

## **SUMMARY**

of the report on

### **OASIS and Outcome-Based Quality Improvement in Home Health Care:**

Research and Demonstration Findings, Policy Implications,  
and Considerations for Future Change

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March 2002

## Preface

The Center for Health Services Research in the Division of Health Care Policy and Research is a multidisciplinary research organization established in 1976 at the University of Colorado Health Sciences Center. The research programs of the Center are focused on health policy, clinical issues, health outcomes, quality measurement, quality evaluation and improvement, performance measurement and analysis, case mix assessment and measurement, cost and payment analysis, health care regulation, and research and quantitative methods. Substantively, the primary research undertakings of the Center have been in long-term, geriatric, gerontological, chronic, and managed care in both noninstitutional and institutional provider environments.

This document is a summary of the four-volume report series for three studies: The National Medicare Quality Assurance and Improvement Demonstration project, funded by the Centers for Medicare & Medicaid Services (CMS), Department of Health and Human Services, (Contract No. 500-94-0054), the CMS Project Officer for this contract is Dr. Armen Thumaian of the Quality Measurement and Health Assessment Group; The New York State Outcome-Based Quality Improvement Demonstration project, funded by the New York Department of Health (NYDoH), (Contract No. C-015111), the NYDoH Project Officer for this contract is Dr. Nancy Barhydt; and the Assisting Home Care Providers in Effectively Monitoring and Using Patient Outcomes project, funded by the Robert Wood Johnson Foundation (RWJF), (Grant No. 031950), the Program Officer for this grant is Dr. David Colby.

The findings and conclusions summarized here derive from several projects conducted during the past 15 years that provided the clinical, analytic, and scientific foundations for this developmental effort. The entire program is indebted to over a thousand home care clinicians and administrators who contributed to all facets of outcome measurement and quality improvement research during this period.

# **OASIS and Outcome-Based Quality Improvement in Home Health Care:**

## **Research and Demonstration Findings, Policy Implications, and Considerations for Future Change**

### **Context**

While no doubt exists that home care is a valuable benefit for patients, the age and frailty of the home care population, combined with the very attribute that defines such care -- its provision in the patient's home -- render this an exceptionally vulnerable population. Quality assessment is far more challenging in home care than in most fields. It must rely on procedures and activities that often are different from those in institutional settings. As a result, for many home care agencies, quality monitoring and improvement methods are not sufficiently effective at this time.

As wide swings in the supply, use, and cost of home health services were occurring between the mid-1980s and 2000, concerns regarding the lack of evidence on patient-level effects of home health care were heightening. Neither individual home care agencies nor CMS, termed the Health Care Financing Administration (HCFA) at that time, had objective information to assess the impacts of these changes on the health of Medicare beneficiaries and other home health patients. Accurate information on patient outcomes was not available to isolate possible quality deficits and target quality improvement efforts. The need for effective performance monitoring intensified as Medicare payment first lessened under the Interim Payment System (IPS) in the late 1990s, and then was restructured under the per-episode Prospective Payment System (PPS), which can create perverse incentives to underserve patients.

Anticipating the need for outcome-related information that might encourage continuous quality improvement (CQI) in home health care, HCFA, in conjunction with the Robert Wood Johnson Foundation and later the New York State Department of Health, embarked on an undertaking in the late 1980s to assess the feasibility and utility of measuring the outcomes of home health care. This 15-year program evolved through several stages of research and development. The findings summarized here pertain to the recently completed outcome-based quality improvement (OBQI) demonstration stage of this program. The research that contributed to the outcome measure system and the OBQI framework spanned approximately 10 years prior to the demonstrations. It included clinical, conceptual, and empirical research to specify an outcome measure system for home care, the data set necessary for measuring outcomes, and the OBQI methodology.

### **Outcome-Based Quality Improvement**

The OBQI applications framework includes two components: outcome analysis and outcome enhancement. The outcome analysis component begins with home care agencies collecting, computerizing, and transmitting uniform patient-level data (from the Outcome and Assessment Information Set, OASIS) to a central source. Outcome, case mix, and adverse event reports are provided to each participating home health agency on an annual basis. The most important report is the All Patients' Outcome Report, which provides a risk-adjusted comparison

of agency performance measured in terms of patient outcomes (1) relative to a national reference or benchmark sample and (2) from one year to the next. The 41 outcome measures used in this report include functional, physiologic, emotional/behavioral, cognitive, and health care utilization (e.g., hospitalization) measures. Functional outcomes are stressed because of the emphasis in home care on assisting patients to become or remain sufficiently independent to stay in their homes, avoiding institutional long-term care. In the outcome enhancement component of the OBQI framework, an agency has considerable latitude to conduct its own CQI activities. These include selecting target outcomes for quality improvement, and conducting process-of-care investigations that culminate in the development of plans of action specifying how care behaviors will be changed to enhance target outcomes. Thereafter, the plans are implemented within each agency, and the outcome reports for the next year show the extent to which target outcomes were influenced.

## **The National and New York State OBQI Demonstrations**

In accord with a research design that would permit evaluation of the effectiveness of OBQI, a National Demonstration was conducted between 1995 and 2000. The demonstration involved 54 home health agencies from 27 states. If successful, the demonstration approach could serve as a prototype for a national OBQI program for all Medicare-certified home health agencies. This national OBQI trial was designed to establish a methodology and template to (1) collect uniform (OASIS) data on all adult, nonmaternity home health patients to measure and report patient outcomes; (2) utilize outcome measures for CQI in home health care; and (3) provide a foundation for enhancing patient outcomes that could lead to a more efficient systemwide approach to performance improvement in home health care. Shortly after the National Demonstration started, the New York State Department of Health implemented a statewide OBQI demonstration that began with 19 and would eventually involve 33 certified agencies as well as 24 noncertified agencies. The New York State Demonstration (and analysis of its impacts) ended in 2001. Both programs were administered by the University of Colorado Center for Health Services Research.

## **Demonstration Findings**

Findings from the demonstration trials indicated that OBQI had a substantial impact on patient outcomes. The relative rates of decline in hospitalization over the three- and four-year outcome reporting cycles of the National and New York State Demonstrations were 22% and 26%, respectively. (Demonstration agencies were asked to select hospitalization as one of their target outcomes.) Analogously, the rates of improvement for other target outcome measures (typically health and functional status measures such as improvement in ambulation, improvement in dressing upper body, stabilization in management of oral medications, improvement in status of surgical wounds, stabilization in anxiety level, and improvement in urinary tract infection) averaged between 5% and 7% per year in both OBQI demonstration trials. The target outcome improvement rates were significantly higher than comparison outcomes that were not targeted as part of the outcome enhancement approach under OBQI (change rates in comparison outcomes were about 1%). The magnitude of the improvement in hospitalization rates and other target outcomes was substantial, particularly since home health clinicians had never undertaken this type of quality improvement. Further, the latter stages of these demonstrations were conducted during a time of unprecedented and radical decline in payment (under IPS), which

was accompanied by large reductions in visits per patient and serious threats to agency survival. Thus, the OBQI impacts on patient outcomes were attained despite a marked decrease in patient care revenues.

## **Reasons for OBQI Effectiveness**

After the demonstrations concluded, the staff of most participating agencies continued to use OBQI. Demonstration agency staff generally exhibited a strong sense of ownership of OBQI (and OASIS), reflected by the manner in which they adapted this new quality improvement approach to their agencies' day-to-day operations. Several factors accounted for the successes of the OBQI demonstration programs. First, information obtained, analyzed, and used in feedback reports is precise, understandable, and of practical value for clinicians. Second, when implemented correctly, requisite data items and CQI activities are integrated into and replace current items and activities, rather than adding substantially to the day-to-day operational routine of clinical staff. Third, the OBQI applications framework encourages clinical staff and quality improvement coordinators to be rigorous and innovative in areas such as (1) choosing target outcomes, (2) isolating important care behaviors to change in their agency or care environment, (3) writing a focused plan of action documenting target care behaviors to change and how to change them, (4) motivating other clinicians to change, and (5) ensuring that changed behaviors continue. Such factors serve as the basis for providing informative feedback to clinicians and give rise to a flexible and pragmatic approach to enhancing outcomes.

## **Problems Encountered and Barriers Overcome**

The most significant challenges faced by the demonstration agencies were four in number. First, the novelty of conceptualizing and using patient outcomes as performance indicators required a transition from the traditional mindset with which home care clinicians tend to provide patient care. This initially led some clinicians to question OASIS and the emphasis on collecting uniform data to measure outcomes. During the second year of OBQI, clinicians typically made the transition to an outcome-oriented mindset and better understood the need for OASIS data. Second, collecting uniform patient status data required agency clinical staff to conduct more precise assessments. Because home care agency staff tend to be highly independent, use of standard language in assessments was not always well-received. Administrative support for the long-term value of the data assisted clinicians to work through this change process. Third, a large portion of the home health industry was not automated in terms of clinical records and other aspects of patient care during the demonstration period (this continues to be true in many agencies today). As a result, computerization and transmission of OASIS data, which would not have been a new concept in many health care settings, required an orientation to a more data driven management approach. Adaptations to the new automation requirements, when they did not occur fairly quickly, occurred during the second year of OBQI, after the first round of outcome reports. Fourth, the impacts of IPS were demoralizing to administrative and clinical management staff as well as to most clinicians, who gradually became aware of the substantial revenue declines in their agencies during the latter part of the demonstration period. The fact that they persisted with OBQI as a means of monitoring and improving outcomes was a testament to the commitment to patient care that had emerged at these agencies (or that already existed and was reinforced during the demonstrations), and to their belief in the cost effectiveness of OBQI.

A few agencies had specific difficulties with OASIS or the OBQI approach. The more significant problems that occurred at these agencies resulted from either (1) inadequate attention to efficiently integrating OASIS into the day-to-day assessment and data collection routines of clinical staff, or (2) technically flawed or inefficient implementation and maintenance of systems for computerizing and transmitting OASIS data. These difficulties were typically resolved as agencies gained experience with the OBQI framework. Virtually no attrition in agency participation occurred during the demonstration period and, by the end of the demonstrations, the number of agencies that continued to experience operational problems or negative staff reaction had dwindled to two or three in both demonstrations combined.

## **A National OBQI Program**

On the basis of preliminary findings from the OBQI demonstrations and the value of OASIS for case mix adjusting payment rates under PPS, in mid-1999 HCFA mandated (1) OASIS data collection for all skilled level patients and (2) transmission of such data to a central source for Medicare and Medicaid skilled level patients at certified agencies. CMS is now moving forward with implementing OBQI nationally. Under the nationwide approach, training and data management programs have been and will continue to be administered at the state level. OASIS data are transmitted to a state agency and then to a central repository from which OBQI and other reports are produced. At this writing, (1) case mix and adverse event reports have been made available electronically to all certified agencies in the United States, (2) OASIS data have been used for case mix adjustment during the first year of prospective payment, and (3) national OBQI training has begun and the first round of outcome reports was completed for all certified agencies in early 2002.

The national outcome reports will serve as the basis for voluntary OBQI activities at the agency level. They also will assist the Medicare survey and certification process by providing specific information to identify strong home health agencies that need relatively little attention as well as agencies in need of greater improvement. A program is underway to facilitate the involvement of Quality Improvement Organizations (QIOs, formerly Peer Review Organizations or PROs) in assisting home health agencies to implement and use OBQI for outcome enhancement. As experience is gained with outcome reports designed for home health agency use, current CMS plans assume that some version of OASIS-based outcome reports will be available to the public.

## **Impediments to Implementation**

While nearly all non-identifier OASIS items are used for OBQI, only selected OASIS data items currently are used to case mix adjust per-episode payments under the recently implemented PPS for certified agencies. Some have suggested reducing OASIS to only those items currently used for payment and eliminating other OASIS items to be used for OBQI (and for potential future refinements to case mix adjustment of payment rates). The demonstration findings suggest this would be a disservice to patients, providers, and payers concerned about quality monitoring and improvement.

It is understandable that concerns have arisen related to the burden of OASIS data collection, encoding, and transmission on the part of home health agencies. Such concerns have

resulted in suggestions to eliminate OASIS altogether, reduce the frequency of data collection, and restrict the types of patients on whom OASIS data are collected. One reason for industry concern is the fact that Medicare revenues for home health care were reduced by over 50% (under IPS) between 1997 and 2000. It was an unfortunate coincidence that the national mandate for OASIS data collection occurred toward the end of this period. Because OASIS was to be used for case mix adjustment under PPS, certified home health agencies were required to implement OASIS data collection and transmission in accord with an extremely ambitious schedule. These two factors -- the conclusion of IPS concurrent with the OASIS mandate and the ambitious implementation schedule for OASIS (announced in January and June 1999 regulations) -- led to far more concern about OASIS than otherwise would have been the case. The demonstration trials showed that implementation of OASIS and OBQI requires a gradual maturation process that typically culminates in acceptance of the necessary transitional steps, followed by application of OBQI and OASIS data for outcome enhancement and other practical purposes at the home health agency level.

### **Recommendations: Staying the Course with Quality Improvement**

Despite logistical and operational challenges, one indisputable fact necessitates changing the way the quality of home health care is monitored and evaluated -- namely, prospective payment for Medicare home health care. Because of PPS, it is apparent that Medicare home health care has changed significantly and permanently. Acceptance of per-case payment for an episode of patient care, and acceptance of the freedom to blend the types and volume of services that comes with such payment, translate into specific responsibilities. In particular, providers must accept responsibility and accountability for patient outcomes that occur over episodes of care for which payment is received. Further, CMS must accept responsibility and accountability for ensuring that adequate information is available to evaluate outcomes of care across payment episodes, preferably in a manner that is useful to home health providers as well as for program evolution, external monitoring, and regulatory purposes. In sum, PPS has ushered in not only a new era of financing home health care under Medicare, but also a new era of accountability. It is impossible to return to or rely on past practices of monitoring and evaluating quality in view of the powerful perverse incentives under this payment system -- incentives that likely will continue for decades to come.

For CMS to carry out its responsibilities in the home care field in a balanced, yet effective manner under the current circumstances is a considerable challenge. OBQI offers a tool for helping to meet the challenge, but only if it continues to evolve. OBQI and the several applications that follow from it in the context of CMS programs should have an explicitly recognized and permanent evolutionary component targeted at (1) identifying potential program improvements through scientific and objective analysis, and (2) implementing improvements in accord with a set of principles that minimize operational impacts while maximizing returns. Presently, the most significant barrier to implementing and maintaining OBQI, including its OASIS data system, is a general lack of awareness (on the part of home health providers) of the rationale for and operational components of OBQI. This issue can be addressed by continuing with planned training and information dissemination programs, refining them as OBQI evolves, and using them on an ongoing basis to facilitate change in the national OBQI system.

Several of the industry-voiced concerns about OASIS-related burdens are overstated, but some may be valid. It would be reasonable to revisit the burden issue, objectively studying its various facets and, if appropriate, determining how payment might be changed to address valid and recurrent inadequacies in the payment system. This analysis should be based on precise information collected in a scientific manner, free of potential biases of self-interest. Refinements to OASIS can be incorporated into the OBQI evolution program. This program can address refinements needed for more equitable case mix adjustment under PPS, better risk adjustment of outcome measures for OBQI, and improved reliability of selected OASIS data items.

Because of the statutory requirement that CMS evaluate quality for Medicare and non-Medicare patients, the recommendation is made that OBQI (and the OASIS data system) should continue to be targeted at all patients who receive skilled care from home health agencies. Using OASIS data collected on skilled care patients, an evaluation should be undertaken of whether PPS is producing a two-class delivery system for Medicare vs. non-Medicare patients, analyzing risk-adjusted patient outcomes, case mix adjusted use and costs, and trends in case mix that might reflect differential changes in access to home health care for Medicare and non-Medicare patients. The final decision regarding OASIS data for nonskilled patients, however, should continue in abeyance. Revisions to OBQI and OASIS for personal care patients are being developed and will be empirically tested through a new demonstration trial in New York State. The results of this experience for nonskilled care patients likely will be useful.

In addition to informing clinical management and resource allocation decisions within individual agencies, the OBQI data system can and should be used to strengthen and streamline various components of the current home health agency survey and certification system. Plans for making this system more outcome-oriented in nature will benefit agencies as well as CMS. As experience is gained with OBQI, progressively more information can be shared on how to (1) efficiently evaluate and improve patient-specific outcomes, (2) continue to refocus and streamline the survey process, and (3) facilitate QIO assistance with agencies' quality improvement programs. OASIS-based outcome data also can be used for public reporting on home health quality, by modifying the national outcome reporting system to produce reports that are understandable to and useful for the general public.

In all, the findings of the OBQI research and development program indicate that OASIS-derived outcome reports for individual agencies and their patients will considerably extend the quality assurance approaches that previously have been employed in the home health care field. They will form a provider-driven foundation for the national OBQI system, contributing to an evolving partnership among the home care industry, home health patients and their families, and the Medicare program. This partnership will benefit patients as well as individual agencies and CMS programs that support home health care if OBQI is properly implemented, maintained, and refined.