

More Efficient Physicians: A Path to Significant Savings in Health Care July 2003

The Consumer-Purchaser Disclosure Project is a unique partnership of many of the nation's leading consumer, labor, and purchaser organizations. The Disclosure Project believes that the primary drivers of improvements to the health care system will be (1) consumers using valid performance information to choose providers and treatments, (2) purchasers building performance expectations into their contracts and benefit designs, and (3) providers acting on their desire to improve, supported with better information. The organizations involved in the Disclosure Project actively collaborate to achieve the following goal:

By January 1, 2007, Americans will be able to select hospitals, physicians, physician groups/delivery systems and treatments based on public reporting of nationally standardized measures for safety, timeliness, effectiveness, efficiency, equity, and patient-centeredness.

The Disclosure Project advocates making information across all of the Institute of Medicine six performance domains available and actionable by providers, purchasers, consumers, and policymakers. One of those domains that has received strikingly little attention, given the cost pressures being felt by purchasers and consumers, is the relative efficiency with which care is delivered. In this context, efficiency refers to average per patient total health care spending, per episode of care or per year, associated with a provider's care, adjusted for differences in patient demographics and illness. To help inform the discussions both about Medicare reform and private sector efforts to reward more efficient physicians, the Disclosure Project sought out the opinions of leading actuaries and health researchers to estimate the potential savings to Medicare if either a small portion of beneficiaries began using more efficient physicians or a similarly small proportion of physicians improved the efficiency of their practice patterns. While using different bases for their analysis, the results were remarkably consistent: **Medicare and other purchasers could save from 2% to 4% of total costs if only one out of ten beneficiaries were to move from less efficient to more efficient physicians.** These results are also informed by separate research that has found that quality did not decline when providers practiced more efficiently. In fact, more efficient regions of the United States enjoyed better quality on some indicators than less efficient regions. The findings on potential savings were confirmed by three independent analyses:

- **Potential Reductions in Medicare Costs via Increased Efficiency in the Delivery of Health Care** (actuarial review by Milliman, USA, Mercer Human Resource Consulting and PricewaterhouseCoopers, LLP). This actuarial opinion assesses the implications of two scenarios applying the findings of the research by Dr. Elliot Fisher, et al., as described in articles entitled "*The Implications of Regional Variations in Medicare Spending.*" In the first scenario, savings of 3.1% of total Medicare costs could be realized if half of the care provided in the nation's highest-cost quintile is delivered with the combined efficiency of the other four quintiles. In the second scenario, a 5.7% reduction in total Medicare costs could be realized if half of the care provided in the two highest cost quintiles is delivered with the efficiency of the other three quintiles.
- **Estimates of Potential Savings To Be Gained by the Medicare Program if Risk-Adjusted Practice Profiles Were Applied to Facilitate Beneficiaries' Preferential Use of Efficient Physicians** (Jonathan Weiner, DrPH, Johns Hopkins University). This paper uses evidence derived from assessing physician practice patterns in commercial, Medicaid and Medicare settings, and assesses potential savings to Medicare both with and without a prescription drug benefit. The paper finds that if one out of ten beneficiaries switched from less to more efficient physicians, it would result in savings of 2% to 4% of total Medicare spending.
- **Estimate of Savings from Linking Health Insurance Plan Beneficiaries to More Efficient Physicians** (Arlene Ash, PhD, Boston University School of Medicine and DxCG, Inc.) This paper assesses practice patterns within a selected regional pool of physicians serving over 100,000 members based on inpatient and outpatient claims from 2001-2002. Optimistic assumptions about the potential savings suggest that moving about one out of ten beneficiaries (half of those being served by the least efficient thirty percent of physicians) could save approximately 2.5% of spending.

Potential Reductions in Medicare Costs via Increased Efficiency in the Delivery of Health Care

The Pacific Business Group on Health ("PBGH"), on behalf of the Consumer-Purchaser Disclosure Project, has requested actuarial estimates of the amount of potential reductions in Medicare costs that could be achieved through increased efficiency in the delivery of health care. PBGH has requested that these estimates be based on the research conducted by Dr. Elliot Fisher, et al., as described in articles entitled "*The Implications of Regional Variations in Medicare Spending.*"¹

Summary of Our Findings

We have estimated savings that would accrue in two scenarios:

- Scenario 1: Half of the care provided to Medicare beneficiaries in regions in the highest-cost quintile, as reported by Dr. Fisher, et al., is provided in such a way that the costs are in keeping with the costs in regions in the other 4 quintiles. All other care remains unchanged.
- Scenario 2: Half of the care provided to Medicare beneficiaries in regions in the two highest-cost quintiles, as reported by Dr. Fisher, et al., is provided in such a way that the costs are in keeping with the costs in regions in the other 3 quintiles. All other care remains unchanged.

Our findings are summarized as follows:

Percentage Reduction in Medicare Costs Through Increased Efficiency in the Delivery of Health Care to Aged Fee-For-Service Medicare Beneficiaries

<u>Scenario 1</u>	<u>Scenario 2</u>
3.1% reduction	5.7% reduction

A description of our methodology is shown in the Appendix on page 4 of this report.

Caveats

In performing our analysis, we relied on the research described in the articles by Dr. Fisher and, by extension, on the data underlying that research -- including, in particular, the Dartmouth Atlas of Health Care, 1999. We have not audited or verified this research and data. If the research or underlying data is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete. If there are material defects in the research or data, it is possible that they would be uncovered by a detailed, systematic review to search for data values that are questionable or for relationships that are internally inconsistent. Such a review is beyond the scope of our engagement.

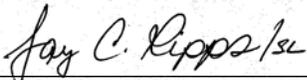
Our analysis is based on Medicare spending patterns in 1996. We believe that these patterns provide a reasonable basis for the findings in this report. However, it is possible that the patterns have changed since 1996 so as to affect the findings materially. It may be desirable to update our findings based upon an analysis of regional Medicare spending patterns in years later than 1996. Such a review is beyond the scope of our engagement.

¹ Annals of Internal Medicine, Volume 138, Number 4, February 18, 2003.

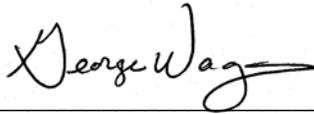
The savings estimated would likely not be achievable immediately upon implementation of program changes; rather, they would occur over a substantial transition period. Actual savings achieved may be lesser or greater than our estimates, depending on the specific program changes adopted and measurement time periods.

Finally, the research reported by Dr. Fisher, et al., in the referenced articles detected little or no positive impact of increased Medicare spending on quality of care, access to care, outcomes of care, or patient satisfaction with care, and, by implication, little or no negative impact of decreased Medicare spending. We have not reviewed these findings and, although we have no reason to question them, we take no position as to their validity.

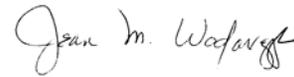
This report has been prepared for the internal business use of PBGH. We understand that the Disclosure Project intends to share these estimates with federal policymakers and their staff as input to their consideration of potential changes to Medicare. When provided to others, the report must be provided in its entirety. We do not intend to benefit and assume no duty or liability to any third parties who receive the report in this fashion.



Jay C. Ripps, Consulting Actuary
Milliman USA
Fellow of the Society of Actuaries
Member of the American Academy of Actuaries



George B. Wagoner, Principal
Mercer Human Resource
Consulting
Fellow of the Society of Actuaries
Fellow of the Conference of Consulting Actuaries
Member of the American Academy of Actuaries



Jean M. Wodarczyk, Principal
PricewaterhouseCoopers LLP
Fellow of the Society of Actuaries
Member of the American Academy of Actuaries

Appendix: Methodology

1. 1996 Medicare spending (fee-for-service, aged population only -- before adjustment for age, sex and race) was split into quintiles as defined in the research conducted by Dr. Fisher, et al., using backup data provided to us by Dr. Fisher.
2. For Scenario 1:
 - a. Services represented by 12.5% of the Medicare spending dollars for Quintile 5 (the most costly quintile) were assumed to be provided at the level of efficiency represented in Quintile 4. To estimate the financial impact of this, we adjusted those dollars by the ratio of Quintile 4 adjusted per capita cost to Quintile 5 adjusted per capita cost, as reported by Dr. Fisher, et al., in the referenced report.
 - b. Similarly, 12.5% of Quintile 5 dollars were assumed to be provided at the level of efficiency represented in each of Quintiles 1, 2 and 3.
 - c. The adjusted dollars for the services assumed to be provided at more efficient levels were added to the unadjusted dollars (100% of Quintiles 1 through 4 and 50% remaining from Quintile 5) to arrive at the total adjusted 1996 Medicare spending.
3. Scenario 2 was evaluated using a similar method as that described above, except:
 - a. 16.7% of spending dollars for Quintile 5 was assumed to be provided at the level represented in each of Quintiles 1 through 3; and
 - b. 16.7% of spending dollars for Quintile 4 was assumed to be provided at the levels represented in each of Quintiles 1 through 3.

Estimates of Potential Savings To Be Gained by the Medicare Program if Risk-Adjusted Practice Profiles Were Applied to Facilitate Beneficiaries' Preferential Use of Efficient Physicians

By Jonathan Weiner, DrPH
Professor of Health Policy & Management, Johns Hopkins University
(jweiner@jhsph.edu, 410-955-5661)

July 1, 2003

1) Goal of This Document:

To provide an estimate of potential cost savings to the Medicare program if risk-adjusted "efficiency" profiling were used to identify physician groups or "naturally occurring networks" made up of the most efficient physicians, and then a proportion of beneficiaries preferentially used these physicians over less efficient physicians. An assessment of the implications of such a policy on quality of care is also assessed.

2) Sources of Evidence:

Estimates are derived from evidence based on a decade of pattern-of-practice analyses using risk-adjusted efficiency profiling and assessment of the quality of care of "low cost" vs. "high cost" physicians and provider organizations. Dr. Weiner and colleagues at the Johns Hopkins University did this work.

The evidence is based on research at a private nationwide open panel IPA HMO; the Maryland Medicaid program, a large business coalition in the Midwest, and a study that accessed 100% FFS Medicare data files from three states (Iowa, Alabama, Maryland). Most of these data were from the 1990s.

3) Key Assumptions:

Summary of Existing Evidence on Physician Efficiency Differences

Difference in the case-adjusted efficiency between the 30% of physicians that represent the most efficient cohort, and the 30% that are the least efficient, was consistently at least .8 vs. 1.2 of average (average is set at 1.0) for all three databases. This means that the patients of the most "efficient" group of providers (after case-mix was taken into account) used on average 20% less services than expected while the patients of the least efficient cohort of physicians used services that were 20% more than expected.

Therefore, for this simulation, "risk adjusted efficiency ratios" of .8 and 1.2 were assumed. This ratio reflects a type of "observed to expected" ratio, where the actual costs of all patients treated by the cohort of physicians is divided by the "expected" costs. (The latter are based on the risk adjusted expectations for similar patients in the entire beneficiary population being studied.) The .8 and 1.2 assumptions can be considered reasonably conservative; actual evidence suggests that higher inter-physician efficiency differences are often seen.

This assessment focuses on patterns of practice around "naturally occurring" (i.e. in FFS practice) choice of primary physician or multi-specialty physician groups. That is, the estimates are based on observations of organized "physician teams" (e.g., multi-specialty groups) and primary care physicians and the specialists that comprise their natural referral patterns.

Research on specialty specific efficiency is more limited and patterns of practice of individual specialists is not considered here. However, estimates in this analysis embody all health plan covered costs. These include costs of all physician care (including specialist care), care provided by other providers, hospital costs, and pharmaceuticals where covered (in the commercial and Medicaid, but not Medicare populations).

These estimates are based on an average cohort of patients at all morbidity-burden/case-mix levels. More money could potentially be saved if the sickest patients were directed to the most efficient physicians, as their costs are considerably higher and any savings that accrue would be proportionate.

Cost of Care Assumptions

The average per year (2006) cost for each Medicare beneficiary was assumed to be \$7,500. Thus applying the .8 and 1.2 assumption, the most efficient third of physicians would have an estimated average per patient cost of \$6,000 and least efficient third about \$9,000.

If pharmacy coverage were enacted (assuming \$1,200 coverage per Medicare beneficiary) the estimated total per year per person cost with Rx added in each cohort would be approximately \$7,000, \$8,700, and \$10,400 respectively. (Note: Rx variation is even greater among most and least efficient physician cohorts, but the same variation rate -- .8 and 1.2 -- was assumed to ensure conservatism in savings estimation).

Cost savings (without Rx) between the high and low efficiency physician cohort can be estimated at \$3,000 per person. A more conservative 50% savings of \$1,500 was also assumed in order to account for factors such as a degree of continued use of less efficient physicians (particularly in a PPO non-gatekeeper environment). With Rx added, the savings estimates between the efficient and inefficient physician group would be \$3,400 and \$1,700 respectively for 100% and 50% savings assumptions.

4) Projected Savings to the Medicare Program

What follows are the estimates of applying these assumptions for an estimated cohort of 42 million Medicare enrollees.

If the approximately 30% of enrollees who receive care from the least efficient cohort of physicians received care that was as efficient as that provided by the most efficient physicians, the overall savings could be estimated as follows:

For these 12.5 million individuals, for the non-Rx costs, the full potential savings (at \$3,000 per patient) would be \$37.8 billion (or approximately 12% of total program costs). Assuming projected savings is overestimated by 50%, the savings level would be about \$18.9 billion (6% of program costs). With Rx costs added in, the overall savings estimates are \$42.8 billion and \$21.4 billion respectively.

If one assumes that instead of the entire 30% of enrollees (i.e. 12.5 million) with the least efficient physicians received more efficient care, only 10% of the population – one-third of those being seen by the least efficient physicians (i.e. 4 million enrollees) – would be directed to the most efficient physicians, then the cost savings (without RX) would be \$12.6 billion at the 100% differential (between efficient and inefficient physicians; saving approximately 4% of programs costs) and \$6.3

billion for the 50% differential (saving 2% of program costs). With Rx added, these “savings” figures would be \$14.3 billion and \$7.1 billion.

In sum, if one assumes a shift of 12.5 million enrollees from inefficient to efficient patterns of care, the savings (with Rx) could range from \$42.8 to \$21.4 billion; or 12% to 6% of total Medicare program costs. Assuming that only 10% (4 million) of the enrollee cohort shifted, the estimated savings would range from \$14.3 to \$7.1 billion or an estimated 4% to 2% of program costs.

The impact on the program would be proportional, depending on the number of enrollees affected and how many physicians were or were not included on “preferred physician lists.” For example, within a program specifically serving 8 million enrollees, if the program shifted care for the 10% of patients now using the least efficient physicians to the most efficient physicians, and if one assumes the more modest 50% practice differential savings across these two physician cohorts, then an estimated \$1,700 per patient (with Rx) could be saved. Thus, the estimated program savings would be \$1.4 billion or about 2% of the estimated \$69 billion program costs.

In sum, the most conservative “bottom line” estimates of savings of applying this strategy would probably be 1.0% to 3.0% of program costs. But this would involve several important assumptions, including: from 5% to 10% of enrollees will switch to the most efficient physicians and that there is adequate capacity for expansion among the more efficient physicians to add them to their practice rolls.

A full discussion of policy options that could be used to capitalize on the information gained from risk-adjusted physician profiling goes beyond the scope of this document. However, it should be noted that a variety of program interventions could be applied. For example, as an alternative (or in addition) to shifting patients to more efficient providers, other interventions could attempt to change the practices of the least efficient providers. Another approach could rely on payment re-design where a decreased fee schedule could be applied for less efficient providers. The Minnesota Business Coalition used a similar approach for a number of years. Efficient providers received an add-on factor to their FFS RVUs and the inefficient providers were paid a deflated standard RVU, that took into consideration their higher than expected billings.

5) Implications for Quality:

In an analysis within Maryland Medicaid (when it was a FFS program) when the low cost physicians were compared to the highest cost, they had better quality for adult diabetes and hypertension care, and adult well care. Their quality levels were the same when several other conditions were assessed. This research was based on detailed chart reviews (of all key primary and specialist physicians) and claims data analyses (see Starfield et al.).

A comparison of 18 medium to large private group practices participating in a employer coalition sponsored plan in Minnesota did not show any significant differences between those with highest risk-adjusted costs and those with lowest costs when HEDIS-like analyses using claims data were performed for several conditions (see Solberg et al.).

There is no evidence that quality of care would decrease if such a strategy were implemented.

6) Caveats & Next Steps:

These estimates are made with the best available data, but the bottom-lines presented should be viewed as “educated guesstimates.”

These estimates could be improved if Medicare specific data runs were made using a recent 100% sample of Medicare claims data for selected regions. More comprehensive analyses of this type are recommended. They are quite feasible with data currently in the possession of the Centers for Medicare and Medicaid Services and I would be pleased to participate in such an analysis.

Further work on the cost-quality trade-offs and access to care issues (particularly in rural areas) is also warranted using actual Medicare patterns of care data.

7) References:

The references of research based at Johns Hopkins used to derive these estimates include:

Solberg, L, Lyles, A, Shore, A, Lemke K, Weiner J; Is Quality Free: An Evaluation of the Relationship Between Cost and Quality in 18 Provider Groups, Am J of Managed Care, June 2002.

Parente ST, Weiner J, Garnick D, Fowles J, Lawthers A, Palmer H, Profiling Medicare Beneficiary Resource Use by Primary Care Practices: Implications for Managed Medicare. Health Care Financing Review, Summer 1996 Vol 17, No. 4 .

Powe N., Weiner J., Starfield B., Stuart M., Baker A., and Steinwachs D. Assessing Provider Performance in a Medicaid Program: The Development and Testing of a Claims Based Approach for Evaluating the Care of Patients With Chronic Illness. Medical Care 1996: 34: 798-810.

Tucker A, Weiner J, Honigfeld S, Parton A. Profiling Primary Care Physician Resource Use: Examining the Application of Case Mix Adjustment, Journal of Ambulatory Care Management, 1996; 19 (1) 60-80.

Parente S, Weiner J, Richards T, Garnick P, Fowler J, Lawthers A, and Chandler P. Developing a Quality Improvement Database Using Health Insurance Data: A User's Guide with Application to Medicare's National Claims History File. Am J of Medical Quality , 1995; 10 (4) 162-176.

Weiner J, Starfield B, Stuart M, Powe N and Steinwachs D. Ambulatory Care Practice Variation Within a Medicaid Program. Health Services Research, 1996; 30:751-770.

Weiner J, Parente S, Garnick D, Fowles J and Lawther A. Variations in Office Based Quality: Claims Based Profile of Care Provided to Medicare Patients With Diabetes. JAMA, 1995; 273(19):1503-1508.

Starfield B, Powe N, Weiner J, Stuart M, Steinwachs D, Scholle S and Gerstenberger A. Costs Versus Quality in Different Types of Primary Care Settings. JAMA, 1994; 272:1903-1908.

Garnick D, Fowles J, Lawthers A, Weiner J, and Palmer RH. Focus on Quality: Profiling Physicians Practice Patterns. J of Amb Care Management, 1994; 17:44-75.

Also: Medicare program estimates were derived from recent (4/03) fact sheets developed by the Kaiser Family Foundation (KFF.ORG)

Estimate of Savings from Linking Health Insurance Plan Beneficiaries to More Efficient Physicians

Prepared by Arlene Ash, PhD
Boston University School of Medicine and DxCG, Inc

June 25, 2003

Scope of work: Estimate the potential cost savings that could be achieved if half the people who go to the "most inefficient providers" have their costs reduced to the levels achieved by the remaining providers.

Dataset: Anonymous/convenience data set containing over 100,000 members, each assigned to a unique PCP (from just under 120 physicians), covered by a managed care health plan from the Southeast. The population is privately-insured, primarily under-age-65 (Commercial), and costs are calculated based on inpatient and outpatient claims from 2001-2002.

Deliverables: Summary analyses by provider, looking at observed vs. expected cost (that is, O/E ratios). Expected cost was derived using DxCG risk scores, where 1.000 is average-single-member-cost for the health plan.

Caveats: The calculations provide optimistic estimates of potential savings, in that they implicitly assume the following: 1) high O/E ratios (the marker for inefficiency), even for providers with small panel sizes, are accurate (and repeatable) estimates of underlying efficiency, 2) the patients of "inefficient" PCPs who could be induced to move to more "efficient" doctors, are, on average, just as expensive as those who would not move, 3) "moving" would cause patients to incur the lower costs seen among existing patients of the more efficient providers, and 4) "moving" is cost free.

Results:

A summary of the findings is shown below in Table A. Assuming that people who moved from less efficient (higher O/E) providers to lower ones would experience the efficiency ratios of the lower providers, the savings (expressed as a percentage of total expenditures) to the plan would be: 0.5% if half the people in the upper decile (2.7% of the population) moved; 1.6% if half the people in the upper two deciles (5.8% of the population) moved; 2.8% if half the people in the upper three deciles (11.4% of the population) moved; 3.8% if half the people in the upper four deciles (15.8% of the population) moved; and 4.9% if half the people in the upper five deciles (21.6% of the population) moved. Linear extrapolation of these data assigns potential savings from moving 10% of people of 2.5%.

Table A: Estimated Savings From Linking Insureds to More Efficient Physicians

Decile	Individual Decile Statistics					Savings Analysis		
	# PCPs	# Pt Yrs	Pts/PCP	Mean E	Mean O	O/E	% of people moved	% of \$ saved
10	10	5,484	548	\$ 752	\$ 1,085	1.44	2.7%	0.5%
9	12	6,568	547	\$ 2,070	\$ 2,587	1.25	5.8%	1.6%
8	12	11,395	950	\$ 1,784	\$ 2,033	1.14	11.4%	2.8%
7	12	9,123	760	\$ 1,980	\$ 2,138	1.08	15.8%	3.8%
6	12	11,989	999	\$ 1,871	\$ 1,908	1.02	21.6%	4.9%
5	12	10,802	900	\$ 1,903	\$ 1,890	0.99	26.8%	6.0%
4	12	10,427	869	\$ 2,000	\$ 1,921	0.96	31.9%	7.4%
3	12	15,800	1,317	\$ 1,630	\$ 1,503	0.92	39.5%	10.1%
2	12	14,657	1,221	\$ 1,820	\$ 1,514	0.83	46.6%	15.8%
1	12	7,004	584	\$ 1,116	\$ 764	0.68	-- N.A. --	-- N.A. --

Summary of health plan evaluation for change in provider effectiveness:

1) 118 Primary care providers split into "deciles" of effectiveness, as measured by Observed dollars / Predicted dollars (O/E) for patients under their care. The total population analyzed was 116,000 people, 103,000 patient years. Decile 10 is the most "inefficient," that is, it has the highest O/E ratio.

2) Savings calculated as "dollars saved if half the people in the upper 'k' deciles were treated with the O/E ratio that pertains for people in the lower '10 minus k' deciles", e.g. dollars saved if half the people in the upper two deciles (Deciles 9 and 10) were treated with the O/E ratio that pertains for people in the bottom two deciles (Deciles 1 and 2).

3) Percent savings equals savings from 2) above divided by total observed actual expenditure for the population.

CONCLUSION

Assuming that people who moved from less efficient (higher O/E) providers to lower ones would experience the efficiency ratios of the lower providers, the savings (expressed as a percentage of total expenditures) to the plan would be:

- 0.5% if half the people in the upper decile (2.7% of the population) moved
- 1.6% if half the people in the upper 2 deciles (5.8% of the population) moved
- 2.8% if half the people in the upper 3 deciles (11.4% of the population) moved
- 3.8% if half the people in the upper 4 deciles (15.8% of the population) moved
- 4.9% if half the people in the upper 5 deciles (21.6% of the population) moved

"Under these assumptions, if you could move about 20% of the people, you could save about 5% of dollars."

ABOUT THE CONSUMER-PURCHASER DISCLOSURE PROJECT:

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By January 1, 2007, Americans will be able to select hospitals, physicians, physician groups/delivery systems and treatments based on public reporting of nationally standardized measures for safety, timeliness, effectiveness, efficiency, equity, and patient-centeredness.

TECHNICAL SUPPORT PROVIDED TO THE CONSUMER-PURCHASER DISCLOSURE PROJECT BY:

Arnie Milstein, MD, MPH
Medical Director, Pacific Business Group on Health
National Health Care Thought Leader, William M. Mercer
415-743-8803
Arnold.Milstein@mercer.com

Please contact Dr. Milstein if you have any questions or need additional information about this report.