Department of Health and Human Services

OFFICE OF INSPECTOR GENERAL

MEDICARE RISK HMO PERFORMANCE INDICATORS

JUNE GIBBS BROWN
Inspector General

OCTOBER 1995
OEI 06-91-00734

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EXECUTIVE SUMMARY

PURPOSE:

To determine the usefulness of HMO disenrollment rates as performance indicators of Medicare risk HMOs, in light of our recent beneficiary survey data.

BACKGROUND AND METHODOLOGY:

The rapidly increasing participation of Medicare and Medicaid beneficiaries in managed care has heightened the need to find valid measures and performance indicators for HMOs. Two measures which have been considered by researchers and policy analysts are HMO disenrollment rates and direct surveys of HMO members. We previously reported results from a survey of 2,882 enrolled and disenrolled beneficiaries in 45 Medicare risk HMOs. Using our survey data, coupled with disenrollment data for these HMOs, we conducted both beneficiary and HMO-level analyses to assess the validity of using disenrollment rates as indicators of HMO performance, and participant survey data to predict disenrollment. This report presents our analyses and conclusions regarding the viability of these two performance indicators.

FINDINGS

Disenrollment Rates as a Performance Indicator

HMO disenrollment rates, once properly adjusted, may provide an early alert of possible problems among Medicare risk HMOs. HMOs with higher disenrollment rates had more enrollees who reported service access problems. However, the following adjustments to HMO disenrollment rates are needed to accurately reflect HMO trends:

- Annualize the rates to more accurately portray disenrollment activity among newer HMO risk contracts.
- Adjust rates for administrative disenrollments (e.g. beneficiaries moving out of the service area).
- Recognize disenrollment rates will be understated because they do not capture those beneficiaries who want to leave but cannot.

HMO Disenrollment Patterns

HMOs with more experience in the Medicare risk HMO program experienced the largest decreases in their disenrollment rates over time.

Beneficiary Disenrollment Patterns

Beneficiary-level survey data showed beneficiaries who are more likely to disenroll tend to report: 1) declining health due to HMO care; 2) being disabled or having end-stage renal disease (ESRD); 3) perceiving that their HMO places more importance on holding down the cost of care rather than giving the best medical care possible; and 4) experiencing long waits in a primary HMO doctor's office.

Beneficiaries leaving Medicare risk HMOs often re-enroll directly, or shortly thereafter, in another HMO.

RECOMMENDATIONS

HMO disenrollment rates, in conjunction with beneficiary survey data, appear to be useful HMO performance indicators. Overall, we recommend that HCFA use systematically developed HMO disenrollment rates and beneficiary survey data to improve its monitoring activities. We believe this is a particularly important step in light of the anticipated rapid growth of the Medicare risk HMO program. We specifically recommend that HCFA:

Use Disenrollment Data

- ***Track disenrollment rates over time*** to detect potential problems among HMOs.

- ***Use adjusted disenrollment rates***, along with other available HMO information (e.g. beneficiary complaints and appeals lodged against HMOs) to target reviews of HMOs. Adjustments must include: 1) annualizing rates for Medicare risk HMO contracts less than 2 years old to more accurately measure newer HMOs' disenrollment activity, and 2) excluding administrative disenrollees, which overstate disenrollment rates due to such factors as enrollees moving or HMO plan discontinuation.

- ***Conduct disenrollment surveys*** that fully capture all the beneficiary's reasons for leaving the Medicare risk HMO.

Use Beneficiary Survey Data

- ***Survey enrollees systematically and routinely*** on key questions and on their desire to leave/remain with an HMO, to complement disenrollment data. Such survey data might be captured nationally, to assist in targeting HMOs for in-depth reviews, or in the HMOs which have been targeted as part of the in-depth review itself.

- ***Monitor Medicare risk HMOs with high disenrollment rates and reported service access problems*** and work with HMOs to respond to the needs of beneficiaries at risk of disenrolling. This should include activities that: 1) give more attention to the care delivered to disabled/ESRD beneficiaries; 2) reduce the waiting times in

primary HMO doctor offices; and 3) address HMO practices that cause beneficiaries to report declining health status as a result of their HMO care and their sense that the HMO gives too much priority to holding down costs versus giving the best care.

Use Key Questions

Several key questions successfully predicted future disenrollment and HMO disenrollment rates, along with beneficiaries who wanted to leave but felt they could not.

- ***The questions we found most predictive of beneficiaries' future disenrollment included:***
  - Were complaints taken seriously by their HMO doctors?
  - Did their primary HMO doctors provide Medicare services, admit them to the hospital, or refer them to a specialist when needed?
  - Did they perceive their HMOs as giving too high a priority to holding down the cost of medical care compared to giving the best medical care?
  - Did they perceive their health got worse as a result of the medical care they received in their HMO?
  - Did they experience long waits (1 hour or more) in their primary HMO doctors' offices?

AGENCY COMMENTS

HCFA concurred with the report's recommendations. They noted several projects underway by the Office of Managed Care (OMC) and other work groups addressing many of the recommendations. We applaud their efforts. We would emphasize the importance of conducting systematic and ongoing national surveys that are statistically sound and contain a sufficient representation from individual Medicare HMOs to obtain comparable, nonbiased data.

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INTRODUCTION

PURPOSE

To determine the usefulness of HMO disenrollment rates as performance indicators for Medicare risk HMOs, in light of our recent beneficiary survey data.

BACKGROUND

As of February 1995, the Health Care Financing Administration (HCFA) reported 157 Medicare risk HMO plans served approximately 2.4 million beneficiaries, an increase of 70 contracts in just two years. The rapidly increasing participation of Medicare and Medicaid beneficiaries in managed care has heightened the need to find valid measures and performance indicators for HMOs. Two measures which have been considered by researchers and policy analysts are HMO disenrollment rates[1] and direct surveys of HMO members.

Prior research on disenrollment rates and patterns for Medicare risk HMOs has generally been retrospective and limited to disenrollee data. Using this approach, they found disenrollment rates were lower for plans that were nonprofit, not federally qualified, and group models (Brown et. al. 1986), and higher for plans that were network/mixed models, for-profit, lacking a chain affiliation, and having fewer than 1,000 or more than 10,000 Medicare beneficiaries enrolled (HCFA 1990). Reasons for disenrollment were discontent with physicians, often caused by poorly established relationships with them; financial constraints, such as high premiums; and HMO procedural constraints, such as needing a primary HMO doctor's referral for other services (Porell et al. 1992; Rossiter et al. 1988, 1989; Ward, R.A. 1987). Studies exploring the general characteristics of disenrollees have found that those reporting access problems were more likely to have Medicare entitlement through disability, reported fair or poor health status, had out-of-plan use, had either very high or no HMO physician/specialist use, and disenrolled within three months of enrollment (Porrell et al. 1992).

One study on Medicare risk HMOs, which used demographic information for both enrollees and disenrollees, concentrated on beneficiary satisfaction and how this related to disenrollment from social/HMOs[2] (Harrington et al. 1993). Disenrollees, compared to enrollees, were more likely to not live alone, have some other type of health insurance or Medicaid, have an employer who pays for the insurance, and report having inadequate information when they joined the HMOs. Disenrollees were also more likely to have better health status, have no impairments in activities of daily living, and have required no hospital or chronic care.

continuity and consistency with our first report, we separated enrollees and disenrollees for most HMO-level data analysis. Also, since our individual-level data was a disproportionate sample of enrollees and disenrollees, we had to account for varying response rates per HMO. Specifically, enrollees were distributed among all 45 HMOs, but disenrollee representation was limited. Four HMOs had less than 20 of 50 disenrollees return their survey. Thus, for disenrollees only, these 4 HMOs were dropped from further analysis. Our intent was not to generalize our findings to all Medicare risk HMOs but to use our data to detect trends within our own sample, especially to illustrate the utility of HMO-level analyses.

Regression Analysis of Data

We analyzed the data at the beneficiary-level and at the HMO-level, using both linear and logistic regression models. Due to the continuous nature of the dependent variables (e.g. HMO disenrollment rates), linear regression models were used for any data aggregated at the HMO-level. Logisitic regression models were used for the beneficiary-level data because the dependent variable in this analysis was binary, either a one (1) if the event occurred or a zero (0) if otherwise.

▸ Linear regression analyses - Beneficiary responses from key survey questions were linked to their respective HMOs and became variables used in all regression analyses, along with structural factors for each HMO. Except for some structural factors, all variables were continuous, measuring the percentage of beneficiaries reporting a particular occurrence within each HMO. Only the dependent variable measuring HMO disenrollment rates is presented as a finding in the main body of this report. Several additional analyses were conducted but are only referenced as an endnote or included in the Appendix material. These analyses included models with dependent variables measuring the percentage of HMO beneficiaries who want to leave but cannot, and those who actually left within one year of our survey.

Key survey questions, used to identify potential problems in our companion reports, are included for each HMO in our regression analysis and show the percent of beneficiaries:

- receiving fee-for-service prior health care
- self-reporting serious health problems[8]
- being asked inappropriate questions about health at application
- waiting an hour or more to see a primary HMO doctor
- perceiving declining health as a result of HMO care
- saying their complaints were not taken seriously by a primary HMO doctor
- seeking out-of-plan medical care while in the HMO
- reporting it was more important to their HMOs to hold down the cost of medical care than to provide the best medical care possible
- saying their primary HMO doctors did not provide Medicare services, admit them to the hospital, or refer them to a specialist when needed

► Logistic regression analysis - For the logisitic regression, all variables, except age, used individual-level beneficiary data coded as binary variables, i.e., either a characteristic existed (coded as 1) or otherwise (coded as 0). The dependent variable, being a sampled disenrollee or otherwise (enrollee), measured the change in the referent category (disenrollee) produced by each independent variable (see Appendix E). Additional independent variables used in logisitic regression analysis include:

- Medicare category: beneficiary was disabled or had end-stage renal disease (ESRD)
- beneficiary's age
- non-competitive area: beneficiary lived in a county with no other Medicare risk HMO contract
- propensity: beneficiary's propensity to use medical services was low or medium
- prior care: beneficiary was enrolled in an HMO before joining sampled HMO
- health worsened: beneficiary reported health declined due to care provided by the sampled HMO

This inspection was conducted in accordance with the *Quality Standards for Inspections* issued by the President's Council on Integrity and Efficiency.

FINDINGS

DISENROLLMENT RATES AS A PERFORMANCE INDICATOR

HMO disenrollment rates, once properly adjusted, may provide an early alert of possible problems among Medicare risk HMOs.

HMOs with high disenrollment rates could be targeted for follow-up analysis and further investigation by HCFA. However, disenrollment rates, like other performance indicators, should not be used as a sole measure of performance but are most helpful when used in conjunction with beneficiary survey data.

HMOs with higher disenrollment rates had more enrollees who reported service access problems.

Enrollees who said they experienced poor service, whose complaints were not taken seriously, and who were in for-profit HMOs, were more likely to come from HMOs with higher disenrollment rates.[9] These 3 factors helped explain much of the variation in our HMOs' Calendar Year 1992-93 disenrollment rates[10], even after controlling for such structural characteristics as HMO type and enrollment size (see Appendix A and Appendix F, Tables 1 and 5).[11]

Poor service

- Poor service (e.g. primary HMO doctor did not provide Medicare services, admit to the hospital, or refer to a specialist when needed) had the largest impact on disenrollment rates.[12] HMOs with the 5 highest disenrollment rates were 1.5 times more likely to have beneficiaries who reported poor service (18 percent vs. 12 percent).[13]

Complaints not taken seriously

- The perception that a primary HMO doctor did not take a beneficiary's complaints seriously strongly affects disenrollment rates.[14,15] The 3 HMOs with the highest disenrollment rates also have the highest percentages of beneficiaries reporting their complaints were not taken seriously (see Appendix A).

Profit Status

- Profit status also significantly influences future disenrollment rates. Four of the 5 HMOs with the highest disenrollment rates were for profit HMOs.

HMO disenrollment rates need adjustment to more accurately reflect trends within HMOs.

HMO disenrollment rates, in their raw form, do not accurately reflect beneficiary disenrollment patterns. They may overstate or understate the true rate. For example, limited GHP information regarding beneficiaries' reasons for disenrollment would overstate the true disenrollment rate.[16] To correct some of these problems, adjustments are needed before using HMO disenrollment rates.

Annualize HMO disenrollment rates.

We found the length of the HMO contract significantly influenced large changes in disenrollment rates over time (see Appendix F, Tables 1 and 2). For the time periods we measured, HMOs with risk contracts less than two years old experienced enormous increases in disenrollment rates. These HMOs had disenrollment rates that were understated because not enough time had elapsed to fully measure their disenrollment rates. However, after annualizing disenrollment rates for our 10 newer HMOs, these increases were less dramatic[a] (see Appendix B).

Account for administrative disenrollments.

We found administrative disenrollments overstate true HMO disenrollment rates. Almost one-third of disenrollees surveyed left solely for administrative reasons, such as moving, procedural errors, or an HMO no longer participating in the Medicare risk HMO program or in a company's retirement plan. Adjusting for administrative disenrollments resulted in substantial decreases in disenrollment rates for several HMOs; 17 HMOs experienced a drop of 33 percent or more, one declined 71 percent. The average change in disenrollment rate, after adjusting for administrative disenrollees, was a decrease of 32 percent[17] (see Appendix C).

Using disenrollment rates without feedback on why beneficiaries left can be very misleading. As mentioned, sometimes beneficiaries have only moved or were disenrolled in error. In a more dramatic example, 1 HMO experienced a 725 percent increase in its disenrollment rate from Calendar Years 1991-92 to Calendar Years 1992-93, with a rise from 4 to 33 percent. One year after our survey, 74 percent of surveyed beneficiaries left this HMO. Interestingly, our survey feedback for this HMO showed no widespread beneficiary discontent. Upon further examination, we found this increase resulted from the HMO splitting into 2 HMOs. Beneficiaries were administratively transferred from one HMO risk contract to the new risk contract operated by the same company.[18]

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[a] Annualized disenrollment rates were used in the analysis on page 5 and throughout the remainder of the report, allowing for comparisons of older and newer HMO risk contracts.

Recognize disenrollment rates will not capture information from those enrollees who want to leave but cannot.

Enrollees wanting to leave their HMOs, but saying they cannot, comprise an unmeasured group in any assessment of HMO disenrollment rates, thus, understating the true rate. Ten percent of surveyed enrollees wanted to leave but could not, primarily because they thought they could not afford to leave. One HMO had 26 percent of its beneficiaries reporting this situation. Since only 9 percent of enrollees wanting to leave actually left within one year after our survey, many of this group's concerns will not be measured by future HMO disenrollment rates.[19]

HMO DISENROLLMENT PATTERNS

HMOs with more experience in the Medicare risk HMO program experienced the largest decreases in their disenrollment rates over time.

Although disenrollment rates averaged a 6 percent increase over the two time periods measured, individual HMO disenrollment rates fluctuated rather widely, with an average 26 percent change in absolute value.[20] HMOs with older risk contracts experienced the largest decreases in their disenrollment rates. The largest decrease, 62 percent, occurred in an HMO which began its risk contract in 1987. The largest increase in disenrollment rate, 150 percent after annualizing, occurred in an HMO which began its risk contract in 1992 (see Appendix D).

BENEFICIARY DISENROLLMENT PATTERNS

By using beneficiary survey data responses we were able to determine: 1) which beneficiaries were more likely to be an enrollee or a non-administrative disenrollee based on their answers to key survey questions (see Appendix E) and 2) beneficiary enrollment patterns before joining and after leaving a sample HMO.

Beneficiaries who are more likely to disenroll tend to report declining health due to HMO care received, being disabled/ESRD, being in HMOs perceived as giving more importance to holding down the cost of care, and experiencing long waits in a primary HMO doctor's office

In this section, beneficiary responses were analyzed as sampled (e.g. enrolled or disenrolled), and not in reference to their disenrollment status after we surveyed them.

Beneficiaries health worsened

- Beneficiaries saying their health got worse as a result of the care they received from their HMO were 5 times more likely to disenroll.[21] This factor was the strongest predictor of disenrollment status.

Disabled/ESRD beneficiary

- Disabled/ESRD beneficiaries were 3.5 times more likely to disenroll.[22] This group reported more access and service problems compared to aged beneficiaries.[23]

Holding down costs perceived as more important to HMO than giving the best medical care possible

- Beneficiaries perceiving their HMOs give more importance to holding down the cost of care were 3.4 times more likely to disenroll.[24]

Long waits in primary HMO doctor's office

- Long waits in their primary HMO doctor's office made beneficiaries 2.8 times more likely to disenroll.

Beneficiaries leaving Medicare risk HMOs often re-enroll immediately, or shortly thereafter, in another HMO.

Beneficiaries switch frequently between fee-for-service and HMOs after they disenroll. However, this disenrollment often does not mean beneficiaries leave HMOs for long periods of time. Enrollment patterns among Medicare risk HMOs suggest market factors (e.g. expensive premiums/co-payments) strongly influence beneficiary disenrollment. However, survey data also show perceived service access problems are a major influence on whether beneficiaries disenroll from their HMO.

Previous HMO experience:

Of the 31 percent of beneficiaries with prior HMO experience, 69 percent went directly from the prior HMO to our sample HMO, while 31 percent went into fee-for-service. This latter group received care there for an average of 25 months.[25] Seven percent of beneficiaries left an HMO in 1 state and enrolled in a new HMO in another state.

Nine percent of beneficiaries disenrolled from their previous HMO, where they averaged 14 months of care, and received fee-for-service care for just over one year. These beneficiaries then re-enrolled in the same HMO, receiving an average of 23 months of care.

Sample HMO experience:

Beneficiaries stayed in our sample HMOs an average of 26 months: 18 percent were enrolled between 1 and 3 months; 22 percent, four months to 1 year; 19 percent, at least 1 year; and 41 percent, more than 2 years. Of the beneficiaries who were surveyed as disenrollees, the following were some of the most frequent reasons for leaving:

- 31 percent said their premium/co-payments were too expensive
- 30 percent did not like their choice of doctors
- 25 percent moved
- 25 percent wanted to use the doctor they had prior to this HMO
- 24 percent did not like going through their primary HMO doctor for other services

Of the 5 percent who said they planned to leave their HMO, almost half (47 percent) actually left within one year. Over one-third who planned an administrative departure (i.e. moving), in fact, left their HMO. Thus, information on beneficiaries planning to leave may provide powerful insight for predicting future beneficiary disenrollment.

Post HMO experience:

Sixty-five percent of beneficiaries went directly back into fee-for-service after disenrolling from their HMOs.[26,27] However, 18 percent of this group stayed in fee-for-service an average of 5 months and then returned to an HMO. Therefore, nearly half of beneficiaries leaving their HMO, either initially or eventually, enrolled in an HMO. Ten percent of these beneficiaries enrolled in a new HMO in another state. Another 12 percent of beneficiaries switched back to the same HMO they were in prior to joining our sampled HMO.

Twelve percent of beneficiaries received care through fee-for-service for an average of 5 months before re-enrolling in the same HMO in which they were sampled. Their reasons for leaving include: 1) moving; 2) wanting to use the doctor they had prior to this HMO; 3) not liking their choice of doctors; and 4) the premium/co-payment being too costly.

RECOMMENDATIONS

HMO disenrollment rates, in conjunction with beneficiary survey data, appear to be useful HMO performance indicators. High disenrollment rates or frequent reports of service access problems should be a warning to HCFA of a potentially problematic HMO. Overall, we recommend that HCFA use systematically developed HMO disenrollment rates and beneficiary survey data to improve its monitoring activities. We believe this is a particularly important step in light of the anticipated rapid growth of the Medicare risk HMO program. We specifically recommend that HCFA:

USE DISENROLLMENT DATA

- ***Track disenrollment rates over time*** to detect potential problems among HMOs. HMOs experiencing larger than average increases in disenrollment rates should be monitored more closely.

- ***Use adjusted disenrollment rates***, along with other available HMO information (e.g. beneficiary complaints and appeals lodged against HMOs) to target reviews of HMOs. Adjustments must include:

  - Annualizing rates for Medicare risk HMO contracts less than 2 years old to more accurately measure newer HMOs' disenrollment activity. Waiting to evaluate HMOs until they become fully operational might jeopardize the health of and service to Medicare beneficiaries, especially since nearly half of risk contracts are less than 2 years old. Alternative methods, such as annualizing, will allow HCFA and other researchers to keep abreast of potential problems of all HMOs and not just the HMOs with older contracts.

  - Excluding administrative disenrollees, which overstate disenrollment rates due to such factors as enrollees moving or HMO plan discontinuation.

- ***Conduct disenrollment surveys*** that fully capture all the beneficiary's reasons for leaving the Medicare risk HMO. This information should be included in the GHP data files.

USE BENEFICIARY SURVEY DATA

As discussed in previous OIG reports providing results of our beneficiary survey data, this information can be useful in a number of different ways. We emphasize here two uses: supplementing disenrollment data to assess HMO performance, and pinpointing problem areas that might lead beneficiaries to disenroll.

- ***Survey enrollees systematically and routinely*** on key questions and on their desire to leave/remain with an HMO, to complement disenrollment data. Such survey data might be captured nationally, to assist in targeting HMOs for in-depth reviews, or in the HMOs which have been targeted as part of the in-depth review itself.

- ***Monitor Medicare risk HMOs with high disenrollment rates and reported service access problems*** and work with HMOS to respond to the needs of beneficiaries at risk of disenrolling. This should include activities that: 1) give more attention to the care delivered to disabled/ESRD beneficiaries; 2) reduce the waiting times in primary HMO doctor offices; and 3) address HMO practices that cause beneficiaries to report declining health status as a result of their HMO care and their sense that the HMO gives too much priority to holding down costs versus giving the best care.

USE KEY QUESTIONS

Several key questions successfully predicted future disenrollment and HMO disenrollment rates, along with beneficiaries who wanted to leave but felt they could not.

- ***The questions we found most predictive of beneficiaries' future disenrollment included:***

  - Were complaints taken seriously by their HMO doctors?

  - Did their primary HMO doctors provide Medicare services, admit them to the hospital, or refer them to a specialist when needed?

  - Did they perceive their HMOs as giving too high a priority to holding down the cost of medical care compared to giving the best medical care?

  - Did they perceive their health got worse as a result of the medical care they received in their HMO?

  - Did they experience long waits (1 hour or more) in their primary HMO doctors' offices?

AGENCY COMMENTS

We received comments from the Health Care Financing Administration (HCFA). The full text of their comments is in Appendix G.

The HCFA concurred with all of the report's recommendations. HCFA noted that the Office of Managed Care (OMC) has developed a plan profile report which incorporates a number of data elements on disenrollment. These profiles are reviewed on an ongoing basis by OMC's Operations and Oversight Team. HCFA reports it is currently implementing a new disenrollment form to capture significant data regarding motivations for disenrollment. With the addition of this information, we believe that HCFA should be able to adjust HMO disenrollment rates by accounting for administrative disenrollments. As it pursues this initiative, we suggest that HCFA: 1) attempt to capture all the beneficiaries' significant reasons for leaving the Medicare risk HMO; 2) include disenrollment information in the GHP data files so that researchers can properly adjust disenrollment rates when studying Medicare risk HMOs; and 3) annualize disenrollment rates to improve comparability of newer HMO contracts with older ones.

A work group within HCFA is also currently developing a strategy on beneficiary satisfaction surveys. We applaud their efforts. Due to the difficulties involved in measuring satisfaction, we urge that the survey focus more on measuring enrollee service access than on beneficiary satisfaction. We would emphasize the importance of conducting systematic and ongoing national surveys that are statistically sound and contain a sufficient representation from individual Medicare HMOs to obtain comparable, nonbiased data. These surveys should ask key questions that we know are predictive of future disenrollment and also focus on service access for disabled/ESRD beneficiaries. The results of these surveys should be included in the HMO plan profile report and used proactively by HCFA to detect potential problems among HMOs.

ENDNOTES

1. Several researchers have suggested Medicare risk HMOs should be required to disclose disenrollment rates to serve as a proxy for such things as enrollment and service access problems (Prasad and Javalgi 1992; Porrell et al. 1992).

2. Social/Health Maintenance Organizations offer expanded benefits in addition to those normally offered by Medicare risk HMOs, such as outpatient prescription drugs, eyeglasses, and/or chronic care benefits. In return for these expanded benefits, beneficiaries are charged premiums.

3. We did not specifically ask beneficiaries about their satisfaction with the HMOs, as the concept of satisfaction is less objective than, and sometimes independent of, the issues of membership in a Medicare risk HMO.

4. Since our primary focus was Medicare beneficiaries' perceptions, we collected information from them and did not contact HMOs or their staffs, nor did we attempt to assess the quality or propriety of medical care rendered by the HMOs to these beneficiaries.

5. We selected a stratified random sample from HCFA's Group Health Plan (GHP) data base. First, we sampled 45 HMOs from the 87 HMOs under a risk contract with HCFA as of February 1993. Beginning with the GHP data, we counted the number of enrollments occurring within calendar years 1991 and 1992. For this cohort, we then calculated the proportion of disenrollments within the following 12 months. Based on this disenrollment rate, we divided the 87 risk HMOs into three strata of 29 HMOs each. Within each strata, we selected 15 HMOs by simple random sampling. Second, from each sampled HMO, we randomly selected 50 Medicare beneficiaries who were enrolled as of February 28, 1993 and 50 who had disenrolled between November 1992 and February 1993 inclusive. When the total number per HMO for either group was less than 50, we selected them all. Using HCFA's Enrollment Data Base, we excluded, from the sampling universe, beneficiaries who had died or who appeared as current enrollees, but had actually disenrolled since the last update to the GHP file. This process resulted in 2,217 enrollees and 1,915 disenrollees for a total of 4,132 beneficiaries. A total of 2882 surveys were deemed usable, yielding an unweighted return rate of 70% overall, 77% for enrollees (N=1,705) and 61% for disenrollees (N=1,177).

6. See "Beneficiary Perspectives of Medicare Risk HMOs," OEI-06-91-00730 and "Medicare Risk HMOs: Beneficiary Enrollment and Service Access Problems," OEI-06-91-00731.

7. HMO model types are divided into three categories. Group models contract with independent, multispecialty physician groups. Individual practice associations (IPAs) contract with independent physicians or small, single specialty physician groups who also maintain private practices co-jointly with their HMO contract. Staff models directly employ salaried physicians to serve patients.

8. Beneficiaries with serious health problems had one or more illnesses, e.g., heart attack, cancer, or pneumonia.

9. As found in past surveys, disenrollees are consistently more dissatisfied than enrolled beneficiaries (OIG/OEI 1994; Harrington 1993). We found survey data of enrollees more powerfully differentiates problematic HMOs. We were able to explain 20 percent more of the variation in disenrollment rates for CY92-93 by using the experiences of just enrollees.

10. HMO disenrollment rates for 1992-93 were adjusted as discussed on page 6 to more accurately reflect each HMO's true disenrollment rate.

11. Table 1 below shows the sharp contrast between the average percentage of beneficiaries reporting service problems at the 5 HMOs with the highest disenrollment rates compared to other surveyed HMOs.

Table 1: Comparison of HMOs With Top 5 Disenrollment Rates Compared To All Other Surveyed HMOs by Key Variables

Key Variables	Top 5 HMOs with Highest Disenrollment Rates	Other Surveyed HMOs
Received poor service	18.0%	12.1%
Complaints not taken seriously by primary HMO doctor	21.4%	15.4%

* Six HMOs were excluded in the analysis of disenrollees and disenrollment rates because three had less than 20 disenrollees of the 50 surveyed per HMO; 2 HMOs discontinued their HMO risk contracts in 1993; and 1 HMO split into 2 risk HMOs, transferring many beneficiaries.

12. For every 1 percent increase in HMO beneficiaries reporting poor service, HMO disenrollment rates changed .68 percent.

13. Poor service also significantly influenced the percentage of beneficiaries who wanted to leave but could not (see Appendix F, Tables 1 & 3).

14. Future HMO disenrollment rates increased .51 percent for every 1 percent increase in HMO beneficiaries' complaints not being taken seriously.

15. We also found beneficaries whose complaints were not taken seriously significantly affected the percentages of beneficiaries leaving their HMO one year later (see Appendix F, Tables 1 & 6).

16. HMO disenrollment rates have typically only reflected movement out of an HMO (# of disenrollees ÷ # of new enrollees in the year prior) with no regard to such factors as administrative reasons for a beneficiary to leave (moving, company dropped the HMO) or the length of time the Medicare HMO risk contract has been operating.

17. Table 2 below shows the change in overall HMO disrollment rates for CY91-92 and CY92-93 after adjusting for administrative disenrollments. Four HMO's CY92-93 disenrollment rates decreased more than 6 percent, while 23 HMOs decreased between 3 and 6 percent, and 12 HMOs had decreases less than three percent after adjusting for administrative disenrollees.

Table 2: Comparison of HMOs' Unadjusted CY91-92 & CY92-93 Disenrollment Rates with HMOs' Adjusted Rates, Excluding Administrative Disenrollees*

	Unadjusted Rates	Adjusted Rates	% Change
CY91-92	14.6%	10.6%	-27%
CY92-93	13.6%	9.8%	-28%

* Six HMOs were excluded in the analysis of disenrollees and disenrollment rates because three had less than 20 disenrollees of the 50 surveyed per HMO; 2 HMOs discontinued their HMO risk contracts in 1993; and 1 HMO split into 2 risk HMOs, transferring many beneficiaries.

18. This HMO was excluded from all future analyses of disenrollment rates or the percent of beneficiaries leaving their HMO.

19. Research has shown beneficiaries respond to dissatisfaction by either "exiting" or through complaints, or "voice" (Harrington 1993; Hirschman 1970). Beneficiaries with financial constraints or without other insurance options are often forced to remain in their HMO because they lack alternatives.

20. We excluded 3 HMOs from our analysis because 2 HMOs discontinued their HMO contracts in 1993 and 1 split into 2 Medicare risk HMOs.

21. Beneficiaries' health getting worse is negatively correlated at the .86 level with the variable measuring poor service. This relationship suggests some beneficiaries are provided Medicare services and referrals to specialist care but still feel their health worsened due to the care they received in their HMO. Why poor service did not significantly predict disenrollment status may be explained by the fact that

variables correlated in excess of .80 tend to weaken the effect of one or both variables.

In addition, beneficiaries' health getting worse is positively correlated with beneficiary complaints not taken being seriously at the .71 level. This suggests there is a strong relationship between beneficiaries' health getting worse and their complaints not being taken seriously by their primary HMO doctor.

22. This finding is consistent with prior research reported in "Beneficiary Perspectives of Medicare Risk HMOs" (OEI 06-91-00730).

23. Table 3 below shows the sharp differences in reported access and service problems of disabled/ESRD beneficiaries compared to aged beneficiaries.

Table 3: Beneficiary Perspectives of Aged or Disabled/ESRD* by Key Variables

Key Variables	Disenrollees		Enrolled	
	Aged	Disabled/ESRD	Aged	Disabled/ESRD
Primary HMO doctor did not take health complaints seriously.	38% (7,892)	48% (976)	11% (104,185)	20% (4,671)
Primary HMO doctor failed to provide Medicare services that were needed.	20% (4,366)	39% (823)	3% (30,648)	4% (1,285)

* The data presented in Table 3 was weighted to approximate 70% of the universe. A previous OEI report (OEI 06-91-00730) includes a complete description of the weighting methodology.

Disabled/ESRD disenrollees also seem to be disproportionately represented among disenrollees. In the entire sample and among enrollees, the weighted proportion of disabled/ESRD beneficiaries is 3 percent. However, disabled/ESRD disenrollees account for 8 percent of all disenrollees, compared to only 3 percent of aged beneficiaries who are disenrolling. After analyzing HMOs that had at least 4 disabled/ESRD beneficiaries, we found 8 HMOs had more than 50 percent of their disabled/ESRD beneficiaries disenroll.

24. In additional analyses, we found beneficiaries who were in HMOs that found it more important to hold down the cost of care significantly affected the percentages of beneficiaries leaving their HMOs one year later (see Appendix F, Tables 1 & 6).

25. Prior HMO care includes various arrangements: 1) enrolling directly in our sampled HMO from another HMO; 2) enrolling directly from fee-for-service; and 3) enrolling in an HMO, returning to fee-for-service, and then enrolling in our sampled HMO.

26. See Endnote #10.

27. One study of disenrollment patterns of Medicare risk beneficiaries found beneficiaries were less likely to enroll in another HMO if they had some type of "other insurance" (Harrington 1993).

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APPENDIX A

Table 1: Adjusted CY92-93 Disenrollment Rates By Key Survey Variables (Enrollees only)			
HMO Ownership**	Adjusted Disenrollment Rate CY92-93 (Percent)	Poor Service*** (Poor)	Complaints Not Taken Seriously (Percent)
Group A			
# 1	12.7	8.0	7.7
# 2	13.9	6.9	10.7
# 3	NS	13.3	20.7
# 4	25.7	11.8	17.9
# 5	16.5	2.6	15.0
# 6	18.2	13.8	10.3
# 7	NS	5.6	19.0
Group B			
# 8	2.2	2.8	2.8
# 9	6.4	2.8	8.1
# 10	NA	2.9	6.3
# 11	NA	13.8	16.1
# 12	NS	3.1	20.0
Group C			
# 13	8.4	0.0	6.3
# 14	7.4*	0.0	3.6
# 15	7.6	12.0	3.8
Group D			
# 16	6.5	13.2	15.0
# 17	3.2	5.9	8.1
Group E			
# 18	9.3	17.6	15.0
# 19	4.1	6.7	16.1
Group F			
# 20	6.8	6.1	11.1
# 21	10.1	8.1	17.1
Group G			
# 22	4.4	6.1	8.6
# 23	5.0	3.8	12.9
# 24	4.9*	3.7	11.1
# 25	8.0	3.2	12.1
# 26	37.0*	11.8	23.8
# 27	6.4*	6.7	10.3
# 28	28.1	23.5	21.7
# 29	8.2	7.0	13.3

Table 1: Adjusted CY92-93 Disenrollment Rates By Key Survey Variables (Enrollees only)			
HMO Ownership**	Adjusted Disenrollment Rate CY92-93 (Percent)	Poor Service*** (Poor)	Complaints Not Taken Seriously (Percent)
# 30	5.9	5.1	7.5
# 31	15.5	10.3	6.5
# 32	20.2	12.5	7.7
# 33	4.2	10.0	13.6
# 34	1.9	5.6	5.7
# 35	3.5	7.5	7.1
# 36	10.2	10.3	13.8
# 37	13.4	16.2	12.8
# 38	15.0	10.8	18.4
# 39	5.4	6.1	8.6
# 40	8.1*	6.9	8.6
# 41	NA	9.7	6.3
# 42	4.2	6.1	5.6
# 43	6.6	8.3	4.9
# 44	3.4	7.9	7.9
# 45	2.3	9.7	25.0

* Annualized disenrollment rate based on the number of disenrollees for the period of time the HMO risk contract existed. This technique allows for comparison among newer and more established HMOs.

** HMOs are grouped together if they are owned by the same parent company.

*** Primary HMO doctor did not provide Medicare services, admit to the hospital, or refer to a specialist when needed.

NS Not Sufficient Data - Five HMOs were excluded in the analysis of disenrollees and disenrollment rates because less than 20 of the 50 disenrollees returned their survey.

NA Not Applicable - Three HMOs were not included in this analysis, H0616 and H0617 discontinued their risk contract in 1993 and H9049 split into two risk HMOs, transferring many beneficiaries into H3856.

Table 2: Top 5 Adjusted CY92-93 Disenrollment Rates by Key Survey Variables			
HMO Ownership	Adjusted Disenrollment Rate CY92-93 (Percent)	Poor Service** (Percent)	Complaints Not Taken Seriously (Percent)
# 26	37.0*	11.8	23.8
# 28	28.1	23.5	21.7
# 4	25.7	11.8	17.9
# 32	20.2	12.5	7.7
# 6	18.2	13.8	10.3

* Annualized disenrollment rate based on the number of disenrollees for the period of time the HMO risk contract existed. This technique allows for comparison among newer and more established HMOs.

** Primary HMO doctor did not provide Medicare services, admit to the hospital, or refer to a specialist when needed.

APPENDIX B

Table 1 : Unannualized and Annualized CY91-92 & CY92-93 Disenrollment Rates For the 10 HMOs with Risk Contracts for Less Than Two Years

HMO	Month/Year Risk HMO Contract Began	Unannualized Rates			Annualized Rates		
		CY91-92 Rate (Percent)	CY92-93 Rate (Percent)	% Change in Rate	CY91-92 Rate (Percent)	CY92-93 Rate (Percent)	% Change in Rate
# 24	5/92	3.0	6.0	100.0	9.0	7.2	-20.0
# 26	6/92	10.7	31.0	189.7	36.7	39.2	6.8
# 27	10/92	0.5	4.9	880.0	4.0	7.8	95.0
# 32	11/91	20.0	26.5	32.5	34.3	26.5	-22.7
# 33	8/91	4.4	5.3	20.5	6.2	5.3	-14.5
# 14	9/92	0.8	8.0	900.0	4.8	12.0	150.0
# 12	4/92	5.6	13.1	133.9	14.9	15.0	0.7
# 40	4/92	6.5	10.4	60.0	17.3	11.9	-31.2
# 22	2/91	5.9	5.5	- 6.8	6.2	5.5	-11.3
# 43	4/91	5.6	9.9	76.8	6.4	9.9	54.7
Average % Change		**6.3%**	**12.1%**	**238.7%**	**14.0%**	**14.0%**	**20.8%**

APPENDIX C

Table 1: CY92-93 Disenrollment Rates, Percent Administrative Disenrollment, and CY92-93 Adjusted Disenrollment Rates by HMO

HMO Ownership**	Disenrollment Rate CY92-93 (Percent)	Percent Administrative Disenrollment	Adjusted Disenrollment Rate CY92-93 (Percent)	% Decrease in CY92-93 Rate
Group A				
# 1	20.1	37.0	12.7	36.8
# 2	19.8	30.0	13.9	29.8
# 3	29.6	NS	NS	NS
# 4	30.0	14.3	25.7	14.3
# 5	17.6	6.3	16.5	6.3
# 6	24.3	25.0	18.2	25.1
# 7	22.6	NS	NS	NS
Group B				
# 8	5.2	58.3	2.2	57.7
# 9	10.6	39.3	6.4	39.6
# 10	NA	NS	NA	NA
# 11	NA	25.0	NA	NA
# 12	15.0*	NS	NS	NS
Group C				
# 13	12.2	31.0	8.4	31.1
# 14	12.0*	38.1	7.4*	38.3
# 15	10.9	30.8	7.6	30.3
Group D				
# 16	11.3	42.9	6.5	42.5
# 17	7.7	58.3	3.2	58.4
Group E				
# 18	11.9	22.2	9.3	21.8
# 19	9.2	56.0	4.1	55.4
Group F				
# 20	9.7	30.3	6.8	29.9
# 21	13.6	25.8	10.1	25.7
Group G				
# 22	5.5	20.0	4.4	20.0
# 23	8.1	38.9	5.0	38.3
# 24	7.2*	31.6	4.9*	31.9
# 25	12.8	37.5	8.0	37.5
# 26	39.2*	5.6	37.0*	5.6
# 27	7.8*	18.5	6.4*	17.9
# 28	32.8	14.3	28.1	14.3
# 29	16.3	50.0	8.2	49.7

Table 1: CY92-93 Disenrollment Rates, Percent Administrative Disenrollment, and CY92-93 Adjusted Disenrollment Rates by HMO				
HMO Ownership**	Disenrollment Rate CY92-93 (Percent)	Percent Administrative Disenrollment	Adjusted Disenrollment Rate CY92-93 (Percent)	% Decrease in CY92-93 Rate
# 30	7.1	16.7	5.9	16.9
# 31	20.2	23.1	15.5	23.3
# 32	26.5	23.8	20.2	23.8
# 33	5.3	20.0	4.2	20.8
# 34	6.6	71.9	1.9	71.2
# 35	3.5	0.0	3.5	0.0
# 36	15.7	34.8	10.2	35.0
# 37	15.9	16.0	13.4	15.7
# 38	18.4	18.5	15.0	18.5
# 39	10.5	48.3	5.4	48.6
# 40	11.9*	32.0	8.1*	31.9
# 41	NA	NA	NA	NA
# 42	9.4	55.2	4.2	55.3
# 43	9.9	33.3	6.6	33.3
# 44	6.6	48.6	3.4	48.5
# 45	5.1	54.8	2.3	54.9
Average % Change				**32.3**

* Annualized disenrollment rate based on the number of disenrollees for the period of time the HMO risk contract existed. This technique allows for comparison among newer and more established HMOs.

** HMOs are grouped together if they are owned by the same parent company.

NS Not Sufficient Data - Five HMOs were excluded in the analysis of disenrollees and disenrollment rates because less than 20 of the 50 disenrollees returned their survey.

NA Not Applicable - Three HMOs were not included in this analysis: H0616 and H0617 discontinued their risk contract in 1993 and H9049 split into two risk HMOs, transferring many beneficiaries into H3856.

APPENDIX D

Table 1: Unadjusted CY91-92 Disenrollment Rates & '92-'93 Disenrollment Rates by HMO

HMO Ownership**	Month/Year Risk HMO Contract Began	CY91-92 Disenrollment Rate (Percent)	CY92-93 Disenrollment Rate (Percent)	% Change in Disenrollment Rate
Group A				
# 1	6/88	21.8	20.1	- 7.8
# 2	4/85	18.8	19.8	+ 5.3
# 3	7/85	21.0	29.6	+ 41.0
# 4	12/87	47.5	30.0	- 36.8
# 5	1/90	10.6	17.6	+ 66.0
# 6	1/86	28.4	24.3	- 14.4
# 7	6/88	29.3	22.6	- 22.9
Group B				
# 8	10/85	5.9	5.2	- 11.9
# 9	7/85	11.0	10.6	- 3.6
# 10	8/88	5.4	NA	NA
# 11	8/88	5.4	NA	NA
# 12	4/92	14.9*	15.0*	+ 0.7*
Group C				
# 13	4/86	10.1	12.2	+ 20.8
# 14	9/92	4.8*	12.0*	+ 150.0*
# 15	4/86	8.8	10.9	+ 23.9
Group D				
# 16	1/88	9.0	11.3	+ 25.6
# 17	1/87	9.2	7.7	- 16.3
Group E				
# 18	8/86	10.8	11.9	+ 10.2
# 19	2/86	7.1	9.2	+ 29.6
Group F				
# 20	10/85	22.9	9.7	- 57.6
# 21	7/85	14.5	13.6	- 6.2
Group G				
# 22	2/91	6.2*	5.5	- 11.3*
# 23	1/88	8.7	8.1	- 6.9
# 24	5/92	9.0*	7.2*	- 20.0*
# 25	6/86	11.3	12.8	+ 13.3
# 26	6/92	36.7*	39.2*	+ 6.8*
# 27	10/92	4.0*	7.8*	+ 95.0*
# 28	4/85	29.5	32.8	+ 11.2
# 29	1/86	15.3	16.3	+ 6.5
# 30	7/86	9.7	7.1	- 26.8

Table 1: Unadjusted CY91-92 Disenrollment Rates & '92-'93 Disenrollment Rates by HMO				
HMO Ownership**	**Month/Year Risk HMO Contract Began**	**CY91-92 Disenrollment Rate (Percent)**	**CY92-93 Disenrollment Rate (Percent)**	**% Change in Disenrollment Rate**
# 31	4/85	18.4	20.2	+ 9.8
# 32	11/91	34.3*	26.5	- 22.7*
# 33	8/91	6.2*	5.3	- 14.5*
# 34	7/85	5.6	6.6	+ 17.9
# 35	6/86	5.5	3.5	- 36.4
# 36	1/87	41.8	15.7	- 62.4
# 37	3/90	16.1	15.9	- 1.2
# 38	7/85	19.6	18.4	- 6.1
# 39	8/87	9.9	10.5	+ 6.1
# 40	4/92	17.3*	11.9*	- 31.2*
# 41	3/88	3.5	NA	NA
# 42	11/85	7.1	9.4	+ 32.4
# 43	4/91	6.4*	9.9	+ 54.7*
# 44	11/87	4.9	6.6	+ 34.7
# 45	1/89	5.0	5.1	- 2.0
Average % Change				**6.0%**
Absolute % Change				**26.0%**

* Annualized disenrollment rate based on the number of disenrollees for the period of time the HMO risk contract existed. This technique allows for comparison among newer and more established HMOs.

** HMOs are grouped together if they are owned by the same parent company.

NA Not Applicable - Three HMOs were not included in this analysis, H0616 and H0617 discontinued their risk contract in 1993 and H9049 split into two risk HMOs, transferring many beneficiaries into H3856.

Table 2: Top 5 HMOs with the Largest Percent DECREASE in the Unadjusted Disenrollment Rate From CY91-92 to CY92-93				
HMO Ownership	Month/Year Risk HMO Contract Began	CY91-92 Disenrollment Rate (Percent)	CY92-93 DisenrollmentRate (Percent)	% Change in Disenrollment Rate
# 36	1/87	41.8	15.7	- 62.4
# 20	10/85	22.9	9.7	- 57.6
# 4	12/87	47.5	30.0	- 36.8
# 35	6/86	5.5	3.5	- 36.4
# 40	4/92	17.3*	11.9*	- 31.2*

Table 3: Top 5 HMOs with the Largest Percent INCREASE in the Unadjusted Disenrollment Rate From CY91-92 to CY92-93				
HMO Ownership	Month/Year Risk HMO Contract Began	CY91-92 Disenrollment Rate (Percent)	CY92-93 Disenrollment Rate (Percent)	% Change in Disenrollment Rate
# 14	9/92	4.8*	12.0*	+ 150.0*
# 27	10/92	4.0*	7.8*	+ 95.0*
# 5	1/90	10.6	17.6	+ 66.0
# 43	4/91	6.4*	9.9*	+ 54.7*
# 3	7/85	21.0	29.6	+ 41.0

* Annualized disenrollment rate based on the number of disenrollees for the period of time the HMO risk contract existed. This technique allows for comparison among newer and more established HMOs.

APPENDIX E

ANALYSIS OF BENEFICIARY DISENROLLMENT STATUS

Introduction

This logistic regression model measures the effect of beneficiaries' negative HMO experiences on the likelihood of disenrollment, even after controlling for a number of demographic characteristics, such as age, sex, and health status.

Model Construction

Methods

The variables created for this anlaysis are binary (except age), characterizing beneficiairies with either a one (1) if the characteristic existed or a zero (0) if otherwise (see Table 1). For this regression model, beneficiaries or events coded as zero represent the referent category. The dependent variable estimated in this model, disenrollment status, measured the change from the referent category produced by each independent variable.

This linear logistic model was created using SUDAAN to compute the correct standard errors, based on weighted data[b]. This model allows us to estimate the probability of a beneficiary disenrolling from their HMO or remaining enrolled, (ρ) depending on the model, based on the linear combination of independent variables. That is,

$$\ln(\rho/1-\rho) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k$$

where β_i is the coefficient estimated by the equation, X_i is the value of the independent variable, and k is the number of independent variables in the equation.

Using the logistic regression model, the interpretation of the coefficients, β_i can be translated easier using the exponential of the coefficient, known as the odds ratio. The estimated odds ratio reflects the extent to which the referent category increases or decreases the odds that a beneficiary disenrolled from their HMO or not. An odds ratio of 5.0 for a particular independent variable, such as HEALTH[c], is translated as: the beneficiary is 5.0 times more likely to have disenrolled if their health got worse as a result of the care they received by their HMO.

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[b] *SUDAAN - Release 6.34, Research Triangle Park, North Carolina: Research Triangle Institute, 1993.*

[c] *HEALTH measures if the beneficiaries' health got worse as a result of the care received by their HMO.*

Results of the Regression Model

Tables 1 and 2 provide the logistic results for the regression model. Beneficiaries with missing data for any of the variables were excluded from the analysis. Each table provides the estimated odds ratios and the estimated lower and upper limits of the 95 percent confidence intervals. Odd ratios with values greater than one (1) indicate that beneficiaries with the characteristic have a greater likelihood of being disenrolled than beneficiaries in the referent group. Confidence intervals including the value one (1) indicate the characteristic does not have a significant effect at the 95 percent confidence interval on whether a beneficiary has disenrolled or not.

Table 2 includes the full model measuring the probability of a beneficiary being disenrolled or not. Highlighted variables are statistically significant at the 95 percent confidence interval or better.

Discussion of the Results

Variables influencing beneficiaries to disenroll, after adjusting for everything else include: 1) beneficiaries' health getting worse as a result of the care received by their HMO, 2) beneficaries having prior HMO experience, 3) beneficiaries' HMO prioritizing holding down the cost of medical care, and 4) beneficiaries usually waiting an hour or more before seeing primary HMO doctor.

Table 1: VARIABLE DESCRIPTIONS DEPENDENT VARIABLE: DISENROLLEE	
Variable Name	**Description**
SEX	1 = Beneficiary was male, 0 = female
DISABLED	1 = Disabled, 0 = aged beneficiary
AGE	Beneficiaries' age
COMPET_AREA	1 = Beneficiary lived in a non-competitive area, 0 = beneficiary lived in competitive area
PROPENSITY_USE	1 = Low/Medium use of medical services by beneficiary, 0 = high use of medical services
SICK	1 = Beneficiary was rated as very sick, 0 = beneficiary was not rated as moderately sick or not sick
PRIOR_HMO	1 = Beneficiary came previously from a HMO, 0 = beneficiary came previously from fee-for-service
COMPLAINTS	1 = Beneficiaries' complaints were <u>not</u> taken seriously, 0 = beneficiaries' complaints were taken seriously
HMO_PRIORITY	1 = Beneficiary reported their HMO most concerned with holding down the cost of their medical care, 0 = Beneficiary reported their HMO most concerned with providing the best care possible
HEALTH_WORSENED	1 = Beneficiaries' health got worse as a result of care received by HMO, 0 = beneficiaries' health stayed the same or got better
POOR_SERVICE	1 = Beneficiaries' HMO doctor not providing Medicare services, hospital care, or referral to specialist care, 0 = otherwise
HOUR_WAIT	1 = Beneficiaries usually waited an hour or more before seeing their primary HMO doctors, 0 = beneficiaries did not wait an hour
OWN_SERVICES	1 = Beneficiaries got services on their own, 0 = beneficiaries did not get services on their own.

Table 2: All beneficiaries who are enrolled or had a non-administrative disenrollment (N = 674) Full Model Dependent Variable = Disenrolled Beneficiary			
Variable	Odds Ratio	95% C.I.	
		Lower	Upper
SEX	1.07	.62	1.86
DISABLED	**3.53**	**1.04**	**11.94**
AGE	1.02	.98	1.06
COMPET_AREA	.90	.52	1.55
PROPENSITY_USE	.92	.53	1.60
SICK	.55	.18	1.70
PRIOR_HMO	1.92	.81	4.54
COMPLAINTS	1.35	.61	3.00
HMO_PRIORITY	**3.39**	**1.55**	**7.42**
HEALTH_WORSENED	**5.00**	**1.48**	**16.95**
POOR_SERVICE	1.63	.72	3.72
HOUR_WAIT	**2.75**	**1.12**	**6.75**
OWN_SERVICES	1.55	.73	3.32

APPENDIX F

KEY LINEAR REGRESSION VARIABLES

All regression models in this report were created using the SPSS for Windows 6.1 software package. Each analysis includes the following information about beneficiaries from those HMOs with complete information for each variable.

Table 1: VARIABLE DESCRIPTIONS

Variable Name	Description
STAFF HMO	1 = Staff HMO, 0 = IPA HMO
GROUP HMO	1 = Group HMO, 0 = IPA HMO
HMO_SIZE	# of Medicare Risk Beneficiaries enrolled in HMO
SOUTH	1 = HMO located in South, 0 = HMO located in West
NEAST	1 = HMO located in Northeast, 0 = Hmo located in West
MIDWEST	1 = HMO located in Midwest, 0 = HMO located in West
FEE-FOR-SERVICE	Percent of beneficiaries receiving prior care through fee-for-service
PROFIT	1 = HMO is for profit, 0 = non-profit HMO
COMPETITIVE	1 = HMO is in competitive area, 0 = HMO is in non-competitive area
POOR_SERVICE	Percent of beneficiaries with HMO doctor not providing Medicare services, hospital care, or referral to specialist care
SICK	Percent of beneficiary-reported serious health problems
Q_HEALTH	Percent of beneficiaries asked questions about health problems, when they applied for HMO membership
HOUR_WAIT	Percent of beneficiaries usually waiting an hour or more before seeing their primary HMO doctors
COMPLAINTS	Percent of beneficiaries reporting their primary HMO doctor did not take their complaints seriously
OWN_SERVICES	Percent of beneficiaries in last year, getting Medicare covered services on their own without primary HMO doctor or HMO first approving
HMO_PRIORITY	Percent of beneficiaries reporting their HMO most concerned with holding down the cost of medical care
DAYS_OPEN	Days HMO has operated current risk HMO contract (used only in regression model #1)
WANT_LEAVE	Percent of beneficiaries wanting to leave but feel they can't (used only in regression model #4)

LINEAR REGRESSION RESULTS

The following tables show the overall regression results of all our reduced models used in this report. It includes the estimate, standard error, t-value for all variables and the significance level (probability > |t|). The t-value for each variable tests for the effect of each independent variable on the dependent variable. The last column gives the probability of the t-value. The t-values and the associated probabilities (probability > |t|) test the hypothesis that the parameter is actually zero and answers the question: If the true slope and intercept were zero, what would the probability be of obtaining, by chance alone, a value as large or larger than the one actually obtained?

Reduced Models:

Table 2: Dependent Variable = Percent change in disenrollment rate from time period 1 ('91 & '92) to time period 2 ('92 & '93)*
N = 39 HMOs, all enrollees & disenrollees*
R^2 = .29 & Adjusted R^2 = .27

Variable	Parameter Estimate	Standard Error	t-Value	Probability > |t|
Intercept	227.96	62.56	4.44	.0001
Days_Open	-0.12	0.03	-3.91	.0004

* Excludes 6 HMOs; H0616 & H0617 dropped their risk HMO contract, H3249, H4510, H1406 had a low number of disenrolled respondents, & H9049 split into two risk HMOs, transferring many beneficiaries into H3856.

Table 3: Dependent Variable = Percent beneficiaries wanting to leave but can't
N = 45 HMOs, enrollees only
R^2 = .39 & Adjusted R^2 = .34

Variable	Parameter Estimate	Standard Error	t-Value	Probability > |t|
Intercept	3.84	1.61	2.38	.0218
Hour Wait or more for Primary HMO Doctor	0.43	0.13	3.16	.0030
Poor Service	0.35	0.16	2.13	.0391
Southern HMO	0.04	0.18	2.36	.0230

Table 4: Dependent Variable = Annualized adjusted disenrollment rates for '92 & '93*
N = 39 HMOs, all enrollees & disenrollees**
R^2 = .23 & Adjusted R^2 = .21

Variable	Parameter Estimate	Standard Error	t-Value	Probability > |t|
Intercept	0.79	2.88	0.28	.7842
Complaints	0.55	0.17	3.37	.0018

* The adjusted disenrollment rate excludes the administrative disenrollees (based on a formula created by our survey data, see Methodology section for further explanation)

** Excludes 6 HMOs; H0616 & H0617 dropped their risk HMO contract, H3249, H4510, H1406 had a low number of disenrolled respondents, & H9049 split into two risk HMOs, transferring many beneficiaries into H3856.

Table 5: Dependent Variable = Annualized adjusted disenrollment rates for '92 & '93*
N = 39 HMOs, enrollees only**
R^2 = .43 & Adjusted R^2 = .38

Variable	Parameter Estimate	Standard Error	t-Value	Probability > |t|
Intercept	-5.17	3.36	-1.54	.1331
Poor Service	0.68	0.24	2.89	.0066
Complaints	0.51	0.21	2.46	.0189
Profit	0.05	0.02	2.10	.0429

* The adjusted disenrollment rate excludes the administrative disenrollees (based on a formula created by our survey data, see Methodology section for further explanation)

** Excludes 6 HMOs; H0616 & H0617 dropped their risk HMO contract, H3249, H4510, H1406 had a low number of disenrolled respondents, & H9049 split into two risk HMOs, transferring many beneficiaries into H3856.

Table 6: Dependent Variable = Percent Leaving HMO one year after survey
N = 42 HMOs, enrollees only*
R^2 = .37 & Adjusted R^2 = .33

Variable	Parameter Estimate	Standard Error	t-Value	Probability > |t|
Intercept	-2.05	2.48	-0.83	.4139
Complaints	0.58	0.15	3.79	.0005
HMO_Priority	0.24	0.10	2.44	.0191

* Excludes 3 HMOs; H0616 & H0617 dropped their risk HMO contract, & H9049 split into two risk HMOs, transferring many beneficiaries into H3856.

Table 4: Dependent Variable = Annualized adjusted disenrollment rates for '92 & '93*
N = 39 HMOs, all enrollees & disenrollees**
R^2 = .23 & Adjusted R^2 = .21

Variable	Parameter Estimate	Standard Error	t-Value	Probability > |t|
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APPENDIX G

TEXT OF AGENCY COMMENTS

DEPARTMENT OF HEALTH & HUMAN SERVICES

Health Care Financing Administration

The Administrator
Washington, D.C. 20201

DATE SEP 1 1995

FROM Bruce C. Vladeck
Administrator

SUBJECT Office of Inspector General (OIG) Draft Report: "Medicare Risk Health Maintenance Organization (HMO) Performance Indicators," (OEI-06-91-00734)

TO June Gibbs Brown
Inspector General

We reviewed the above-referenced report which analyzes the relationship between OIG beneficiary survey data and future HMO disenrollment and, specifically, how service access relates to disenrollment status. Our comments on the report recommendations are attached.

Thank you for the opportunity to review and comment on this report.

Attachment

Comments of the Health Care Financing Administration (HCFA)
on Office of Inspector General (OIG) Draft Report:
"Medicare Risk Health Maintenance Organization (HMO) Performance,"
(OEI-06-91-00734)

OIG Recommendation

Track disenrollment rates over time to detect potential problems among HMOs. HMOs experiencing larger than average increases in disenrollment rates should be monitored more closely.

HCFA Response

We concur. HCFA has been tracking disenrollment rates over time to detect potential problems among HMOs. Our Office of Managed Care (OMC) developed a plan profile report in 1991 which incorporates various key indicators of a Medicare contractor's HMO performance and includes a number of significant data elements on disenrollment. OMC's Operations and Oversight Team reviews these data on an ongoing basis as well as before conducting a monitoring site visit of a Medicare contractor. OMC also tracks disenrollment via other data; e.g., HCFA Medicare Hotline data, reconsiderations.

OIG Recommendation

Use adjusted disenrollment rates, along with other available HMO information (e.g., beneficiary complaints and appeals lodged against HMOs) to target reviews of HMOs.

HCFA Response

We concur. The OMC puts disenrollment rates in context with other HMO information as part of targeting reviews of contractors. We believe, however, that the OIG may be underestimating the degree to which disenrollment occurs due to shopping for benefits on the part of beneficiaries.

OIG Recommendation

Conduct disenrollment surveys that fully capture all the beneficiary's reasons for leaving the Medicare risk HMO. This information should be included in the Group Health Plan data files.

HCFA Response

We concur and are implementing a new disenrollment form that has been designed to capture significant data regarding motivation for disenrollment.

OIG Recommendation

Survey enrollees systematically and routinely on key questions and on their desire to leave/remain with an HMO, to complement disenrollment data.

HCFA Response
We concur. A work group is currently developing a strategy on the conduct of beneficiary satisfaction surveys. Items being considered are a national survey versus individual HMO surveys, subject areas to cover, types of questions to ask, approaches for evaluation of surveys, existing surveys, as well as other relevant areas.

OIG Recommendation
Monitor Medicare risk HMOs with high disenrollment rates and reported service access problems and work with HMOs to respond to the needs of beneficiaries at risk of disenrolling.

HCFA Response
We concur. Disenrollment rates are monitored on an ongoing basis with special sensitivity and follow up with HMOs which show high disenrollment rates and reported access problems.

Comments on Key Questions
The key questions offered by the OIG as predictive of beneficiaries' future disenrollment will be shared with the work group referenced above.