

CMS Report to Congress

Medicare Gainsharing Demonstration: Final Report to Congress

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Legislative Mandates for the Medicare Gainsharing Demonstration

Under Section 5007 of the Deficit Reduction Act (DRA) of 2005, as amended by Section 3027 of the Affordable Care Act, the Secretary was required to conduct a qualified gainsharing demonstration program (the Gainsharing Demonstration) “to test and evaluate methodologies and arrangements between hospitals and physicians designed to govern the utilization of inpatient hospital resources and physician work to improve the quality and efficiency of care provided to Medicare beneficiaries and to develop improved operational and financial hospital performance with sharing of remuneration as specified in the [demonstration] project.” The primary goal of the demonstration was to evaluate gainsharing as a means to align physician and hospital incentives to improve quality and efficiency. This demonstration began October 1, 2008 and ended September 30, 2011. As part of this mandate, the Secretary is required to submit this Final Report to Congress. This report summarizes the final evaluation results for the two sites participating in the demonstration at the time of implementation:

- Beth Israel Medical Center (BIMC), New York, New York
- Charleston Area Medical Center (CAMC), Charleston, West Virginia

CMS solicited volunteer participating sites for the Gainsharing Demonstration in fall 2006. Applications were due to CMS on November 17, 2006. At the time of implementation in October 2008, only two sites (BIMC and CAMC) participated in the demonstration. CAMC operated under the demonstration for 1 year, and then elected not to continue participation in the demonstration past December 2009. CAMC withdrew from the demonstration for a variety of reasons, including continued concern over financial risk for post-acute care costs.

Although the anticipated start date for the demonstration was January 1, 2007, demonstration sites did not begin the implementation process until October 1, 2008. Originally, the demonstration was authorized to continue through December 31, 2009. However, the demonstration was extended through September 30, 2011, as a result of the Affordable Care Act enacted on March 23, 2010. BIMC elected to continue implementation through that extended end date. CAMC elected to end its participation in the demonstration as of December 31, 2009, and was evaluated only through that time period.

Overview of the Evaluation Design

RTI International (RTI) conducted an independent evaluation design under contract to CMS. This RTC summarizes the primary findings. The complete RTI Final Report on the Evaluation of the Medicare Gainsharing Demonstration (the “Final Evaluation Report”) is attached as an appendix (Appendix I) and as a reference for a full description of BIMC and CAMC’s gainsharing methodology, the evaluation and analytic design, and detailed findings. Specific reference will be made in this RTC to relevant sections within the Final Evaluation Report.

The primary goal of the Gainsharing Demonstration was to consider gainsharing strategies aimed at improving the quality of care and efficiency in health delivery systems. The demonstration sites implemented approaches that may better align physician and hospital financial incentives and ultimately lead to reductions in the overall internal hospital costs of care

according to methodologies determined by the sites. The gainsharing sites were required to maintain quality of care. Participating sites were not required to generate Medicare program savings, but CMS structured the demonstration to ensure budget neutrality. Specifically, participating sites in the Gainsharing Demonstration were required by CMS to maintain per episode Medicare payments that did not exceed the amount providers otherwise would be paid if the demonstration were not in place. Participating hospitals with per episode Medicare payments in excess of the latter amount were required to pay CMS the difference in Medicare payments.

The evaluation addressed a variety of research questions and assessed the effects of different gainsharing models on:

- operational experience
- internal hospital savings
- physician referral patterns
- Medicare expenditures and savings
- quality of care
- beneficiary satisfaction

A summary of the primary analytic task approaches used by RTI follows.

Overall, the RTI evaluation used a trended-baseline and difference-in-difference methodology to determine whether expenditures and quality of care changed for participating hospitals during the demonstration. Comparison groups were necessary because the demonstration applicants otherwise could compare only their own performance year experience to that of a base year (i.e., a simple pre-post analysis). Observing only pre-post differences does not control for changes experienced by similar nonparticipants during the demonstration period. One must observe both types of differences to determine the effects attributable to the Gainsharing Demonstration. Therefore, RTI also compared the performance of the demonstration sites with that of independent comparison sites not participating in the Gainsharing Demonstration. A complete summary of the comparison group selection methodology is provided in Section 3 of the Final Evaluation Report.

Site visits and physician focus groups were required under this evaluation contract awarded to RTI. This qualitative data collection process documented and analyzed initial implementation and ongoing operations of the Gainsharing Demonstration sites. Site visits were conducted for CAMC and BIMC in the fall of 2010. A follow-up second visit was conducted with BIMC in November 2011; RTI did not revisit CAMC, as it had withdrawn from the demonstration. RTI discussed the participation decision, details of the demonstration design, and initial and ongoing implementation; methods and evidence for cost reductions and quality impacts attributable to the intervention; and relationships with physicians and other providers. Paralleling and in coordination with the site visits, physician focus group discussions were also conducted. The goal of the physician focus groups was to gather information on physicians’

experience and satisfaction with the gainsharing arrangements at their respective sites. In these focus groups, RTI collected in-depth information on physicians' behavioral responses to incentives, the development of gainsharing methods at each site, and physician satisfaction with demonstration arrangements.

The RTI evaluation included an analysis of Medicare payments to identify any savings to Medicare. Though the Gainsharing Demonstration sites were not required to generate Medicare savings, CMS was highly interested in how the demonstration affected Medicare expenditures. Hypothetically, increased efficiency and savings in hospital internal costs driven by changes in physician practice patterns had the potential to change Medicare Part B costs.

Another critical aspect of the evaluation was an assessment of whether quality of care was affected by the gainsharing financial incentives. The quality-of-care analyses in the evaluation compared changes in quality measures for demonstration hospitals with those from comparison hospitals. An additional aspect of quality of care was patients' perspectives about the care they received during their hospital stays. The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey provides annual measures on patient satisfaction for participating hospitals. CMS made participation in HCAHPS a requirement for the demonstration sites. For the evaluation, RTI analyzed the difference in beneficiary satisfaction between demonstration and comparison hospitals before and after program implementation.

Finally, the opportunity to earn gainsharing incentive payments could provide physicians practicing at demonstration hospitals an increased financial incentive to avoid potentially high-cost admissions by referring patients with less severe conditions to the participating sites and by transferring more severe patients to other hospitals. To monitor these potential referral patterns impacts due to gainsharing, RTI conducted analyses that included tabulating and statistically testing differences between the demonstration hospital and its competitor hospitals (before and during the demonstration) on patient severity, transfer patterns and referrals to non-demonstration hospitals.

The next sections of this RTC briefly summarize the gainsharing interventions implemented by CAMC and BIMC. Additional information regarding the gainsharing interventions is provided in Chapter 2 of the Final Evaluation Report attached as Appendix I. The remainder of this RTC will summarize the primary findings of the Final Evaluation Report.

Charleston Area Medical Center, Charleston, West Virginia

CAMC is the main tertiary care hospital serving West Virginia, northeastern Kentucky, and southeastern Ohio, including more than 300,000 people in the Charleston metropolitan area. The CAMC gainsharing model focused on cardiac diagnosis-related groups (DRGs). CAMC established savings initiatives for each DRG in the demonstration. No gainsharing bonus payments were awarded if no internal savings were generated. CAMC anticipated that internal savings would be generated by the following initiatives:

- examination of physician practice differences
- use of laboratory resources as needed

- evaluation of product usage
- increase in patient flow
- negotiation of lower prices for medical devices and supplies

The CAMC gainsharing intervention did not anticipate Medicare savings; it expected cost savings to be internal to the hospital. Medicare payment, internal staff and consultant costs, and Medicare patient volume were expected to remain constant. CAMC measured physician quality of care provided based on several factors to ensure that quality of patient care remained the same. Worse performance on any of the defined minimum standards for an individual physician would make him or her ineligible to receive the gainsharing bonus.

Beth Israel Medical Center, New York, New York

BIMC is a large, urban, academic hospital with 1,106 beds on two campuses: a downtown Manhattan site (Petrie) and a community hospital in Brooklyn (Kings Highway). BIMC included most medical and surgical DRGs in its demonstration. Enrollment was voluntary for physicians. At the time of the application, 600 physicians had been employed by the hospital's medical staff for at least 1 year and were thus eligible to enroll in the demonstration. Ultimately, 271 physicians participated in the Gainsharing Demonstration at BIMC. BIMC adopted a gainsharing plan designed by Applied Medical Software, Inc. (AMS). A pool of bonus funds was prospectively estimated from hospital savings on the basis of the following factors:

- total available incentive is a percentage of the best practice variance for each all-patient refined DRG (APR-DRG)
- best practice variance = (actual spending – best practice cost)
- best practice cost = spending of the lowest-cost 25th percentile

If no hospital savings were realized, no bonuses were allocated to physicians participating in the demonstration. An incentive pool was calculated for every APR-DRG, and then pools for all APR-DRGs were summed. Physicians earned a share of the total available incentive on the basis of their own efficiency or lower costs. Medical and surgical specialists had two separate gainsharing algorithms: one based on costs relative to their low-cost peers (performance) and another based on their own cost improvement (improvement). Total incentives were weighted toward improvement in the first year and then moved toward performance weighting during later years.

CMS was concerned that gainsharing could encourage physicians to change their inpatient discharge patterns, resulting potentially in increased overall post-acute care costs. This possibility is of particular concern when gainsharing models, such as the one implemented by BIMC, focus on reduced lengths of inpatient stays. If this had occurred in the BIMC model, the demonstration may not have been budget neutral. BIMC implemented strategies to reduce internal facility costs. BIMC's cost control strategy included overall shorter inpatient stays,

facilitated by conducting patient rounds on weekends, writing discharge orders early in the morning, and decreasing consultation waiting time. BIMC also planned use of fewer marginal diagnostic tests, a reduction in pharmacy expenses, and more efficient use of operating rooms. BIMC implemented more cost-effective use of critical care, evidence-based selection of medical devices, and avoidance of duplicative care. Finally, BIMC improved the quality and timeliness of medical records, which it believed should have an overall impact on improved efficiency.

BIMC implemented a variety of physician quality standards that, if not met by individual physicians, would make the physicians ineligible for the gainsharing bonus. These overall standards are as follows:

- Overall readmission rate within 7 days must not increase.
- Adverse events and malpractice experience must not increase.
- Physicians must comply with available quality measures.

BIMC also implemented procedures to track patient complaints related to premature release, track readmission rates, and implemented systematic communications with post-acute care providers to ensure that post-discharge outcomes were not negatively affected by the demonstration.

Budget Neutrality

CMS required participating sites in the Gainsharing Demonstration to maintain per episode Medicare payments that did not exceed the amount providers otherwise would be paid if the demonstration were not in place. Participating hospitals with per episode Medicare payments in excess of the latter amount must repay the difference in payments to Medicare.¹ Both BIMC and CAMC were determined to be within budget neutrality criteria specified and were not liable for payments to Medicare.

Internal Savings and Bonus Payments

The primary aim of the Gainsharing Demonstration was to allow hospitals to adopt efficient processes to generate internal savings and reward physicians for contributing to the realized efficiencies. Internal savings were the savings *determined by the participating hospitals* resulting from the practices that they implemented under the demonstration.² Internal savings represented the base from which bonus payments were allocated. Both BIMC and CAMC reported achieving internal savings and distributed bonus payments to physicians participating in the demonstration who they determined to have maintained acceptable quality of care

¹ The episode of care under this demonstration was defined as including a 14-day pre-admission period and a 30-day post-discharge period.

² Unlike budget neutrality, the process of determining internal savings and allocating bonus payments was totally internal to the participating hospitals. Thus, the participating sites allocated their own funds and the process used was not directly linkable to costs for Medicare patients or Medicare payments.

performance. Bonus payments could not be based on the volume or value of referrals,³ were capped at 25 percent of the fee schedule payment amount for similar cases, and all payments had to be linked to quality improvements.

Summary of Evaluation Findings

In the evaluation of the Gainsharing Demonstration, RTI analyzed the impact of the Gainsharing Demonstration gainsharing models on hospital efficiency, physician practice patterns, Medicare expenditures, quality, and beneficiary satisfaction. The Final Evaluation Report, included as Appendix I to this RTC, focused on the available performance years for both sites. For CAMC, RTI evaluated impacts during the single performance year in which this site participated. For BIMC, RTI presented findings from all 3 performance years.

The evaluation findings presented have a few limitations. The CAMC site operated for only 1 year and the demonstration at this site was limited to a subset of cardiac-related DRGs. Both of these factors limit the generalizability of CAMC's gainsharing experience and performance and RTI's analysis of them. The findings reported for BIMC are more robust because they represent 3 performance years for a wide range of DRGs. Finally, the RTI analytic approach for both sites focused on a difference-in-difference methodology. This approach is useful for the purposes of estimating the impacts of a complex intervention while controlling for existing trends in key outcomes that may have occurred even in the absence of the demonstration. However, results based on this methodology should be interpreted with some consideration of the relative baseline values of the intervention and control groups. Particularly with regard to quality of care, groups whose performance at baseline approaches high performance have less ability to improve over time.

Operational Experiences: One element of the RTI evaluation focused on the performance and operational experiences of the participating sites. RTI gathered this information through a series of site visits with hospital leadership and staff, supplemented by focus group discussions with physicians participating in gainsharing.

CAMC and BIMC implemented different gainsharing methodologies, each with a different clinical focus. For these reasons, direct comparisons between the findings of these two different sites should be made with caution. Still, some common themes that emerged from the RTI site visits and physician focus groups may point to lessons learned about the overall gainsharing model.

First, both sites agreed that gainsharing is a promising model for health care reform but that in practice the model may work better for some hospitals than others. Overall, individuals RTI spoke with at both CAMC and BIMC felt that the gainsharing model was a promising way

³ The authorizing legislation provided, however, that an incentive payment made by a hospital to a physician in accordance with the demonstration project would not implicate the physician self-referral prohibition in section 1877 of the Act, the anti-kickback statute in section 1128B(b) of the Act, or the civil monetary penalty in section 1128A of the Act for hospital payments made to a physician to reduce or limit services.

to improve health care delivery by improving physicians' awareness of cost and by better aligning hospital and physician financial incentives. Both sites also reported that the gainsharing model improved communication between physicians and hospital administration on issues related to lowering costs and maintaining or improving quality of care.

Second, sites found that it was challenging to fully educate participating physicians on the gainsharing reporting metrics, their underlying data, and the overall purpose of the project. Although the sites had different clinical focuses, both provided similar detailed quality-of-care and cost performance reports to participating physicians as a way to substantiate the payment (or nonpayment) of gainsharing incentives. However, the RTI site visits and focus groups found that many physicians didn't understand the reports, although this situation appeared to have improved somewhat by the second site visit to BIMC. Physician understanding did improve somewhat over time, but this increased level of understanding required what hospital leadership reported as considerable effort and cost. One-on-one meetings between hospital leadership and physicians, as implemented by BIMC, seemed to be a promising way to improve physician understanding of and buy-in to the metrics. But because physicians generally struggled with understanding and accepting the performance information presented the perceived direct link between the actual amount of gainsharing payments and improvements in cost and quality of care was not always clear to the participating physicians.

In addition, physicians who participated in the focus groups generally commented that the performance data were often "too old" (performance data presented to physicians were generally lagged 6–9 months) and they felt that more timely information would be more powerful. Leadership in both sites felt that the overall gainsharing model was successful, but mostly in improving the communication between hospitals and physicians and in improving awareness about the need to lower costs and maintain and improve quality of care. RTI generally found that physicians who participated in the focus groups had few if any specific descriptions of practice patterns they changed as a result of the gainsharing performance incentives. Hospital leadership was generally less than confident that the performance metrics provided to individual physicians under gainsharing resulted in widespread changes in physician behavior.

Finally, RTI found that ongoing operational success of a gainsharing model depended greatly on a strong organizational champion and on significant investment, in time and other resources, by the participating site. Both demonstration sites discussed the substantial level of effort required to implement and maintain a gainsharing model. Both sites also stressed that making gainsharing work in practice requires an internal champion within the implementing organization.

A complete summary of the implementation and organizational response (site visit and focus group analysis) can be found in Section 4 of the Final Evaluation Report.

Internal Hospital Savings: One goal of the Gainsharing Demonstration was to reduce the hospital's internal costs enough to generate savings that could be shared with participating physicians. Both CAMC and BIMC determined that internal savings were generated and incentive payments were therefore made to participating physicians. There were no available data to independently verify these self-determinations of internal savings. For the 36 months

from October 1, 2008 through September 30, BIMC's total internal savings⁴ achieved by participating physicians for intervention cases that qualified for an incentive was \$37,517,343. BIMC distributed \$1,546,143 in incentive payments. For the 13 months from December 1, 2008 through December 31, 2009, the total internal savings achieved by CAMC physicians for intervention cases that qualified for an incentive was \$116,830. CAMC distributed approximately \$89,911 in incentive payments to physicians.

Medicare Expenditures and Savings: Savings to the Medicare program (separate from internal hospital savings) were not required in this demonstration. However, the incentives for behavioral and other changes inherent in the gainsharing model had the potential to reduce Medicare payments per episode through reductions in physician Part B charges, post-acute care, lab tests, and potentially other Part B services. RTI's findings found no evidence that such changes occurred.

Four types of episode payments (expenditure) variables were constructed:

- (1) Total episode payments which includes Medicare payments to all providers in the three years;
- (2) episode payments excluding Medicare's basic IPPS payment to the index hospital and outlier payments to the index hospital;
- (3) episode payments excluding only the fixed inlier DRG payment to the index hospital and
- (4) episode payments for only the 14-day pre-admission and 30-day post-discharge periods.

Further detailed information may be found in Appendix I.

For BIMC, average total episode payments were \$22,127 in the base period which increased to \$23,634 at the end of its third performance year. BIMC's comparison hospitals average total episode payments also increased during the performance period, increasing \$485 more on average, from \$23,413 to \$26,122. For CAMC, average total episode payments were \$32,813 in the base period and increased to \$36,614 in its one performance year. CAMC comparison hospital average total episode payments increased more on average, growing from \$33,833 to \$38,464.

Medicare payments to CAMC physicians were an average of \$171.69 per episode less than those made to physicians at its comparison sites. These savings, however, did not affect any of CAMC's four total episode Medicare payment measures (which did not decrease). RTI did not find a significant impact of the Gainsharing Demonstration on BIMC's per-episode Medicare payments over the course of the demonstration. However, RTI found what turned out to be a temporary significant impact of the first year of the Gainsharing Demonstration on BIMC's per-episode Medicare inpatient physician payments. The difference-in-difference coefficients for BIMC's four episode Medicare payment measures all were all negative, but only one was

⁴ Savings were computed in comparison to the base year. They were limited to claims in the rate year where the performance incentive calculated was greater than 0. BIMC imposed an additional requirement of year-over-year savings in order for incentives to be dispensed.

statistically significant (total episode payments during performance year 1). Despite BIMC's self-reported emphasis on reducing length of stay (LOS) as a source for reducing internal costs, BIMC's average LOS was actually slightly higher in performance year 3 (possibly due to a slight increase in the complexity of the case mix), whereas the average LOS for the comparison hospitals continually fell during the 3 years of the demonstration. This suggests that the internal cost savings were driven either by factors other than changes in the LOS or by changes in physician billing behavior. At BIMC, site reported internal cost savings did not translate to detectable savings for the Medicare program. The complete RTI methodology and findings regarding Medicare expenditures and savings can be found in Section 5 of the Final Evaluation Report.

Quality-of-Care Metrics: The quality of care measures examined include 30-day mortality and readmission rates, inpatient quality indicator scales and patient safety indicators developed by the Agency for Healthcare Research and Quality (AHRQ) and quality measures from CMS' Hospital Inpatient Quality Reporting (IQR) program.

For CAMC, the RTI results indicate only a small and statistically insignificant impact of the demonstration on the quality indicators measured. This outcome is likely the result of convergence in quality across hospitals, given the national emphasis on quality improvement over the past two decades, as well as of the difficulty in detecting demonstration impacts with only one year of performance.

For BIMC, RTI found no evidence that the Gainsharing Demonstration had statistically significant negative effects on the quality of care that was received at BIMC over the period of the demonstration. The following measures did not differ significantly between BIMC and its comparison group: 30/90 day mortality rates, 30 day readmission rates, Inpatient Quality indicators, Patient Safety Indicators. RTI did note that BIMC had a 23 percent increase in mortality rate per 1,000 patients between the base year and year 3 (from 53.1 to 68.7); whereas mortality rates for the comparison group remained nearly constant at 63 per 1,000 patients. RTI could not determine the source of this increase and it may be due to chance variation (since it was not statistically significant). A more complete summary of the methods and findings related to quality of care can be found in Section 6 of the Final Evaluation Report.

Patient Satisfaction: The analyses of HCAHPS survey findings for the two Gainsharing Demonstration hospitals and comparison sites show that all these hospitals performed at similar levels during the performance periods. Overall, the survey results indicated very good perceived levels of quality of care at both participating hospitals and their comparison hospitals. On the basis of these results, RTI did not detect any major impacts of the Gainsharing Demonstration on patient satisfaction. In the case of BIMC, the demonstration site with 3 years of performance data, almost all the patient satisfaction measures were trending in the direction of improvement. Complete findings for the patient satisfaction analyses are found in Section 7 of the Final Evaluation Report.

Referral Patterns: As part of the demonstration, physicians practicing at demonstration hospitals had an increased financial incentive to avoid potentially high-cost admissions by referring patients with less severe conditions to the participating sites and by transferring more severe patients to other hospitals. RTI analyzed admitting patterns for physicians admitting at

both demonstration and comparison hospitals to determine whether physician referral patterns changed substantially in this respect as a result of the Gainsharing Demonstration. The descriptive results indicate little, if any, demonstration impact on most referral pattern measures. In the RTI multivariate analyses, the results indicate that neither BIMC nor CAMC avoided major or extreme severity admissions. The results also indicated that the demonstration had no impact on transfers to other acute care hospitals. On the basis of these analyses, there is no evidence that the demonstration caused changes in physician referral patterns to the participating sites on the basis of patient acuity. The complete analysis of referral patterns may be reviewed in Section 8 of the Final Evaluation Report.

Conclusions

The findings from the evaluation of the Gainsharing Demonstration indicate that the gainsharing models as implemented by CAMC and BIMC were successful in meeting the main objective of the demonstration by generating internal cost savings for the participating hospitals to pay physician incentives throughout the project.

One potential unintended consequence was that participating hospitals and physicians would have incentives to discharge patients prematurely to post-acute facilities. This does not appear to have occurred. This observation is supported by the RTI evaluation findings, which showed no significant increases in post-acute care for the 30-day episode defined by the demonstration.

Although the Gainsharing Demonstration was not required to generate Medicare savings, it was possible that significant improvements in efficiency and reductions in unnecessary care during the inpatient stay would have an impact on Medicare Part B expenditures. To the extent that physicians, given the gainsharing incentives, may have reduced use of unnecessary services and inefficient visits, Medicare might have seen a spillover reduction in Part B expenditures. RTI found no evidence that this occurred. The evaluation also found only limited, and in some performance years no reductions in inpatient LOSs relative to comparison groups. This finding suggests that internal cost savings were generated through other sources.

Early concerns regarding the gainsharing concept centered around potential negative impacts on beneficiary quality of care. In general, the RTI evaluation found no statistically significant reductions in quality of care or patient satisfaction. However, mortality rates for BIMC rose in some performance years as discussed above. Patient satisfaction was not negatively affected. There were no significant findings that quality of care was affected as a result of gainsharing.