

Savings estimate for a Medicare insured group

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Estimates of the savings potential of a managed-care program for a Medicare retiree population in Michigan under a hypothetical Medicare insured group (MIG) are presented in this article. In return for receiving an experience-rated capitation payment, a MIG would administer all Medicare and employer complementary benefits for its enrollees. A study of the financial and operational feasibility of implementing a MIG for retirees of a national corporation involving an analysis of 1986

claims data finds that selected managed-care initiatives implemented by a MIG would generate an annual savings of 3.8 percent of total (Medicare plus complementary) expenditures. Although savings are less than the 5 percent to be retained by Medicare, this finding illustrates the potential for savings from managed-care initiatives to Medicare generally and to MIGs elsewhere, where savings may be greater if constraints are less restrictive.

Introduction

The problem of rising health care costs for the population 65 years of age or over is a concern both to Medicare and to employers who provide complementary coverage to their Medicare-eligible retirees. Payment concerns of both Medicare and employers have been heightened by recent increases in Medicare Part B (physician and nonfacility) expenditures. Exacerbating these concerns of employers are the newly mandated Financial Accounting Standards Board (FASB) accounting procedures that will cause corporations to recognize the projected value of future retiree health care benefits. (Financial Accounting Standards Board, 1990).

Medicare and employers generally focus on their own objectives and programs to control health care costs. The Medicare insured group (MIG) provisions of the Omnibus Budget Reconciliation Act of 1987 (OBRA) (Public Law 100-203), however, provide a unique opportunity for the public and private sectors to cooperate and seek a joint solution to their related problems. The Health Care Financing Administration (HCFA) (Moley, 1986) and certain large corporations and unions hoped that MIGs could demonstrate that a single integrated employment-related program could work better than separate Medicare and complementary programs with their overlapping benefits and complex administration. At that time (1986-87), these organizations believed a MIG could provide cost-effective quality care and increase enrollee satisfaction through simplification of the often confusing and frustrating administrative burden created by separate Medicare and complementary administrative systems.

In return for receiving an experience-based capitation payment from Medicare, a MIG would administer all Medicare benefits for its eligibles and fully assume the financial risk involved in undertaking a MIG. Specifically, OBRA mandated that a MIG receive a payment rate of 95 percent of the average project cost of the group. Consequently, the MIG must reduce Medicare payments per enrollee more than 5 percent below fee-for-service levels to offset the amount that Medicare would retain, assuming, among other things, that administrative

costs are fully reimbursed. Because of the risks inherent in a MIG, a key consideration to potential MIG sponsors and to HCFA is the extent of savings that a MIG could realistically achieve. The purpose of the research summarized here was to estimate "real-world" savings that could occur in a MIG in Michigan that would be operated by a national corporation. The findings were the result of a study of the financial and operational feasibility of implementing a MIG for Medicare-enrolled retirees of that corporation.

This article, a summarization of that research, begins with a review of possible MIG initiatives. It contains a review of methodological and data issues in evaluating potential areas of opportunity in light of real-world implementation constraints. The claims data analysis of specific initiatives and their mechanisms for achieving savings are described, and estimates of savings are presented. Although the estimates are for a specific MIG, they illustrate savings possibilities that might be obtained elsewhere for a managed-care, fee-for-service program for Medicare beneficiaries.

Selection of Medicare insured group initiatives

Given the voluntary enrollment requirement of OBRA 1987 and this specific population accustomed to a broad choice of providers, it was believed that the fee-for-service sector represented the starting point to achieve sufficient MIG enrollment. Once that decision was made, specific initiatives were selected using design criteria and the results of the preliminary descriptive analysis, which revealed areas of savings opportunity. In selecting for analysis possible initiatives for a MIG-sponsored, fee-for-service managed-care system, we required that the initiatives meet the following criteria:

- Control medical expenditures without limiting access to necessary medical services.
- Promote the delivery of quality-managed health care services for retirees and dependents.
- Be acceptable to Medicare retirees.
- Provide benefits and services appropriate for Medicare aged retirees.
- Implement cost-containment strategies similar to those currently in place for the employer's retiree group under 65 years of age, with modifications as appropriate.

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- Be consistent with current HCFA initiatives.
- Be supported by sufficient comparative data to corroborate savings estimates with confidence.
- Be easy to implement in Michigan.

Applying these criteria, MIG savings opportunities appear mainly in utilization management. This focus is because Medicare's recent success in controlling the price and use of inpatient care through prospective payment programs has reduced the scope for savings, particularly from lowering provider prices. MIG opportunities could be reduced further if physician reimbursement is successfully reformed by means of a fee schedule as suggested by the Physician Payment Review Commission. Consequently, it appeared unlikely that hospital payment levels consistently lower than Medicare's could be successfully negotiated in Michigan. Also, several managed-care initiatives that restricted choice of providers, such as health maintenance organizations (HMOs), did not seem feasible given a population accustomed to a broad choice of providers. Others, such as precertification of admissions on grounds of medical necessity, were too difficult to implement, or too administratively cumbersome or costly, particularly given the risk nature of the MIG. Therefore, we focused the savings analysis on feasible managed-care areas that HCFA initiatives do not directly address, primarily utilization review and case management, for which there were an identifiable intervention mechanism and a realistic implementation strategy.

In a preliminary analyses, Birnbaum et al. (1989) identified three general areas for savings:

- *Medically unnecessary hospital care*—Analysis of Medicare and employer-paid complementary claims data indicated that an effective case-management program driven by a precertification program would allow early identification of long-stay hospitalizations so that less intense and less costly home and community-based care could be substituted for long inpatient stays. Further, a precertification program could encourage a shift of outpatient appropriate procedures and short stay medical admissions from the inpatient to the ambulatory setting.
- *Poorly coordinated care*—Claims data analysis produced a substantial number of admissions for geriatric problems potentially preventable through more effective coordination of care. Admissions for disorders of nutrition and electrolytes could be prevented through case-management services that encourage proper food and liquid intake. Further, conditions such as skin breakdown and infections could be addressed in a comprehensive case-management program that carefully trains family and other caregivers in methods of turning and proper skin care.
- *Aberrant and abusive billing practices*—The tendency toward systematic upgrading of diagnosis-related group (DRG) assignment during health care claims submission has resulted in larger Medicare reimbursement for facilities (Health Data Institute, 1987). Chart review, which focused on selected DRGs to detect coding errors and DRG misassignment, could achieve savings in addition to those gained by current Medicare administrative activity.

Initiatives (and mechanisms) selected for savings analysis are as follows:

- **Medical case management.**
 - Earlier discharge of outlier patients.
 - Avoided short-stay admissions.
- **Precertification.**
 - Case-management identification.
 - Outpatient surgery program.
 - DRG assignment validation.
 - Inpatient surgery shift to outpatient and office setting.
- **Condition-specific preferred provider organizations (PPOs).**
 - Laboratory services.
 - Psychiatric services.
 - Rehabilitation care.
 - Cataract surgery.
- **Retrospective payment review.**
 - Hospital DRG assignment.
 - Surgical fee unbundling.
 - Appropriate location.
 - Medical necessity.

Methods of savings estimation

Although the best methodological approach would have been to compare the retirees' experience with that of other comparable managed-care populations, such direct comparisons were not possible. The absence of clinically detailed utilization data from successful Medicare HMOs (Rossiter, Nelson, and Adamache, 1988) prevented direct MIG comparison; only aggregate HMO data were available. Direct application of savings estimates from a managed-care program for employed populations was not possible because of differences between the reimbursement policy of Medicare and that of the private sector and differences between the age and health status of potential MIG enrollees and employed populations. For example, savings estimates of the impact of precertification of hospital care (Feldstein, 1988) were not useful because precertification programs currently in operation for employed populations tend to generate savings through reductions in length of stay (LOS); whereas for MIG eligibles, Medicare has already controlled LOS through its prospective payment system (PPS).

Instead, a model incorporating estimates about each initiative's effectiveness was developed. Where data were available, estimates were based on the recent experience of this employer's fee-for-service managed-care program for employed workers and on achieved savings rates for each of the managed-care programs. Savings were estimated for each initiative by applying these estimates to recent Medicare and complementary claims data.

The analytic approach involved specification of operational mechanisms for specific opportunities that could be identified by means of clinical analysis of the claims data. The analysis needed to account for current Medicare programs. For example, medical case management can only generate savings for inpatient Medicare cases severe enough to warrant additional payment under prospective payment outlier reimbursement rules. MIG initiatives had to generate savings in excess of those of PPS in managing Medicare

Part A payments, as well as future HCFA Medicare Part B initiatives. Fiscal intermediary implementation issues also were considered, as were beneficiary concerns, particularly a desire to maintain a broad choice of providers.

The experience of HMOs under the Tax Equity and Fiscal Responsibility Act (TEFRA) that have attempted to manage retiree health care in Michigan also tempered the estimates of potential savings from this specific MIG. The Michigan area was initially attractive to risk contractors. One inducement was the high level of inpatient utilization compared with national Medicare levels. As shown in Table 1, however, by 1986, both days of care and admission rates were declining in Michigan relative to the Nation. By early 1989, several HMOs had left the risk contracting program in Michigan. Anecdotal accounts point to provider payment levels as a central problem. Moreover, although Medicare TEFRA HMO days of care fell, use fell even more for this population, suggesting that a further large reduction was an unlikely outcome for this MIG.

Data

Savings estimates are based on data from claims and enrollment files provided by the HCFA and Blue Cross and Blue Shield of Michigan to the Health Data Institute (HDI). Each of these payers also provided an enrollment file and a file of claims incurred from 1984 through 1986 by eligibles on the enrollment file. Using data from these sources, HDI built integrated data files in three steps. First, Medicare enrollees were identified and included in the employer's enrollment file, combining information from the two payers' separate enrollment files. Second, the large claims files provided by each carrier were collapsed into data sets with one record per person-year or per episode. Finally, records for Medicare enrollees

were extracted from the person-year and episode files by matching them to the Medicare enrollment file.

This process resulted in four files: two person-year files (one for each payer) with aggregated financial information, an extract of Part A claims from HCFA data, and an episode file combining experience for both payers. Each file retained enrollment information from both payers' original enrollment files. MIG data and their limitations are described elsewhere by Birnbaum, Reilly, and Hodgkin (1989). Reported Medicare payment data represent Medicare's total payments for the retirees. For the employer, payment data include only services covered through basic benefits complementary to Medicare.

Measures

Savings estimates were based on claims files for the aged and disabled beneficiaries enrolled in both Medicare and complementary programs in Michigan during 1986. No medical record data were available. Savings estimates account for costs of substitute care and avoid double-counting caused by overlap in the scope of initiatives but do not reflect startup or operating administrative costs to achieve these savings. These savings estimates rely, where possible, on the impact these initiatives already have had on the employer's beneficiaries who are under 65 years of age. Figure 1 displays a flow chart depicting the savings initiative system. It is assumed throughout that a MIG would use Medicare's DRGs to pay hospitals because it was believed that otherwise a MIG would lack the market power in Michigan to negotiate provider payment levels consistently as low as Medicare's. The initiative and how savings estimates were derived are described later in this article. The methodology differed for the separate initiatives based on factors such as availability of comparison data and whether the initiative was in place for the population under 65 years of age.

Table 1

Comparative Medicare inpatient utilization data for Michigan employer retirees versus overall Michigan Medicare beneficiaries versus overall U.S. Medicare beneficiaries: Calendar years 1984-86

Calendar year	Michigan retirees	Overall Michigan Medicare beneficiaries	Overall U.S. Medicare beneficiaries	Michigan retirees versus overall Michigan Medicare beneficiaries 1984-86	
				Percent difference	Michigan retirees versus overall U.S. Medicare beneficiaries 1984-86
Length of stay in days					
1984	10.1	9.0	8.9	+12.2	+13.5
1985	10.3	8.7	8.6	+18.4	+19.8
1986	9.6	8.7	8.7	+10.3	+10.3
Admissions per 1,000 enrollees					
1984	382	384	374	-0.5	+2.1
1985	359	312	328	+15.1	+9.5
1986	317	296	326	+7.1	-2.8
Days of care per 1,000 enrollees					
1984	3,852	3,456	3,329	+11.5	+15.7
1985	3,698	2,714	2,821	+36.3	+31.1
1986	3,043	2,575	2,836	+18.2	+7.3

SOURCES: (Health Data Institute, 1987.) Data prepared from claims files of Blue Cross and Blue Shield of Michigan and the Health Care Financing Administration, Bureau of Data Management and Strategy; Data from the Medicare Decision Support System, 1989.

Before describing the specific interventions, background data (Birnbaum, Reilly, Hodgkin, et al., 1989) on the potential for savings are described.

Findings on potential for savings

Background: Expenditure and utilization experience

In 1986, HCFA paid \$186.1 million and the employer paid \$39.3 million for benefits for its 68,489 Medicare enrollees nationwide, but HCFA paid \$126.6 million and the employer paid \$24.5 million for the 42,578 Michigan Medicare enrollees. The total Medicare and employer payments for these Medicare eligibles in Michigan was \$151.1 million in 1986. Because this experience is concentrated in Michigan (62 percent of eligibles, 68 percent of Medicare payments, and 62 percent of complementary payments), the employer selected Michigan as the initial MIG site and the focus of the feasibility experience unless otherwise noted.

Complementary payments for Medicare enrollees were 16 percent of its health costs for all actives and retirees (Figure 2). Complementary average payments per aged Medicare enrollee (excludes the disabled and those with end stage renal disease) were high compared with the overall Michigan and U.S. aged only Medicare experience. Table 2 shows that the average 1986 Medicare payment per aged Medicare enrollee in Michigan (\$2,811) was 39 percent higher than the average Medicare payment per aged enrollee nationwide and 22 percent above the Michigan average.

It is instructive to compare utilization levels for inpatient care (the largest component of payments) with utilization by other Medicare groups. Despite decreasing inpatient utilization trends from 1984 through 1986, inpatient utilization remained high compared with overall Medicare experience in Michigan and the United States. Long average LOS and high admission rates resulted in 3,043 days of care per 1,000 enrollees in 1986, a rate that was 18 percent higher than all Michigan Medicare, 7 percent higher than all U.S. Medicare, and 61 percent higher than the rate for Medicare demonstration HMOs. Both admission rates and LOS for Michigan Medicare enrollees showed some convergence, however, toward Michigan Medicare levels from 1984 through 1986.

Compared with all Michigan Medicare enrollees, the employer's Michigan Medicare retirees had higher average payments per enrollee, proportionately more claims, higher admission and days-of-care rates, and higher average LOSs. Higher utilization and payments are not attributable to differences in the age and sex distribution of the two populations. Higher utilization levels for the retirees may be attributable in part to greater severity of illness (although this cannot be definitively assessed through claims data) and to other factors.

Specific interventions

Case management

The amount of savings that can be realized in the Medicare population from a case-management program depends heavily on the reimbursement structure of

Figure 1
Medicare insured group feasibility study savings initiative system

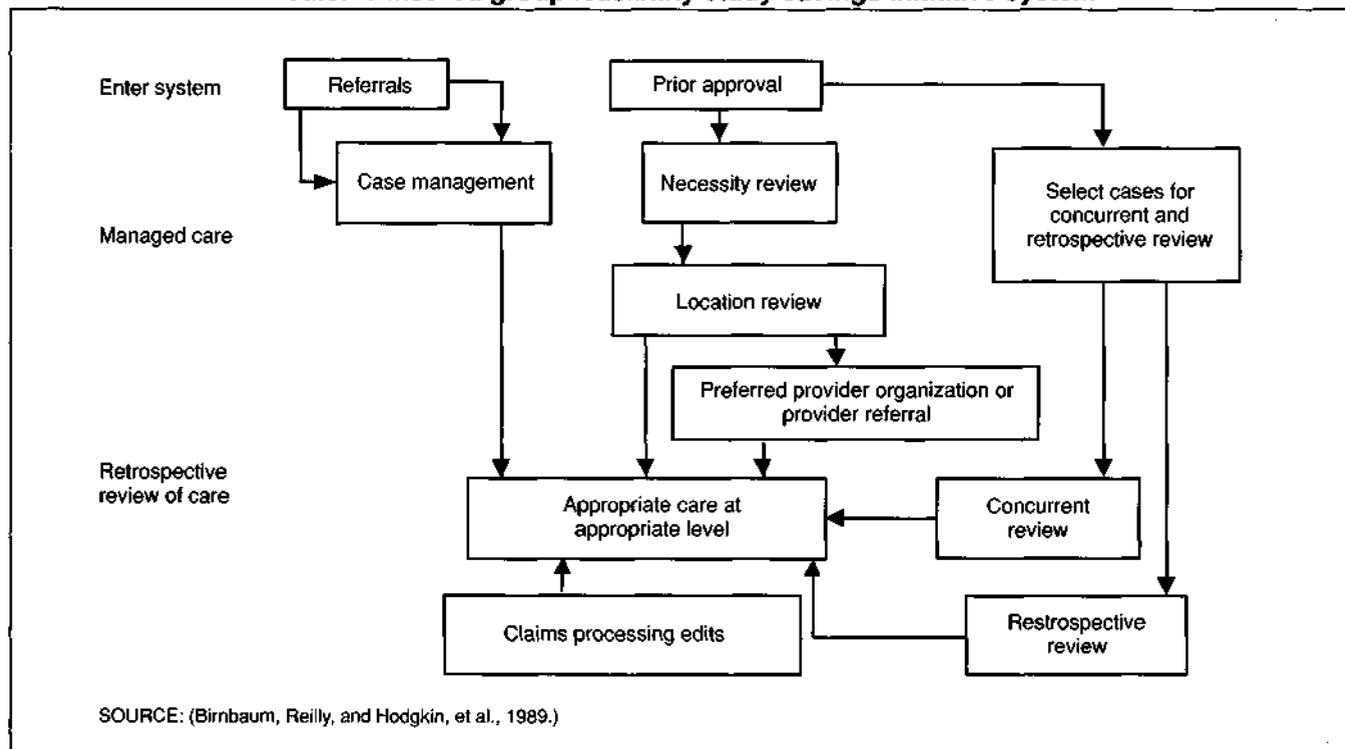


Figure 2
Percent distribution of employer's Medicare retirees as a percent of enrollees and as a percent of payments in 1986

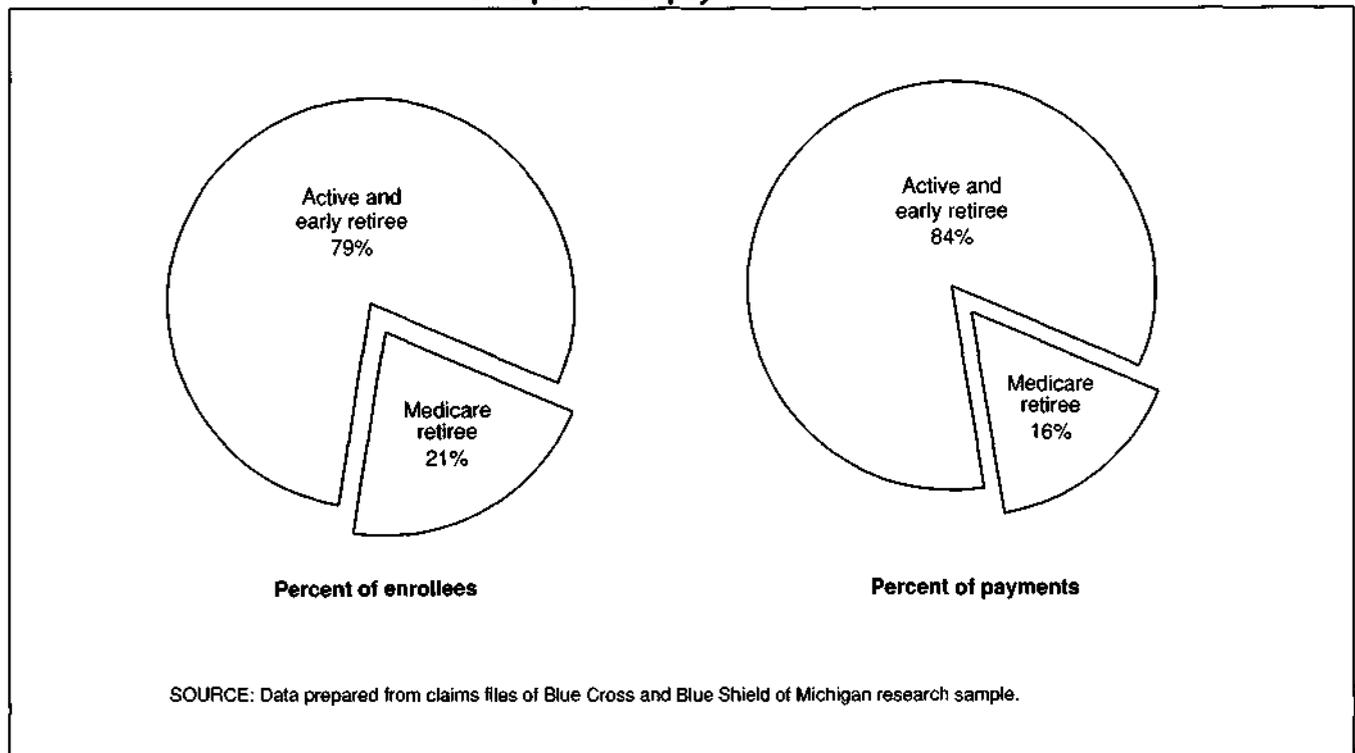


Table 2
Comparative average 1986 Medicare payments per enrollee for Michigan employer retirees versus overall Michigan Medicare beneficiaries versus overall U.S. Medicare beneficiaries

Item	Michigan retirees	Overall Michigan Medicare beneficiaries	Overall U.S. Medicare beneficiaries	Percent difference	
				Michigan retirees versus overall Michigan Medicare beneficiaries	Michigan retirees versus overall U.S. Medicare beneficiaries
Average 1986 payment per enrollee	\$2,811	\$2,312	\$2,021	+ 21.6	+ 39.1
Average 1986 payment per claimant	\$2,423	\$3,017	\$2,881	+ 13.5	+ 18.8
Percent of enrollees with Medicare claims	82.1	76.6	70.1	+ 7.2	+ 17.1

SOURCES: (Health Data Institute, 1987.) Data prepared from claims files of the Blue Cross/Blue Shield of Michigan and the Health Care Financing Administration, Bureau of Data Management and Strategy; Data from the Medicare Decision System, 1989.

Medicare's PPS. Under PPS, most admissions are grouped into specific DRGs and are reimbursed at a DRG-specific fixed amount that varies somewhat between hospitals. There are provisions for additional payment beyond this fixed amount for admissions that have long stays (outlier stays) or impose exceptional resource requirements (cost outliers) on the hospital. Consequently, savings are possible from a case-management program that fosters the early identification and discharge of outlier patients to less care settings. Case-management programs can also lower health care expenditures by identifying and avoiding short-stay medical admissions that are often the result of a minor deterioration of a known chronic condition or a

disintegration of the social support system that has maintained the chronically ill and disabled individual in the home setting.

Early discharge of outlier patients

To estimate potential savings resulting from earlier discharge, non-PPS admissions, which include admissions to rehabilitation and psychiatric hospitals, were excluded from the analysis. Then, we randomly selected two 50-admission samples from the admissions qualifying as day outliers and collected the detailed claims history for each of these 100 cases. After a clinical examination of the claims histories on a case-by-case basis in each

sample, clinicians estimated that 72 percent of outlier days could have been avoided through case management.

We defined a case as "case manageable" if the admission had at least 5 outlier days; if there was no major procedure performed after the initial third of the stay; and if the patient's clinical condition was amenable to home care, intermediate care, or skilled nursing care. Of the cases reviewed, 93 percent were judged to be case manageable. The potential inpatient savings would be partially offset by the costs of substitute care for the avoided days. Substitute care would consist of a mixture of skilled and custodial care. Potential annual net savings of \$1.5 million were determined by assigning a separate cost per day for lower technology and higher technology substitute care and then subtracting the combined cost of substitute care from projected inpatient savings.

Avoided short-stay admissions

In addition to promoting earlier hospital discharge of long-stay patients, a case-management program could prevent admissions altogether (or avoid readmissions) for some patients with selected geriatric-specific chronic conditions through early identification of potential problems and the application of ambulatory health care resources. To estimate potential savings, clinicians studied detailed claims histories from selected high frequency admissions for DRGs representing certain skin disorders, nutritional and metabolic disorders, and urinary tract and kidney infections.

Based on case-by-case examination of the claims histories of two randomly selected samples of 50 cases, we concluded that 65 percent of the short stays could be voided through case management and closer coordination of care with primary care providers. All cases had short LOSs, no invasive procedures, and diagnostic codes (from the *International Classification of Diseases, 9th Revision, Clinical Modification*) reflecting a minor deterioration in a chronic condition. Although the manageable admissions would be avoided entirely, all facility and associated professional costs, including the first hospital deductible and the copayment for professional services, would be saved. Alternative care costs were estimated and the potential net savings from case-managed, avoided admissions were estimated at \$0.73 million.

Precertification: Outpatient surgery program

Because the MIG case-management program would focus on preventing long inpatient stays (outlier stays) and short-stay medical admissions, it is fashioned after precertification and case-management programs currently in place for the employer's population. Simply controlling LOS variation would result in meager savings, however, because hospitals are generally reimbursed a fixed amount by Medicare regardless of the LOS. In contrast, the MIG's focus is to eliminate unnecessary inpatient surgical admissions altogether, which would result in significant savings, providing the cost of any substituted care was less than the DRG payment for the avoided inpatient stay.

To estimate the potential savings from such a program, we examined the retirees' experience for a clinically distinct group of surgeries that can be typically performed

safely on an outpatient basis. Potential program savings were derived from the difference between the inpatient DRG reimbursement for the procedure and the average outpatient payments for that same surgical procedure. Over \$0.32 million could be saved annually by shifting ambulatory-appropriate procedures to less intensive settings. Savings from any sentinel effect of the implementation of a utilization review program or other presurgery medical necessity review would be additional.

Condition-specific preferred provider organizations

Although little opportunity seemed present to make improvements over Medicare prices with Michigan hospitals, an MIG might save by negotiating directly with other types of providers to gain price, utilization, and quality control through a PPO. PPO opportunities for laboratory and psychiatric services would involve extensions of the employer's programs for beneficiaries under 65 years of age. The other two opportunities in this area would require the development of new programs for ophthalmologic surgery (directed at cataracts) and rehabilitation care (which currently is reimbursed by Medicare on a cost-plus basis outside the control of PPS).

Laboratory services—In 1986, the employer operated a capitated program for outpatient laboratory services for its active population. Extrapolating the savings estimated for the active population (Health Data Institute, 1988) results in MIG estimated savings of \$0.32 million over actual fee-for-service laboratory expenditures.

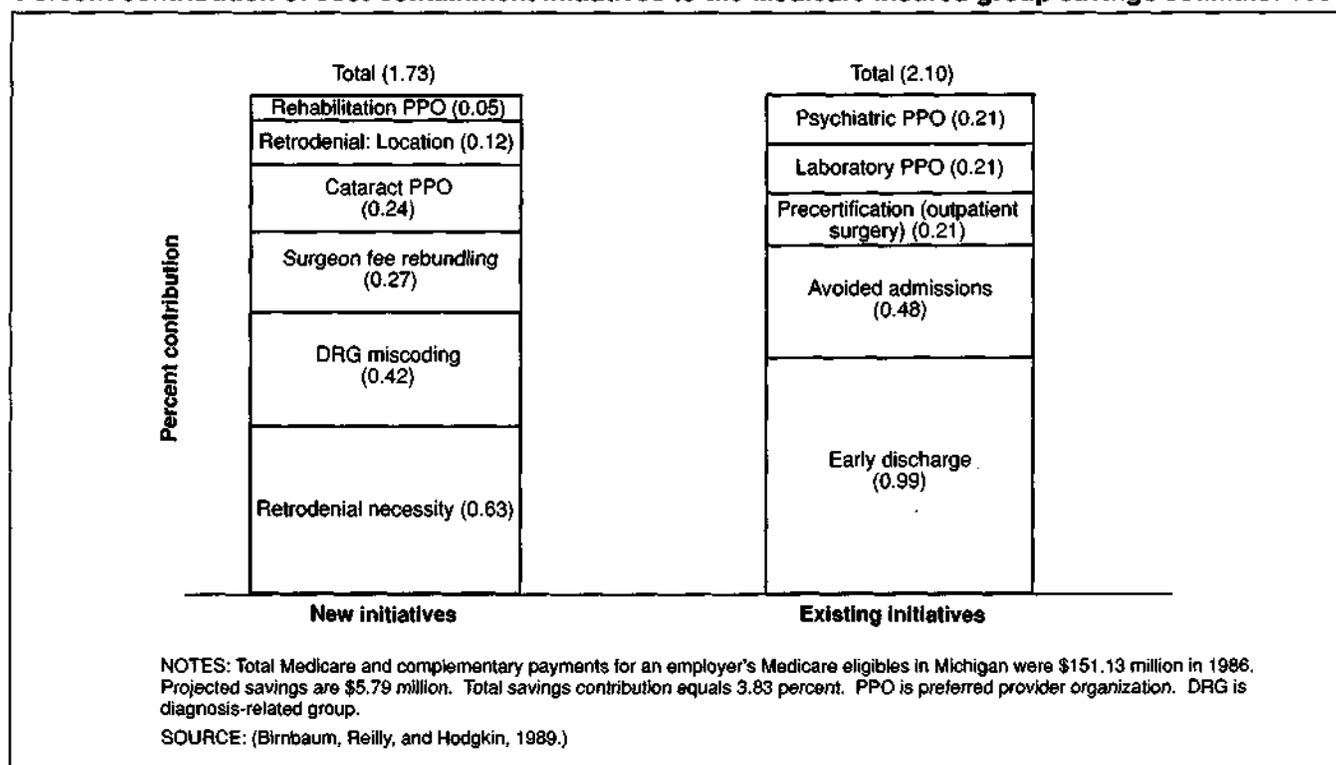
Psychiatric and substance abuse care—MIG savings might be possible as a result of paying less than Medicare for admissions to psychiatric hospitals and qualified psychiatric units in general hospitals currently being paid on the basis of TEFRA regulation. Under these regulations, because the payment per discharge is essentially the updated historical average cost for a Medicare psychiatric discharge in that facility, most psychiatric facilities have been able to keep Medicare costs below limits. Also, average LOS and cost of psychiatric facilities in Michigan are higher than regional averages. Based on information regarding ongoing research (McGuire, 1989), we estimated that a price reduction of 14 percent of current TEFRA prices could be attainable for the MIG, yielding savings of \$0.31 million. This estimate is tempered by a recognition of the difficulty of providing mental health care to retirees.

Ophthalmologic surgery—Cataract surgery was the most common facility-based outpatient surgical procedure for the research population in 1986. Opportunities for savings through negotiated lower physician fees and strong utilization controls for ophthalmologic surgery exist nationwide as well as in Michigan (Lion, Collard, and Harrow, 1988). To estimate potential savings from a PPO for cataract surgery, we calculated the total cost per episode for facility-based outpatient cataract surgery, including payment for both facility and associated professional services, and projected a 20-percent price discount on overall facility and professional fees based on past selective contracting experience. This procedure yields estimated savings of \$0.36 million.

Rehabilitation services—Care provided in rehabilitation specialty hospitals and rehabilitation units of general

Figure 3

Percent contribution of cost-containment initiatives to the Medicare insured group savings estimate: 1986



hospitals is reimbursed on a cost basis outside the DRG-based per-admission PPO reimbursement scheme. Based on comparisons to several PPO network data bases, we estimated that a 5-percent discount (net of substituted services) on total facility and professional payments could be achieved, yielding \$0.07 million savings. Because LOS is a direct determinant of rehabilitation cases, additional savings could be gained through the use of effective case management that would work to substitute less costly home and community-based physical, occupational, and speech therapies for prolonged inpatient stays.

Payment review—Four areas offer savings potential under a retrospective payment review program. These areas focus on physician and hospital coding errors, location of care, and medical necessity. The success of these initiatives would largely depend on a MIG's ability to arrange "hold-harmless" provisions that would protect beneficiaries from provider balance billing on payment denial.

Hospital coding—Accurate payment under the PPS depends on accurate assignment of the appropriate DRG to each admission. The National DRG Validation Study (Health Data Institute, 1987) found that nearly one in five admissions was coded incorrectly and consequently grouped into the wrong DRG. The study identified 10 DRGs for which miscoding is frequent, and recoding to the correct DRG usually reduces payment. Potential savings of the MIG were estimated by applying the DRG Validation Study results to the distribution of cases for these 10 specific DRGs. This analysis produced an estimated 17.4-percent reduction in Medicare facility payments through DRG assignment corrections for those

DRGs. Discounting this estimate by 50 percent to account for improvements in DRG validity since 1986 yielded potential savings of \$0.64 million.

Surgical fee unbundling—Although Medicare screens operated by fiscal intermediaries detect some coding errors on claims for professional services, some physicians are increasing their reimbursement by upcoding or unbundling services. Improved software tools are now available for applying medical judgment and precise Current Procedural Terminology, Version 4, coding rules to the evaluation of surgeons' claims to arrive at appropriate codes for surgery and other invasive procedures prior to payment (Holloway, 1987). The savings estimate is based on a pilot analysis of claims for active employees, and applying this to the MIG enrollee's experience would yield over \$0.4 million in savings.

Retrospective review: Admission appropriateness—The Michigan Peer Review Organization (PRO) routinely performs retrospective review of a 3-percent random sample of inpatient medical records. In 1987-88, their retrospective review yielded an overall net denial rate of 2.2 percent based on comparison of medical record information with specific admission criteria (Michigan Peer Review Organization, 1989). To estimate potential savings from retrospective review of medical admissions designed to verify appropriate treatment location, we analyzed the experience for the 10 medical DRGs with the highest net denial rates found by the Michigan PRO. The denial rates experienced by the Michigan PRO were applied to the 10 target medical DRGs to yield a net denial rate. Assuming partial payment denial averaging 50 percent per case, estimated savings were \$0.18 million.

Retrospective review: Medical necessity—Findings by Chassin, Kosecoff, and Park (1987); Winslow et al. (1988); and Wennberg and Gittlesohn (1982) indicate the health care system currently delivers a substantial level of medically unnecessary services. To estimate potential savings from a program of retrospective review designed to identify medically unnecessary services, claims data for seven surgical procedures with potentially high rates of inappropriateness in the Medicare population were examined. The procedures were coronary angiography, endarterectomy, upper gastrointestinal endoscopy, coronary artery bypass graft, major vascular replacement, joint replacement, and prostate resection. RAND research (Chassin, Kosecoff, and Park, 1987) found that for four of the seven procedures, between 14 and 32 percent of the procedures were unequivocally inappropriate, based on retrospective review of Medicare beneficiaries' medical records. Applying these rates to the group's experience, discounted by one-half, to allow for real-world considerations, yields estimated savings of \$0.95 million.

Savings estimates

Implementation of MIG initiatives would have lowered payments by \$5.79 million. Because the combination of Medicare and complementary payments in Michigan totaled \$151.1 million, implementation of MIG initiatives would have lowered payments by 3.8 percent. This estimate is the net of substitute care costs but does not account for administrative costs. Figure 3 displays the percent contribution of each of the cost-containment initiatives to the overall savings estimate and distinguishes whether the initiative was ongoing or new for the active population. For example, the \$0.64 million savings from new DRG miscoding initiatives would yield 0.42 percent savings on the \$151.1 million base.

Savings from existing programs

Expansion of existing programs for the population under 65 years of age, modified for an elderly population, account for most of the savings. Case management is the largest single source of savings and accounts for net payment reductions of 1.47 percent (after including costs of substitute care). Approximately two-thirds of case-management savings come from early discharge of long-stay cases; the rest come from avoided admissions. Case management is the most straightforward of the initiatives to implement based on the experience of the active group and the most likely to be accepted by beneficiaries.

Expansion of the employer's existing PPOs for laboratory and psychiatric care to the elderly would add an additional 0.21 percent in reimbursement savings. The implementation of location-of-care review through a precertification program similar to what exists (which would shift outpatient-appropriate procedures from inpatient settings) would save an additional 0.21 percent.

Savings from new programs

Of the new programs that can be implemented at the start of MIG, retrospective payment review offers the most potential for savings. Taken together, payment

review for DRG miscoding, surgical fee unbundling, and retrospective review for denial of payment because of a lack of medical necessity and inappropriate location could yield a 1.44-percent savings. The chief sources of savings would be medical necessity denials and DRG miscoding corrections, which would account for savings of 0.63 and 0.42 percent, respectively. These estimates assume that the problem of hold-harmless provisions, a very important issue for beneficiaries, is solved.

One or two new PPOs for ophthalmologic care (primarily cataracts) and, possibly, rehabilitation care seemingly can be implemented and likely would save approximately 0.24 percent. Because these would be new programs, it would be necessary to develop a provider negotiation strategy and to address beneficiary concerns. These savings initiatives could cover beneficiaries under 65 years of age and Medicare beneficiaries. If these new focused PPOs are successful, a series of PPOs for high-cost diagnostics, such as endoscopies, cardiac testing, and magnetic resonance imaging, also might be effective tools for controlling both the price and utilization of these new and costly technologies.

Discussion

Expected savings (3.8 percent) from a MIG's utilization initiatives are not sufficient to offset HCFA's retention of 5 percent of the adjusted average per capita cost mandated by OBRA 1987. As a result of this and other findings (including likely unreimbursed administrative overhead and major systems implementation obstacles), the employer decided that its MIG was not feasible. In evaluating the results of this MIG savings analysis, however, a key issue is to distinguish local from general features.

How generalizable are these findings? Design criteria for this MIG set by this employer reflected such factors as the considerable financial risk of the MIG, OBRA 1987 reimbursement policies, a population that faces relatively open access in a fee-for-service environment, and a variety of administrative and systems implementation issues. The Michigan area is unique in a number of ways, so results could be different for other locations and populations. Thus, a MIG may be found to be feasible in other circumstances, particularly where the administrative issues are less cumbersome and the design and analysis criteria are set less conservatively or better comparison data are available.

Indeed, several other potential sponsors that are more involved in the business of health care are actively exploring the MIG option. MIGs may be feasible for employers that have direct health care administrative experience such as Deere & Company (which owns a subsidiary HMO). For such sponsors, constraints may be less binding, particularly regarding administrative issues and flexibility to implement new initiatives, and a MIG may be feasible.

Factors that affected the savings estimates included:

- *Enrollment and disenrollment in the MIG are voluntary*—The potential for adverse selection in this population could eliminate potential savings achieved through utilization and price control initiatives. For instance, the MIG could attract enrollees with chronic conditions not included in the MIG initiatives.

- *Potential enrollees are accustomed to a broad choice of providers*—The most successful managed care to date has been delivered in closed health care systems, where patients are redirected to efficient and less costly providers. Restricting access to care for retirees through a closed system would work against broad participation in the MIG.
- *A majority of potential savings gained by the MIG would be through the identification and prevention of medically unnecessary care and poorly coordinated care*—Managed-care programs for retirees is a new concept. There is a lack of data on the administrative costs of managing health care for retirees in such a manner.
- *Little specific utilization data are available from successful Medicare HMOs to allow estimation of the degree of overutilization in the Medicare retiree population*—Detailed knowledge of HMO utilization might have contributed to higher projected savings and greater confidence in the estimates. Data are unavailable to compare the baseline severity of illness for enrollees of HMOs with that of potential enrollees under a MIG.
- *The impact of Medicare catastrophic legislation was unknown*—Although the Medicare catastrophic legislation was repealed subsequent to this analysis, at the time its potential impact was unclear and added uncertainty.
- *There is uncertainty about future HCFA cost-containment initiatives and their likely impact on the potential for savings by a MIG*—For example, a cap on physician expenditures or expenditure targets could influence MIG savings options.

For several reasons, the savings from the initiatives proposed for the MIG appeared less than when the project was formulated. First, HCFA cost-containment initiatives (particularly regarding inpatient care) were more successful than anticipated at the start of the project, leaving less opportunity for additional MIG savings. Second, in a context of voluntary enrollment, many potentially ineffective initiatives become impractical as they may discourage enrollment. Third, a MIG would have less market power and legal status than Medicare and, therefore, be in a weaker position to implement initiatives that providers may perceive negatively. It would be possible to develop additional MIG initiatives and to improve or add to existing initiatives analyzed for the MIG. Ultimately, to control expenditures, new initiatives need to be focused on ambulatory care and professional services.

Beyond the MIG, the research described here also illustrates the potential for savings from managed-care initiatives to Medicare generally, even if the MIG, as currently constrained, is not an appropriate vehicle for achieving those savings. HCFA's cost-containment initiatives in recent years have succeeded by focusing on price, and one result is reduced opportunity for further savings through a MIG. Many of the utilization control initiatives described in this article could be implemented more practically by HCFA than by a MIG. HCFA is not constrained by the need to attract enrollment, has greater market power in dealing with providers, and has legal protections not available to a MIG. Moreover, the Medicare program can amortize administrative costs over

much larger populations than any employer and does not need to purchase stop-loss insurance, which would be very expensive for a MIG.

Managed-care initiatives discussed in this article could save Medicare dollars directly and potentially affect employers indirectly, because complementary payments are driven by Medicare. It is important that employers not be penalized if Medicare implements managed-care programs and that there be cooperation between the public and private sectors. This overlap of interests arises because managed-care initiatives would focus, in part, on achieving savings by substituting ambulatory care for facility care. Because increases in ambulatory care shift costs to Part B benefits which, in turn, involve greater coverage from employers' complementary benefits, such an initiative could shift costs onto employers. To avoid merely shifting costs to the private sector, Medicare needs to implement initiatives in a way that reduces the total bill. Because employer retiree benefits often complement Medicare primarily for professional and outpatient care, it will be important that there be mechanisms to ensure that the savings are shared rather than coming at the expense of employers and beneficiaries. Future savings initiatives implemented by Medicare, such as ones using effectiveness research and practice protocols, also might get diffused generally among providers with the result that savings would be carried over to the population under 65 years of age. With cooperation between the public and private sectors, it should be possible to implement initiatives that lead to a more efficient health care system and generate savings for both sectors while ensuring quality of care.

In addition, without the MIG, employers should be allowed to manage certain benefits that they provide to their Medicare-enrolled retirees. For example, HCFA could contract on a nonrisk basis to employers for management services and split any savings. Employers have considerable experience in managing the care of their active employees. The adaptation of certain of these programs to retired groups would offer significant benefits to employers, HCFA, and Medicare beneficiaries. Employers would gain greater control over their liability for complementary benefits. HCFA would benefit from the private sector's experience in health care management and be able to monitor the effects of different employers' approaches and, at the same time, reap some of the savings. Beneficiaries would be able to continue in many of the same managed-care programs before and after enrolling in Medicare, thereby reducing confusion and interprogram administrative inconsistencies.

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