FINANCIAL ARRANGEMENTS BETWEEN PHYSICIANS AND HEALTH CARE BUSINESSES

REPORT TO CONGRESS

OFFICE OF INSPECTOR GENERAL

OFFICE OF ANALYSIS AND INSPECTIONS

MAY 1989

OFFICE OF INSPECTOR GENERAL

The mission of the Office of Inspector General (OIG) is to promote the efficiency, effectiveness, and integrity of programs in the United States Department of Health and Human Services (HHS). It does this by developing methods to detect and prevent fraud, waste and abuse. Created by statute in 1976, the Inspector General keeps both the Secretary and the Congress fully and currently informed about programs or management problems and recommends corrective action. The OIG performs its mission by conducting audits, investigations and inspections with approximately 1,200 staff strategically located around the country.

OFFICE OF ANALYSIS AND INSPECTIONS

This report is produced by the Office of Analysis and Inspections (OAI), one of three major offices within the OIG. The other two are the Office of Audit and the Office of Investigations. The OAI conducts inspections which are typically short-term studies designed to determine program effectiveness, efficiency, and vulnerability to fraud or abuse.

This report responds to a congressional request for information on the practice of physician ownership and self-referral contained at Section 203(c)(3) of the Medicare Catastrophic Coverage Act of 1988.

This inspection was carried out under the direction of **Barry Steeley**, Chief, Health Care Branch, Office of Analysis and Inspections. Principle participants in this study were the following people:

Office of Analysis and Inspections

Mark Krushat
Penny Thompson
Jack Molnar
Bob Katz
Natalie Coen
John Traczyk

Office of Audit

Joseph Kwiatanowski

Office of Investigations

Raisa Ottero-Cesario

Office of General Counsel

Lisa Foley

Additional contributors to the study are listed in appendix E to this report.

FINANCIAL ARRANGEMENTS BETWEEN PHYSICIANS AND HEALTH CARE BUSINESSES

REPORT TO CONGRESS

RICHARD P. KUSSEROW
INSPECTOR GENERAL

OAI-12-88-01410

MAY 1989

TABLE OF CONTENTS

EXECUTIVE SUMMARY

PURPOSE

In June 1988, Congress mandated that the Office of Inspector General (OIG), U.S. Department of Health and Human Services (HHS), conduct a study on physician ownership and compensation from health care entities to which they make referrals. Section 203(c)(3) of the Medicare Catastrophic Coverage Act (MCCA) of 1988 directed the OIG to report to Congress by May 1, 1989 on:

- physician ownership of, or compensation from, an entity providing items or services to which the physician makes referrals and for which payment may be made under the Medicare program;
- the range of such arrangements and the means by which they are marketed to physicians;
- the potential of such ownership or compensation to influence the decision of a physician regarding referrals and to lead to inappropriate utilization of such items and services; and
- the practical difficulties involved in enforcement actions against such ownership and compensation arrangements that violate current anti-kickback provisions.

BACKGROUND

Physician ownership of, and compensation from, entities to which they make referrals is a practice which has received marked attention only in the past 10 years. New trends in the way health care is delivered in the United States have created a market and impetus for investment in for-profit health care. As physicians have become investors or financial partners of health care entities for which they also generate business through referrals, public examination of the potential conflicts of such arrangements has increased.

In recent years, legislators have moved to strengthen Federal laws prohibiting payment for referrals. Certain States have acted to require disclosure of financial interests to patients; the State of Michigan has prohibited referral of patients to any entity in which the physician has a financial interest. Additional Federal and State actions are being contemplated, including a bill introduced recently in the 101st Congress, "The Ethics in Patient Referrals Act," which would generally prohibit physicians from referring Medicare patients to entities in which they hold a financial interest.

METHODOLOGY

Two surveys of health care providers were conducted to determine the prevalence of physician financial involvement with other health care entities and the nature of such arrangements. One survey was directed at physicians; the other was directed at independent clinical laboratories, independent physiological laboratories, and durable medical equipment suppliers.

Claims information from the Health Care Financing Administration's (HCFA) Part B Medicare Annual Data (BMAD) files for 1987 was used to assess utilization patterns for patients of physician-owners identified through our survey of health care businesses. Third, State officials, industry representatives, health care experts and a subsample of provider respondents to our survey were interviewed or consulted.

MAJOR FINDINGS

Many Physicians Have Financial Relationships with Health Care Businesses to Which They Refer Patients

- Twelve percent of physicians who bill Medicare have ownership or investment interests in entities to which they make patient referrals.

- Referring physicians invest in a wide range of businesses, including clinical and physiological laboratories; durable medical equipment suppliers; home health agencies; hospitals; nursing homes; ambulatory surgical centers; and health maintenance organizations.

- Eight percent of physicians billing Medicare have compensation arrangements with entities to which they refer patients. These arrangements include space rental agreements, employee arrangements, consulting agreements, and management services contracts.

Many Health Care Entities are Owned by Referring Physicians

- Nationally, at least 25 percent of independent clinical laboratories (ICLs), 27 percent of independent physiological laboratories (IPLs), and 8 percent of durable medical equipment suppliers (DMEs), are owned in whole or in part by referring physicians.

- The prevalence of ownership or investment varies by State. In some States, such as Arkansas and California, a larger than average percentage of ICLs, IPLs, and DMEs are physician owned. In other States, such as Michigan, the percentage of entities which are owned by physicians is much smaller than average.

Patients of Physician Laboratory Owners Received More Services

- Patients of referring physicians who own or invest in ICLs received 45 percent more clinical laboratory services than all Medicare patients in general, regardless of place of service. They also received 34 percent more services directly from independent clinical laboratories than all Medicare patients in general. This increased utilization of clinical laboratory services by patients of physician-owners cost the Medicare program $28 million nationally in 1987. This figure does not include any costs associated with increased utilization resulting from physician ownership interest in entities other than independent clinical laboratories.

- Patients of physicians known to be owners or investors in IPLs use 13 percent more physiological testing services than all Medicare patients in general.

Patients of Physicians Associated with DMEs Show No Difference in Receipt of Services

- Patients of physicians known to be owners or investors in DME suppliers use no more DME services than all Medicare patients in general. However, significant variation exists on a State by State basis.

PROCEDURAL RECOMMENDATIONS

Based on the results of this study, we are making recommendations that HCFA pursue the necessary legislative and regulatory changes to: (1) require entities billing Medicare to disclose the names of their physician-owners and investors to the program; and (2) require claims submitted by all entities providing services under Medicare Part B to contain the name and provider number of the referring physician.

OPTIONS FOR POLICYMAKERS

We have identified six options legislators and administrators may wish to pursue in order to address the higher use of services by patients of physician-owners and investors. These include:

1. Implement a post payment utilization review by carriers directed at physicians who own or invest in other health care entities.

2. Require physicians to disclose financial interest to patients.

3. Improve the enforcement of current anti-kickback authorities.

4. Institute a private right of action for anti-kickback cases.

5. Prohibit physicians from referring patients to certain types of entities in which they have a financial interest.

6. Prohibit physicians from referring patients to any entity in which they have a financial interest.

BACKGROUND

Physician ownership of, and compensation from, entities to which they make referrals is a practice which has received marked attention only in the past 10 years. New trends in the way health care is delivered in the United States have created a market and impetus for investment in for-profit health care. As physicians have become investors or financial partners of health care entities for which they also generate business through referrals, public examination of the potential conflicts of such arrangements has increased. The professional as well as mass media has critically examined such arrangements. Several regional studies have been conducted to determine if such arrangements lead to over use of services by physicians in a position to profit from medical decisions made for their patients.

In recent years, legislators have moved to strengthen Federal laws prohibiting payment for referrals. Certain States have acted to require disclosure of financial interests to patients; the State of Michigan has prohibited referral of patients to any entity in which the physician has a financial interest. Additional Federal and State actions are being contemplated, including a bill introduced recently in the 101st Congress, "The Ethics in Patient Referrals Act," which would generally prohibit physicians from referring Medicare patients to entities in which they hold a financial interest.

New Trends in Health Care Delivery

Many experts argue that, while self-referral has always existed, investment or ownership by physicians in other, free-standing facilities is a relatively new phenomenon that has resulted from changes in the way health care is reimbursed and delivered. These changes include: (1) the shift from inpatient to outpatient settings for the delivery of care; (2) cost containment strategies directed at physicians; and (3) the introduction of new technologies.

The Shift from Inpatient to Outpatient Settings for the Delivery of Care

Cost containment strategies implemented by the Federal Government and other third party payors have caused shifts in how, where, and at what cost health care is delivered. One of the primary agents of change has been the prospective payment system (PPS) instituted by Medicare in 1983, which established reimbursement to hospitals at predetermined fixed rates. Largely as a result of PPS, many services once performed in hospitals are now performed in outpatient settings, creating a new nexus of health care delivery in non-hospital, community settings.

Cost Containment Strategies Directed at Physicians

A number of other changes in reimbursement policy have directly affected non-hospital based physicians. The Deficit Reduction Act of 1984 (DEFRA) established the Medicare Participating Physician Program. Under this program, a participating physician agrees to accept Medicare assignment on all claims, in return for increased billing allowances and listing in a directory of physicians available to Medicare

beneficiaries. The DEFRA also imposed a fee freeze for physicians from July 1984 to May 1986 for participating physicians and from July 1984 to December 1986 for non-participating physicians. In addition, a direct billing policy was implemented by Medicare for laboratory services, preventing physicians from billing for laboratory services performed in a laboratory which is independent of their offices.

While PPS has been somewhat successful in controlling expenditures under Medicare Part A (Medicare's hospital insurance program), the physician pay freeze and other measures enacted to curb Part B spending (Medicare's supplementary insurance program) have not been as successful. Medicare Part B expenditures have continued to rise despite these cost containment measures.

Because physician services account for most of the Part B expenditures (around 60 percent), Medicare administrators are continuing to pay attention to reimbursement strategies to contain costs in this area. Dr. William Roper, former Administrator of the Health Care Financing Administration (HCFA) which manages the Medicare program, stated in testimony before the Subcommittee on Health, the Committee on Ways and Means in September 1988 that "[t]otal Medicare spending on physicians' services is large and growing rapidly." He went on to say that, since the introduction of PPS, inpatient hospital costs have grown at a rate of 6 percent per year while physician costs have grown at rate of 15 percent.[1] A number of different strategies, including capitation, managed care, and a resource-based relative-value scale for reimbursement of physician services, are being considered to attack the continued growth in outlays.

The Introduction of New Technology

New technology can also affect how and where health care is delivered. Magnetic resonance imaging (MRI) is one example. Sophisticated services once found only in hospital settings can now be delivered in community settings, assuming resources are there to purchase the necessary technology. Such technology is becoming more and more important to the practice of "state of the art" medicine.

Effects on the Health Care Market

The shift from inpatient to outpatient settings for the provision of care, together with reimbursement policies which seek to contain outlays for physicians' services, have created certain market reactions which some argue have dramatically affected the rate of physician ownership in other health care entities. For example, an incentive exists for physicians or others to create additional entities that provide services once delivered in hospital settings. Physicians may establish laboratories in their offices.[2] They may pool resources to establish labs, to provide durable medical equipment, or to set up MRI facilities to meet patient needs in the community. At the same time, physicians may seek to protect or supplement their incomes by investing in such facilities providing services to their patients.

In 1980, an article in *The New England Journal of Medicine* by Dr. Arnold S. Relman, described the rise of the "medical-industrial complex," a new growth industry which supplies

health care for profit. Dr. Relman wrote that the key to control of this complex lies in the hands of physicians, but noted that any financial associations between physicians and industry can undermine that role. He went on to say that "[a]s the visibility and importance of the private health care industry grows, public confidence in the medical profession will depend on the public's perception of the doctor as an honest, disinterested trustee. That confidence is bound to be shaken by a financial association between the practicing physicians and the new medical-industrial complex."[3]

Articles describing the practice of physician ownership and self-referral, most focusing on limited partnerships, have appeared in the *New York Times, L.A. Times, Business Week,* and numerous smaller publications. "The CBS Evening News" discussed the practice as it affects the laboratory industry in a segment broadcast in March 1989.

In December 1988, a series of articles on physician investment appeared in the *Christian Science Monitor.* This series of articles described the practice of ownership and self-referral as "one of the most divisive issues confronting American medicine today." It reported on one case where a private radiologist in Philadelphia had lost most of his business to a physician-owned radiological lab that opened up a block away from him. The private radiologist complained that "a few of the [doctors] just turned off the spigot" after they invested in their own facility, not allowing him to compete; the president of the physician-owned lab argued that the physicians' investment allowed them to purchase new technology that the community needed.[4]

An article in *The Wall Street Journal* entitled, "Doctor-Owned Labs Earn Lavish Profits in a Captive Market," appeared in March 1989. The article reported on a case in California in which a radiologist was threatened with the loss of referrals if he did not offer an investment opportunity to the referring physicians. The radiologist refused, and the referring physicians subsequently opened their own lab. The article also described variances in pricing between physician-owned and non-physician owned labs.[5]

Previous Studies Regarding Physician Ownership

Despite the increasing interest in the practice of physician ownership and self-referral, few studies have been conducted in this area. Among those that have been conducted are a 1981 study by the State of Michigan; a 1983 Health Care Financing Administration (HCFA) Region V study; a May 1984 Blue Cross Blue Shield of Michigan study; and a 1988 survey by the American Medical Association (AMA).

The 1981 study by the State of Michigan targeted Medicaid utilization of clinical laboratory services. It found that Medicaid recipients referred for clinical laboratory services by physician-owners had an average of 41 percent more tests than those referred by non-owners. Physician-owners also referred more of their patients for tests than did non-owners.[6]

The May 1983 HCFA Region V study did not find any appreciable difference in Medicare utilization between what they called "practice related" laboratories and "non-practice related" laboratories. However, patients of practice related laboratories had more batteries of tests

done, and a greater number of "miscellaneous procedure" codes billed than patients of non-practice related laboratories.[7]

The May 1984 Blue Cross Blue Shield of Michigan study reviewed all laboratory procedures billed in a single calendar quarter. Data were analyzed for 148 laboratories as well for two subsamples of 20 laboratories each: one with known physician ownership (other than pathologist), and the other with a known absence of physician ownership. For the physician-owned group, the average number of services per patient and the average payment per patient were roughly 20 percent higher than the averages for all laboratories, and roughly 40 percent higher than the averages for the nonphysician-owned group.[8]

In response to increasing interest in financial partnerships between physicians and other health care businesses, the AMA asked questions concerning financial interests as part of its semi-annual telephone survey of physicians in Fall 1988. As a result of these interviews, the AMA estimated that 7 percent of physicians have an ownership interest in a health care entity to which they refer. The AMA also reported that an additional 3 percent of its members have ownership interests in facilities to which they *do not* refer.[9]

Other studies are now in progress. The General Accounting Office (GAO) began a review of the practice of physician ownership and self-referral in June 1988. That study is currently on-going and will report on activity in two States, Maryland and Pennsylvania.

Federal and State Activity

Federal Anti-Kickback Laws: In 1972, Congress outlawed payments for referrals of business payable under the Medicare or Medicaid programs. In 1977, Congress strengthened this prohibition when it passed the Medicare and Medicaid Anti-Fraud and Abuse Amendments. As amended in 1977, the anti-kickback law provides criminal penalties for knowingly and willfully soliciting, receiving, offering or paying anything of value in return for the referral of a health care item or service payable under the Medicare or Medicaid program. Such a transaction is deemed fraudulent and a felony punishable by a fine of up to $25,000 and imprisonment for not more than 5 years.[10]

On its face, the anti-kickback provision is very broad, covering indirect or covert bribes, kickbacks and rebates, as well as direct or overt ones. In 1985, the Third Circuit U.S. Court of Appeals dramatically demonstrated how broad the provision was intended to be. In *United States v. Greber,* [11] the court found that, "...if *one* purpose of the payment was to induce future referrals, the Medicare statute has been violated."[12] [Emphasis added.]

Greber is considered authoritative throughout the health care community. Its reasoning was recently adopted by the Ninth Circuit Court of Appeals in *United States v. Kats*. The court found that the anti-kickback statute is violated unless the payments are "wholly and not incidentally attributable to the delivery of goods and services."[13] Further, the same circuit in *United States v. Lipkis* has emphasized the importance of determining the fair market value of services rendered when analyzing ownership and compensation arrangements.[14]

It is within the framework of the *Greber, Kats* and *Lipkis* cases that physician ownership and compensation arrangements are frequently viewed, even though there are no reported court decisions which analyze the applicability of the anti-kickback statute to specific kinds of arrangements. The current view of Federal authorities is that physician ownership does not, *in and of itself*, violate the anti-kickback laws. At the same time, *Greber* and *Kats* indicate that returns on investment, whether or not related to volume of physician referrals, might constitute a violation of the statute if such returns are intended to induce referrals. The factual setting of any particular arrangement is critical to the analysis.

In 1987, Congress passed the Medicare and Medicaid Patient and Program Protection Act. This legislation expanded the anti-kickback sanctions by authorizing the Office of Inspector General (OIG) to exclude from the federal health care programs anyone who violates the anti-kickback statute.[15]

In view of the broad language of the anti-kickback statute, as well as the court's interpretation of that language under *Greber* (and later *Kats)*, the Medicare and Medicaid Patient and Program Protection Act of 1987 also required the Secretary of the U.S. Department of Health and Human Services (HHS) to develop regulations clarifying what types of arrangements or conduct would not be subject to prosecution under the anti-kickback authorities.[16] These "safe harbors" were specified in a Notice of Proposed Rulemaking (NPRM) published January 23, 1989.

The NPRM proposes a safe harbor for physicians with investment interests in large publicly held corporations, but does not do so for any other types of investment or ownership arrangements. Likewise, the proposed rule establishes a safe harbor for certain compensation arrangements (space and equipment rentals, personnel services and management contracts) that meet established criteria that limit the potential for abuse. Ownership or compensation arrangements that fall outside these safe harbors are not exempt from prosecution under the anti-kickback authorities.

The only explicit Federal prohibitions which currently exist on physician ownership and self-referral *per se* concern home intravenous (IV) drug therapy and home health agencies. The Medicare Catastrophic Coverage Act of 1988 prohibits a home IV therapy provider from providing services to a Medicare patient when such services have been ordered by a physician with a financial interest (including financial interest held through an immediate family member) in the provider. Some exceptions are made, such as for a sole rural provider or financial interest in a publicly traded company. Federal regulations also prohibit physicians from certifying the home health plan of care for a beneficiary when they own more than 5 percent of the home health agency which will provide the care.

State Laws: While many States have anti-kickback laws similar to the Federal statute, only Michigan directly forbids referral to an entity in which a physician has a financial interest. Several States are "unfriendly" to such ventures; New York, for example, has considered not certifying some physician-owned laboratories. In addition, a number of States require physicians to disclose their financial interests to patients before referral. For a more com-

prehensive discussion of State laws, see the OIG report "Financial Arrangements between Physicians and Health Care Businesses: State Laws and Regulations," issued in April 1989.

Laws Prohibiting Referrals to Physician-owned Facilities

One State directly forbids the referral of patients to entities in which the physician has an ownership interest. Michigan's Public Health Code forbids "directing or requiring an individual to purchase or secure a drug, device, treatment, procedure or service from another person, place, facility or business in which the licensee has a financial interest."[17]

Laws Requiring Disclosure to Patients

Arizona, California, Delaware, Florida, Massachusetts, Minnesota, Nevada, Pennsylvania, Virginia, Washington, and West Virginia specifically require disclosure of financial interests under certain circumstances to patients.

Those laws requiring disclosure of financial interest to patients vary in their stringency. For example, Florida's law only applies to equity interests of 10 percent or more.[18] Minnesota's disclosure law applies to "significant financial interest" and stipulates that the disclosure must be made "in advance and in writing to the patient and must include...a statement that the patient is free to choose a different health care provider."[19] Both the Pennsylvania and Virginia disclosure laws apply to "any financial interest in the facility or entity" to which the physician makes a referral and require that the physician "advise the patient of his freedom of choice in the selection of a facility."[20]

Additional Steps Contemplated

The Congress has expressed continued concern regarding the practice of ownership and self-referral. The Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, expressed its distress regarding the emergence of such arrangements as early as 1982.[21]

In February 1989, Representative Fortney (Pete) Stark introduced H.R. 939, the "Ethics in Patient Referrals Act." This bill generally would prohibit Medicare providers from accepting referrals from physicians with an ownership interest or compensation arrangement with the provider. The bill provides for certain exceptions, including group practice arrangements, sole rural providers, and prepaid plans. The bill also authorizes the Secretary of HHS to establish other exceptions that he deems to have little risk of program or patient abuse. The Committee on Ways and Means, Subcommittee on Health, held hearings on the bill on March 2, 1989.

Several States are also reviewing the practice. The New York State Health Commissioner created an ad hoc committee to meet with the public this year and gather comments on ethical or other concerns the public may have regarding the practice. Further hearings are scheduled. The Health Care Committee of the Florida House of Representatives is currently collecting information on the practice and may conduct a study on such arrangements in Florida.

METHODOLOGY

Purpose and Objectives

In June 1988, Congress mandated that the Office of Inspector General, U.S. Department of Health and Human Services, conduct a study on physician ownership and compensation from health care entities to which they make referrals. Section 203(c)(3) of the Medicare Catastrophic Coverage Act of 1988 directed the OIG to report to Congress by May 1, 1989 on:

- physician ownership of, or compensation from, an entity providing items or services to which the physician makes referrals and for which payment may be made under the Medicare program;
- the range of such arrangements and the means by which they are marketed to physicians;
- the potential of such ownership or compensation to influence the decision of a physician regarding referrals and to lead to inappropriate utilization of such items and services; and
- the practical difficulties involved in enforcement actions against such ownership and compensation arrangements that violate current anti-kickback provisions.

Evaluability Assessment

Before beginning this study, the OIG investigated existing sources of information on ownership or investment, and referrals by physicians. The study team assessed the feasibility of using such sources of information in addressing the issues of interest to the Congress.

Currently, no complete information is held by Medicare carriers (who process Part B claims for the program), the States, or the Federal Government regarding the ownership of entities which are Medicare providers. Not all State Secretary of State offices maintain information on corporations and partnerships originating in their States. Information that is maintained generally does not include a full listing of owners, partners, or investors. Boards of Medicine do not obtain such information, although we found one (West Virginia) which maintains ownership information on all registered medical corporations which are wholly owned by medical doctors.

Another potential source of information investigated by the OIG was HCFA Form 1513, "Disclosure of Ownership and Control Interest Statement." As a condition of participation, certification, licensure or recertification under the Medicare program, a health care entity (sole proprietorship, partnership, corporation) must make disclosure of ownership and financial interest on this form. One purpose of the information is to identify entities that are owned by individuals who have been convicted of a criminal or sanctionable offense related to participation in programs established by title XVIII, XIX, or XX.

In assessing whether HCFA Form 1513 could be used as a basis of information for determining the extent of physician ownership or investment in other health care entities which are Medicare providers, the OIG discovered several limitations to its use. First, the form does not require a listing of all investors.. Instead, for the most part, only individuals having an interest of 5 percent or more must be listed. Second, physicians are not required to be expressly identified. Thus a physician owner may be identified by his name only, without a M.D. designation. Third, maintenance of the form is uneven. Forms have not always been completed in the past by providers, nor have they submitted updates when new investors are added or ownership changes hands. Lastly, the HCFA regional offices are only required to maintain this information for independent clinical laboratories, not all types of Medicare providers.

Other possible sources of ownership information that were subsequently researched during the course of this study included the Offices of the State Attorney Generals; Medicaid Fraud Control Units; local medical societies; State Public Welfare Provider Review and Sanction Offices; State revenue offices; State peer review organizations; municipal offices that maintain city or town directories; State, city, and county courthouses; State insurance commissions; State Departments of Commerce; and Medicare provider audit groups. None of these organizations maintained information on ownership of health care businesses.

At the same time, no existing information is maintained by most Medicare carriers regarding the referral activity of physicians. Claims submitted by health care entities do not generally contain the name or provider number of the referring physician.

As a result of this evaluability assessment, the OIG study team developed a study design that would collect original data on ownership and other financial arrangements between physicians and other health care entities. The OIG also developed a mechanism for assessing utilization that was patient-based, rather than physician-based, due to the lack of specific data on physician referrals and the availability of data on beneficiaries' use of services.

Study Approach

In order to gather information in all the areas outlined in Section 203(c)(3) of MCCA, the OIG study team collected data from the following sources. First, two surveys of health care providers were conducted to determine the prevalence of physician financial involvement with other health care entities and the nature of such arrangements. Second, claims information from the Health Care Financing Administration's Part B Medicare Annual Data (BMAD) files for 1987 was used to assess utilization patterns for patients of physician-owners identified through our surveys. Third, State officials, industry representatives, health care experts and a subsample of provider respondents to our survey were interviewed or consulted.

Surveys of Health Care Providers

The OIG study team conducted two surveys of Medicare-participating providers, using a two-stage random sample. During the first stage of sampling, eight Medicare carriers were randomly selected, with the probability of selection proportionate to total amounts reimbursed under Medicare in 1986. The eight carriers selected were

Travelers of Connecticut; Empire Blue Cross Blue Shield of New York; Nationwide of West Virginia; Blue Shield of Florida; Blue Shield of Michigan; Blue Shield of Kansas City; Blue Shield of Arkansas; and Occidental of California. These carriers represented approximately 30 percent of amounts reimbursed under Medicare Part B in 1986.

At the second stage of sampling, two sets of providers were selected. In the first set, 4,000 provider numbers representing physicians (500 in each carrier) were randomly selected and surveyed regarding their ownership interests in health care businesses to which they make referrals. In the second set, 1,133 provider numbers representing health care businesses (from 91 to 180 per carrier) were selected and surveyed regarding their business structure, owners, principal parties, and health care providers with whom they have compensation arrangements. The health care businesses surveyed were of three types: independent clinical laboratories (ICLs), independent physiological laboratories (IPLs), and durable medical equipment suppliers (DMEs). These three classes of providers account for approximately 50 percent of Part B claims for ancillary services.

High response rates were experienced with both surveys. The survey of physicians met with a 92 percent response rate overall, including 443 mailings (11 percent) which were undeliverable due to provider number address inaccuracies. The survey of health care businesses met with a 99.9 percent response rate including 121 (11 percent) where a response was not required because the entity had gone out of business. In total, 3,218 responses were made to the physician survey (2,690 from active Medicare providers) and 1,011 to the survey of health care entities. For further detail regarding the response rates and technical components of the surveys, see appendix A.

BMAD claims information

Based on information obtained from the entity survey described above, the OIG study team developed a list of physicians known to be owners or investors in other health care businesses. This list of physicians was matched to carrier provider number files. Physicians with designated specialty codes indicating radiology or pathology (non-referring specialties) were dropped from the IPL and ICL analysis, respectively, since such physicians are not in a position to refer patients.

Using the HCFA BMAD file, patients who had seen referring physician-owners or investors were identified. For patients associated with physicians who have investment or ownership interest in an ICL, use of laboratory services was compared to the use of such services by all beneficiaries in the file. A similar analysis was conducted for patients of physicians associated with IPLs and DMEs. For further detail regarding the BMAD file and our analysis, see appendix B.

Interviews

In order to collect detailed information concerning the nature of physician ownership and compensation arrangements, a number of providers responding to our two surveys were interviewed. Forty physician-owners identified through our physician survey were interviewed to collect detailed information on these arrangements. Twenty-four physician-owned entities and 23 non-physician owned entities identified through our survey of health care businesses were also interviewed.

In addition to these interviews, we consulted with various industry groups and associations regarding their positions on physician ownership and self-referral. These groups included the American Medical Association (AMA), the American College of Radiology (ACR), the American Society of Internal Medicine (ASIM), the College of American Pathologists (CAP), the American Clinical Laboratory Association (ACLA), and the American Imaging Association (AIA).

We also conducted interviews with 143 State officials regarding: (1) their perspectives on, and experiences with, physician ownership and self-referral; and (2) the existence and enforcement of State laws which may prohibit self-referrals, kickbacks, or require disclosure of financial interests to patients. The officials interviewed included representatives from State licensing boards, Medicaid Fraud Control Units (MFCUs), State Attorney General offices, and title XIX offices. Finally, the OIG study team consulted with knowledgeable investigators and attorneys within the OIG concerning their experiences with the enforcement of Federal anti-kickback laws as they apply to abusive ownership or compensation arrangements.

FINDINGS

Nature and Range of Arrangements

Many Physicians Have Invested in Health Care Businesses to Which They Refer Patients

- Twelve percent of physicians who bill Medicare have ownership or investment interests in entities to which they make patient referrals.

- Referring physicians invest in a wide range of businesses. They hold interests not only in independent clinical and physiological laboratories and durable medical equipment suppliers, which we specifically studied, but also in home health agencies, hospitals, nursing homes, ambulatory surgical centers, and health maintenance organizations.

- Eight percent of physicians billing Medicare have compensation arrangements with entities to which they refer. These arrangements include space rental agreements, employee arrangements, consulting agreements, and management services contracts.

Of the 2,690 active Medicare providers responding to our physician survey, 322 claimed to have an ownership interest in a health care business to which they refer patients (other than physician office laboratories). Projected and weighted nationally, then, 11.8 percent of physicians billing Medicare have an ownership or investment interest in entities to which they make referrals.

Most ownership interests are held directly by the reporting physician, although a few physicians reported that they held ownership interests indirectly through immediate family members. Eight physicians, for example, indicated that they held an ownership interest through a family member in diagnostic imaging centers, and five reported such an indirect interest in clinical or other physiological laboratories.

Interests are held in a wide array of businesses. Exhibit 1 illustrates the breakdown of interest by type of business.

Two hundred and six of the active Medicare providers surveyed reported having a compensation arrangement with an entity to which they refer. Most of these arrangements involve space rental to or from the entity, and employee or consultant fees. Exhibit 2 indicates the type of compensation arrangement reported by the physicians surveyed.

Exhibit 1

Number and Percent of Physicians Indicating Ownership by Type

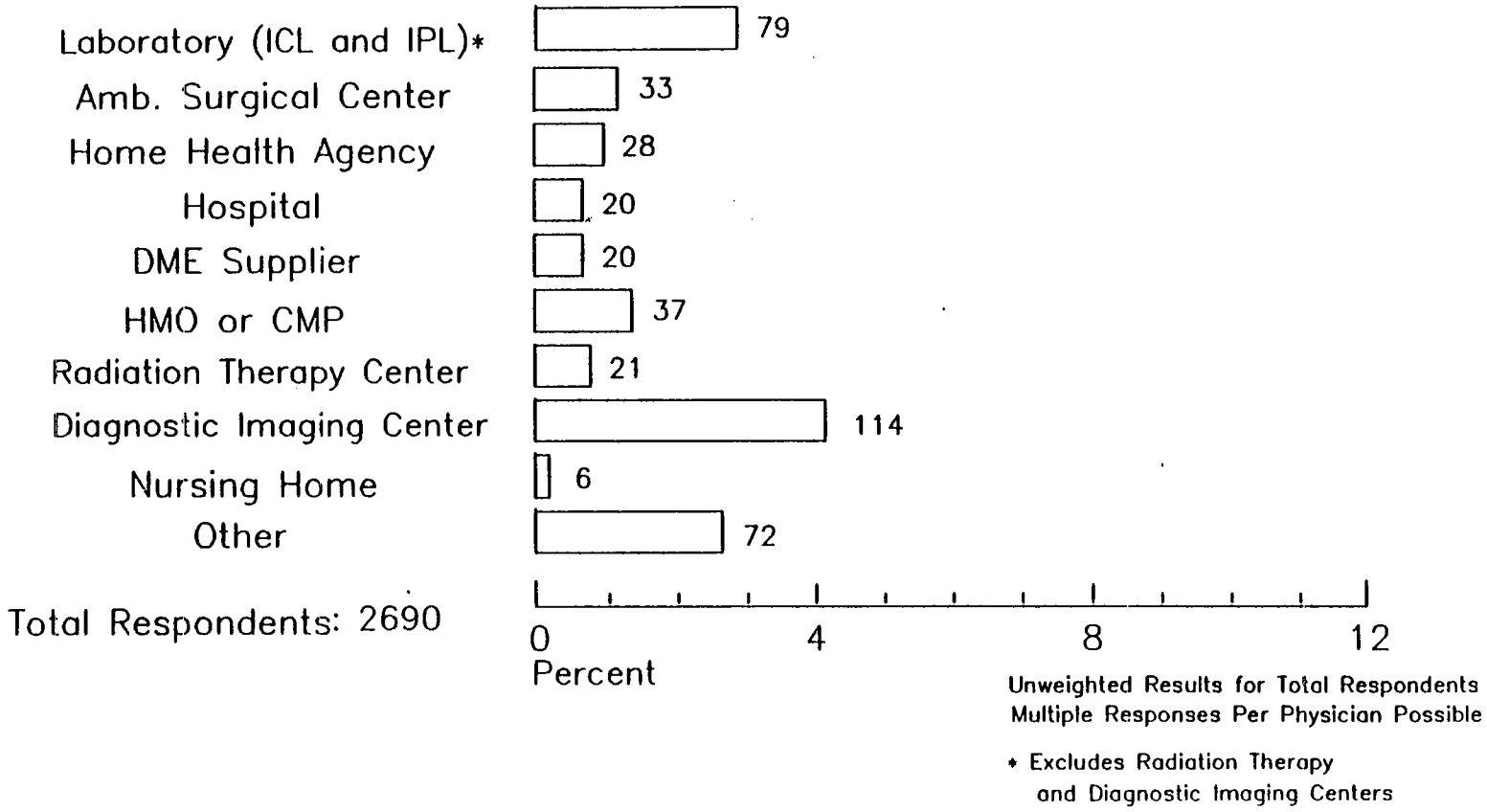
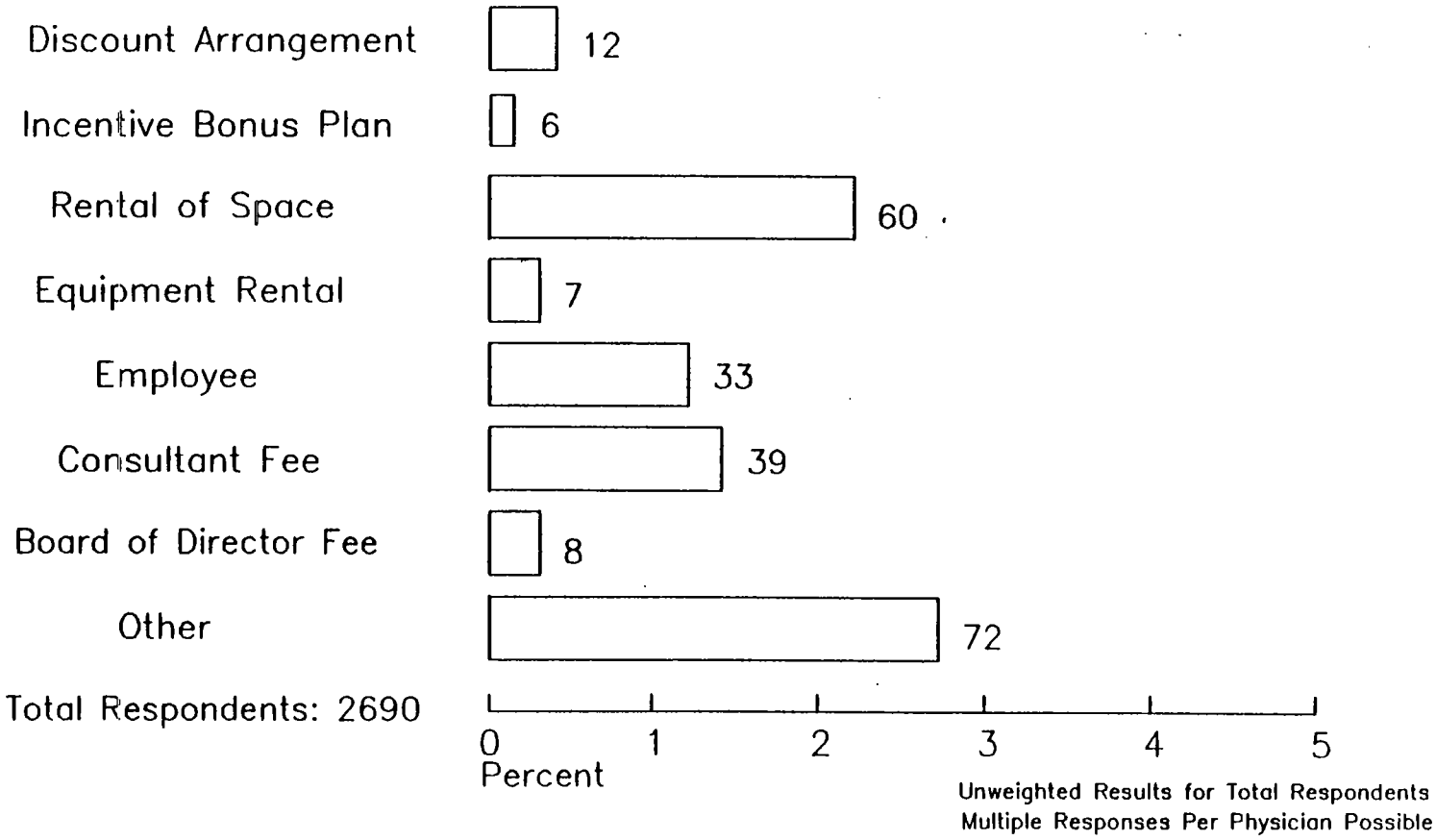


Exhibit 2

Number and Percent of Physicians Indicating Compensation Arrangements by Type



Many Health Care Entities are Owned by Referring Physicians

- Nationally, at least 25 percent of independent clinical laboratories, 27 percent of independent physiological laboratories, and 8 percent of durable medical equipment suppliers, are owned in whole or in part by referring physicians.

- The prevalence of ownership or investment varies by State. In some States, such as Arkansas and California, a larger than average percentage of ICLs, IPLs, and DMEs are physician owned. In other States, such as Michigan, the percentage of entities which are owned by physicians is much smaller than average.

- One hundred ninety-five entities in our sample (17 percent) have compensation arrangements with referring physicians. Some entities have both physician-owners and compensation arrangements with other physicians.

Of the three industries we studied, the highest rate (27 percent) of physician ownership or investment is found in the independent physiological laboratory industry. The lowest rate (8 percent) is in the durable medical equipment industry. These rates reflect conservative estimates, since they reflect only physician ownership or investment which is both direct and immediate. Physicians may also hold interests through other family members. In addition, physicians may hold interests in parent companies which in turn own other health care businesses. In such cases the owner of the entity surveyed was reported as another company; we did not attempt to collect ownership information on the parent company. (Sixteen entities in our survey reported that they are owned by another company.)

Exhibit 3 represents the rate of ownership, by industry, and indicates whether entity ownership interests are held by referring physicians (such as internists), non referring physicians (such as pathologists or radiologists), or physicians whose specialty is unknown. (Where at least one referring physician has an ownership interest, the entity is counted as referring physician owned.) As the exhibit demonstrates, a significant portion of physician ownership is accounted for by referring physicians. The actual rate of referring physician ownership is probably higher, since at least some of the physicians whose specialties are unknown can be presumed to be referring physicians.

Exhibit 4 illustrates the extent of physician ownership or investment in each industry, by State. As these figures illustrate, there is significant variability in the rate of referring physician ownership according to State. The carriers with the least amount of physician ownership are Kansas City, Michigan and New York. Differences in practice patterns in Kansas City, along with the existence of State policies unfriendly to such ventures in Michigan and New York, may help to explain these variances. Interestingly, laws in California and Florida which require disclosure of financial interests to patients do not appear to inhibit physician ownership.

One hundred ninety-five entities of the 1,133 businesses surveyed (17 percent) had one or more compensation arrangements with referring physicians. One hundred and six of the 195 entities reporting such arrangements (54 percent) were independent clinical laboratories. Types of arrangements reported by all types of entities included management/consulting agreements, space rental to and from the entity, and personnel services.

Exhibit 3

Percent of Entities Owned By Status of Physician

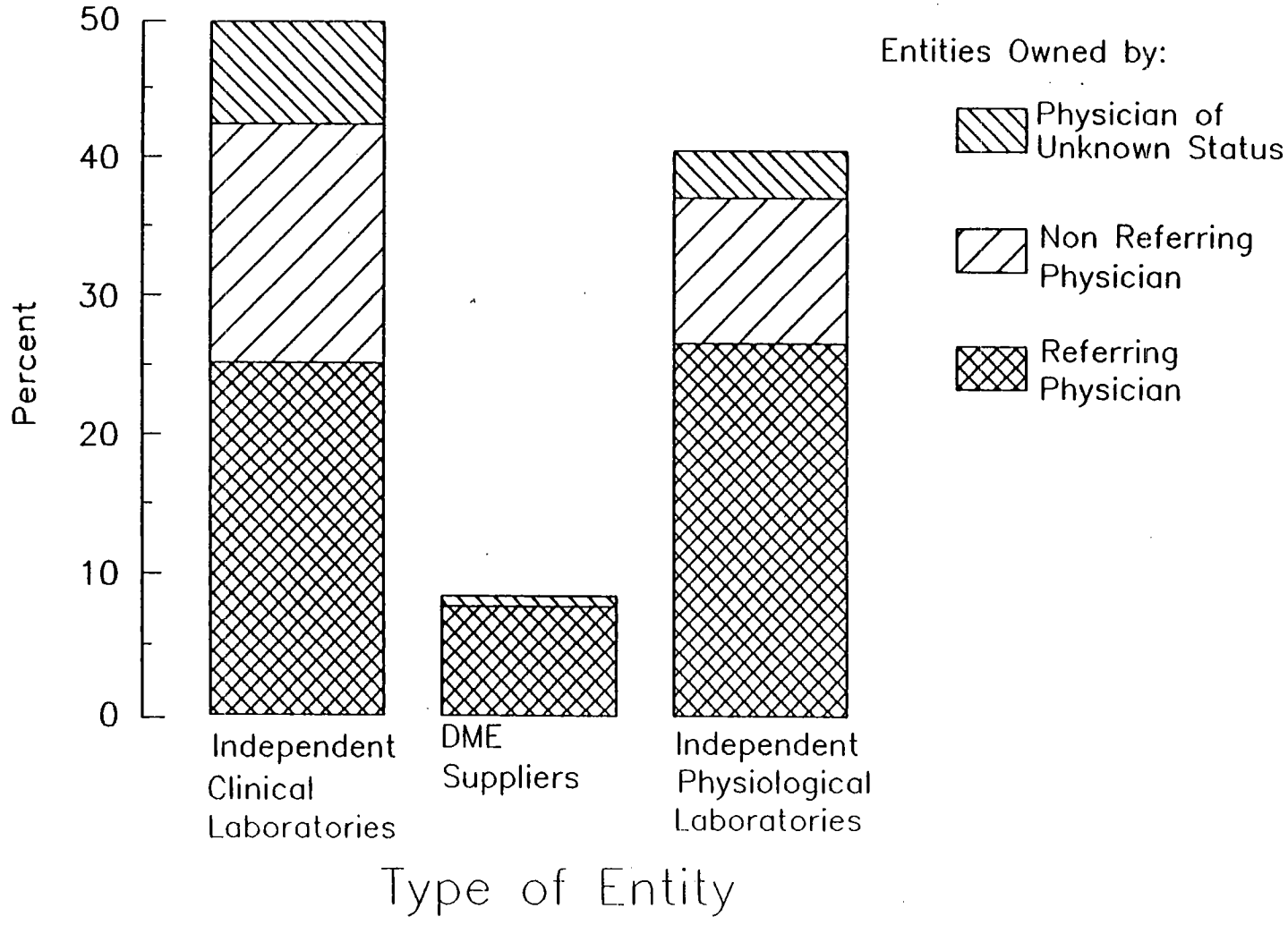
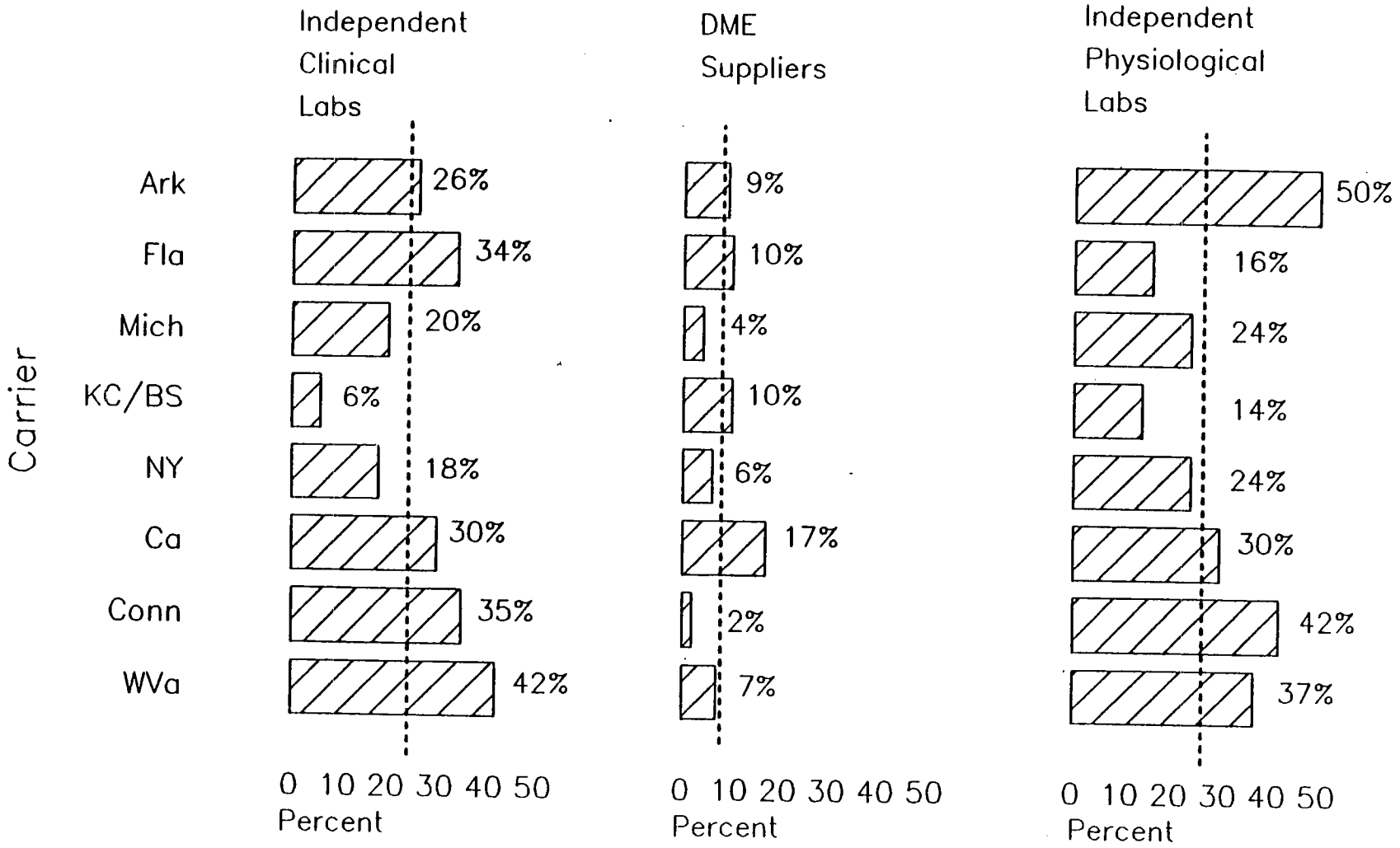


Exhibit 4

Percent Ownership by Entity Type and Carrier

Referring Physicians Only



Line indicates weighted average.

The Structure of Ownership or Investment Varies

Of the 208 entities with known physician-owners or investors in our sample of 1,133 health care businesses, 145 (70 percent) are established as corporations or similar structures, 50 (24 percent) as partnerships, and 13 (6 percent) as sole proprietorships. In contrast, 87 percent of the non physician owned entities are established as corporations, and only 4 percent as partnerships, with the remaining functioning as sole proprietorships.

Partnerships which included physicians typically have a much larger number of limited partners (average of 31) than partnerships between non physicians (average of 2). Few of the limited partners in physician partnerships were non physicians. Physician partnerships involved an average of 27 physician limited partners, with one partnership composed of 122 physician limited partners.

We requested supporting documentation (such as offerings, prospectuses, articles of incorporation and contracts) from the entities we sampled. While physician-owned companies are more likely to be structured as limited partnerships than non physician owned companies, we received few prospectuses and offerings in connection with these ventures. Of the 18 prospectuses and offerings we received for physician partnerships, none established a requirement for a specific rate of referral by investing physicians or indicated that profits are distributed in direct proportion to volume of referrals made.

Offerings and prospectuses received, however, did indicate that expectations may exist on the part of the entity with respect to physician referrals. For example, certain offerings indicated that the venture anticipated referrals from physician partners or that the viability of the business depended on such referrals. Other entities noted in their materials to us that the offering of stock or units of partnerships was made only to practicing physicians in the area. Some entities in our sample are structured in such a way as to require divestiture of financial interest by a physician upon his or her retirement from the medical profession.

Investment Opportunities are Often Identified by Physicians Themselves

Physicians reporting ownership or investment interests in health care businesses to which they refer patients most often said that they learned of such arrangements through personal contact with another associate (either a doctor, accountant, or stock broker). Only three physicians reported learning of an investment opportunity through contact from an investment firm. Although much attention has been paid to so-called "deal-makers," or third parties who act as brokers for the development of arrangements between physicians and other health care businesses, information collected through our physician survey did not suggest that this activity is prevalent. However, it is unclear to what extent the "personal associates" identified by physicians in our survey acted as agents for other third parties in soliciting interested physician-investors.

Information collected through the survey was borne out through interviews. Many of the physician-owners interviewed stated that they became aware of investment or ownership opportunities through personal contact with associates. One physician owner stated that he be-

came aware of an opportunity to invest in a lab "at a backyard barbecue at [another] doctor's house." A large number of physician-owners stipulated that they simply saw a need in the community, and rose to meet it.

When asked whether physicians approached businesses or were sought out as investors in business, many of those interviewed indicated that both occurred. Several respondents believed that while businesses generally sought out physicians in the past, physicians have become increasingly aware of these opportunities and now seek them out or create them on their own. A consumer advocate suggested that, when such investment opportunities were new, third party brokers or "deal-makers" generally initiated them; now, he argued, the practice is common enough that financially astute physicians establish such deals on their own. One association representative stated that, in some industries, physicians are demanding investment opportunities in entities to which they refer and threatening to establish their own business if such an opportunity is not afforded them.

Impact of Arrangements on Utilization

Patients of Physician Laboratory Owners Received More Services

- Patients of referring physicians who own or invest in ICLs received 45 percent more clinical laboratory services than all Medicare patients in general, regardless of place of service. They also received 34 percent more services from independent clinical laboratories than all Medicare patients in general. This increased utilization of clinical laboratory services by patients of physician-owners cost the Medicare program $28 million in 1987. This figure does not include any costs associated with increased utilization resulting from physician ownership interests in entities other then independent clinical laboratories.

- Patients of physicians known to be owners or investors in IPLs received 13 percent more physiological testing services than all Medicare patients in general.

- The extent of increase in the use of services by patient associated with laboratory owners or investors varies by state.

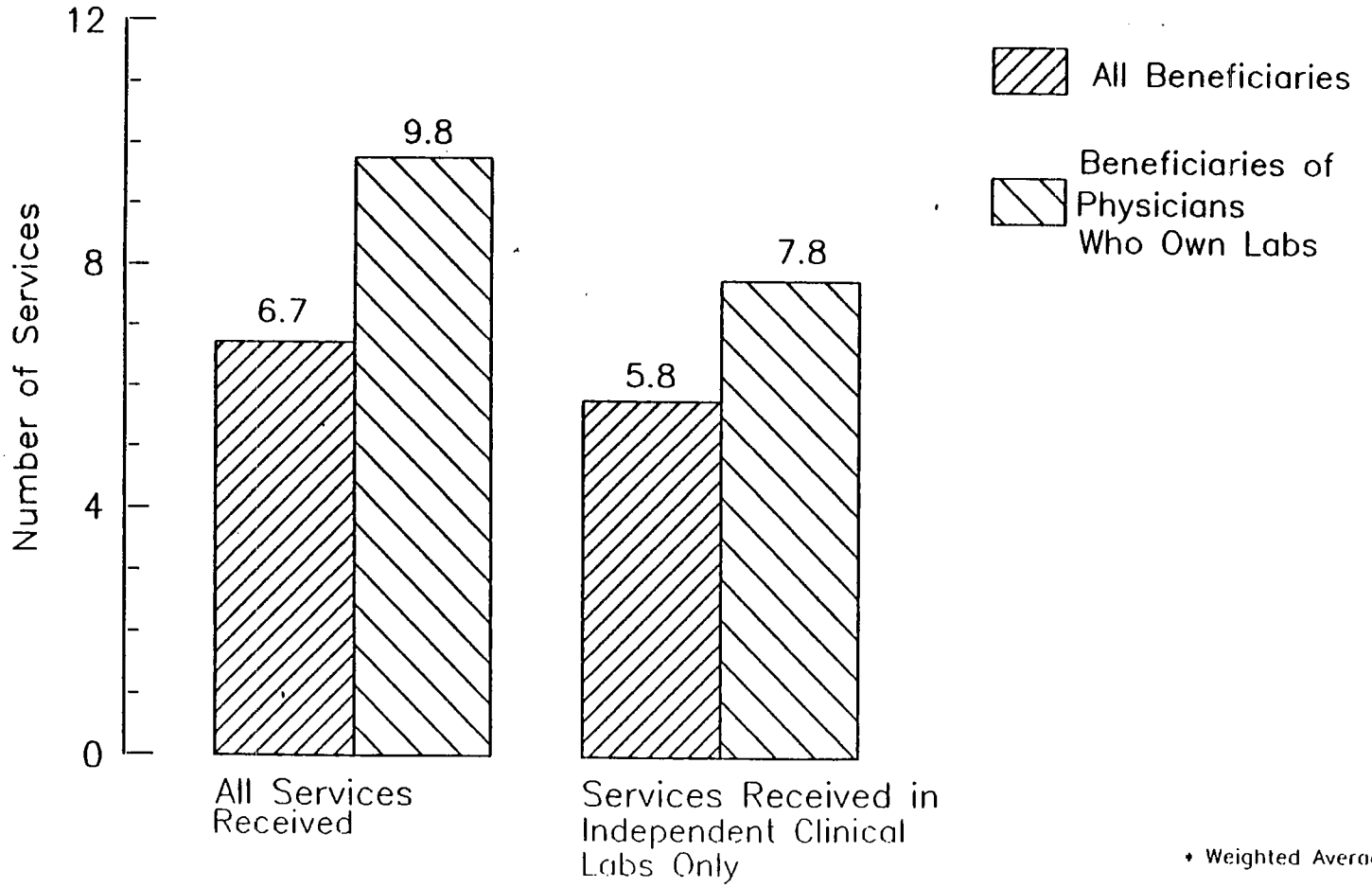
Patients of referring physicians known to be owners or investors in clinical laboratories received, on the average, 45 percent more clinical laboratory services than all Medicare patients in general, regardless of place. Clinical laboratory services may be delivered in a variety of settings including independent clinical laboratories, physician's offices and hospital outpatient departments. They also received 34 percent more laboratory services from clinical laboratories than all Medicare patients in general. (See Exhibit 5.) *The actual effect is probably higher, since the control group (all patients) includes the comparison group (patients who have seen physician-owners).* If the control group consisted of patients who have *not* seen physician-owners, we would expect to see an even more dramatic effect.

Likewise, patients of physicians known to be owners or investors in physiological laboratories use 13 percent more physiological services than patients in general.[22] (See Exhibit 6.) Since physicians generally billed for physiological testing services in 1987 rather than the

Exhibit 5

Average Number* of Services Per Beneficiary By Physician Ownership Status and Place of Service

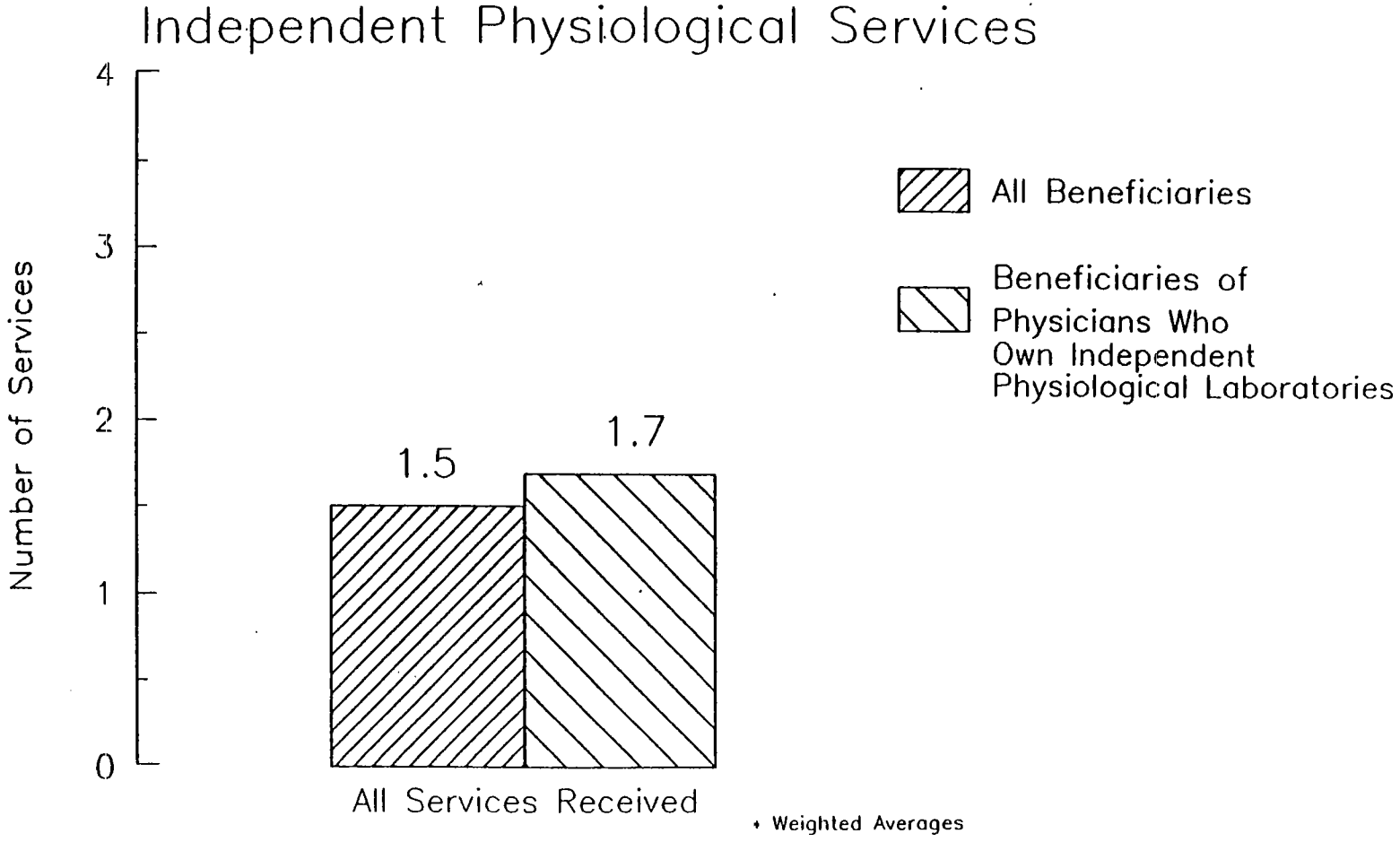
Clinical Laboratory Services



* Weighted Averages

Exhibit 6

Average Number of Services Per Beneficiary By Physician Ownership Status



laboratories that actually performed the tests, we were unable to extend the analysis by place of service as we did with clinical laboratories, above.

The extent of difference in receipt of services varies by State. In two States, West Virginia and New York, there was no difference in experiences between patients of physician-owners of clinical laboratories and all patients in general. However, in the six remaining States there was a statistically significant increase in the use of services by patients of physician-owners. This increase ranged from a low of 30 percent in California to a high of 87 percent in Michigan. Exhibits 7 and 8 illustrate the State by State results for patients associated with physicians who are clinical and physiological laboratory owners. Again, the differences by state may be explained by local practice patterns or State law influences. It is interesting to note that the existence of disclosure laws in Florida and California, or the more stringent law in Michigan, have not prevented us from seeing increased utilization in those States.

We saw a similar effect on utilization associated with the existence of compensation arrangements between laboratories and physicians. Patients of physicians with compensation arrangements with clinical laboratories, for example, use 32 percent more laboratory services than all Medicare patients in general. See appendix B for more detail.

Based on our analysis of utilization patterns for patients of physician-owners of clinical laboratories, the difference in utilization for clinical laboratory services *alone* cost the Medicare program $28 million in 1987. This figure does not include costs associated with differences we demonstrated in utilization by patients of physician-owners in the physiological laboratory industry, or differences in utilization by patients of physicians with other types of financial arrangements (i.e., compensation arrangements).

Patients of Physicians Associated with DMEs Show No Difference in Use of Services

- Patients who saw physician-owners or investors in DMEs received no more durable medical equipment than all Medicare patients in general. However, significant variation exists on a State by State basis.

Patients of physicians who are DME owners or investors do not use any more durable medical equipment than all Medicare patients in general. In addition, we did not find any significant differences between all DME services furnished to Medicare beneficiaries or DME services furnished directly by DME suppliers. However, the data showed significant State by State variation. While in the aggregate there was no effect on the utilization of DME services, beneficiaries of physicians in Florida who own show a statistically significant increase in utilization while in West Virginia and Kansas City, this same group of beneficiaries show a significant decrease in utilization of services. Exhibits 9 and 10 illustrate the results of our analysis for DMEs.

We saw a similar effect on utilization associated with the existence of compensation arrangements between DME providers and physicians. See appendix B for more detail.

Exhibit 7

Average Number of Services Per Beneficiary By Carrier and Ownership Status of Billing Physician

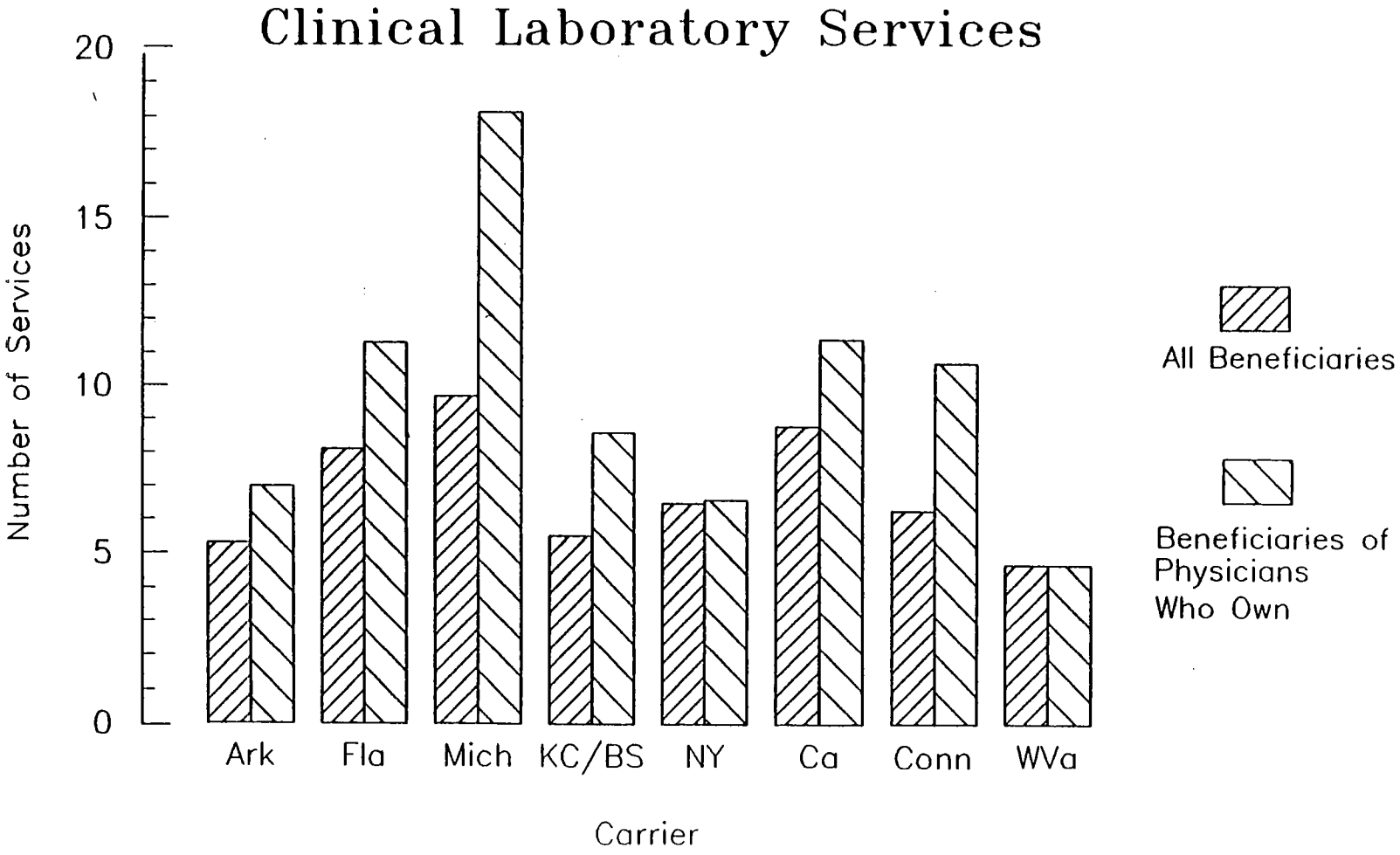


Exhibit 8

Average Number of Services Per Beneficiary By Carrier and Ownership Status of Billing Physician

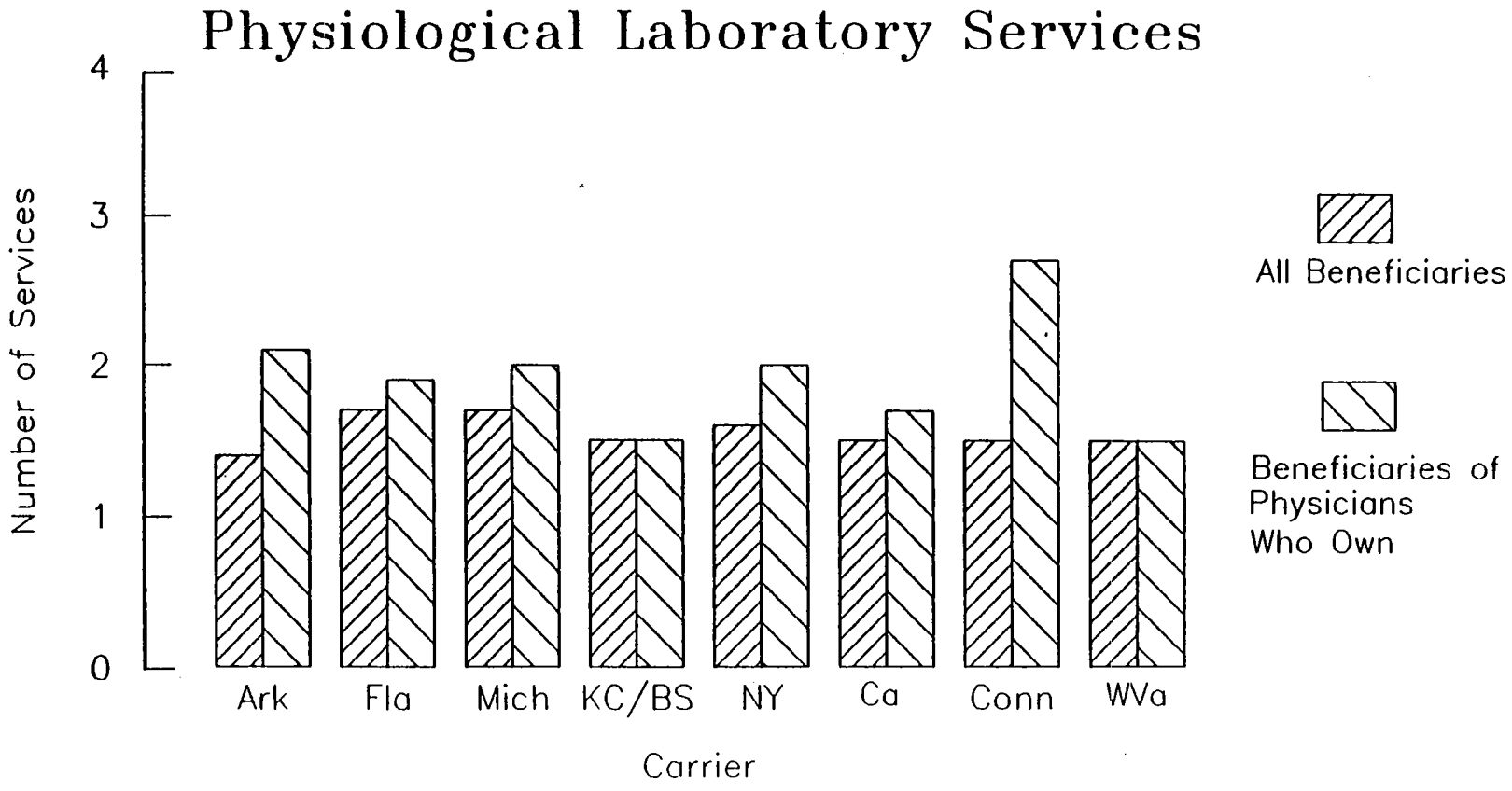
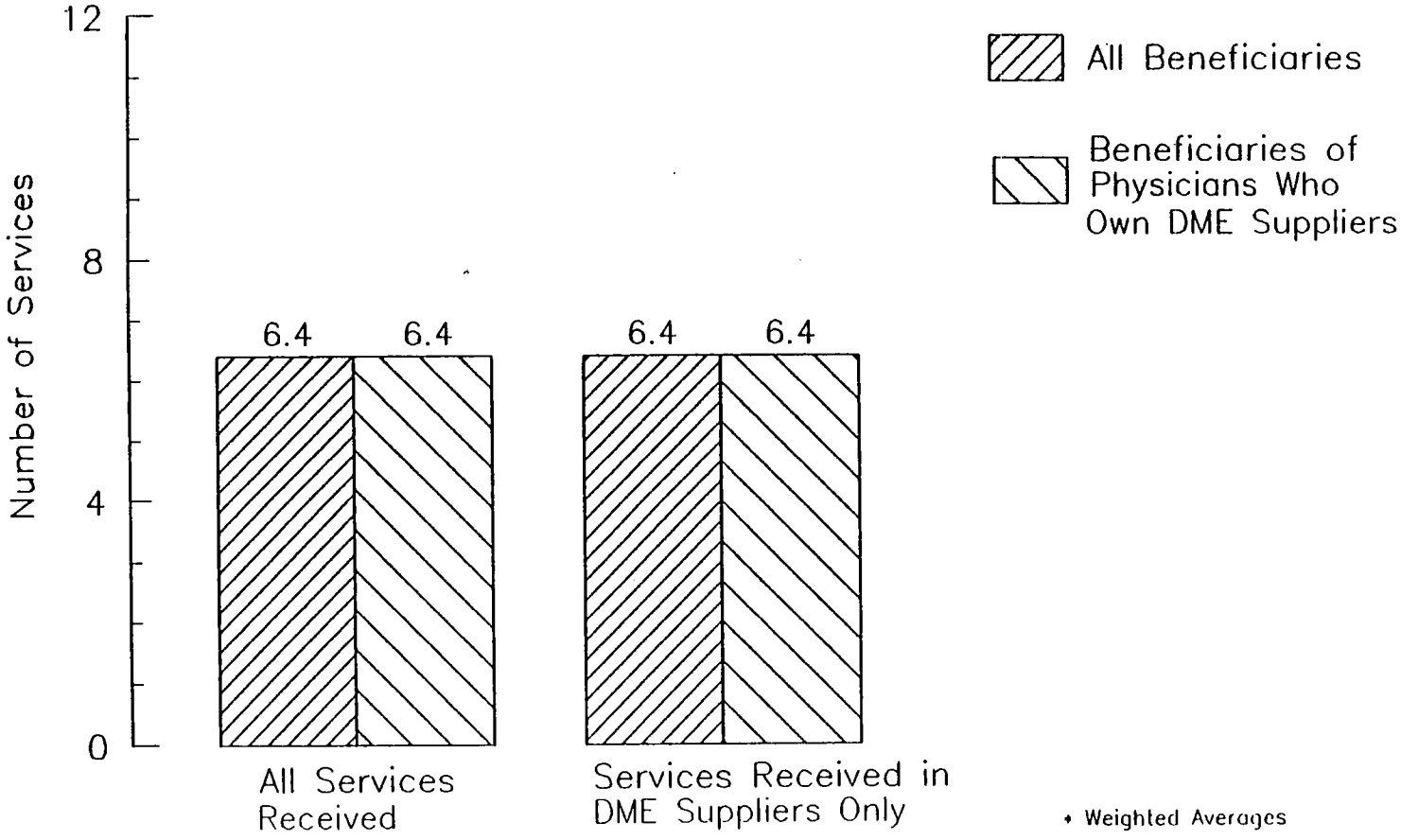


Exhibit 9

Average Number* of Services Per Beneficiary By Physician Ownership Status and Place of Service

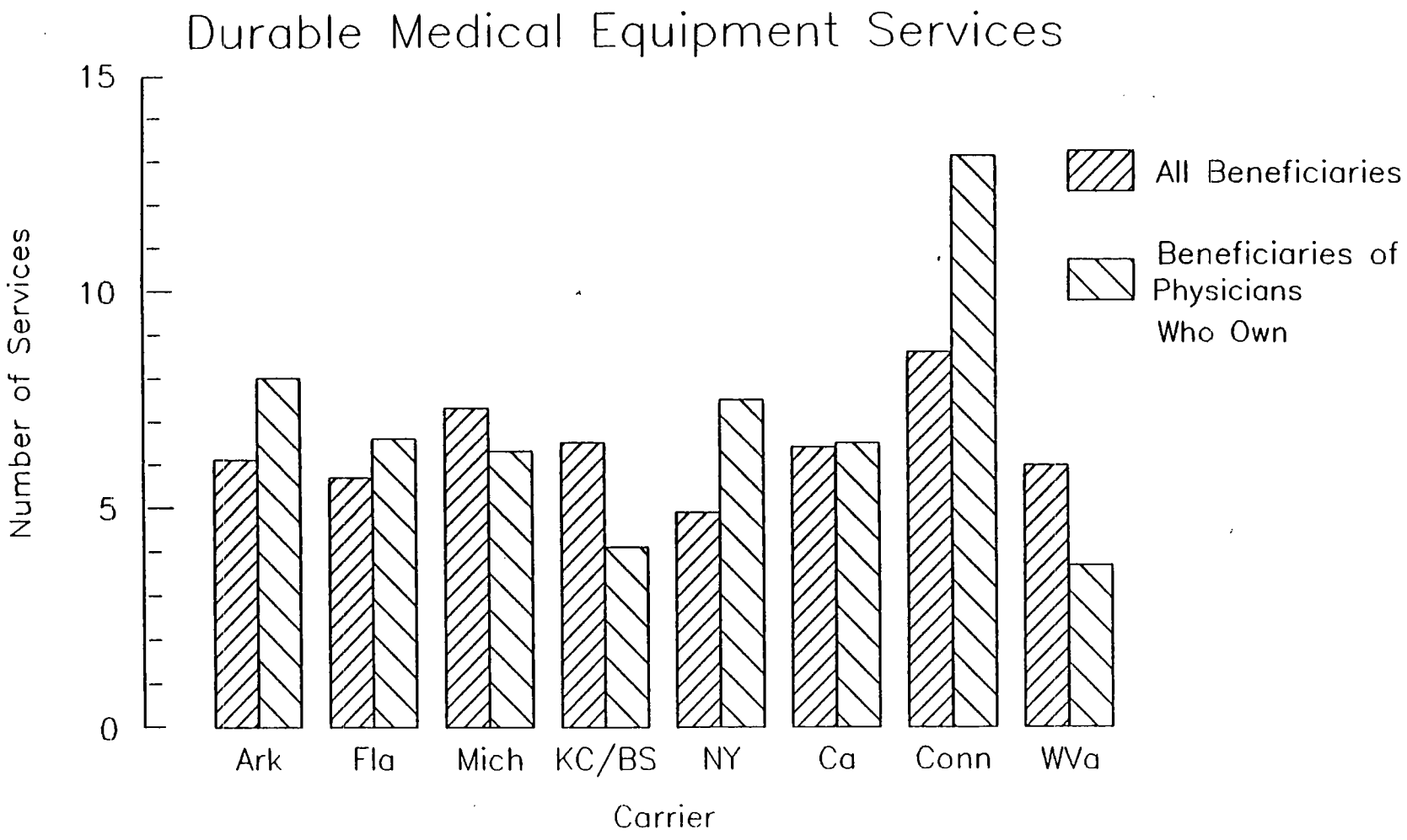
Durable Medical Equipment Services



* Weighted Averages

Exhibit 10

Average Number of Services Per Beneficiary By Carrier and Ownership Status of Billing Physician



Enforcement Experiences

Enforcement of Current Federal Anti-Kickback Laws Is Challenging

- In the past two years the OIG has pursued 442 cases under the anti-kickback authorities which involve physician ownership or compensation arrangements. Most (416) were cases involving physician compensation and many (338) arose out of one large investigation in Philadelphia, Pennsylvania.

- Recent legislative and regulatory developments will aid the OIG in addressing abusive arrangements.

A number of obstacles exist which make enforcement of current anti-kickback laws, as they relate to physician ownership or compensation arrangements, challenging. Investigations of ownership arrangements are complex and labor-intensive. In order to convince a judge or jury that the anti-kickback statute has been violated, certain facts can be helpful. These include, but are not limited to:

(1) whether the amount of return is related to referral volume in any way;

(2) whether opportunities to invest are offered only to those in a position to refer business, or if those in a position to refer greater amounts of business are offered a greater investment opportunity;

(3) whether the investing physicians' referrals are monitored by the entity;

(4) whether restrictions are placed on transferability of the investment interest;

(5) whether the return on investment is excessive in light of the nature of the business risk; and

(6) whether the amounts invested reflect the capital needs of the entity, etc.

Since many of these arrangements are structured differently, such analysis requires significant legal support.

Physician compensation cases involving payments for referrals are somewhat easier to pursue, principally because they have moved from the realm of contracts and stock options to the much shadier realm of "deals"--cash payments off-the-books, paid under a veil of secrecy, exorbitant rent payments which do not reflect fair market value, or other payments which disguise their true purpose. As a result, it is easier to show that the arrangement is a sham, that medically unnecessary services were generated to receive a payoff, and that false claims were generated to obtain money. However, some of the same difficulties in enforcement exist with respect to these arrangements, including legal complexities.

Such cases are also difficult to explain to a fact-finder, unless the business arrangement clearly specifies payment for referral. Federal prosecutors are more likely to prosecute where the

scheme has an element of corruption, the parties to the arrangement are involved in a number of abusive practices, or there is direct cost to the Medicare program or its beneficiaries. Even overt kickback cases are difficult to prove, where there is no "paper trail." In these instances the case must be developed with wires and interviews.

For these reasons, such cases have often been assigned a low priority at the Department of Justice. Instead, resources have been directed at criminal cases where harm to patients or the Government can be more easily demonstrated.

However, recent legislative and regulatory developments have helped pave the way for more effective and aggressive enforcement in this area. The Medicare and Medicaid Patient and Program Protection Act of 1987, which allowed the OIG to sanction providers who were previously subject only to criminal action, obviates the need for the OIG to rely on the Department of Justice to prosecute offenders. The "safe harbor" regulation, once promulgated as final rule, will help put providers on notice that they may be subject to criminal prosecution or civil sanctions if their business arrangements do not qualify for a safe harbor. The OIG Fraud Alert forewarns regional investigators, Medicare carriers, health care providers and the public as to the structural and other facts the OIG deems instructive in reviewing arrangements for potential abuse.

SUMMARY

Extent of Arrangements

Our survey data reveals that financial arrangements between physicians and health care entities to which they may make referrals are common. However, since the data presented represents a "snapshot in time" and no baseline data exists with which to judge it, it is impossible to determine if the number of financial arrangements between referring physicians and other health care entities is increasing, decreasing or remains stable. Even so, we consider the prevalence of arrangements reported in our findings as significant.

It is important to note that, while much attention is given to the percentage of physicians who are involved in such arrangements, the more relevant question for the Medicare program is the percentage of health care providers that have financial arrangements with physicians (since it is the health care providers, not the physicians, who are being reimbursed for these ancillary services). As the data demonstrates, the percentage of physician ownership or investment varies by type of provider; we have seen a greater degree of physician investment in the laboratory industries than in the DME industry. It also varies by State, with Arkansas, California, West Virginia and Connecticut markets heavily weighted with physician-owners and investors. Without baseline data, we are unable to determine if this uneven distribution represents a trend in one direction or another.

Impact on Utilization

We have also demonstrated that patients who have been seen by physician-owners or investors in the laboratory industries, or for that matter physicians with other kinds of financial arrangements with laboratories, tend to use significantly more services than Medicare patients in general. While we have demonstrated an association rather than a causality, this finding--consistent with previous small-scale studies in this area--is quite troubling.

While we have demonstrated a remarkable effect on utilization of services attributable to physician ownership in the ICL and IPL industries, no such effect occurred in the DME industry. This may be due to the elasticity and consumability of laboratory services; that is, an unlimited number of tests may be ordered for any given patient. In DME, many goods are non-consumable; hence, one patient can at the most receive one wheelchair, not an infinite number of wheelchairs. Certainly the utilization effect we have seen in the laboratory industries is cause for concern to the Medicare program, especially in light of the fact that the methodological approach supported the most conservative finding possible.

Procedural Recommendations

Regardless of action that might be taken on the options we have identified below for policymakers, certain steps should be pursued which will make further analysis and ongoing monitoring of arrangements between physicians and other health care entities possible. We are making recommendations that HCFA pursue the necessary legislative and regulatory chan-

ges to: (1) require entities billing Medicare to disclose the names of physician-owners and investors to the program; and (2) require claims submitted by all entities providing services under Medicare Part B to contain the name and provider number of the referring physician.

Options for Policymakers

A number of policy options exist which might serve to address the issue of higher utilization of services by patients of referring physician-owners. A sample of these options is delineated below. However, the choice of these options may not depend alone upon the results of this study. For example, we have not collected quantitative data regarding the impact of physician ownership and self-referral on competition, quality of care, or availability of services. These dimensions of the policy issue were outside the scope of our study. However, the choice of policy options may be driven, at least in part, on an assessment of these other factors.

1. **Implement a focused post payment utilization review by carriers.**

   Carriers now conduct post payment utilization review based on claims submitted under Medicare. One policy option is to implement such review directed at physician-owners or investors.

   This option would require several modifications to the current system of collecting information. First, in order to identify the targeted group, health care entities would have to disclose their physician-owners or investors, along with their Medicare provider numbers, to HCFA and the carriers. Second, the name and provider number of the referring physician must be entered on each claim submitted by the health care entity. Third, provider number reform must be instituted. If physicians and health care entities are allowed to use more than one provider number, the difficulty of this review is increased. Fourth, resources must be made available in the carriers to carry out such a program.

   While this approach would focus the program's attention on possible abusers only, there are several disadvantages to this approach. If the carriers found that a physician-owner ordered 20 percent more tests than his non-investing peers, it is not clear that such a finding would lead to adjudication in favor of the program. Peer review might not support a finding of "relative over-use" of tests as sufficient justification, by itself, for sanction or exclusion. In such cases, it is difficult to demonstrate that the tests ordered were in fact unnecessary; the program might experience a high reversal rate in cases before Administrative Law Judges. In addition, such focused utilization review is timely, costly and difficult to administer at the carrier level. A previous study issued by the OIG found that current post payment utilization review requirements are not being met by the carriers.[23]

2. **Require physicians to disclose financial interests to patients, as a condition of participation, when making referrals to an entity in which they have an interest.**

As detailed earlier in the report, at least eleven States currently have laws which require physicians to make some form of disclosure to patients when they refer those patients to facilities in which they have financial interests. While we have not undertaken a causal study of the effect of disclosure requirements on physician or patient decision-making, the two States in our sample that do have disclosure laws--California and Florida--experienced the same higher utilization rate among patients of physicians owners as did other States without disclosure laws.

While this option is perhaps the least onerous of all those described in this section, it may also be the least likely to influence actual patterns of use of services. Patients have little basis with which to judge the efficiency, quality, or even pricing of one facility versus another. Patient choice in this environment may have little meaning.

3. **Improve the enforcement of current anti-kickback authorities.**

With recent regulatory and legislative developments which have paved the way for more aggressive enforcement of current anti-kickback laws, abusive arrangements between physicians and other health care entities may be effectively addressed. The Medicare and Medicaid Patient and Program Protection Act of 1987, the "safe harbor" regulations, and the OIG Fraud Alert have combined to create a positive environment for enforcement. Placement of additional resources at the OIG to pursue these cases would also support the goal of improved enforcement.

While legal actions against arrangements that violate the current anti-kickback laws will deal with abusive arrangements, and perhaps deter the development of other abusive arrangements, OIG enforcement activity cannot effectively address physicians who refer patients for more services than their peers, in absence of other relevant facts. However, disclosure of financial interests by physicians to the Medicare program, together with post payment utilization review by carriers, might aid the OIG in targeting cases and reviewing arrangements under its current anti-kickback authority.

4. **Institute a private right of action for anti-kickback cases.**

Congress may also wish to consider legislation which would allow private citizens to bring actions against other private parties engaging in conduct prohibited under current anti-kickback law. Consideration should be given to the appropriate private remedy, given the current civil enforcement scheme which only permits program exclusion. However, a private right of action would encourage self-policing among health care providers and allow the Government an additional source of cases brought against abusive arrangements. If enacted under the *qui tam* model of the

False Claims Act, the private right of action would be subject to departmental control and supervision.

5. **Prohibit physicians from referring patients to certain types of entities in which they have a financial interest.**

This option would allow the Congress to prohibit physician referrals to certain types of entities in which they have financial involvement. This approach has precedent in the Medicare Catastrophic Coverage Act of 1988, which barred physician referrals to home IV therapy providers in which they have a financial interest. Based on our finding that patients of physician-owners in these industries use more laboratory services that patients in general, the laboratory industries are logical targets for such restrictions. However, this option may result in certain unintended consequences, such as a negative effect on availability of services; reduced competition; or a drive of services into the physician office laboratory market. In order to address some of these issues, legislation might provide exceptions for sole rural providers or others who meet a legitimate community need in providing services.

Compliance with such legislation may be difficult to ensure. If ownership of health care entities is not disclosed to the Medicare program, then financial involvement by physicians might be unseen by the OIG or other enforcement officials. Potential for "gaming" the restriction is also evident. Financial involvement might be hidden through indirect or non-immediate interests, e.g., through family members or a holding company.

6. **Prohibit physicians from referring patients to any entity in which they have a financial interest.**

This option, which reflects the intent of "The Ethics in Patient Referrals Act," would generally prohibit physicians from referring patients to health care entities in which they have a financial interest. As with the previous option, legislation thus constructed may result in certain unintended consequences, such as a negative effect on availability of services; reduced competition; or a drive of services into the physician-office laboratory market. In order to address some of these issues, legislation might provide exceptions for sole rural providers or others who meet a legitimate community need in providing services, as does the current bill pending before the Congress.

Compliance with such legislation may be difficult to ensure. If ownership of health care entities is not disclosed to the Medicare program, then financial involvement by physicians might be unseen by the OIG or other enforcement officials. Potential for "gaming" the restriction is also evident. Financial involvement might be hidden through indirect or non-immediate interests, e.g., through family members or a holding company.

Additional Reports

The OIG will issue several additional reports focusing on physician ownership and other market forces in the independent clinical laboratory, independent physiological laboratory, and durable medical equipment industries in Fall 1989. Additional analysis will be conducted concerning the nature and extent of physician compensation arrangements.

ENDNOTES

1. Testimony of William L. Roper, M.D., before the Subcommittee on Health, Committee on Ways and Means, U.S. House of Representatives, September 29, 1988.

2. The OIG has recently conducted a study on physician office laboratories (POLs). *See* Office of Inspector General, Office of Analysis and Inspections, "Quality Assurance in Physician Office Laboratories," OAI-05-88-00330, March 1989.

3. Arnold S. Relman, "The New Medical Industrial Complex," *New England Journal of Medicine,* October 23, 1980.

4. Robert P. Hey and Barbara Bradley, "$450 billion industry spawns fraud, abuse," *Christian Science Monitor,* December 7, 1988; "MD's investments reap controversial profits," *Christian Science Monitor,* December 8, 1988; "Patient care vs. physicians' investments," *Christian Science Monitor,* December 12, 1988.

5. Michael Waldholz and Walt Bogdanich, "Warm Bodies: Doctor Owned Labs Earn Lavish Profits in a Captive Market," *The Wall Street Journal.* February 28, 1989, p. 1.

6. Medical Services Administration, State of Michigan Department of Social Services, "Utilization of Medicaid Laboratory Services by Physicians With/Without Ownership Interest in Clinical Laboratories: A Comparative Analysis of Six Selected Laboratories," July 9, 1981.

7. U.S. Department of Health and Human Services, Health Care Financing Administration, Division of Health Standards and Quality, Region V, "Diagnostic Clinical Laboratory Services in Region V," #2-05-2004-11, May 1983.

8. Blue Cross and Blue Shield of Michigan, Medical Affairs Division, "A Comparison of Laboratory Utilization and Payout to Ownership," May 9, 1984.

9. Mathematica Policy Research, AMA Socioeconomic Monitoring System Autumn Survey, 1988.

10. 42 U.S.C. Section 1320a-7b.

11. 760 F.2d 68 (3rd Cir. 1985). A company providing holter monitor services submitted claims to Medicare and forwarded a portion of the reimbursement to the referring physician. The operator of the holter monitoring enterprise, who was also a physician, was prosecuted. In this defense, the physician argued that the payments he made were for legitimate services, e.g., for interpreting test results.

12. 760 F.2d at 69.

13. Case No. 87-5108 (April 3, 1989). In this case, the court upheld the conviction of an owner of a clinic who received payments from a medical services company, which collected blood and urine samples and forwarded them to a laboratory. The court upheld a jury instruction that read, *inter alia,* "It is not a defense that there might have been other reasons for the solicitation of a remuneration by the defendants, if you find that one of the material purposes for the solicitation was to obtain money for the referral of services."

14. 770 F.2d 1447 (1985). In this case, the court examined a medical management company which was providing services to a physician group. This company entered into an arrangement with a laboratory which returned 20 percent of its revenue obtained from the physician group's referrals back to the management company. The defendant alleged that these payments were fair compensation for "specimen collection and handling services." 770 F.2d at 1449. The court rejected this defense, holding: "The fair market value of these services was substantially less than the [amount paid], and there is no question that [the laboratory] was paying for referrals as well as the described services." *Ibid.*

15. 42 U.S.C. Section 1320a-7(b)(7).

16. Pub.L. 100-93, Section 14.

17. Mich. Comp. Laws Ann. Section 333.16221(e)(iv).

18. Fla. Stat. Section 455.25.

19. Minn. Stat. Ann. Section 147.091(p)(3).

20. PA. Act 66, Section 2, and Va. Code Section 54-278.3.

21. Prepared statement of the Subcommittee, Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, March 5, 1982.

22. Unlike results associated with clinical laboratories, this number tested as statistically non-significant nationally. This is probably due to small numbers of beneficiaries in the 5 percent BMAD sample associated with physician-owners of these entities, particularly in Arkansas, Kansas City, and Connecticut.

23. Office of Inspector General, Office of Analysis and Inspections, "Medicare Carriers' Performance of Program Integrity Functions," OAI-04-88-00710, August 1988.

APPENDIX A

METHODOLOGY

This appendix presents the details of the two surveys conducted by the Office of Inspector General. Both surveys were conducted simultaneously and used the same basic design. The Office of Audit developed and administered, by mail, a survey of a sample of physicians in current practice and presumably billing the Medicare program. The Office of Analysis and Inspections surveyed, again by mail, a sample of entities providing ancillary services to the Medicare population.

Design

Both surveys used a two stage cluster design to sample the desired elements. At the initial stage, Medicare Part B carriers were selected at random, with replacement, with probability proportional to size. The size of a carrier was determined using the total Medicare dollar amounts paid by each carrier in 1986. Eight carriers were selected. The following table shows the carriers selected and the probability associated with each carrier.

Distribution of Sampled Carriers by Reimbursed Amount Source: 1986 BMAD

Carrier	Reimbursed	Probability of Selection
Arkansas BS	$ 189,533,042.00	1.0%
Florida BS	$ 1,425,407,061.00	7.4%
Michigan BS	$ 774,109,935.00	4.0%
BS of Kansas City	$ 155,282,982.00	0.8%
BS of Greater NY	$ 1,186,874,282.00	6.2%
Occidental Ca	$ 1,525,825,170.00	8.0%
Travelers CT	$ 244,404,358.00	1.3%
Nationwide WVa	$ 119,594,198.00	0.6%
Total Selected	**$ 5,621,031,028.00**	**29.4%**
All Other Carriers	$13,513,861,042.00	70.6%
National Total	$19,134,892,070.00	100.0%

The second stage differed depending upon the element of interest, either physicians or entities providing ancillary services. The second stage sampling strategy and the results of the sampling process will be discussed separately for each survey.

Office of Audit Physician Survey

For the second stage of this survey, each carrier was asked to provide a list of physician numbers used by the carrier for billing purposes. Each number on the list was considered an element for purposes of sampling. For each carrier, a simple random sample of 500 numbers was selected. The name and address of the owner of each number was identified by the carrier and a questionnaire was sent. Follow up questionnaires were sent to those physicians for whom a response had not been received within two weeks. Subsequent to the second mailing, telephone calls were made to those physicians not responding to the second mailing.
It was recognized early that the physician provider numbers we were using could represent either single physicians or groups of physicians. We were not able to distinguish between these two occurrences in all carriers prior to mailing the survey instruments. We have considered a single physician and a physician group as essentially the same. Thus, our findings represent the proportion of individual billing numbers identified to Medicare. This should be kept in mind when interpreting our results. To avoid cumbersome language, we will refer to these billing numbers as physician provider numbers.

A total of 4,024 were actually selected. Twenty-nine of these numbers were dropped prior to mailing the questionnaires. These 29 included numbers for which no address was available or the physician identified was under active investigation by our office. Overall, 81 percent of the 4,024 physicians selected responded to the questionnaire. The following table gives a breakdown of this response rate.

Office of Audit Physician Survey Responses by Category

Physician Numbers Selected		4,024
Inappropriate numbers or Physician under Investigation		(29)
Survey Questionnaires Mailed		3,995
Responses Outstanding	334 (8.4%)	
Responses Returned (Undeliverable)	443 (11.1%)	
Responses Received		3,218 (80.6%)
Responses Indicating No Active Medicare Participation or Inappropriately Selected Number		528
Active Medicare Providers		2,690

Only active Medicare providers are used in the analysis to determine rates of ownership or compensation. The 2,690 represents 67.3 percent of the questionnaires mailed and 83.6 percent of the responses received.

Office of Analysis and Inspections Entity Survey

For this survey, a stratified design, using simple random sampling within each strata, was employed. Three types of entities were studied which constituted the three strata. Independent clinical laboratories (ICL) and durable medical equipment (DME) suppliers were identified using data supplied by the Health Care Financing Administration's (HCFA) sample of Part B services. A 5 percent sample of all beneficiaries receiving services is contained in the Part B Medicare Annual Data (BMAD) files collected by HCFA. For each of the eight carriers selected, we generated a list of ICLs and DMEs known to have billed for services in 1987. Using these lists, a simple random sample of 60 provider numbers were selected. If there were less than 60 numbers, then all of the numbers were included in the sample.

A third group of entities included in this survey are known as Independent Physiological Laboratories (IPL). These entities are independently established, non-physician providers of physiological services (Ref: HCFA Carrier Manual). Because these entities were not required to bill the Medicare program directly for services performed until April of 1988, the BMAD files could not be used to generate lists for sampling. The IPL lists were therefore generated by the carriers at our request. These lists were then used to select the 60 entities, or as many as were available, for inclusion in the survey.

In those carriers where we had less than 60 entities of one type or more, we attempted to increase the sample size of remaining group(s) of entities if possible. The sample design, as constructed, called for 1,440 entities. Because not all of the carriers had the designated minimum number of subject entities, the final sample size is 1,133. Each entity selected was mailed a survey instrument. Follow up mailings were made two weeks later and subsequent follow up by telephone was used to insure response to the survey. Due to authority vested with the Inspector General, subpoenas were issued, where necessary, to insure a complete follow up. The following three tables provide a detailed breakdown of the number of survey instruments sent and the responses received.

Results of Sampling

Independent Clinical Laboratories

Carrier	Number in BMAD	Sample Size	Responses	Lost to Followup	Percent Response
Arkansas BS	31	31	29	2	93.5%
Florida BS	141	62	60	2	96.8%
Michigan BS	88	59	58	1	98.3%
BS of Kansas City	34	34	31	3	91.2%
BS of Greater NY	102	68	65	3	95.6%
Occidental CA	273	60	51	9	85.0%
Travelers of CT	68	63	62	1	98.4%
Nationwide WVa	19	19	18	1	94.7%
TOTAL	**770**	**396**	**374**	**22**	**94.4%**
		Weighted Average		94.7%	

Durable Medical Equipment Suppliers

Carrier	Number in BMAD	Sample Size	Responses	Lost to Followup	Percent Response
Arkansas BS	60	56	54	2	96.4%
Florida BS	309	60	57	3	95.0%
Michigan BS	141	79	73	6	92.4%
BS of Kansas City	41	41	40	1	97.6%
BS of Greater NY	146	67	58	9	86.6%
Occidental CA	220	60	52	8	86.7%
Travelers of CT	50	50	48	2	96.0%
Nationwide WVa	57	57	55	2	96.5%
TOTAL	**1,024**	**470**	**437**	**33**	**93.0%**
		Weighted Average			95.7%

Independent Physiological Laboratories

Carrier	Number in Carrier	Sample Size	Responses	Lost to Followup	Percent Response
Arkansas BS	4	4	3	1	75.0%
Florida BS	275	64	41	23	64.1%
Michigan BS	42	42	32	10	76.2%
BS of Kansas City	14	14	13	1	92.9%
BS of Greater NY	45	45	35	10	77.8%
Occidental CA	90	60	44	16	73.3%
Travelers of CT	19	19	16	3	84.2%
Nationwide WVa	19	19	16	3	84.2%
TOTAL	**508**	**267**	**200**	**67**	**74.9%**
		Weighted Average			81.5%

The lost to follow up category includes: (1) those entities that were found to be out of business; and (2) those entities which we were unable to locate through efforts of our own or those of the carrier, and were presumed out of business.

Utilization Analysis

Data collected by HCFA and the Medicare carriers does not include information to determine completely ownership or compensation relationships that may exist among the various providers that bill for services to beneficiaries. Nor does information exist as to the identity of providers that have referred a beneficiary for services billed by other providers. To overcome these difficulties and use HCFA's BMAD data, the entity survey described above provided the names of any and all physicians maintaining ownership and/or compensation arrangements with the sampled entities.

The carriers were asked to divulge all provider numbers associated with each physician identified in the entity survey. Matching these provider numbers with those numbers found in the BMAD billing data allowed us to establish groups of beneficiaries known to have had services from physicians with ownership or compensation arrangements. The rates for various services in this group of beneficiaries can then be compared to the overall rates of services for all beneficiaries.

APPENDIX B

ANALYSIS

This appendix provides the detailed tables and analysis supporting the results presented in the body of this report. The data is reported in sections defined by subject matter in the title.

Proportion of Physicians Reporting Ownership and/or Compensation

Tables B1 and B2 provide detailed breakdowns by carrier of the number of physicians, or physician groups, reporting ownership (Table B1) and compensation arrangements (Table B2). For these tables, those physicians not responding to the survey were assumed to reflect the same distributions as those responding, both with respect to active participation in the Medicare program and the proportion indicating ownership and compensation arrangements. Thus, the number reported in the columns headed "Physicians Sampled" reflects those physicians who either responded or we were unable to locate and whose questionnaires were undeliverable. Physicians associated with undeliverable questionnaires were assumed to be inactive in the Medicare program for purposes of this survey.

The weighted proportion of physicians reporting ownership or compensation arrangements is based upon only those physicians also reporting that they actively bill the Medicare program. Our results estimate that there are approximately 560,000 physicians registered with Medicare carriers, of which only approximately 399,000 actually are active in Medicare. Also, Tables B1 and B2 do not give mutually exclusive counts. Approximately 26 percent of the physicians responding (unweighted percent) reported both ownership and compensation arrangements.

The data reported in this survey represents responses that are self reported by the sampled physicians or physician groups. In an attempt to verify the accuracy of the responses, two separate approaches were taken. First, two random 10 percent subsamples of all the selected physician provider numbers were drawn, by carrier. Given the physicians associated with these numbers, auditors endeavored to establish any ownership or compensation arrangements these physicians might have through independent sources. The sources used included State and local government offices as well as Federal offices located in each region.

The first subsample consisted of 402 physician provider numbers. We were able to identify five physicians, active in the Medicare program, with ownership or compensation arrangements. All five of these physicians had responded to our survey. Two of these five physicians responded to the survey that they had no ownership or compensation arrangements with other entities billing the Medicare program. We did not establish whether these two physicians referred patients to the entities so identified.

The second sample consisted of 400 physician provider numbers. With this sample, we found eight physicians meeting our criteria. Seven of these physicians had responded to our survey and again, two responded they had no ownership or compensation arrangements with entities

to which they referred patients. Again, we did not establish the actual referral practices of these two physicians.

A second approach was to match the physician provider numbers obtained from this survey with those collected in the survey of entities. This match found 88 physician provider numbers. That is, 88 of the physicians selected at random from the eight carriers to receive a physician survey questionnaire were subsequently identified by the data collected in the survey of entities as physicians with either ownership or compensation arrangements from our sample of independent clinical laboratories, durable medical equipment suppliers or independent physiological laboratories. Sixty-five of these 88 physicians responded to the survey instrument. Of these 65, 14 (21 percent) indicated on the physician survey that they had no ownership or compensation arrangements with other entities to which they referred patients. As before, we could not determine actual referral patterns for these physicians.

While the conclusions that can be drawn from these two methods of verification are limited, it seems apparent that the self reported nature of the physician survey did not lead to gross misstatements of fact on the part of the physicians. At worst, we may be understating the true extent of physician financial relationships that exist. Consequently, we believe that our results are an accurate representation of the proportion of physicians who have financial relationships with other entities, to which they refer patients, and who also bill the Medicare program.

Utilization Analysis

The analysis of the effect of physician ownership and compensation arrangements on utilization of services was conducted by defining two groups of beneficiaries. The first group was defined as all beneficiaries in the carrier BMAD sample with at least one service of the type under study. For independent clinical laboratories, this was all beneficiaries with at least one service billed to Medicare using the HCFA Common Procedure Code System (HCPCS) where the first digit of the HCPCS was an '8' or a 'P'. For durable medical equipment suppliers, the first digit of the HCPCS was an 'E' and for independent physiological laboratories, the HCPCS codes listed in appendix C were used. Essentially, this group constituted the control group. The comparison group was composed of beneficiaries showing at least one service billed as in the control group and also showing a billing for services received from a physician known to have an ownership or compensation arrangement with an entity selected in the entity survey. All services for a beneficiary so identified were included in the comparison group.

This form of analysis has two important implications that should be kept in mind when interpreting the results. First, this approach represents a conservative analysis. The comparison group is not excluded from the control group and the comparison group is composed only of beneficiaries identified through the entities included in the sample. Those beneficiaries of physician owned entities not included in the sample are included in the control group but not in the comparison group. An important effect of this type of construction is to reduce any apparent difference found in utilization rates calculated for each group. Second, any differences found should be interpreted as showing an association only between groups and utilization rates. Causality cannot be established because the data lacks the information necessary to determine which physician prescribed the service billed on behalf of the beneficiary.

Tables B3 through B12 present the results of the above analysis. For clinical laboratory services and durable medical equipment services, four types of tables are given. Two tables give utilization rates by carrier where the comparison group is composed of beneficiaries seen by physicians with a known ownership interest in the entity tabled. One table uses all services, regardless of source and the second uses only those services delivered in (or by) the entity. A second set of two tables presents the same information when the beneficiary was seen by a physician with a compensation arrangement with the entity.

Only two tables are presented for services involving independent physiological laboratories, that is, all services from all sources for beneficiaries of physicians who own (Table B11) and all services from all sources for beneficiaries of physicians with compensation arrangements with IPLs (Table B12). This is due to the fact that lack of direct billing by IPLs in 1987 did not allow us to identify IPLs in the BMAD sample data.

Included in these tables is a column labeled "Ratio." This is the ratio of the utilization rate for the comparison group to that of the control group. The weighted average of this ratio, along with the upper and lower bounds of the 90 percent confidence interval, are given at the bottom of each table. This ratio gives the relative increase in the utilization rate of the comparison group when compared to the corresponding control group. If the confidence interval includes the value 1.00 then one should infer that, on the average, there is no difference in the utilization rates between the two groups. Student's t-test is provided to test the statistical significance of the differences between the utilization rates within each carrier. Large absolute values of this test statistic would indicate that the observed differences are probably not due to random chance.

Analysis of Utilization Comparison and Control Groups

Of particular concern for this utilization analysis is the occurrence of bias due to adverse selection of the comparison group of beneficiaries. This can occur either among the beneficiaries or the physicians. By using only those beneficiaries with at least one service in the calculation of the utilization rates, we have created homogenous groups, at least with respect to type and quantity of services used. This provides some protection against bias due to beneficiaries.

As to the physicians, the only information available in the BMAD data with which to test for any bias is the carrier designated specialty of the physician. Because clinical laboratory services shows the greatest increase in utilization due to physician ownership and compensation, this will be the focus of an examination of bias due to adverse physician selection. A criticism of the utilization analysis with respect to clinical laboratory services, might be that physicians, normally associated with high use of clinical laboratory services by virtue of their specialty, are the majority of those physicians establishing ownership in independent clinical laboratories. To test this, we looked at the distribution, by specialty, of the weighted proportions of physicians in both the control group and the comparison group. The weighting is across carriers. The following table gives the proportions of Medicare providers in five categories. These categories represent a recoding of the specialty codes used by Medicare carriers (see appendix D).

Weighted Distribution of Providers by Specialty and Ownership Status

Clinical Laboratory Services

Provider Type	Control Group	Comparison Group
Physicians:		
Medical, Primary Care	59.6%	50.5%
Medical, Not Primary	11.2%	10.6%
Surgeons	18.2%	16.8%
Others	4.2%	7.7%
Clinical Laboratory	3.2%	10.0%
Other Entity	3.6%	4.5%
Total	100.0%	100.0%

This table shows a decrease in the proportion of primary care physicians, an expected increase in the proportion of services delivered by clinical laboratories and an increase in the proportion of physicians in the 'Other' category. If we look at the distribution of physicians only, then the following table, again using weighted averages across carriers, is derived.

Weighted Distribution by Specialty and Ownership Status, Physicians Only

Clinical Laboratory Services

Provider Type	Control Group	Comparison Group
Physicians:		
Medical, Primary Care	64.0%	59.0%
Medical, Not Primary	12.0%	12.3%
Surgeons	19.6%	19.6%
Other	4.5%	9.0%
Total	100.0%	100.0%

This version of the table still shows the decrease in the proportion of primary care physicians and the increase among the 'Other' type of physicians. What is important in this comparison is the fact that the 'Medical, Not Primary' group of physicians contains those specialist most likely to use clinical laboratory services according to conventional wisdom. The proportion of this category in both groups is essentially equal. This would indicate that physicians normally associated with higher use of clinical laboratory services are not overrepresented in the comparison group.

Because of referrals patterns inherent in medical care delivery and the lack of referring physician identification on bills in the BMAD data, it is not possible to determine to what extent this difference in proportions might contribute to the differences seen in utilization rates for clinical laboratory services. However, the analysis represented here would indicate that the difference in utilization rates among beneficiaries is not due to any over representation of

physician providers associated with greater use of these services. Thus, any bias due to adverse selection of physician providers would appear to be minimal.

Calculation of Payments

The calculation of payments associated with this report is given only for physician ownership in the case of independent clinical laboratories. To do this we must estimate a savings based on the element of selection, which for this study is the independent clinical laboratory. Thus it is not possible to make such an estimate for independent physiological laboratories as our selection was not from the BMAD data. Durable medical equipment suppliers showed no significant effect due to physician ownership.

The following table shows the number of independent clinical laboratories upon which the sampling was based, by carrier.

Carrier	Total Num. of ICLs	Number of ICLs Sampled			Prop. Owned
		Total	Unowned	Owned	
Arkansas BS	31	31	23	8	25.8%
Florida BS	141	62	41	21	33.9%
Michigan BS	88	59	47	12	20.3%
BS of Kansas City	34	34	32	2	5.9%
BS of Greater NY	102	68	56	12	17.6%
Occidental Ca	273	60	42	18	30.0%
Travelers CT	68	63	41	22	34.9%
Nationwide WVa	19	19	11	8	42.1%

Using the BMAD data, we determined the total number of beneficiaries receiving services and the total allowed amounts for all of the labs in the sample. This information is shown in the following table.

Carrier	Number of Benes.		Total Allowed	
	Unowned	Owned	Unowned	Owned
Arkansas BS	2,827	1,280	$ 110,711	$ 60,705
Florida BS	16,519	4,906	$1,075,730	$ 395,848
Michigan BS	18,629	2,180	$1,279,873	$ 176,950
BS of Kansas City	4,811	229	$ 300,417	$ 33,303
BS of Greater NY	23,390	1,633	$1,134,536	$ 80,824
Occidental Ca	8,860	1,364	$ 650,481	$ 136,146
Travelers CT	10,355	2,152	$ 543,401	$ 148,234
Nationwide WVa	830	234	$ 43,576	$ 8,864

Using these two tables, it is possible to calculate a savings per independent clinical laboratory and project this to the total estimated savings per carrier (the BMAD sample is a 5 percent sample of beneficiaries). Since each carrier, and the subsampling therein, is independent of another, a projection to the nation can be made for each carrier in the sample. The average of these individual estimates represents a valid projection to the nation for the increase in allowed amounts in 1987 that can be associated with physician ownership of independent clini-

cal laboratories. The following table shows costs of $28.1 million due to increased utilization associated with physician ownership of independent clinical laboratories. The 90 percent confidence interval of this estimate has a lower limit of $13.7 million and an upper limit of $42.4 million.

Carrier	Sampling Fraction	Est Costs In Sample	Est Costs Per Carrier	National Estimate
Arkansas BS	1.0%	$10,577	$ 211,545	$21,154,509
Florida BS	7.4%	$76,365	$ 3,473,385	$46,937,637
Michigan BS	4.0%	$27,177	$ 810,713	$20,267,833
BS of Kansas City	0.8%	$19,004	$ 380,072	$47,509,056
BS of Greater NY	6.2%	$ 1,615	$ 48,441	$ 781,309
Occidental Ca	8.0%	$36,005	$ 3,276,421	$40,955,260
Travelers CT	1.3%	$35,303	$ 762,091	$58,622,375
Nationwide WVa	0.6%	($ 3,422)	($ 68,433)	($11,405,495)
			Average	$28,102,811
	90% Confidence Interval		Lower Limit	$13,780,546
			Upper Limit	$42,425,075

Table B1

Estimates of Rates of Physician Ownership

Carrier	Total Num. Physicians	Physicians Sampled	Active Physicians	Number Indicating Relationship	Percent of Active with Relationship
Arkansas BS	5,173	493	396	64	16.2%
Florida BS	39,905	432	313	64	20.4%
Michigan BS	21,840	420	278	25	9.0%
BS of Kansas City	3,214	449	362	19	5.2%
BS of Greater NY	38,847	474	351	18	5.1%
Occidental Ca	32,432	482	391	60	15.3%
Travelers CT	6,927	465	354	47	13.3%
Nationwide WVa	5,549	446	245	25	10.2%
			Weighted Average		11.8%

Table B2

Estimates of Rates of Physician Compensation Arrangements

Carrier	Total Num. Physicians	Physicians Sampled	Active Physicians	Number Indicating Relationship	Percent of Active with Relationship
Arkansas BS	5,173	493	396	49	12.4%
Florida BS	39,905	432	313	34	10.9%
Michigan BS	21,840	420	278	27	9.7%
BS of Kansas City	3,214	449	362	18	5.0%
BS of Greater NY	38,847	474	351	13	3.7%
Occidental Ca	32,432	482	391	26	6.6%
Travelers CT	6,927	465	354	17	4.8%
Nationwide WVa	5,549	446	245	22	9.0%
			Weighted Average		7.8%

Table B3

Comparisons based on Lab Services
All Services
Physicians with Ownership

Carrier	All Beneficiaries			Beneficiaries of Physician-Owners				
	N	Avg	Std Err	N	Avg	Std Err	Ratio	T-Test
Arkansas BS	11,135	5.3	0.06	1,196	7.0	0.25	1.32	6.612
Florida BS	73,270	8.1	0.03	7,760	11.3	0.13	1.40	23.985
Michigan BS	36,289	9.7	0.07	1,481	18.1	0.51	1.87	16.318
BS of Kansas City	8,403	5.5	0.08	274	8.6	0.59	1.56	5.207
BS of Greater NY	40,320	6.5	0.04	636	6.6	0.30	1.02	0.330
Occidental Ca	53,018	8.8	0.05	1,649	11.4	0.35	1.30	7.354
Travelers CT	14,236	6.3	0.07	1,186	10.7	0.38	1.70	11.387
Nationwide WVa	5,981	4.7	0.08	220	4.7	0.29	1.00	0.000
Weighted Averages		6.7			9.8		1.45	
	90% Confidence Interval				Lower Limit		1.28	
					Upper Limit		1.63	

Table B4

Comparisons based on Lab Services
Services from ICL Only
Physicians with Ownership

Carrier	All Beneficiaries			Beneficiaries of Physician-Owners				
	N	Avg	Std Err	N	Avg	Std Err	Ratio	T-Test
Arkansas BS	3,332	3.3	0.07	782	4.7	0.24	1.42	5.600
Florida BS	46,332	6.0	0.03	5,803	8.1	0.11	1.35	18.418
Michigan BS	22,280	8.4	0.08	1,025	12.8	0.53	1.52	8.209
BS of Kansas City	4,396	4.7	0.10	123	12.5	1.06	2.66	7.326
BS of Greater NY	25,165	5.2	0.04	455	5.0	0.26	0.96	-0.760
Occidental Ca	39,207	6.8	0.05	1,092	9.0	0.33	1.32	6.591
Travelers CT	10,121	5.5	0.08	1,013	8.5	0.34	1.55	8.589
Nationwide WVa	942	4.4	0.16	83	4.6	0.41	1.05	0.454
Weighted Averages		5.8			7.8		1.34	
	90% Confidence Interval				Lower Limit		1.04	
					Upper Limit		1.65	

Table B5

Comparisons based on LAB Services
All Services
Physicians with Compensation

Carrier	All Beneficiaries			Beneficiaries of Phy w/ Comp				
	N	Avg	Std Err	N	Avg	Std Err	Ratio	T-Test
Arkansas BS	11,135	5.3	0.06	789	6.8	0.27	1.28	5.423
Florida BS	73,270	8.1	0.03	114	8.1	0.66	1.00	0.000
Michigan BS	36,289	9.7	0.07	2,740	12.5	0.30	1.29	9.089
BS of Kansas City	8,403	5.5	0.08	178	8.5	0.93	1.55	3.214
BS of Greater NY	40,320	6.5	0.04	39	8.4	0.87	1.29	2.182
Occidental Ca	53,018	8.8	0.05	426	11.1	0.75	1.26	3.060
Travelers CT	14,236	6.3	0.07	83	10.0	1.15	1.59	3.211
Nationwide WVa	5,981	4.7	0.08	176	5.5	0.56	1.17	1.414
Weighted Averages		6.7			8.8		1.32	
	90% Confidence Interval				Lower Limit		1.21	
					Upper Limit		1.43	

Table B6

Comparisons based on LAB Services
Services from ICL Only
Physicians with Compensation

Carrier	All Beneficiaries			Beneficiaries of Phy w/ Comp				
	N	Avg	Std Err	N	Avg	Std Err	Ratio	T-Test
Arkansas BS	3,332	3.3	0.07	545	2.1	0.08	0.64	-11.289
Florida BS	46,332	6.0	0.03	83	6.2	0.58	1.03	0.344
Michigan BS	22,280	8.4	0.08	2,110	8.9	0.27	1.06	1.776
BS of Kansas City	4,396	4.7	0.10	79	6.5	1.29	1.38	1.391
BS of Greater NY	25,165	5.2	0.04	37	7.2	0.91	1.38	2.196
Occidental Ca	39,207	6.8	0.05	280	10.5	0.94	1.54	3.931
Travelers CT	10,121	5.5	0.08	72	8.2	1.08	1.49	2.493
Nationwide WVa	942	4.0	0.16	48	5.3	0.62	1.33	2.030
Weighted Averages		5.7			5.7		1.00	
	90% Confidence Interval				Lower Limit		0.82	
					Upper Limit		1.18	

Table B7

Comparisons based on DME Services
All Services
Physicians with Ownership

Carrier	All Beneficiaries			Beneficiaries of Physician-Owners				
	N	Avg	Std Err	N	Avg	Std Err	Ratio	T-Test
Arkansas BS	1,345	6.1	0.25	132	8.0	1.01	1.31	1.826
Florida BS	7,434	5.7	0.09	522	6.6	0.35	1.16	2.490
Michigan BS	3,942	7.3	0.28	24	6.3	1.57	0.86	-0.627
BS of Kansas City	776	6.5	0.36	55	4.1	0.74	0.63	-2.916
BS of Greater NY	4,703	4.9	0.15	67	7.5	1.43	1.53	1.808
Occidental Ca	5,479	6.4	0.15	247	6.5	0.60	1.02	0.162
Travelers CT	914	8.6	0.61	8	13.1	7.61	1.52	0.589
Nationwide WVa	653	6.0	0.32	29	3.7	1.03	0.62	-2.132
Weighted Averages		6.4			6.4		1.00	
	90% Confidence Interval				Lower Limit		0.79	
					Upper Limit		1.21	

Table B8

Comparisons based on DME Services
Services from DME Supplier Only
Physicians with Ownership

Carrier	All Beneficiaries			Beneficiaries of Physician-Owners				
	N	Avg	Std Err	N	Avg	Std Err	Ratio	T-Test
Arkansas BS	1,343	6.1	0.25	132	8.0	1.01	1.31	1.826
Florida BS	7,378	5.8	0.09	521	6.6	0.35	1.14	2.214
Michigan BS	3,931	7.4	0.28	24	6.3	1.57	0.85	-0.690
BS of Kansas City	773	6.5	0.36	55	4.1	0.74	0.63	-2.916
BS of Greater NY	4,671	4.9	0.15	65	7.3	1.46	1.49	1.635
Occidental Ca	5,169	6.5	0.15	230	6.1	0.60	0.94	-0.647
Travelers CT	866	8.6	0.64	7	14.1	8.71	1.64	0.630
Nationwide WVa	625	6.2	0.33	23	4.0	0.80	0.65	-2.542
Weighted Averages		6.4			6.4		1.00	
	90% Confidence Interval				Lower Limit		0.78	
					Upper Limit		1.22	

Table B9

Comparisons based on DME Services
All Services
Physicians with Compensation

Carrier	All Beneficiaries			Beneficiaries of Phy w/ Comp				
	N	Avg	Std Err	N	Avg	Std Err	Ratio	T-Test
Arkansas BS	1,345	6.1	0.25	12	7.1	2.43	1.16	0.409
Florida BS	7,434	5.7	0.09	48	6.7	1.10	1.18	0.906
Michigan BS	3,942	7.3	0.28	4	4.7	2.13	0.64	-1.210
BS of Kansas City	776	6.5	0.36	6	4.0	1.59	0.62	-1.534
BS of Greater NY	4,703	4.9	0.15	-	-	-	0.00	-
Occidental Ca	5,479	6.4	0.15	-	-	-	0.00	-
Travelers CT	914	8.6	0.61	-	-	-	0.00	-
Nationwide WVa	653	6.0	0.32	98	6.8	1.03	1.13	0.742
Weighted Averages		6.3			6.6		1.05	
	90% Confidence Interval				Lower Limit		0.74	
					Upper Limit		1.36	

Table B10

Comparisons based on DME Services
Services from DME Suppliers Only
Physicians with Compensation

Carrier	All Beneficiaries			Beneficiaries of Phy w/Comp				
	N	Avg	Std Err	N	Avg	Std Err	Ratio	T-Test
Arkansas BS	1,343	6.1	0.25	12	7.1	2.43	1.16	0.409
Florida BS	7,378	5.8	0.09	46	6.9	1.14	1.19	0.962
Michigan BS	3,931	7.4	0.28	4	4.7	2.13	0.64	-1.257
BS of Kansas City	773	6.5	0.36	6	4.0	1.59	0.62	-1.534
BS of Greater NY	4,671	4.9	0.15	-	-	-	0.00	-
Occidental Ca	5,169	6.5	0.15	-	-	-	0.00	-
Travelers CT	866	8.6	0.64	-	-	-	0.00	-
Nationwide WVa	625	6.2	0.33	93	7.0	1.07	1.13	0.714
Weighted Averages		6.4			6.8		1.07	
	90% Confidence Limit				Lower Limit		0.75	
					Upper Limit		1.38	

Table B11

Comparisons based on IPL Services
All Services
Physicians with Ownership

Carriers	All Beneficiaries			Beneficiaries of Physician-Owners				
	N	Avg	Std Err	N	Avg	Std Err	Ratio	T-Test
Arkansas BS	1,880	1.4	0.02	19	2.1	0.41	1.50	1.705
Florida BS	8,292	1.7	0.01	181	1.9	0.09	1.12	2.209
Michigan BS	10,808	1.7	0.01	183	2.0	0.10	1.18	2.985
BS of Kansas City	1,564	1.5	0.02	25	1.5	0.20	1.00	0.000
BS of Greater NY	8,417	1.6	0.01	98	2.0	0.14	1.25	2.850
Occidental Ca	9,741	1.5	0.01	712	1.7	0.04	1.13	4.851
Travelers CT	2,674	1.5	0.01	32	2.7	0.33	1.80	3.635
Nationwide WVa	1,556	1.5	0.02	94	1.5	0.10	1.00	0.000
Weighted Averages		1.5			1.7		1.13	
	90% Confidence Interval				Lower Limit		0.97	
					Upper Limit		1.29	

Table B12

Comparisons based on IPL Services
All Services
Physicians with Compensation

Carrier	All Beneficiaries			Beneficiaries of Phy w/ Comp				
	N	Avg	Std Err	N	Avg	Std Err	Ratio	T-Test
Arkansas BS	1,880	1.4	0.02	31	2.6	0.44	1.86	2.724
Florida BS	8,292	1.7	0.01	361	1.6	0.05	0.94	-1.961
Michigan BS	10,808	1.7	0.01	1,082	1.8	0.03	1.06	3.162
BS of Kansas City	1,564	1.5	0.02	134	1.9	0.12	1.27	3.288
BS of Greater NY	8,417	1.6	0.01	26	1.9	0.21	1.19	1.427
Occidental Ca	9,741	1.5	0.01	518	1.8	0.05	1.20	5.883
Travelers CT	2,674	1.5	0.01	13	1.6	0.17	1.07	0.587
Nationwide WVa	1,556	1.5	0.02	95	1.7	0.11	1.13	1.789
Weighted Averages		1.5			1.8		1.18	
	90% Confidence Interval				Lower Limit		1.01	
					Upper Limit		1.34	

APPENDIX C

HCFA COMMON PROCEDURE CODING SYSTEM (HCPCS)

Codes used to define Independent Physiological Labs.

70450	71250	71550	72125	72140
72192	72196	73200	73220	73700
73720	74150	74181	76070	76700
78000	78001	78003	78007	78010
78015	78016	78102	78103	78104
78170	78186	78202	78215	78216
78282	78290	78300	78305	78306
78310	78445	78600	78606	93258
93259	93262	93263	93266	93268
93269	93270	93720	93721	93722
93740	93850	93860	93870	93890
93910	93950	93960	M0520	M0525
M0526	M0530	M0535	M0560	M0570
M0575	M0580	M0585	M0590	M0592

Codes used to define Magnetic Resonance Imaging Services.
These Services are included in the definition of IPLs.

70540	70550	70551	70552	72141
72142	72143	72144	73221	73721
75552	76400			

APPENDIX D

RECODING OF CARRIER PROVIDER SPECIALTY

Category Created		Carrier Specialty Codes Included
Physician, Medical, Primary Care	01	General Practice
	08	Family Practice
	11	Internal Medicine
	37	Pediatrics
	38	Geriatrics
Physician, Medical, Other than Primary	03	Allergy
	06	Cardiovascular Disease
	07	Dermatology
	10	Gastroenterology
	13	Neurology
	25	Physical Medicine and Rehabilitation
	26	Psychiatry
	29	Pulmonary Disease
	30	Radiology
	36	Nuclear Medicine
	39	Nephrology
Physician, Surgeon	02	General Surgery
	04	Oncology, Laryngology, Rhinology
	14	Neurological Surgery
	16	OB - Gynecology
	18	Ophthalmology
	20	Orthopedic Surgery
	24	Plastic Surgery
	28	Proctology
	33	Thoracic Surgery
	34	Urology
	40	Hand Surgery
	48	Podiatry - Surgical Chiropody
Other Physician	05	Anesthesiology
	09	Gynecology (Osteopaths only)
	12	Manipulative Therapy (Osteopaths only)
	15	Obstetrics (Osteopaths only)
	17	Ophthalmology,Otology, Laryngology, Rhinology (Osteopaths only)
	19	Oral Surgery (Dentists only)
	21	Pathologic Anatomy; Clinical Pathology (Osteopaths only)
	22	Pathology
	23	Peripheral Vascular Diseases or Surgery (Osteopaths only)
	27	Psychiatry, Neurology (Osteopaths only)
	31	Roentgenology, Radiology (Osteopaths only)
	32	Radiation Therapy (Osteopaths only)
	35	Chiropractor, Licensed
	41	Optometrist

Category Created		Carrier Specialty Codes Included
Other Physician (cont.)	49	Miscellaneous
Clinical Laboratory	69	Independent Laboratory (Billing independently)
Other Entities	51	Medical supply company with C.O.
	52	Medical supply company with C.P.
	53	Medical supply company with C.P.O
	54	Medical supply company not included above
	55	Individual CO
	56	Individual CP
	57	Individual CPO
	58	Individuals not included in 55, 56, 57
	59	Ambulance service supplier, e.g., private
	60	Public Health or Welfare Agencies
	61	Voluntary Health or Charitable Agencies
	62	Psychologist (Billing independently)
	63	Portable X-ray Supplier (Billing independently)
	64	Audiologists (Billing independently)
	65	Physical Therapist (Billing independently)
	70	Clinic or other group practices
	87	All other, e.g., Drug and Department Store
	88	Unknown
	99	Unknown

APPENDIX E

ADDITIONAL CONTRIBUTORS TO THE REPORT

Office of Analysis and Inspections

Headquarters

Brian Ritchie
Jennifer Cryor

New York

Dawn McDonald
Tracey Kennedy
Bill Counihan

Chicago

Phillip Onofrio
Margaret Shell
Pamela May
Aquilla Box

Philadelphia

Joe Goodyear
Nancy Molyneaux

San Francisco

Neil Merino
Mollyann Brodie
Robert Gibbons
Corrinne M. Harol

Atlanta

Jim Wilson

Office of Audit

Headquarters

George Reeb
John Hapchuk
Janet Rankin
Rose Hatten

Boston

William Hornby
Herve Guerette
Hank Vanderbeek
Steve Conway
Robert Champagne

New York

Raymond J. Yak
James P. Edert
Romula Capistrano
Robert Huot
Margaret Wallace

Philadelphia

James Maiorano
Joanne Jackson
Joseph Cardamone

Atlanta

Gerald Dunhan
Bernard Rach

Chicago

Paul Swanson
Allen Peters
Tammie Anderson
Robert Templeton
Dennis Harman

Dallas

Joseph Smith
C.B. Goff

Kansas City

Dennis Dewitt
John Harrington
Gary Gunter

San Francisco

Gordon Fickel
Gerald McGee
Anna Greenhalgh
Ton Son Lam
Akop Baltayan
Paul Scott
Michael Montgomery

Office of General Counsel

Elizabeth Weiss, Thomas Crane