events; and define and implement an ongoing, proactive program for identifying and reducing unanticipated adverse events and safety risks to patients.

Home care organizations that provide Medicare-certified home health services along with other types of services that do not require the collection of OASIS data are required to follow the performance measurement requirements for Medicare-certified agencies. However, JCAHO requires OASIS data collection on only those patients that CMS identifies as requiring OASIS. Agencies can meet their data collection and analysis requirements for other patients through use of clinical and health status measures based on JCAHO’s ORYX requirements.

The JCAHO representative we spoke with said that their requirements for collection of OASIS are based on the current CMS requirements. OASIS is not a requirement for private pay patients for this reason, but she also stated that there are areas where OASIS and OBQI measures did not seem appropriate for some patients since the populations were very different in terms of their baseline health status and may not even be homebound. Examples of areas of OASIS that were not considered appropriate for some private pay patients were the evaluation of incontinence for younger patients, and measurement of improvement in functional status for patients who were seen for only 1 – 3 visits or who did not have a goal of functional improvement. Wound care and medication management were identified as examples of two areas of OASIS that *were* considered appropriate for many patients, as was the analysis of use of emergent care and rehospitalization.

JCAHO has confidence that agencies they accredit are meeting their standards of care for their private pay patients, even if they do not collect OASIS data on them, because of their accreditation process and on-site surveys. This includes an examination of care processes for private pay patients and evaluates that they are receiving the same standard of care required for all.

CHAP

According to the CHAP representative interviewed by Abt staff, their home health standards were revised in 2004 and incorporate OASIS data collection and OBQI process for all agencies they accredit, even if they are not seeking deemed status. Comprehensive assessments must be completed on all private pay patients and CHAP review includes private pay patients when they assess agencies along the three parameters of clinical record, home visit and interview process. Similar to JCAHO's position, CHAP requires agencies they accredit to collect OASIS data only on those patients that CMS regulations specify and so dropped requirement of OASIS for all in December 2003.

The CHAP representative stated that although they don't require OASIS, using OASIS for all patients could potentially improve continuity of care. She noted that OASIS is a "tried and true tool" and that other assessments agencies may use have not been validated. She also stated that OASIS is seen as appropriate for all patients when built-in skip patterns are followed. When a section seems inappropriate (like incontinence) it may have more to do with how the assessor is collecting OASIS.

The CHAP representative offered the opinion that private pay patients could benefit from being included in benchmarking and that improving the quality of care for all home health patients is made more difficult by "the lack of a mandate from Congress." When OASIS is not required for all patients, agencies may lose the potential for meeting the needs of their patient population as a whole. It is also harder to hold agencies accountable and also harder for agencies to demonstrate accountability. At the same time, reinstating a requirement for OASIS for private pay patients might be a burden for some smaller agencies, although increasing use of technology is helping to ameliorate this issue.

6.0 Examination of OASIS Privacy Issues

6.1.1 Background

The initiation of any new government-required collection of individual-level data for accumulation in a central database is an event that will raise concern among affected parties and certain sectors of the public. The development and implementation of the OASIS data collection and reporting system was no exception. Significant concern was voiced by advocates within the home health industry, as well as outside advocacy groups focusing on OASIS as another case of government intrusion.³⁸ In addition to selected OASIS items identified as so sensitive that patients would refuse to answer and be refused services, HCFA's collection of data on private pay patients – whose care it was not subsidizing – was presented as a particularly egregious invasion of privacy.³⁹ After two months of the originally-mandated data collection (February 1999 – April 1999), data collection was suspended to allow for review of the data collection's conformance with the Paperwork Reduction Act requirements. Some of these concerns were also addressed. Specifically:

- Collection of OASIS data on private pay personal-care only patients was deferred indefinitely;
- Collection of the OASIS variable measuring "Financial factors limiting the ability of the patient/family to meet basic health needs: (M0160)" was deleted from data collection and transmission.
- Collection of OASIS data on private pay patients was retained, but the requirement to encode and submit the data to the state repository was deferred until a system could be put into place to encrypt or "mask" the identifier variables as the record was being transmitted to the state data repository.
- While the masking was incorporated into HAVEN in early 2000, the requirement to encode and submit the masked data on private pay patients was never implemented. However, some agencies did voluntarily encode and submit such records.
- Subsequently, Section 704 of the Medicare Modernization Act of 2003 officially removed the requirement that agencies collect OR submit these data as of December 2003.

Questions to be Addressed: In contemplating reinstating the collection of OASIS data on private pay patients, as well as inaugurating encoding and transmission of such information to the OASIS data repository, a number of questions arise in relation to data privacy and confidentiality:

³⁸ [http://www.cchconline.org/privacy/pcoaspriv.php3#sec ...](http://www.cchconline.org/privacy/pcoaspriv.php3#sec...) "OASIS is in and of itself a violation of privacy rights, an unauthorized access to personal information on citizens by the government."
<http://www.eagleforum.org/column/1999/apr99/99-04-07.html> ... "The 12-page fine-print form that home health care providers must fill out on each patient is extraordinarily detailed, offensively privacy-invading to the patient, and obviously exhausting and time-consuming for the employee conducting the interrogation." <http://www.privacilla.org/government/oasis.html>

³⁹ Senate Aging Committee Hearing, May 24, 1999, "Too Much Information? The Impact of OASIS on Access to Home Health Care."

- Are privacy issues (still) viewed as a significant concern vis-à-vis collection of OASIS data on private pay patients – by the home health industry? by patient advocates? by others?
- What are the threats to the confidentiality of OASIS data on private pay patients? Do they differ from the threats to OTHER data collected on such patients, or from the threats to Medicare/Medicaid patients' OASIS data?
- What are the implications of measures taken to protect OASIS data on private pay patients when such data are incorporated into the existing OASIS submission/reporting process?

6.1.2 Findings

Question: Are privacy issues (still) viewed as a significant concern vis-à-vis collection of OASIS data on private pay patients – by the home health industry? by patient advocates? by others?

We contacted representatives of the national home health industry organizations for their assessments. We were especially interested in the for-profit sector, and the American Association for Home Care (AAHC) canvassed its membership via email. In short, there was no evidence that this is still a “hot issue.” Providers complained about the burden of OASIS in general, but nobody raised data confidentiality as an issue in general, or in relation to collecting data on private pay patients. There was some feeling that the implementation of the Health Insurance Portability and Accountability Act (HIPAA) had eclipsed such concerns.

Corroboration is also provided by data from the national agency survey. Agencies who had suspended the collection of OASIS data on private pay patients were asked to rate a number of factors as to their importance in reaching that decision. Of the 15 factors presented for rating, “Concerns about confidentiality of OASIS data” was the factor accorded least importance by respondents.

The web sites for a number of the advocacy groups that opposed this data collection at the outset (see above) were checked to see if anything recent had been posted on this topic since 1999, and nothing could be found.

Question: What are the threats to the confidentiality of OASIS data on private pay patients? Do they differ from the threats to other data collected on such patients, or from the threats to Medicare/Medicaid patients' OASIS data?

Collecting any information on these patients that would not otherwise have been collected does increase the risk that the additional data collected COULD be revealed to a third party. Whether the OASIS as now collected included sensitive data not otherwise present in an HHAs' non-OASIS comprehensive assessment or clinical records depends on that agency's data collection practices. Within the home health agency, OASIS data on private pay patients are not masked; rather, they are protected by the same security safeguards accorded to other clinical data on patients served by the agency, including HIPAA. If OASIS does not include any data beyond what the agency normally collects and maintains by other means, using OASIS does not increase the internal risk of disclosure. Of course, a few incidents of inadvertent OASIS data disclosure have been reported (e.g., stolen laptops, disposal of computers with data records still intact.)

A potentially significant difference in the treatment of OASIS data is the transmission of such data to the state data repository. Before the data leave the HHA, patient identifiers (name, SSN, Medicare and Medicaid numbers) are masked using a standardized software algorithm that creates the uniform

output string whenever it is applied to the same input string. This uniquely identifies the beneficiary and allows the beneficiary's records to be linked across assessments (assuming that all identifiers are entered identically), so that outcomes can be calculated. The masking algorithm has been criticized as leaving enough other variables unmasked – date of birth, gender, race, start of care date, inpatient discharge date, diagnoses, etc.) that a patient could potentially be identified. Also, the (publicly-available) algorithm was described as potentially vulnerable to decoding by “reverse engineering” – feeding in a series of strings and monitoring the output to deduce the encryption logic. However, the algorithm's developer is reported to assess this possibility as extremely remote, and no reports were identified of this having occurred.

Once the data are stored in the repository, they are safeguarded in a manner similar to Medicare/Medicaid patient data, and subject to the risk of potential disclosures, mitigated by the additional protection of the masking of identifiers and record-level security in the Oracle database. Individual-level data in the repository are subject to release for a variety of uses (e.g., Medicare claims processing, survey/certification reviews, etc.), and while private pay patients would not be included in these activities, there is a small potential for inadvertent release. There were no reports of inadvertent releases of individual-level Medicare data, though CMS Central Office staff noted that they “cannot control what happens” to data in the state repositories nor the decisions made by state staff regarding release of data.

Question: What are the implications of measures taken to protect OASIS data on private pay patients when such data are incorporated into the existing OASIS submission/reporting process?

The software structure of the OASIS Data Repository has already accommodated masked assessments for private pay patients, since some agencies submitted such assessments even though they were not required. However, the masked records had caused some problems in the central Oracle data base at the outset (because the masked strings overflowed the identifier fields and were truncated, which made it difficult to match data). CMS staff have been planning to begin to reject masked records upon initial submission. Some Central Office staff voiced a very strong preference that if private pay data were to be collected, it should NOT be masked – as is the case currently with nursing home assessment data.

Masked records could theoretically be used in computing outcomes and generating quality indicators for publication on Home Health Compare. Masked identifiers can appear on agency adverse event reports, and there is a “lookback” function in HAVEN which stores the masked strings as well as the unmasked identifiers, so that the agency can identify a client whose ID masked. However, a potential consequence of masking is that it is impossible to pursue work utilizing the identifiers, such as attempting to link episodes for an individual where some of the identifiers were entered onto the OASIS form with small differences, or an identifier has valid changes over time. Thus, creating a single record with all of an individual's utilization (both Medicare/Medicaid and private pay) is virtually impossible.

A risk of utilizing the masking algorithm in data preparation and submission software is that it may not work correctly, and data could be disclosed. These errors already occur, albeit rarely. In the first 10 months of 2005, 9,474,453 assessments were submitted via the states to the national data repository. Of these, there were approximately 15,000 (about 0.1 percent) where it appears that masking seemed appropriate, but did not occur.

7.0 Discussion of Study Findings and Implications

This section summarizes findings from the survey, interviews and OASIS data analysis, and discusses the relevance of these findings to the research questions. Implications of the findings for future CMS policy are also discussed.

7.1 Status of private pay OASIS data collection

Questions we sought to answer on the status of private pay OASIS data collection were:

- What proportion of agencies has suspended collection of OASIS data on their private pay patients?
- What factors influenced agency decisions to suspend or continue collection of OASIS data on their private pay patients?
- What agency characteristics are associated with agencies that have elected to suspend or continue collection of OASIS data on their private pay patients?

Proportion of agencies that continued and suspended

Survey findings indicate that 65.38 percent of agencies are continuing to collect OASIS data on all adult, non-maternity patients receiving skilled service (all the OASIS items, collected at all the time points required for their Medicare patients). Based on our analysis of early and late responders (Section 3.4), and our interviews with Quality Improvement Organizations (Section 5.2), we are confident that this is a reasonably accurate reflection of the status of agency data collection practices at the time of the survey. However, the number of agencies may have changed since the time the survey was fielded (May – June 2005). Our analysis of private pay OASIS data from OCS showed a steady decline in the number of agencies submitting data on private pay patients over time, and this may reflect a continuing trend toward fewer agencies collecting OASIS data on their private pay patients since the December 2003 suspension.

Reasons for suspending

The reasons reported by agencies as most important in their decision to suspend private pay OASIS collection were discussed in Section 4.3 and primarily related to burden: the cost of collection; the demands on staff time required for collection which affect staff productivity; the burden on patients; and problems retaining and/or recruiting staff due to OASIS burden. OASIS burden was also discussed in relation to the level of reimbursement from private payers in our interviews with agencies (summarized in Section 5). Agencies reported that in some cases, reimbursement from private payers is too low to cover the time needed to do a thorough comprehensive assessment. Several agencies also stated that the OASIS instrument needed to be streamlined in order to be less resource-intensive, and that the time parameters and deadlines for submitting OASIS data should be relaxed to reduce the burden associated with OASIS.

Reasons for continuing

Reduction in burden was also the underlying benefit cited by respondents whose agencies continued OASIS data collection on their private pay patients. Agencies that continued private pay OASIS data collection rated “fewer training issues when one data collection form is used for all patients,” and “fewer training issues when our data collection policies remain unchanged” as the two most important reasons for their decision to continue. Interviewees also said that they felt that continuing OASIS

collection on all patients saved them time, trouble and money. Some interview respondents reported that collecting OASIS on all patients prevented confusion among staff about which tool to use and potentially avoided dissension among staff that might result if some were assigned to patients that required OASIS while others didn't.

Another commonly cited reason for continuing OASIS data collection was the belief that it meets the Conditions of Participation requiring comprehensive assessments and that it facilitates consistent assessment and care planning. Many agencies stressed that they felt performing an OASIS assessment was part of good care and that all of their patients "deserved to be treated the same". Interest in obtaining outcomes data on private pay patients, and concern that the suspension was only temporary, were tied as the fifth most important reasons for continuing OASIS data collection on private pay patients.

Agency characteristics

Agency size and urban/rural status does not appear to be correlated to the decision to continue or suspend OASIS collection for private pay patients. However, region of the country was correlated, with agencies in the Northeast approximately 4 times more likely to continue private pay OASIS data collection, and agencies in the South almost twice as likely, than those in the West. This finding may be due to the fact that agencies in the Northeast and South had a much higher participation in OBQI demonstration projects and so have longer experience with OASIS, have integrated the OASIS assessment more thoroughly into their agency's operations, and may be more committed to and proficient at the use of outcomes data.

In contrast, for-profit agencies are about half as likely to have continued collection as non-profit or government agencies. Payer mix was also significantly correlated to agency decision-making about continuing OASIS data collection on all patients. Agencies with a higher percent of private pay patients (more than 20 percent) were one third as likely to continue collection as those that had a high percent of patients requiring OASIS. This makes sense when considering that the higher the percentage of private pay patients, the greater the savings in staff time when private pay OASIS data collection is discontinued.

7.2 Benefits derived from OASIS data collection

In this section we summarize the survey and interview findings to answer the following study questions:

- What benefits are agencies deriving from the analysis of Medicare/Medicaid OASIS data?
- What benefits are agencies deriving from the analysis of private pay OASIS data?
- What benefits *could* agencies potentially be deriving from the collection of private pay OASIS data that they are not currently receiving?
- What factors and agency characteristics (such as size) influence the degree of benefit the degree of benefit derived by agencies from private pay OASIS data collection?
- What barriers prevent agencies from using and benefiting from private pay OASIS data?

Agency benefits derived from Medicare/Medicaid OASIS data collection

Even those agencies that suspended OASIS collection for their private pay patients reported using and benefiting significantly from OASIS data collection on their Medicare/Medicaid patients.

Patient assessment and care planning. The most highly rated benefit related to OASIS data collection was, “Collecting OASIS data helps to standardize our agency’s comprehensive assessment process”, with 77 percent of agencies agreeing. In addition, a majority of agencies reported that OASIS data help them identify a patient’s need for specific programs or interventions, that collecting OASIS data improves their agency’s overall patient care planning process, and that OASIS data help identify the need for referrals for services such as social work or occupational therapy. The ability to collect patient assessment data consistently with a tool that has been tested nationally was the benefit cited most frequently by HHA interview respondents.

Agency processes. The majority also of survey respondents agreed that collecting OASIS data facilitates a multidisciplinary approach to patient care at their agency, and that OASIS data helps them identify the need for developing special programs or interventions. Over half of survey respondents report using OASIS data for controlling costs and increasing efficiency, identifying staffing needs and assisting with agency resource allocation decisions. Approximately one third of agencies agreed that OASIS has helped their agency make efficient allocation/use of agency resources in delivering care.

Outcome improvement. Use of OASIS for patient outcome improvement was also rated highly by respondents overall. A majority of survey respondents agreed that OASIS data help them identify care processes needing improvement, OASIS has helped their agency to improve patient outcomes and the quality of the home health services they provide, and that OASIS has helped the home health industry improve the quality of homecare services. In our agency interviews many agencies noted that their quality monitoring and improvement programs and their orientation and continuing education training are all OASIS-based. They stated that posting their OBQI outcomes reports for staff to see functions as a morale booster as staff members take pride in seeing the improvements. It helps to remind staff of the reasons why OASIS is important and reinforces the practice changes.

Relations with other organizations and consumers. Survey respondents also indicated that Medicare/Medicaid OASIS data can be useful in their agency’s dealings with other organizations and for the purposes of marketing, with over half of agencies saying they use the data for fulfilling requirements of accrediting organization and private payers. In addition, slightly less than half report using the data to market to the public or consumers and for marketing to referral sources.

Agency benefits derived from private pay OASIS data collection

Administrative functioning. As discussed above (in relation to the decision to continue OASIS data collection on private pay patients), agencies report that the most important benefits they receive from continued private pay OASIS data collection relate to agency administrative functioning, such as savings in time spent training and maintaining staff competency by avoiding the use of multiple assessment tools.

Patient assessment and care planning. Agencies that have continued to collect OASIS on private pay patients report using their OASIS data for individualized care planning, identifying patient need for referrals and identifying patient need for special programs/interventions. The rate of use is not appreciably different than the rates reported by agencies that use non-OASIS assessments on their private pay patients. However, interview respondents from HHAs and QIOs expressed the belief that OASIS assessments are in many cases more comprehensive, valid and reliable than non-OASIS assessments and could potentially lead to better assessment and care planning for private pay patients.

HHA and QIO representatives interviewed also said that as long as the COPs required a comprehensive assessment, agencies preferred not to “reinvent the wheel” and instead to use a nationally validated tool.

Outcome improvement. Because OASIS data on private pay patients can be used to calculate outcome measures with internal agency software systems or by private vendors, agencies that have continued to collect OASIS can benefit from using the data for quality improvement efforts in ways that agencies that have suspended collection cannot. Survey respondents from continued agencies report that OASIS data are valuable for assessing outcomes for private pay patients, that OASIS data on private pay patients are valuable for determining appropriate quality monitoring or improvement activities for those patients, and that collecting OASIS data on private pay patients provides them with a better picture of overall agency performance. Of the agency representatives we interviewed that are able to examine outcomes for their private pay patients, all said continued OASIS collection was important to them to understand the “big picture” of what is happening with their entire patient population and enabled them to have give them a true understanding of the impact of any care initiatives they undertook.

Marketing to consumers. Of the agencies that continued OASIS data collection on their private pay patients, a little over one third report using the data for marketing to the public, significantly more than the agencies that suspended private pay OASIS data collection. This makes sense due to the fact that OASIS data can be benchmarked against outcomes of other agencies.

Potential agency benefits from private pay OASIS data collection

Ability to analyze OASIS data and benchmark. Currently, only those agencies that contract with an outside benchmarking vendor or use internal outcomes software are able to benefit from examining the OASIS data they collect on their private pay patients. The lack of reporting available from CMS was one of the chief complaints that led to suspension of the requirement for private pay OASIS data collection in 2003. In our interviews with agency representatives, agencies that currently do not have access to outcome reports for their private pay patients reported they would like to be able to do benchmarking and trend analysis for those patients.

If CMS provides reports on private pay OASIS data similar to those generated on Medicare/ Medicaid data, agencies could receive a case-mix report that presents the profile of all the agency’s patients as well as an Adverse Event Report on “sentinel” events that were potentially either caused by or could have been avoided with appropriate care, such as falls, wound infections and urinary tract infections that would include private pay patients. They would also have the opportunity to compare their clinical performance to their prior performance and to the national average on the 41 OASIS-derived outcome measures for all their private pay patients.

Outcome improvement. Agencies that currently are able to access similar reports generated internally or by vendors say they provide a data-driven basis for quality improvement activities and allow them to discover potential areas for process-of-care adjustments to improve the care provided to their private pay patients. They also provide a more comprehensive understanding of the impact of any care initiatives they undertake and where they need to target staff educational efforts. Examples of QI efforts that agencies report they have instituted for both their Medicare/Medicaid and private pay patients included: pain management, medication management, falls prevention, improvement in dressing, improvement in surgical wounds, and pathways for dyspnea, diabetes, and congestive heart failure. These benefits would be potentially available to all Medicare-certified agencies if OASIS data collection is mandated for private pay patients and CMS produces reports based on those data.

Marketing to consumers and payers . In addition to quality improvement, nationally benchmarked reports would assist agencies in their ability to use private pay data for marketing to consumers, and

marketing and negotiating with payers. Agency and QIO representatives we interviewed reported that the majority of private payers currently have little interest in private pay OASIS data because they believe that Home Health Compare outcome measures for Medicare/Medicaid patients accurately reflect the care received by all the agency's patients. Our analysis of private pay and Medicare/Medicaid outcomes data in discussed in Section 2 indicates that within-agency correlation between these two payer groups is low, however, so that outcomes based on Medicare/Medicaid patient data cannot be generalized to serve as a proxy for private pay patients. Several of the agencies representatives we interviewed said that their share of private pay patients is growing, and that some insurers are starting to be more interested in their OASIS outcomes. Some also forecast that that outcome data will grow in importance with the increase in pay for performance initiatives.

Factors and agency characteristics that influence the degree of benefit derived from private pay OASIS data collection

In Section 4.4, we analyzed how size and other agency characteristics differed among respondents and how they impacted decisions uses and benefits associated with OASIS data collection on private pay patients.

Agency size . Size was not generally correlated with the uses or benefits derived from private pay OASIS data collection. Smaller agencies are less like to submit their private pay OASIS data to a private vendor for benchmarking, and are also less likely to use private pay OASIS data for marketing to referral sources and payers, and negotiating with payers, than large agencies. Small agencies were more likely to report they suspended collection due to the number of private pay patients they serve being too small for calculation of outcome measures and the number of visits too few to impact outcomes for those patients.

Urban/Rural Status Rural agencies were the least likely to agree with the statement that OASIS helps their agency to save money. Otherwise, urban/rural status was not generally a significant influence on the uses or benefits derived from private pay OASIS data collection. Like the small agencies, rural agencies were also more likely to report they suspended collection due to the number of private pay patients they serve being too small for calculation of outcome measures

Region . Agencies in the West that continued collecting private pay OASIS data report using it more frequently than do other areas of the country for case-mix analysis, identifying targets for OBQI, tracking patient outcomes in response to QI initiatives, identifying staff training needs, assisting with resource allocation decisions, fulfilling requirements of other payers and benchmarking against other agencies. Agencies in the West were also more likely to agree that the collection of OASIS data on private pay patients was valuable for all of the listed benefits.

Payer mix. Having a low percentage of patients for whom OASIS is required (less than 80 percent) was a significant predictor that the agency is less likely to agree that the collection of OASIS data on private pay patients was valuable for all of the listed benefits.

Barriers to agencies benefiting from private pay OASIS data

Several potential barriers to the use of private pay OASIS data emerged in our interviews with QIOs and with agencies that have continued OASIS collection on private pay patients (discussed in Section 5). These are summarized below

Lack of outcome reports. As described above, the ability to measure outcomes of private pay patients, identify care processes needing improvement, measure improvements in outcomes, benchmark care against other agencies and use private pay outcomes for marketing is currently

restricted to those agencies that either contract with a private vendor or have invested in internal resources to process private pay OASIS data.

Lack of buy-in to OASIS and OBQI at the agency management level. According to the QIO representatives interviewed, agency leadership and the availability of QI staff have an important impact on an agency's interest in using, and ability to benefit from, OASIS data. QIOs report that some agencies have never invested the time or energy needed to understand outcome reports or to track outcome measures of even their Medicare/Medicaid patients. Several agencies we interviewed agreed that a lack of commitment to the OBQI process and the unwillingness to devote sufficient resources to OASIS data collection and analysis were the biggest barriers to use of private pay OASIS data. Some respondents reported that improvements to the OASIS tool are needed to increase the level of acceptance of OASIS and OBQI. These improvements would include addressing concerns that OASIS response categories do not allow agencies to demonstrate patient progress, and perceptions that OASIS is too subjective and "gameable". In addition, some respondents expressed concern that the suspension of OASIS data collection for private pay patients sends a message that CMS is not fully committed to quality improvement for all home health patients.

Shorter stays, lower reimbursement, and low frequency of private pay patients. One additional issue that was frequently raised by agencies is that they provide fewer home health services for private pay patients than they would for comparable patients with Medicare or Medicaid coverage. Agencies believe that they rarely have time to make an impact on the patient's status and achieve improvements because patients are discharged or transferred so quickly from home care into an outpatient setting. Coupled with the fact that many agencies have a low percentage of private pay patients, some agencies question whether outcome data for private pay patients would yield information about appropriate targets for improving care. At the same time, TEP members raised concerns that without outcome data being collected and reported on private pay patients, there is no way to determine if this reduction in services is having a negative impact on the care private pay patients receive.

Data privacy and masking. One issue that did not seem to be a barrier to private pay OASIS collection was concern about privacy of the data. As evidenced by the survey results and discussions with representatives of the national home health industry organizations, privacy issues relating to collection of OASIS data on private pay patients do not seem to be a major concern among providers. The implementation of HIPAA appears to have subsumed the particular concerns about OASIS by providing much more stringent protection for all individual-level health data. Our analysis indicates that the threats to the privacy of OASIS data on this population do not seem to exceed those of the OASIS data for government-paid programs.

Masking of identifiers on OASIS records submitted to the state and national Data Repositories is an additional measure of security, but it may create some problems for data reporting and analysis. While masked records could theoretically be used in computing outcomes and generating quality indicators for publication on Home Health Compare, it is impossible to pursue work utilizing the identifiers, such as attempting to link episodes for an individual where some of the identifiers were entered onto the OASIS form with small differences, or an identifier has valid changes over time. Thus, creating a single record with all of an individual's utilization (both Medicare/Medicaid and private pay) is virtually impossible. Some CMS staff see masking as creating problems in the data systems used to process OASIS data question the need for it, believing that "if we have the authority to collect it, it shouldn't have to be masked".

7.3 Costs and burdens associated with OASIS data collection

In this section we summarize the survey findings to answer the following study questions:

- What is the incremental cost associated with OASIS assessment versus non-OASIS assessment for private pay patients?
- What factors and agency characteristics (such as size) influence agency costs related to OASIS data collection?

Assessment staffing. One of the factors affecting assessment costs is the mix of staff completing the assessments and the number of staff completing assessments (since each staff member who completes the comprehensive assessment must be trained, regardless of how many (or few) assessments s/he performs.) In our sample, nurses completed an average 89% of all assessments, the remainder being completed by physical therapists (10%) or other therapists (1%). The largest agencies were most likely to use therapists to complete their comprehensive assessments (average 21%); small agencies made least use of therapists (5%).

Assessment labor hours and cost– Medicare/Medicaid patients. On average, nurses spent about two hours (122 minutes) completing a start-of-care for a Medicare/Medicaid patient, 82 minutes for a followup/recertification assessment, and 59 minutes for a discharge assessment. When therapists completed the assessment, they took a few minutes less (109, 75, and 54 minutes, respectively.) Additional staff (clerical, medical records, QI staff) spend an average of 41 minutes on start-of-care assessments, 32 minutes on followup/recertification assessments, and about 25 minutes on discharge assessments. There is no significant difference in assessment times for Medicare/Medicaid patients between agencies who continued OASIS data collection on private pay patients and those who suspended such data collection. The total assessment labor cost for each Medicare/Medicaid assessment type is estimated to be about \$62 for start-of-care assessments, about \$45 for a followup/recertification assessment, and about \$32 for discharge assessments.

- **No apparent impact of “reduced burden” followup assessment on assessment time.:** The OASIS followup/recertification assessment was reduced from 71 to 23 items in December 2002 in an effort to reduce HHA burden. Agencies were asked if they had reduced the followup assessment to the minimum required, dropped some items, or made no changes. It was expected that assessment time would be lower for agencies who had reduced items to the minimum. The observed differences was very modest – 108 total assessment minutes vs. 115 minutes for agencies who made no changes.

Assessment labor hours – Private Pay patients. Nurses at agencies that continued to collect OASIS on private pay patients spent a few minutes less on these assessments than on Medicare patients (116 minutes vs. 122 for an average Medicare start of care, 78 minutes vs. 82 for a Medicare followup, 54 minutes vs. 59 minutes for a Medicare discharge assessment). This could be due to some small differences related to data processing, or it could be a difference in the characteristics of the private pay patients (e.g., younger age) that allows the assessment to happen more quickly. However, agencies that suspended OASIS data collection for private pay patients spent substantially less time on their comprehensive assessments of their patients - 78 minutes vs. 116 for start of care, 45 minutes vs. 78 for a followup, 37 minutes vs. 54 minutes for a discharge assessment. The total assessment labor cost for each private pay assessment type is estimated to be about \$59 for a start-of-care OASIS assessments vs. \$42 for other start-of-care assessment; , about \$43 for an OASIS followup/recertification assessment vs. \$25 for alternative; and \$31 for an OASIS discharge assessment vs. \$21 for another type of discharge assessment.

Other labor costs – Data Quality Review. In addition to the conduct of the assessment itself, HHA staff must review the OASIS assessment to assure that it is complete and accurate. For Medicare patients, payment depends on the OASIS data, and errors on the assessment can result in delays in processing and inaccurate payments. Agencies reported spending about \$28 per assessment on data quality reviews for Medicare/Medicaid assessments, and slightly less (\$23 to \$27) on review of assessments for private pay patients. The difference between Medicare/Medicaid and private pay patients is modest (5%) at the agencies that continued OASIS for private pay, and more substantial (16%) at the agencies which suspended. Economies of scale are evident, with the largest spending about half as much per assessment as the smallest agencies (\$20 vs. \$40 per assessment for Medicare/Medicaid, \$18 vs. \$33 for private pay patients.)

Other labor costs – Assessment Training. Agencies that continued OASIS data collection on private pay patients need train staff on one assessment protocol only. The average total cost of this training (which includes initial training of new employees as well as ongoing in-service training and other educational activities across all staff types – clinical and clerical) was estimated at about \$11 per assessment. For agencies that suspended OASIS data collection for private pay patients, the cost of OASIS training for Medicare/Medicaid assessments was estimated at an average \$13 per assessment; in addition, such agencies were estimated to invest \$22 per assessment in training (of all staff types) on non-OASIS assessments of private pay patients. This number seems large, which is likely due either to agency reporting error OR to the fact that most agencies serve modest numbers of private patients, which reduced the number of assessments over which the training investment can be “spread”. As with data quality review, there are significant economies of scale and the largest agencies spend about half as much per assessment as the smallest agencies.

Other costs. Surveyed home health agencies were asked to report non-labor costs related to their comprehensive assessment activities, including items such as printing, data entry, data scanning, or data validation services, software and hardware, or consultants (e.g., training.) The overall average reported cost per assessment was about \$7, the median was \$1. The largest portion (63%) of these costs was software and computer costs. Agencies that had suspended OASIS data collection for private pay patients reported costs that were 26% lower than those which had continued, with proportional differences in most of the cost components.

Total assessment cost – Medicare/Medicaid patients. The average total cost per OASIS start of care assessment was about \$108 at agencies which continued to collect OASIS on private pay patients; \$90 for a followup, and \$76 for a discharge assessment.) OASIS costs for agencies that chose to suspend OASIS for private pay patients was actually slightly higher (\$113 for start of care, \$90 for followup/assessment, and \$81 for a discharge assessment.)

- **Total assessment cost – Private Pay patients.** The average total cost per assessment of private pay patients was slightly less at agencies for those who continued to collect OASIS (about \$3 less for each type of assessment.) At agencies which had suspended OASIS data collection, the private pay patients’ assessments cost about \$92 for start of care, \$76 for followup/recertification, and \$72 per discharge.

Cost of Mandating OASIS Data Collection for Private Pay Patients. We estimated the per-assessment incremental cost of mandated OASIS data collection. For some cost components, we compared the costs already reported for private pay patients and Medicare/Medicaid patients. For others, we asked agencies directly what their costs would be if OASIS were mandated. The total incremental cost PER ADMISSION is estimated at \$54.30.

- **No differential impact by agency size** . The net impact of such a mandate on any particular agency would depend on its patient volume, its use of nurses versus therapists in conducting assessments, (and full versus part-time staff) and its payer mix (which determines the number of additional OASIS assessments to be conducted.) We calculated the net impact on assessment minutes. The average was around 1% for agencies which had continued OASIS data collection vs. 7 to 8% of agencies which had suspended OASIS. By size, there was no clear pattern in observed changes – the impacts ranged from 2% to 5%, with no clear pattern across assessment type or agency size categories, suggesting that mandating OASIS data collection would differentially impact agencies that are smaller or larger.

Factors and agency characteristics that influence the costs and burdens associated with OASIS data collection

Size . Agency size was not correlated with the number of minutes reported to complete Medicare/Medicaid or private pay assessments. Agencies in the lowest 2 size quartiles did report a higher number of RN data quality review hours per assessment for both Medicare/Medicaid assessments and private pay assessments. The number of RN training hours per assessment for OASIS assessments was also higher for agencies in the smallest size quartile.

Location. Rural agencies reported higher RN minutes for private pay Start-of-Care Assessments, although rural/urban status was not significantly related to the total staff costs for private pay Start-of-Care Assessments. Region was significantly related in terms of the number of RN minutes and total staff costs reported for Medicare/Medicaid Start-of-Care Assessments, but not for RN minutes for non-OASIS assessments. Non-OASIS RN training hours were reported to be significantly higher for agencies in the South and the Midwest.

Proprietary status. For-profit agencies reported significantly fewer RN minutes for Medicare/Medicaid Start-of-Care Assessments. However, for-profits reported more RN data quality review hours and RN training hours per assessment for both private pay and Medicare/Medicaid assessments.

Use of Point of Care technology. Agencies that had a high proportion of staff using POC technology reported a significantly higher number of RN minutes for Medicare/Medicaid Start-of-Care Assessments and for private pay Start-of-Care Assessments. They also had an overall higher total staff costs for private pay Start-of-Care Assessments and higher RN data quality review hours per assessment for both private pay and Medicare/Medicaid assessment. The difference in staff costs for Medicare/Medicaid and private pay assessments was significantly smaller for agencies with high use of POC technology.

Staff shortages. Agencies reporting a staffing shortage reported a higher number of RN minutes and higher total costs for both Medicare/Medicaid Start-of-Care Assessments and for private pay Start-of-Care Assessments. These agencies also reported higher RN data quality review hours and higher RN training hours per assessment for Medicare/Medicaid assessments. Non-OASIS RN training hours also were higher.

7.4 Potential impacts of including private pay OASIS data in outcome reports

In Section 2, we discuss the methodology and findings of our analysis of a sample of OASIS data for Medicare and other patients obtained from a private home health benchmarking vendor, Outcomes

Concept Systems. Here we summarize the results of our findings as they relate to the following study questions:

- How do case-mix and outcomes differ for Medicare/Medicaid and private pay patients?
- Can patient outcomes currently collected for Medicare/Medicaid patients at the agency level be generalized to serve as a report for all adult non-maternity patients receiving skilled services from an agency?
- Does the risk-adjustment approach used in the current outcome reports perform adequately for private pay patients?

Differences in case-mix and outcomes

In our analysis of private pay and Medicare/Medicaid OASIS data, we examined patient diagnosis, patient characteristics, and patient outcomes. As expected, significant differences were seen between the patients based on payment source. Our findings, detailed in Sections 2.3 and 2.4, support the perception that private pay patients are commonly acute post-operative patients, with fewer chronic functional and cognitive disabilities and a greater level of natural support in the home. Not surprisingly, with no risk adjustment model applied, private pay patients did better on most outcome measures than Medicare or Medicaid patients.

Using Medicare/Medicaid outcomes as a proxy for private pay outcomes

A separate question is whether the outcomes currently produced on Medicare/Medicaid patients adequately represent the care provided to private pay patients. Our analyses showed that within agency correlation between Medicare/Medicaid and private pay patients was less than 50 percent for 21 of the 24 outcomes examined. This indicates that outcomes based on Medicare/Medicaid patient data cannot be generalized to serve as a proxy for private pay patients.

Adequacy of the current risk adjustment model for private pay patients

Our analyses of Medicare, Medicaid and private pay outcomes data suggest that there are important differences in outcomes for home health patients with different payment sources that remained even after applying the risk adjustment models. While it is possible that these differences reflect a better quality of care for private pay patients, it is more likely that the differences are largely due to the inability of the risk adjustment models to account for all of the sources in variation in outcomes across the different payer groups. Our analysis showed that the independent variables in the risk adjustment models accounted for less of the variance in outcomes for private pay patients than for Medicare/Medicaid patients, a finding that was not surprising given that the risk adjustment models were developed using a sample of OASIS assessments that did not include private pay patients.

For this reason, comparisons of agency performance based on data that is aggregated across private pay, Medicare, and Medicaid patients could produce misleading information, particularly if the comparisons are made between agencies with large differences in the proportion of private pay patients. Outcomes based on combined data confound differences in agency performance (i.e., how well they achieve particular outcomes) with differences in payer mix, given that agencies with more private pay patients would tend to have better outcomes. Comparison of outcomes between agencies with small and high proportions of private pay patients may not be valid for assessing quality of care given the results described above. This is less of a concern for facilities with comparable proportions of private pay patients and for outcomes for which there were only small differences across different payment sources.

7.5 Implications of study findings for future CMS policy-making

It is not possible to accurately predict the actual impacts of a decision by CMS to either permanently suspend or require OASIS data collection on private pay patients. However, in this section we offer some potential impacts based on our interviews and the results of the survey, for CMS consideration.

7.5.1 Potential positive impacts of reinstating the mandate for OASIS data collection for private pay patients

Private pay patients and consumers Requiring OASIS for private pay patients has the potential to improve patient care by insuring that patient assessment tools used by all Medicare-certified agencies include, at a minimum, the nationally-validated OASIS questions. The collection of OASIS data also creates an environment in which care processes can be improved by examining the outcomes and targeting the specific characteristics and needs of the private pay patient population.

It also may provide patients and consumers the ability to select a care provider by examining outcome reports that include patients with similar characteristics and conditions and noting how well patients of one agency fare compared to other agencies and to the state and national average. TEP members noted that it may also assist in protecting private pay patients from under-provision of services.

Private payers would benefit from being able to review outcome data that includes patients with the characteristics and conditions of their subscribers and so may be able to direct patients to the agency where they would receive the best care. Survey respondents and some agency representatives indicated that most private payers currently do not display significant interest in OASIS data. We did not speak with private payer representatives as part of the study. It is reasonable to posit, however, that private payers might be more interested in home health quality data if it were benchmarked.

Home health agencies. Agencies that collect private pay OASIS data report benefits related to improved agency administrative functioning (such as fewer training issues and greater consistency in patient assessment and care planning).derived from using a single tool for assessment and care planning. As reported above, the majority of survey respondents whose agencies continued OASIS data collection on private pay patients agreed that OASIS data are valuable for assessing outcomes for their private pay patients; determining appropriate quality monitoring or improvement activities for those patients; and that continued collection provides them with a better picture of overall agency performance.

If CMS produces case-mix, outcome and adverse event reports that included private pay data, agencies would have the ability to use the data to examine outcomes, improve care processes and market to organizations and groups such as consumers, referral sources, payers and accrediting organizations. These reports may also be useful in negotiating rates with private payers.

Home health industry. Consistent collection of outcomes data may improve the industry's standing and negotiating position with payers and providers who are reluctant to have their patients cared for in a home health setting because of questions about the quality of care provided. It may also assist the industry to prepare for upcoming pay for performance initiatives.

CMS. As noted in the introduction to this report, Sections 1861 and 1891 of the Social Security Act establish the responsibility of CMS to monitor the quality of care provided by Medicare-certified HHAs to all patients, regardless of payment source. A requirement for OASIS data collection for all adult non-maternity patients would allow CMS to fulfill that role by enabling CMS to evaluate and monitor the quality of care provided in the home environment for all patients across agencies and

over time and ensure that Medicare policies do not have a negative effect on either Medicare or non-Medicare patients

7.5.2 Potential negative impacts of reinstating the mandate for OASIS data collection for private pay patients

Costs to home health agencies. Reinstating private pay OASIS data collection would not create any financial impact on the estimated 20 - 25 percent of Medicare-certified agencies that provide care *only* to Medicare/Medicaid patients. Those agencies that currently collect data on private pay patients but do not enter it into an electronic database (approximately one quarter of those that have continued collection) would have to the increased expense associated with data entry and transmission. For agencies that have suspended private pay OASIS data collection, we estimate that costs per assessment would increase as shown in Table 4.47 – an average of \$54.30 per admission. Furthermore, the costs required for OASIS assessment may not be reimbursed by private payers that typically authorize fewer visits and services than are received by comparable OASIS patients.

Our analysis showed that a decision to permanently reinstitute private pay OASIS data collection would not differentially impact agencies by size or urban/rural status, but it would impact agencies differently depending on their payer mix and proportion of private pay patients. The mean proportion of private pay patients across all agency size groups and regions is reported to range from a low of 11 percent to a high of 23 percent. Therefore, the estimated cost per assessment would apply to between 11 and 23 percent of patients in the approximately 30 percent of agencies that have suspended OASIS data collection on private pay patients.

Increased staff burden. Survey respondents cited concerns about staff becoming overburdened if OASIS were required for all patients. Since the OASIS assessment typically takes longer to complete than the average non-OASIS assessment, clinician productivity would necessarily be somewhat reduced. If agencies did not hire additional staff to handle the requirement for a more resource-intensive assessment, patient care might suffer.

Patient burden. Survey respondents reported that concern about “patient burden” was an important reason for suspending OASIS, and private pay patients would be subjected to a longer assessment if OASIS data collection were mandated for all.

Costs to private payers. Private payers may be put in the position of having to increase reimbursement to agencies that are required to perform a more resource-intensive assessment.

Need for CMS to develop reporting mechanisms. CMS would be the need to develop a mechanism for agencies to receive reports on their private pay patients. The differences in outcomes across different payer groups noted in Section 7.4, above, suggests that it might be appropriate to report outcomes and case mix profile information separately for private pay and Medicare/Medicaid patients (and also potentially to report outcomes and case mix profile information separately for Medicare and Medicaid patients). If CMS elects to require collection, coding and transmission of OASIS assessments for private pay patients for use in outcome reporting, then it may also be appropriate to develop refinements to the risk adjustment models. Refinements would include interaction terms for independent variables and payment source for the key independent variables on which there are important differences in coefficients for patients with different payment sources.

7.5.3 Potential positive impacts of permanently suspending OASIS data collection for private pay patients

Increased clinician productivity and reduced staff burden. Agencies that discontinued OASIS collection on their private pay patients would have a potential for increased clinician productivity if they switched to a less resource-intensive assessment tool.

Agency cost savings. As shown in Table 4.44, if agencies currently collecting OASIS data on private pay patients choose to cease doing so, they have the potential to save an average of \$11 to \$12 on each start-of-care and followup assessment, plus about \$4 on each discharge assessment. However, these savings would likely be somewhat offset by increases in OASIS assessment cost, as fixed costs are spread over a shrinking pool of OASIS assessments.

7.5.4 Potential negative impacts of permanently suspending OASIS data collection for private pay patients

Medicare/Medicaid patients. Concern was voiced by agency representatives, QIO staff, and TEP members that a permanent suspension of OASIS data collection would result in the a system in which there would be negative incentives to caring for Medicare beneficiaries due to the requirement for a more resource-intensive comprehensive assessment. These incentives could result in reduced access and inferior outcomes for Medicare patients.

Home health agencies. A large proportion of respondents view using two assessment tools, one for Medicare/Medicaid patients and one for private pay patients, as more of a burden. A decision to permanently suspend the mandate for OASIS collection on private pay patients may actually be perceived as a burden by agencies that would prefer to continue collection. Those agencies would have a choice between switching to a non-OASIS tool for their private pay patients or being placed in competition with agencies that would have potentially lower costs. They would also be competing for staff with agencies that would be offering a “reduced paperwork” environment. Based on survey results and discussions with home health agency administrators it also seems likely that a significant proportion of the agencies that have continued collecting OASIS on their private pay patients under the “temporary” suspension of OASIS requirements would stop collecting OASIS data if the suspension were made permanent.

Home health industry. Agency representatives said that a permanent suspension might erode the industry’s standing and negotiating position with payers and providers because of questions about the quality of care provided. One accrediting organization representative offered the opinion that improving the quality of care for all home health patients would be made more difficult by “the lack of a mandate from Congress,” and that if OASIS is not required for all patients, agencies may lose the potential for meeting the needs of their patient population as a whole. It would also become harder to hold agencies accountable and harder for agencies to demonstrate accountability. An agency representative commented that all of home health quality improvement is based on OASIS and that the home health industry is ahead of other health care settings in terms of benchmarking because of OASIS. The need for consistent benchmarks will grow as managed care increases.

CMS quality initiatives. Agency representatives cautioned that a decision to permanently suspend private pay OASIS data collection weakens CMS’s message about the importance of quality improvement for all patients and the goal of achieving system transformation in areas such as reduction in unnecessary emergent and inpatient care.

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