

## THE ROLE OF THE MARKETPLACE IN THE CLINICAL WORKFORCE OF THE UNITED STATES

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### INTRODUCTION

This paper addresses the role of market forces in shaping the clinical workforce of the United States (US). I have chosen to focus on the physician workforce, and I refer only parenthetically to other health care professions as required to better frame the context for analysis of physician workforce issues. Although the bulk of the paper does concentrate on market forces, the effects of planning and regulation on the physician workforce also are considered.

Specifically, the paper addresses the following questions:

- (1) What is the nature of the USs' health care markets?
  - What are the different types of purchasers of physician services and to what degree does a competitive market operate at each of these purchasing levels?
- (2) How has the different mix of public/private planning, regulation, and financing in the US affected:
  - availability of physicians to patients;
  - cost of care to the public sector, private payers, and patients;
  - professional opportunities of providers;
  - entry of physicians into training programs and then into practice;
  - mix of physician specialties; and
  - geographic distribution of clinicians, particularly physicians.
- (3) In what areas of the US health care system have market forces, public planning, and regulation fallen short in achieving a desirable clinical workforce?
- (4) How is the US altering its approach to "optimizing" the physician workforce, in light of the successes and failures of past policies (public and private)?

This paper draws on a variety of academic, professional, and journalistic sources to provide the data relative to the preceding questions. I adopt a broad economic perspective in outlining a conceptual view of markets, planning, and regulation relative to the physician workforce. In the synthesis that follows, the paper also attempts to incorporate the views of other social sciences, clinical and professional disciplines, for each contributes significantly

to understanding the influence of markets, planning, and regulation on the physician workforce.

### **NATURE OF THE US HEALTH CARE MARKET**

Characterizing the general nature of the US health care markets is a necessary first step to understanding the physician services market in particular. Figure 1 depicts a simplified representation of the US health care market, which includes the physician services market sector as one component. In the most general sense, the health care market is organized for one superordinate social function: the production of health among the population (consumers). This production of health is part of the larger quality of life of the population, and the contribution of health services is threefold: preventing disease and illness, caring for health problems (decrements to health status) when they occur, and curing health problems.

#### **Conceptual outline of Figure 1**

The levels in Figure 1 point toward a kind of vertical hierarchy of functions:

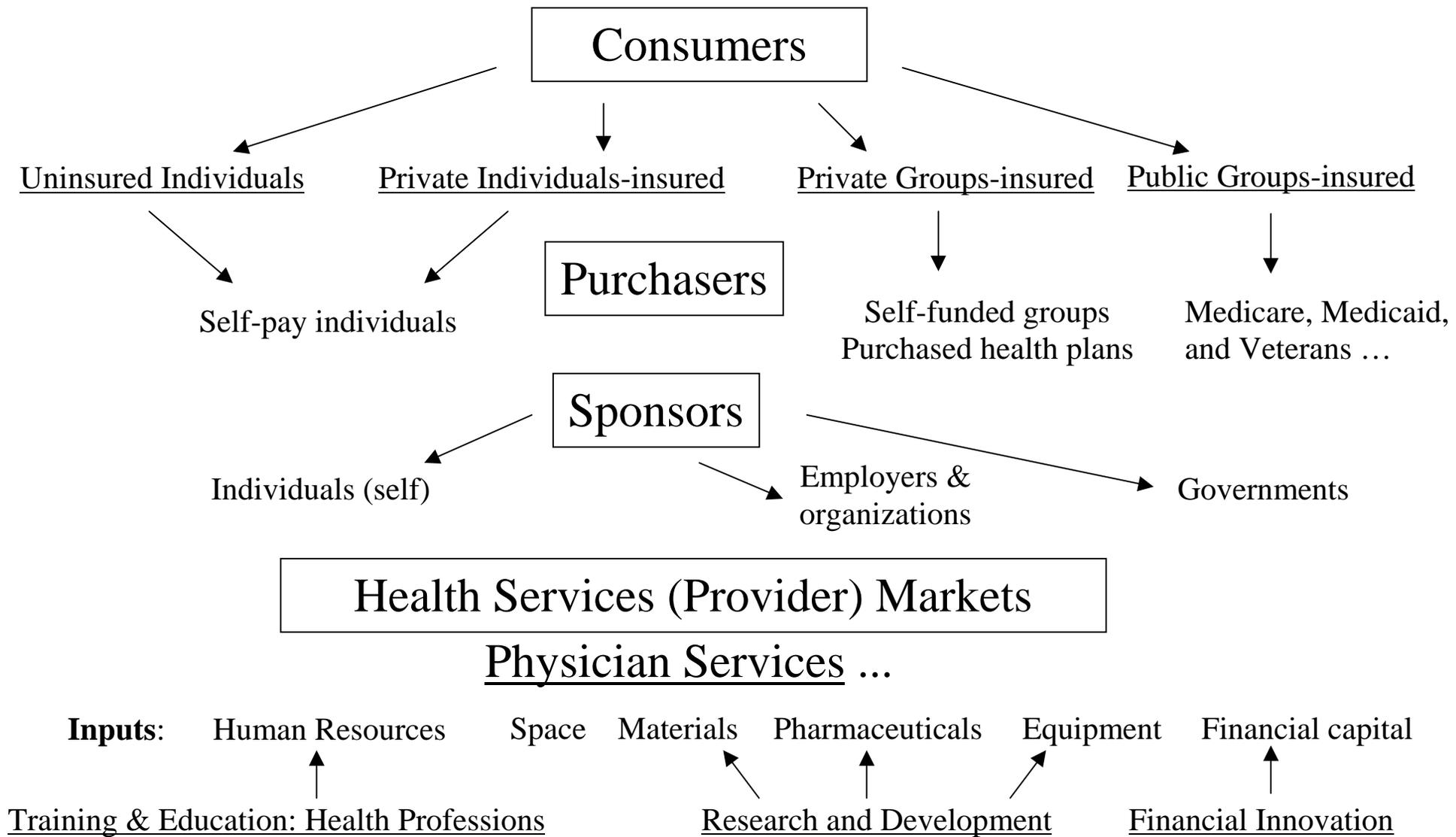
- The ultimate outcome of interest is consumer health, enhanced by the health care functions of disease and illness prevention, caring, and curing.
  
- The purchase of health care is performed through a variety of arrangements:
  - individuals without insurance pay out-of-pocket directly for health services (self-pay);
  - others are covered by health insurance bought in the individual (non-group) private market;
  - others are covered by private group health insurance "sponsored" by their employer or another private entity (eg., fraternal organization, welfare trust), which health plans are either self-funded (eg., the employer directly reimburses the employee's health care costs and covers administrative costs of health care from a combination of the firm's revenues and employee contributions) or negotiated arrangements with private insurers ("purchased health plans" in Figure 1);
  - others finance their purchase of health care through government, which acts as their personal "sponsor" in such programs as Medicare (primarily for the elderly), Medicaid (a federal-state program for persons, including low income, disabled, and other persons categorically eligible for public assistance), and the Veterans Administration (VA).

The sponsoring function is particularly important in filling gaps in the US social "safety net" for uninsured, under-insured, and low-income individuals. Essentially, any entity that collects general revenues (taxes and user fees in the case of government, contributions in the case of employers, fraternal organizations and the like) - but does not necessarily distribute reimbursement on behalf of individual health care expenses in direct proportion to the individual's contribution - is cross-subsidizing the health care of some under the auspices of others in the pool of contributors. In the predominantly private US health care market, private and public sponsors are critical societal agents for achieving equity in the distribution of health care itself, as well as equity in the personal financial burden of health care cost.

- Health services markets (eg., for hospital inpatient services, hospital outpatient services, ambulatory care services by physicians, physician services to hospital inpatients, non-physician ambulatory care services, skilled nursing facility services, and other long term care services) are organized for the delivery of services to consumers. For persons with private or public health insurance, their purchase of health services is mediated through private health plans and public programs, which intermediaries inevitably shape the competitiveness of health care delivery.
- This paper will focus on the physician services sector in the larger market, and will pay close attention to:
  - the inputs for producing physician services, which include the physicians themselves, other non-physician health professionals, non-clinical personnel, management, space, materials and supplies, pharmaceuticals, equipment (medical and non-medical), and financial capital (private debt and equity, as well as public subsidies and capital financing contributions);
  - the sectors which support and underlie those inputs: especially, training and education (medical schools in particular, but also other health professional educational programs); research and development organizations; and firms organized to discover, design, and distribute new capital financing vehicles (financial innovation).

The US health care market is an implicit system - implicit in the sense that there is no unitary social planning body that explicitly integrates the various levels in the hierarchy displayed in Figure 1. Nonetheless, a combination of planning, regulatory, and market mechanisms do stimulate integration and coordination among the various sectors of the health care market. One of the distinctive features of US health care is the society's reliance on market forces and private organizations to finance, deliver, and regulate health services. Regulatory and social planning mechanisms are important, but arguably secondary, players in this system. However, the primacy of market forces does not imply that competition is the norm in US health care markets. One of the tensions in US health care turns on the question of how competition should be regulated or "managed" (Enthoven, 1993).

**Figure 1: The United States Health Care Market**



### **The market for purchasing physician services**

Roughly 20% of the aggregate health care spending dollar is directed to the purchase of physician services (Levit et al, 2000). For the three year period spanning 1995 - 1998 (Levit et al, p. 125), the annual rate of increase in total expenditures for physician services accelerated from 3.3% (1995-1996) to 5.4% (1997-1998), still below the 5.6% aggregate rate of increase in total health expenditures for 1997-1998. Levit et al observe that the trend toward managed care, the phase-in of the Medicare prospective payment system for physician services, and the volume performance standards (under which the Medicare fee schedule is adjusted downward to the extent the volume of physician services rises faster than the federally-targeted rate of increase) have combined to restrain physician expenditures. Furthermore, whereas the share of physician services purchased through private insurance rose from 37.9% in 1980 to 50.6% in 1993, this growth in private share has ceased in the past five years. Thus, public and political pressures on health care spending are likely to play an important role in constraining expenditure for physician services.

### **Managed care arrangements**

Managed care in the US refers to financing arrangements that adopt one or more of the following approaches to health care delivery and financing:

- Selection by the purchaser of either an exclusive or preferred "panel" of providers (eg., physicians, hospitals) to deliver health services to persons receiving care under the auspices of that purchaser (a private health plan, self-funded employer arrangement, or public program);
- "Management" (really, constraint) of health services utilization through pre-determined processes and/or protocols: eg., pre-admission certification of hospitalization, prior approval of particular (usually, high-cost) procedures or services, concurrent review of hospital length of stay, prior authorization of referrals to non-primary care specialists, clinical guidelines, and disease management programs; or
- Prospective payment to providers for some predetermined "bundle" of health services, for example per individual service; per hospital stay (adjusted for diagnosis and case mix differences); per episode of care (eg., in the form of "package" rates for pre-surgical, surgical treatment including hospitalization, and post-surgical care); or per person per period of time (so-called "capitation" rates, either on a flat per plan member per month rate - the PMPM - or percent of premium basis). Acceptance of prospectively fixed payment rates by providers then becomes the basis for "channelling" by purchasers of their subscribers (insured persons) to either an exclusive or preferred panel of providers.

The generally distinguishing feature of managed care is the "supply-side" nature of this set of organizational models for health care delivery and financing. Except for raising consumer cost-sharing when the insured goes "out-of-network", the principal restraints on utilization and prices are placed on providers and suppliers of health services.

Several different organizational models of managed care exist in the US:

- Different types of health maintenance organizations (HMOs):
  - Group or staff model HMOs, in which physicians are either under exclusive contract or employees of the organization (generally, but not necessarily paid on salary),

health care facilities are owned by the organization, and the organization accepts responsibility for health care services of a defined population in return for a fixed prospective payment (capitation) and generally minimal consumer cost-sharing (low levels of copayment, coinsurance, and deductibles at point of service)

- Network/IPA model HMOs, which contract prospectively with medical groups or associations of physicians in independent practice, for delivery of a predetermined set of covered services at a fixed prospective rate for that bundle (Such organizations generally contract with providers at fee for service or capitated rates.)
  - Point-of-service (POS) plans, which typically define different levels of consumer cost-sharing for different degrees of consumer choice of provider at point of service (higher cost-sharing for "out-of-network", non-preferred providers; lower cost-sharing for "in-network" providers, who have preferred practice patterns and/or who accept tighter constraints on allowed fees or utilization management)
- Preferred provider organizations (PPOs), which typically base the network of "preferred providers" available to plan members on either the physicians' practice patterns or (more often) their acceptance of lower allowed fees.

The market shares of these alternative managed care models have shifted significantly - even in the past 6 years - in ways that have affected the competitiveness and efficiency of physician services. To wit, the share of enrollment of POS and PPO plans in private, employer-sponsored health plans has risen (from 34% to 59% between 1993-1999); the corresponding share of group, staff, and network/IPA model HMOs has risen from 19% to 30%; and traditional ("unmanaged") indemnity insurance's share has shrunk from 48% to 11% of the market (Mercer/Foster Higgins, 1999; Levit et al, 2000). Among public programs, 15.6% of Medicare beneficiaries are enrolled in managed care (Levit et al, 2000): (generally HMOs contracting for fixed, "at-risk" payments with Medicare), and more than 25% of Medicaid recipients are receiving services through managed care arrangements (Lee and Benjamin, 1999).

### **ERISA (1974): a critical juncture in health care purchasing**

Before drawing conclusions regarding the competitiveness of the purchasers' market for health services, I will discuss a key piece of federal legislation that constituted a historical point of inflection in the evolution of health care purchasing in the US. The enactment of the Employee Retirement and Income Security Act (ERISA) in 1974 changed the health plan/purchasers market sector in several ways, most of them unintended.

- Self-funded employer-sponsored health plans became exempt from state health insurance regulation, insurance premium taxes, and state mandates of covered benefits - thus creating a powerful incentive for both large and mid-size employers to "self-insure" their employees for health services benefits. As of 1994, the share of private health insurance claims payments paid through self-funded employer plans exceeded 50%, having risen from barely above 25% of payments in 1980 (Whitted, 1999; p. 190).
- As employers increasingly have moved to self-funding, they have also entered into direct contracting with health care providers for the purchase of health care services. These

purchasing models typically require changes in state regulatory authority, since health care providers are, in effect, assuming actuarial risk and performing an insurance function under direct contracting. The Knox-Keene legislation in California, permitting limited (insurance) licenses for providers in California exemplifies this legislation (Penner, 1997). The Buyer's Health Care Action Group (BHCAG) in the Minneapolis-St. Paul (Twin Cities) area illustrates the increasing market strength of employers vis a vis health care providers: in that market area this large purchasing coalition has negotiated total claims cost targets with several large care systems of providers. Based on their bids, care systems are grouped into three relative cost tiers, and employee premium contributions increase with costliness of tier. Bovbjerg and Marsteller (1998) report that this approach appears to have stimulated competition among systems in that low-cost care systems increased their enrollment by 15 to 57 percent after release of comparative cost and quality ratings by BHCAG.

- The movement toward self-funding by large and medium-size employer groups has fragmented the risk pool and eroded insurers' ability to use community rating (charging virtually identical rates to different risk classes). Thus, more favourable risk groups have self-selected out of the community-rated pool (formerly dominated by Blue Cross and Blue Shield plans) into experience-rated purchased health plans and self-funded arrangements. The resulting adverse risk selection has left small groups and the remaining community-rated risk pool at a competitive disadvantage. Furthermore, this risk segmentation has induced insurers to compete intensively on risk selection. With 10% of the population accounting for 70% of health care expenditures (Etheredge et al, 1996), the gains from favourable risk selection by insurers are substantial relative to the costs of engaging in such strategies. Risk segmentation has especially eroded the market for individual health insurance.

### **Competitiveness of the private market for health care purchasing**

My global assessment is that the private market for health care purchasing is highly competitive in at least three respects:

1. Entry by new health plans into local and regional market areas is relatively free of barriers, and these are the relevant service areas for the vast preponderance of health care delivery.
2. Self-funding arrangements have captured the majority of private enrollment and thus represent a viable competitive alternative. The direct contracting option enhances these self-funded plans as a credible threat to fully funded ("purchased") health plans.
3. Managed care models have shown an ability to compete - both among themselves and with traditional indemnity insurers. Private insurance arrangements (predominantly managed care) cover more than 150 million persons in the US, and account for the bulk of health care transactions and dollars in this country (Levit et al, 2000; Exhibit 6, p. 131).

One factor that complicates the interpretation of trends in private health plan premiums is the "underwriting cycle", an empirical regularity observed over the past three decades in the difference between premiums and claims costs. Premiums minus claims costs are defined

as underwriting gains (if positive) or losses (if negative). The cycle oscillated between 3 years of losses and 3 years of gains through the mid-1990s, reflecting private insurers' tendency to alternate between under-pricing and over-pricing. After a transitory disappearance in the early to mid-1990s, the cycle has re-appeared in 1998 and 1999. Actuaries have observed a substantial up-tick in 1998 premium prices (Smith, Heffler, and Freeland, 1999) and are predicting rising premiums in 1999 for both individual and group purchasers of health insurance – especially for the individual market (Kuttner, 1999). Of course, price trends do not directly demonstrate the extent of competition among private plans, which in theory would affect the level of prices, but these price cycles do suggest dynamism in private health insurance markets – hardly consistent with stable market power among plans.

While detailed analysis of competition in private health insurance markets is beyond the scope of this paper, the private purchase of physician health services has been strongly shaped by the following competitive factors:

- Employees increasingly have fewer choices of health plan product<sup>1</sup>, especially in rural areas, and the erosion of the individual market is particularly acute (Gabel, Ginsburg, Whitmore, and Pickreign, 2000). Even in large metropolitan areas, the pressures from managed care and increased cost-sensitivity among organized group purchasers have stimulated consolidation among private plans.
- Competitive forces on the buyer side have acted as a constraint on physician earnings. Simon and Born (1996) point out, "... since 1990 managed care has put pressure on income growth for all specialties – including primary care (p. 132)". Levit et al (2000) remark that physician real (inflation-adjusted) net incomes were unchanged between 1993-1997.
- Private purchasers, especially employers, are moving from defined benefits to defined contributions - more of a "voucher" approach to health benefits. This increases employees' cost- sensitivity, as the household pays the full marginal cost of increased benefits (Cutler and Reber, 1998). However, in their recent study of Harvard University employees, Cutler and Reber (1998) demonstrate a tradeoff between the increased competition among health plans under the defined contribution approach and increased adverse risk selection. Facing the full incremental cost of higher-priced plans, employees gravitated toward the lower-priced HMO product, and within three years the higher-priced PPO option was eliminated for Harvard employees. The authors estimated the social welfare loss of adverse selection at 2-4% of baseline health spending by Harvard employees. The savings in premium from increased enrollment in HMOs were approximately 5-8% of baseline spending - a larger amount than the "deadweight" social cost of selection. However, those premium savings are a transfer between insurers and insureds, while the selection costs represent net costs to society of foregone risk protection offered by the PPO product.

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<sup>1</sup> Etheredge et al (1996) observe that most employees (48%) have only one plan choice available to them, 23% have two plan choices, and the remainder three or more. Thus, within employer group the competition among plan options for employees is quite limited. However, the competition among plans to be on the employer's list of options introduces a second level of discipline among private health plans in local markets.

- The logical solution to this conundrum would be for the plan sponsor to offer a risk-adjusted contribution toward plan premiums, ie., sponsor contribution in direct proportion to expected (ex ante) health care costs of the employee. However, risk adjustment methodologies are still embryonic in their application (Newhouse, 1998).
- Second, employer contributions toward employee health benefits inevitably come predominantly from employee pockets anyway - although indirectly, through forgone wages and non-health benefit forms of compensation (Pauly, 1997; Krueger and Reinhardt, 1994). Thus, the only sustainable sponsor for risk-adjusted contributions (which are a "quasi-public good") would be government.

### Competitiveness in the market for public purchase of health care

Public programs are unique in the degree of market power they bring to health care purchasing decisions. Although these public programs have not adopted managed care models to the same extent as private payers, Medicare and Medicaid in particular have exerted strong countervailing pressures on provider prices and utilization decisions. The oligopsony power of public purchasers - applied through payment schedules to hospitals and physicians and the Balanced Budget Act of 1997 (BBA97) - undoubtedly has resulted in significantly lower rates of increase in health care expenditures in the latter half of the 1990s, roughly comparable with the expenditure rates achieved by private purchasers (see Table 1). Interestingly, the Office of the Actuary of the Health Care Financing Administration (HCFA, 1999) is projecting lower rates of increase in public expenditures for personal health services through 2008, compared with trends in private spending.

**Table 1: Percentage annual growth rates, selected years, by payer category, United States, 1980 to 1998**

Year	1980	1990	1994	1995	1996	1997	1998	1998 total (\$billions)
<b>Aggregate Growth:</b>	12.9%	11.0%	7.9%	4.8%	4.6%	4.7%	5.6%	\$1149.1
<b>Private Funds:</b>	12.1%	11.3%	6.0%	2.4%	4.0%	4.8%	6.9%	\$626.4
<b>Consumer Payments:</b>	12.2%	11.5%	5.9%	2.3%	3.7%	4.4%	7.2%	\$574.6
Out of pocket	9.2%	9.2%	3.8%	1.4%	4.4%	6.2%	5.5%	\$199.5
Private insurance	15.7%	13.1%	7.1%	2.8%	3.3%	3.5%	8.2%	\$375.0
Other private	11.1%	9.7%	6.9%	3.6%	7.8%	9.1%	3.1%	\$51.8
<b>Public Funds:</b>	14.2%	10.5%	10.6%	7.8%	5.4%	4.5%	4.1%	\$522.7
<b>Federal:</b>	15.0%	10.5%	11.5%	8.3%	6.5%	4.5%	3.8%	\$376.9
Medicare	17.2%	11.5%	10.6%	11.0%	7.6%	6.0%	2.5%	\$216.6
Medicaid	17.6%	11.4%	17.6%	6.0%	6.8%	2.9%	5.6%	\$100.3
Other Federal	10.6%	7.5%	6.5%	3.1%	2.2%	2.1%	5.6%	\$60.0
<b>State and Local:</b>	12.7%	10.4%	8.5%	6.6%	2.5%	4.6%	4.7%	\$145.8
Medicaid	16.8%	10.9%	12.9%	12.5%	3.4%	5.2%	8.2%	\$70.3
Other state and local	11.0%	10.1%	5.6%	2.0%	1.8%	4.0%	1.7%	\$75.5

Source: Adapted from Levit et al (2000), Exhibit 6, p.131.

Implementation of the BBA97, a projected increase in the proportion of uninsured in the US, the continuing impact of managed care, and projected excess capacity of physicians - especially specialists - are expected to dampen spending growth over the next decade

(HCFA, 1999). Another major development in the public policy climate has emerged, as legislators and policy analysts are currently reviewing a defined contribution approach toward Medicare health benefits. In March 1999 a majority of the National Bipartisan Commission on the Future of Medicare voted in favour of a "premium support" proposal that would have altered several core assumptions of the Medicare program (National Bipartisan Commission, 1999).

Oberlander (2000) summarizes the basic elements of that proposal, subsequently reflected in legislation introduced by Senators Breaux and Frist (not enacted as of this writing):

- Medicare beneficiaries would select each year from multiple approved health plans.
- Health plans would submit bids to cover a core benefit package for Medicare beneficiaries.
- Based on these annual bids, federal payments to plans would take the form of a fixed premium subsidy (defined contribution). The government's contribution would be risk-adjusted.
- Medicare beneficiaries would capture the full price difference between the plan premium and the Program's premium subsidy.

The defined contribution/premium support model proposes to infuse the principles of managed competition within the public purchase of health care (Aaron and Reischauer, 1995). As such, it is the most radical competitive strategy extant in the public purchasers' market.

Powerful counter-pressures against the competitive model are in play, however. For example, Iglehart (2000) observes, "... the private sector remains wedded to a politically negotiated payment model (p. 6)," and he points out the unravelling of HCFA's efforts to set Medicare payments to managed care plans on the basis of competitive bids.

Dowd et al (2000) document the difficulties encountered by HCFA in its Medicare competitive bidding demonstrations in 4 cities.

## **EFFECTS ON THE PHYSICIAN WORKFORCE OF THE PARTICULAR US MIX OF PLANNING, COMPETITION/REGULATION, AND FINANCING**

The unique combination of regulatory and public policy instruments and market forces in the US has broad implications for the performance of the (implicit) health system. This section explores the direct ramifications of that particular policy/market mix for physicians and physician services.

### **Availability of physician services to patients (access and quality)**

This topic itself deserves a manuscript-length treatment. The best one can do in the context of this paper is to offer summary judgments, supported hopefully by a balanced view of the available evidence.

First, with respect to access to care, the US market presents a mixed portrait. With the number of uninsured Americans currently at approximately 44 million (Kuttner, 1999), there are clearly important gaps in financial access to health services. It has been demonstrated

that uninsured persons' expenditures on health services average roughly 60% of those with public or private health insurance (Rasell, 1995). The evidence from the Rand Health Insurance Experiment (Newhouse et al, 1993: pp. 31-79) suggests that a coinsurance rate of 25% would be expected to lower per person health care expenditures to 69% of the level prevailing under full coverage (75% after correcting for insured persons' under-filing of health care claims). It seems likely that these consumption comparisons between uninsured and insured persons understate the demand response of consumers to substantial gaps in coverage since supply-side adjustments (eg., the provision of uncompensated care by providers) will offset the demand shortfalls to some degree.

Given the stability of physicians' share of total personal health expenditures over time, shortfalls in access to physician services would follow from the high prevalence of under-insurance and uninsured persons in this country. Supporting this inference are comparisons between the US and Canada: Fuchs and Hahn (1990) found higher input prices, higher medical care prices, higher levels of physician compensation, higher physician services expenditures per capita, but lower quantities of care per capita in the US relative to Canada. For example, Fuchs and Hahn estimated that evaluation and management services per capita were 36% lower in the US than Canada. Physician contacts per person were 24% lower in the US (5.4 vs. 7.1 in the 1985-86 time period).

Direct evidence on the effects of lack of health insurance on access and quality of care comes from a recent study of adults aged 18 to 64 years in the US (Ayanian et al, 2000). The authors observe that a significantly higher fraction of uninsured adults reported that they could not see a physician when needed due to cost (among long-term uninsured, 26.8%) compared with those insured (8.2%). The differences were even more dramatic among those in poor health. Reinhardt (1997) cites studies showing that, for comparable clinical problems and patient characteristics, the in-hospital mortality rates of the uninsured are up to three times that of insured patients. Clearly, access is substantially compromised for the uninsured in the US.

Another force for diminished access to health care, at least among low-income persons during an initial transitional period, is the enactment of "welfare-to-work" legislation in the US. Persons under the Temporary Assistance to Needy Families program, the successor to the AFDC program in Medicaid, are eligible for Medicaid health benefits only for a 1-year period after securing employment. In consequence of this policy shift, a slight decrease in the number of Medicaid recipients occurred in 1998 - after five years of stability in the size of the pool of Medicaid recipients. Given the fragmentation of the individual and small-group private health insurance market, many of these persons will fail to secure private coverage after the 1-year period.

Surveys of physicians reveal that they are changing practice behaviours in response to managed care pressures. Simon et al (1997) found that primary care physicians contracting with managed care organizations devoted more time to primary care, and specialists with managed care contracts did less primary care than those without managed care contracts. Thus managed care is leading to a narrower scope of practice by both types of physicians. While by itself this evidence would seem salutary, suggesting that primary care and non-

primary care specialists were practicing closer to their domains of comparative advantage, the authors also find that nearly 13% of primary care is delivered by non-primary care physicians.

Grumbach et al (1998) reported that 75% of primary care physicians (PCPs) subject to managed care financial incentives perceive pressure to see more patients per day; 24% believe that this pressure has compromised patient care. Specifically, PCPs facing financial incentives regarding referrals were two and one-half times as likely to have felt pressure to limit referrals in a manner that compromised care. Productivity-based incentives were also judged as more likely (estimated odds ratio of 2.1) to encourage primary care physicians to treat an excessive number of patients per day; and PCPs subject to such incentives were significantly less satisfied with their practices (odds ratio of 0.4). In contrast, those PCPs whose compensation incorporated quality incentives were significantly more satisfied with their practices (odds ratio of 1.8).

Other studies confirm the general pattern discovered by Grumbach and colleagues. In a key informant study of physicians in medical groups in four states (Tufano et al, forthcoming) a clear majority of the physicians perceived that production-based compensation arrangements frequently lead physicians to avoid seeing capitated patients. Presumably this is because production formulae may not reward them for encounters that are not fee-for-service, or that do not generate incremental revenue. Similarly, a clear majority felt that “dumping” of difficult or complex cases commonly occurs under production-based compensation.

The preponderance of key informant physicians believed that capitation-based compensation systems lead to inappropriate under-utilization of medical services, and that this phenomenon occurs frequently. Physician incentives under capitation of the individual physician are strongly inclined to encourage restraint in utilization. However, these same incentives can discourage the appropriate utilization of services (Tufano et al, forthcoming).

Perceptual studies and surveys of physicians are revealing, but research on actual physician behaviour is ultimately more informative. In a literature synthesis including 15 peer-reviewed studies of the effect of managed care on quality, Miller and Luft (1997) report an equal number of studies showing better and worse results when HMOs were compared with fee for service (FFS) plans. They did refer to one study in which 4-year outcomes were significantly worse for chronically ill low-income persons and frail Medicare elderly (Ware et al, 1996), but such findings clearly were the exception. Updating their earlier synthesis of studies of managed care performance (Miller and Luft, 1994), the authors' 1997 synthesis found no overall differences in physician utilization or outpatient expenditures between FFS plans and HMOs.

Beyond these comparative studies of quality and access, which stress differences between managed care (almost exclusively HMO) and FFS performance, significant general quality issues exist in the US health care system. These issues are not exclusively within the province of physicians, but generic quality problems are certainly germane to any analysis of physicians.

It is a commonplace to point out that - in spite of being the developed country with by far the largest per capita expenditures and largest share of national output devoted to personal health services - the US ranks at best in the middle of developed countries on measures of life expectancy and infant mortality. However, according to a recent Institute of Medicine report (IOM, 1999), preventable adverse events exact a large economic and psychic cost on the society.

Citing research conducted as part of the Harvard Medical Practice Study (Brennan et al, 1991; Leape et al, 1991) and studies of Colorado and Utah hospitalized patients (Thomas et al, 2000), the IOM (1999) states:

"Total national costs (lost income, household production, disability, and health care costs) of preventable adverse events are estimated to be between \$17 billion and \$29 billion, of which health care costs represent over one-half (p. 15)."

The frequency of adverse events was 2.9 versus 3.7% of hospitalizations in the Colorado and Utah versus New York studies, respectively (IOM, 1999; p. 15). Over one-half of these adverse events were estimated to result from preventable medical error.

The research team conducting the research on hospitalized patients in Utah and Colorado also found that only 3% of the patients experiencing a negligent injury filed a malpractice suit (Studdert et al, 2000). This frequency is similar to that estimated by other studies (eg., Localio et al 1991 estimated a comparable fraction of less than 2%). Thus, the medical malpractice legal system in the US appears to capture only a small fraction of potentially compensable (preventable) adverse medical events.

The IOM report and authors of the original empirical studies acknowledged that these estimates are likely to substantially understate the total magnitude of medical error and its consequences because hospital patients are only a small minority of the population at risk, and direct hospital costs (eg., of re-work and treatment of iatrogenic problems) are only a fraction of total costs.

### **Costs of care to public payers, private payers and patients**

It is common knowledge that the US spends a substantially higher proportion of its gross domestic product (GDP) on health services than any other developed country in the world. From 1993, when the share was at 13.7%, to 1998, when the proportion had declined to 13.5% (Levit et al, 2000), there was relative stability in this number largely due to pressures from private managed care, temporary suspension of the insurance underwriting cycle, and aggressive efforts to restrain public spending. Now, however, the nation is experiencing something of a consumer "backlash" against managed care, and the private insurance underwriting cycle has reappeared (HCFA Office of the Actuary, 1999). Accordingly, the costs of care to public and private payers and patients themselves remain a major challenge to this society.

The direct burden of health care costs varies markedly across different types of services. In the aggregate, 96% of hospital costs are covered by public or private insurance, and the comparable figure for physician services and pharmaceuticals (principally prescription

drugs) is 82% and 72%, respectively (Schweitzer and Comanor, 1999). Not surprisingly, much of the current public policy debate regarding health care costs has focused on prescription drugs, which now comprise in excess of 30% of total out-of-pocket expenditures for health services.

The underlying cost issue is posed more properly in terms of “value for money”. In essence, the US health services “system” is implicitly balanced by a set of market mechanisms and policy instruments, which combine the “visible hand” of public policy, planning, and regulation with the “invisible hand” of the marketplace.

Lee and Benjamin (1999) recently described the US health policy environment as having evolved through several stages.

- The era of the New Frontier, Great Society, and “creative federalism” (1961-1969): characterized by:
  - (a) the 1962 amendments to the Food and Drug Act, which required that drugs be demonstrated to be effective prior to being marketed, strictly regulated advertising, and implemented more effective mechanisms for eliminating unsafe drugs from the market;
  - (b) enactment of the Medicare, Medicaid, and Maternal and Child Health programs; and
  - (c) implementation of the comprehensive health planning and public health services amendments, which both established state and local (voluntary) comprehensive health planning bodies and reestablished block grants for state public health services. The first significant bulge in personal health expenditures in the US relative to Canada and developed countries in Western Europe really occurred during this era, as the demand pressures from Medicare and Medicaid led to large price increases (Feldstein, 1970).
- An interim period of “new federalism” (1969 – 1982), distinguished by the application of widely applied federal grants-in-aid to the states, the creation of Professional Standards Review Organizations (PSROs) in 1972, the provision of subsidies, loans, and dual-choice rules for federally qualified HMOs (Federal HMO Act of 1973), and enactment of the National Health Planning and Resource Development Act of 1974 – which put “teeth” into comprehensive health planning programs by mandating state certificate of need (CON) laws for capital expenditures by hospitals. Empirical studies (cf. Salkever and Bice, 1976) concluded that, in general, these CON laws were ineffective in controlling capital investment and duplication of facilities and technology.
- A return to dependence on competition and the private sector (1983 to the present), which has witnessed prospective payment for hospitals (beginning with the enactment of Medicare prospective payment based on diagnosis-related groups, DRGs, in 1983), the development of resource-based relative value scales (RBRVS) for physician payment (initiated with the Medicare fee schedule in 1991), and the rise of managed care in both public and private purchasing.

At this time, the relative moderation in health expenditure growth during 1993-1998 has weakened the case for active regulation of prices or quantities of physician services, as has the historic failure of regulatory instruments to control health care cost (whether in the form of price controls, CON laws constraining capital expenditure, or other cost containment programs). Another factor working against cost containment is public concern regarding the potential for managed care financial incentives to skew physicians' patient care decisions, which has prompted calls to hold health plans accountable for the adverse consequences of physician treatment decisions (Havighurst, 2000; Sage, 2000; Bloche, 2000<sup>2</sup>). Similarly, the erosion of the private market for individual health insurance in the US (especially around continuity of coverage) and concerns regarding gaps in the state regulation of health plans prompted the enactment of the Health Insurance Portability and Accountability Act (HIPAA) in 1996 (Pollitz et al, 2000).

Both the drive to hold health plans legally accountable for physician treatment decisions and the provisions of HIPAA are likely to tilt the policy balance in the US against cost containment in the near term. Furthermore, the societal reaction against managed care and against the application of financial incentives to physicians<sup>3</sup> is likely to fuel cost increases in the physician services. However, like a pendulum, the equilibrium of forces between cost constraint and improvement in quality and access seems destined to oscillate back and forth for the foreseeable future as the US seeks a middle ground.

### **Professional opportunities of physicians**

In this section, I will focus on professional opportunities in the sense of organizational arrangements for physician practice. Several economic and social forces have converged over the past three decades to alter those medical practice arrangements. For example, the combination of rapid technological innovation in medicine, insurance-induced demand for increased quality and quantity of physician services, and the rise of managed care contracts placing providers at "actuarial risk" has impelled physicians increasingly to join medical groups. The American Medical Association (AMA) Census of Medical Groups (1996) records that the proportion of non-federal physicians in practices of 3 or more (sharing revenues and expenses) increased from 10.6% in 1965 to 34.4% in 1995.

Roughly 70% of groups are single-specialty, and in spite of the conceptual advantages of large multi-specialty groups – in terms of economies of scale, coordination of patient care, and the assumption of risk under managed care contracts – the dominance of single-specialty groups and solo and two physician practices seems likely to persist in the US

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<sup>2</sup> The recent Supreme Court decision in the case of *Pegram v. Hedrich* illustrates these tensions aptly. In that case, Lori Pegram, a Carle Clinic (Illinois) physician required Cynthia Hedrich, an HMO member, to wait 8 days to receive an ultrasound of her inflamed abdomen. The patient's appendix ruptured, resulting in peritonitis. Hedrich sued Pegram in state court for malpractice and won, but the clinic sought to remove the accompanying claim of fraud to federal court on grounds that ERISA preempted state law. Hedrich amended her original complaint to charge that – by fashioning an incentive that induces physicians to limit medical care rather than to act exclusively in the patient's interest – the HMO had violated ERISA's own "fiduciary duty" provisions. Ultimately the Supreme Court ruled that "mixed treatment and eligibility decisions are not fiduciary acts under ERISA", the practical effect of which was to exempt the HMO from liability in this case.

<sup>3</sup> Bodenheimer (1999) notes that capitation appears to have reached its zenith in 1998, at least in urban areas; he reports that the percentage of physician revenues in capitation declined from 8.4% in 1996 to 7.0% in 1997.

physician services sector<sup>4</sup>. First, economies of scale in physician practice appear to be relatively modest, peaking at roughly 6 physicians per practice, and multi-specialty groups do not appear to have realized significant cost efficiencies from “economies of scope” (Conrad et al, 2000; Pauly, 1996). Second, attempts to “scale up” medical practices through affiliation with for-profit physician practice management companies (PPMCs) have foundered on the shoals of failed promises and unrealistic expectations (Conrad et al, 1999; Robinson, 1999).

It is just possible that the ideal medical practice unit remains relatively small, flexible, and with predominant ownership in the hands of its physicians. Indeed, even among large multi-specialty groups, 64% are owned by their physicians (Bodenheimer, 1999). From 1965 to 1995, the share of all medical groups organized as either professional corporations or partnerships (both physician ownership forms) rose from 85.9% to 91.7% (AMA, 1996). Perhaps the most notable statistic regarding physician practice organizational form is: after three decades of rapid economic and social transformation in the economic environment for American medicine, 65% of self-employed physicians still practice in organizations with fewer than 4 physicians (Bodenheimer, 1999).

### **Physician Entry to Medical Education and Practice**

The rate of entry into medical practice in the US continues at a rapid pace. During the 25-year period from 1970-1995, the ratio of active physicians per 100,000 population rose at a compound rate of 1.95% per year (Mick, 1999). The growth in relative physician supply moderated somewhat in 1990-1995, but even then continued at 1.02% per year. In fact, the health care sector overall now accounts for 6.5% of the US labor force. Parenthetically, these same statistics suggest the relative capital and technological intensity of health services -- compare, for example, this 6.5% share of labor with health care's 13.5% share of the US economy's total GDP.

This rapid growth in physician supply has proceeded in the face of projections suggesting an aggregate excess supply ranging from 70,000 to 140,000 physicians by the year 2000<sup>5</sup>. The most dramatic increases in the number of US physicians occurred in the 1970s, as the number of medical schools and international medical graduates (IMGs) rose substantially. Beginning in the mid-1980s, however, the number of medical schools and the number of annually graduating physicians stabilized at levels maintained since then<sup>6</sup>. After relative stasis in the 1980s, growth in IMGs has reappeared as a major contributor to continued growth in US physician supply; in fact, international medical graduates now comprise 23% of the active physicians in the US.

The dynamics of physician supply are subject to long lags. Because medical school training is lengthy, the number of practicing physicians is large, and physician manpower policy

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<sup>4</sup> Bodenheimer (1999) cites data from the AMA Census of Medical Groups (1996, p. 47), which show that single-specialty groups raised their share in the US from 54.2% of groups (and 35.3% of physicians practicing in groups) in 1975 to 69.7% of groups (and 41.9% of groups) in 1995.

<sup>5</sup> Mick (1999) reports statistics developed by the Graduate Medical Education National Advisory Council (GMENAC) as the high estimates of excess supply, and also alludes to other more conservative projections.

<sup>6</sup> The number of medical schools and annual graduating physicians for the past 15 years have settled at roughly 125 and 16,500, respectively (Mick, 1999).

instruments are predominantly based in the private sector - subject to decentralized decisions and not central “command and control” - major changes in both the rate of growth and distribution of physician supply would take a long time (Schwartz, 1996).

That said, federal and state policy levers on medical manpower do have a significant role to play, along with such market forces as adjustments in physician earnings over time. For example, the Medicare formula paying the program’s share of the indirect costs of medical education (the “IME” component) is conditioned on the number of interns and residents per bed, thus encouraging hospitals to increase the number of interns and residents in proportion to their inpatient capacity. Secondly, these financial incentives indirectly have induced medical schools to concentrate medical training in the inpatient setting.

The importance of these payment mechanisms to the medical education enterprise is highlighted by noting that, of the total federal support for medical education, almost half (\$4.3 billion of \$9 billion total) is derived from Medicare IME payments. In contrast, federal direct medical education (DME) subsidies to medical schools amount to \$2.2 billion from Medicare, \$1.0 billion from Medicaid for IME and DME, \$0.9 billion from the VA (which pays resident stipends), and relatively modest \$0.3 billion each from the Department of Defense and Health Resources and Services Administration (Young and Coffman, 1998). A critical and troublesome trend in medical school financing is the decline in the federal share of such funding from 44% in 1970 to roughly 20-25% in the early 1990s (Mick, 1999). The lion’s share of federal funds for medical education therefore is tied to patient care (ie., as IME); the fortunes of medical education and health care delivery are inextricably intertwined.

As an unintended consequence of the linkage between patient care and education, the concomitant growth of managed care and the omission of IME payments from managed care plan payments has gradually shrunk the contribution of patient care revenues toward medical education. To maintain their patient care base and to enhance operating efficiency, teaching hospitals increasingly have merged with one another and have crafted leasing arrangements with for-profit systems to raise capital, and to manage, operate, and renovate facilities (Mick, 1999).

If implemented, the recent recommendation of the Medicare Payment Advisory Council (MedPAC, 2000) to fuse Medicare’s IME and DME payments into one would further cement the tie between patient care and medical education. This has practical – and potentially negative – implications for the magnitude of the federal contribution toward medical education. Moreover, this MedPAC recommendation reflects an important philosophical shift by stating explicitly that the unified payment would be viewed as support of patient care, not education (MedPAC, 2000: Executive Summary, p. xvi).

### **Physician specialty mix**

Several elements of explicit public policy are inclined to support a significant increase in the proportion of active physicians in primary care, as against non-primary care specialties. These include:

- HRSA funding for program development grants to primary care residency programs;

- RBRVS adjustments in the Medicare fee schedule (widely adopted by private payers) that increase fee weights for evaluation and management (“cognitive”) services relative to procedures;
- allocation of an increased share of residency training slots for the primary care specialties (family medicine, general internal medicine, and paediatrics; and
- public programs targeting special recruitment and financing for physicians pursuing family practice in rural and underserved areas (Rabinowitz et al, 1999).

Young and Coffman (1998) allude to a general policy consensus that a 50-50 mix of generalists and specialists would be desirable, and several aspects of implicit policy and market trends have modestly reinforced such a shift in the physician specialty distribution:

- For example, Simon and Born (1996) report, “...1995 and 1996 residency matches resulted in more students’ choosing programs in primary care, while fill rates in programs such as anaesthesiology, pathology, and diagnostic radiology fell sharply (p. 132).” They also remark that the earnings differential favouring specialists over PCPs has shrunk - driven primarily by gains among general/family practice physicians.
- The adoption of primary care “gatekeeper” models for managed care among network model HMOs was also a factor indirectly promoting growth in primary care during the 1980s and through the mid-1990s (Mick 1999).

However, certain powerful opposing factors and market trends are tilting in the other direction from the aforementioned set of market inducements and policy levers leaning toward increased relative market penetration of primary care physicians. Mick (1999) documents, for example, that whereas PCPs comprised 38.5% of all active MDs in the US as recently as 1986, by the year 2000 that share was projected to diminish to 32.0%. Second, Simon et al (1997) observe, although PCPs’ relative earnings have increased under managed care, the number of PCPs per capita is not necessarily higher in markets with higher managed care penetration. This may reflect the recent shift among managed care plans away from primary care gatekeeper mechanisms in favour of “open access” plans. If “reverse capitation” payment models, which capitate specialists and pay FFS to primary care physicians, ultimately provide incentives that increase clinical efficiency (in the sense of total cost per person of effective illness prevention, diagnosis, and treatment), then specialization might increase at the margin. Finally, the continuing urbanization of the US population represents another underlying factor reinforcing the secular trend toward greater physician specialization.

### **Geographic distribution of physicians**

The stubborn realities and long lags that hamper realization of desired policy shifts in physician specialty mix also confront public and private initiatives aimed at increasing the supply of physicians in rural and medically under-served areas. In fact, the Institute of Medicine report on primary care (1996) actually forecast that the geographic maldistribution of physicians is expected to worsen in the future. Indeed, the previously mentioned increasing urbanization of the US population is actually a force encouraging further relative movement of physician supply away from rural and medically underserved areas (Blumenthal, 1994).

Thomas Konrad (1995) reports, based on a 1987-1990 study of physician migration into and out of rural areas, that “for every 4 doctors entering rural counties in sparsely settled states, 3 or more left (p. 1914).” He suggests two policy options for attempting to reverse the low retention rates of physicians in rural areas:

- dispersed ambulatory-based training and continuing medical education; and
- design of explicit career paths in organized networks integrating medical practice and medical education.

In contrast to the explicit public and private policy steps recommended by Konrad and others (cf. Rabinowitz et al, 1999), many economists point to the role of increased aggregate supply of physicians as a “push” factor acting to increase physician migration to rural and other medically underserved areas. Mick (1999) calls this notion “the market diffusion theory”. Newhouse (1982) provides a lucid exposition of this concept: the basic idea is that as the population-to-physician ratio rises in urban areas, other things equal, the demand for physician services per doctor will diminish -- which at some point will naturally encourage established physicians to overcome their inertia and relocate to rural and other relatively underserved areas and similarly will induce new physicians to practice in rural areas.

Mick (1999) opines that there is some, albeit modest, support for this physician diffusion process; in fact, from 1970-1983 both metropolitan statistical areas (MSAs) and non-MSAs experienced the same 28% increase in the physician-to-population ratio. So, while not improving, at least the relative imbalance might not be worsening for the first time in the past four decades. However, the inequity in relative physician supply remains; rural areas account for 20% of the US population, but only 9% of active physicians practice there.

### **SHORTFALLS IN ACHIEVING A DESIRABLE PHYSICIAN WORKFORCE**

The language in this section heading is important, particularly the terms, "desirable physician workforce". I will start from the premise that there are three aspects of "desirability": efficiency, effectiveness, and equity. The first two aspects relate to the average level of performance in the physician services sector:

- Efficiency has two elements: (1) technical efficiency, which measures the extent to which the total output of physician services is produced at lowest possible cost (given the clinical-technological and economic state of the art); and (2) allocative efficiency, which measures the extent to which the marginal benefits of physician services are equal to their marginal costs.
- If allocative efficiency is assessed sufficiently broadly (that is, if the health and other benefits of physician services are fully captured), then incremental "effectiveness" of physician services is compared with the incremental costs of those services. Thus, the analysis of effectiveness would be captured on the way to the evaluation of allocative efficiency.
- Finally, one must ask not only if the physician workforce is structured to deliver services efficiently and effectively, but also equitably. That is, are the professional opportunities, service providers, and physician services themselves distributed fairly - by geography, by social demographics, and by underlying need for physician services?

Briefly, below is what I conclude on those questions, based on the literature synthesis presented in this paper.

### **Efficiency and effectiveness**

The relatively high prices for physician services in the US, particularly in comparison with other developed countries, suggest that there is a substantial margin for reductions in average cost. Moreover, the studies of preventable adverse events provide documentation of substantial levels of medical error and re-work, which suggests significant potential for improvements in technical efficiency. These studies of medical error and patient safety allude to problems in coordination of care, fragmented information exchange among providers and systems, and lack of standardized protocols for many basic health care processes. Resistance by providers to competitive mechanisms in health care also hampers cost containment throughout the system and lowers physician incentives to achieve technical efficiency.

Fragmented risk pools in private health insurance markets exact their own toll in administrative inefficiency, as health plan managers and providers waste resources in attempting to select plan enrollees and patients whose health risk profiles (expected care costs) are favourable in relation to the premiums and payments captured by plan and provider, respectively. Imperfect, embryonic risk-adjusted payment methodologies frustrate allocative efficiency, as payments on behalf of plan enrollees are not well-aligned with the expected benefits of those persons. Thus, biased selection into health plans and into medical group and individual physician panels threatens both allocative and technical efficiency.

Medical errors directly represent shortfalls in clinical effectiveness and, as mentioned above, also reduce the technical efficiency of physician services by forcing re-work and waste. While there is no agreed-on benchmark for the minimum feasible rate of medical error, the IOM report (1999) states the goal of reducing the rate of medical error by one-half within 5 years (Executive Summary, p. 17). This objective offers one metric for the order of magnitude of the challenge.

### **Equity**

Fairness issues abound in the US health care system, and thus in the physician services sector as the major driver of the delivery system. Specifically, inequities of access to health insurance - by ethnicity, socioeconomic status, and by accident of employment status - are a paramount concern. The uneven distribution of financial access contributes directly to unequal and compromised health status. Access to physicians and physician services is unequally geographically distributed, which ultimately results in inequities of health status.

The gaps in risk-adjustment of health insurance premiums - besides weakening efficiency in the allocation of payments and costs - also hinder fairness. Every time plans or providers are systematically overpaid (or underpaid) relative to the expected costs for a population of enrollees or patients, the overpaid group essentially has extracted a subsidy from the underpaid group. These cross-subsidies constitute a significant source of unfairness.

The exemption of employer premium contributions from personal income tax also confers a significant benefit which affects individuals unequally. This "tax expenditure" is regressive in that it is more valuable to those in higher income tax brackets. It is additionally inequitable by creating incentives for higher-priced health plans that are less affordable to low-income persons.

The emphasis in medical education on specialization and inpatient-based training to the detriment of general and primary care not only distorts the professional opportunities available, but also exacerbates the inequities of care available to persons situated differently according to socioeconomic status and geography. The historic upward bias in fees for procedures relative to those for evaluation and management services (though attenuated by the Medicare RBRVS adjustments in relative value weights) has exaggerated inequalities in access to and professional reward between specialty and primary care.

## **CHANGES IN APPROACH TO ACHIEVING A DESIRABLE PHYSICIAN WORKFORCE IN THE US**

Several steps are being taken and others are potentially available to address the shortfalls in the US health care system, particularly as those relate to the physician workforce. I have organized my comments around the themes of efficiency, effectiveness, and equity, as outlined in the previous section.

### **Efficiency and effectiveness reforms**

Efficient health insurance and efficient delivery of physician services constitute the major elements of an "efficiency and effectiveness" reform agenda for physician services. Several major steps are being undertaken to improve the efficiency of health insurance:

- medical savings accounts are being subjected to pilot test as a means for encouraging insured persons to spend their own money for routine, predictable, and affordable health services (the "high-deductible" portion of the account), saving "insurance" exclusively for individually unpredictable and catastrophic health costs;
- defined contribution approaches increasingly are being utilized by private "sponsors" (typically employers and other organized purchasers) as a means of vesting consumers with the full marginal costs of purchasing richer, more high-priced health plans; and
- elements of "managed competition" are being tried in local market areas, initially by private employer coalitions in selected areas (eg., BHCAG in the Twin Cities) and with halting steps by the Medicare program in selected demonstration sites.

Efficient delivery of physician services is also the subject of active reform initiatives:

- Incentive physician payment arrangements are being designed that blend traditional salary and fee-for-service structures with compensation elements that reward careful management of health care resources per patient (or, viewed more broadly, per panel member), quality of care, citizenship, and patient satisfaction. These blended payment methods have the potential to lead to improved productivity (Conrad et al, 2000) without compromising the cost of care or its quality (Conrad et al, 1998).

- Continued refinement of managed care arrangements is underway. As plans move away from gatekeeper models and prior authorization mechanisms, there is potential for physicians to play a more active role in reducing administrative cost and investing the newly freed-up resources in more efficient patient care processes. The strategy of physician "empowerment" would require that physicians be socialized with a new "professional ethic." This new professionalism (Mechanic, 2000) would be based on explicit recognition of economic and technological constraints within a framework characterized by "procedural justice." Within this new construct of physician professionalism, the clinician would take responsibility for population health, engage patients in a more active partnership (regarding economic and clinical consequences of care decisions), and would contribute to and learn from an "evidence-based" clinical culture.
- If implemented, the recommendations of the IOM report on medical errors promise significant improvements in delivery of physician services:
  - better coordination of care through less segmentation of information and closer attention to standardized drug naming and other clinical protocols;
  - less re-work and duplication of effort; and
  - more accountability and responsibility for patient care safety directly vested in executive leadership of provider organizations.

### **Equity reforms**

Equity-driven changes are proceeding in a variety of areas pertinent to physician services and the physician workforce:

- Both major Presidential candidates in the US sketched plans for children's health insurance coverage and for providing improved prescription drug coverage for Medicare beneficiaries. These proposals are the natural result of a national political environment for health care and physician services that currently appears to favour an incremental approach to remedying the large gaps in access to health insurance and health services in the US.
- My personal view is that universal health insurance (ie., for all persons) in a unified, integrated form is the fundamental means for effectively equalizing financial access to physician services (and other basic health services) in this country. Progress toward universality of health insurance seems historically to have been held hostage to disputes over individual versus employer mandated contributions, the role of private health plans, the nature of competition among plans, the nature and extent of consumer choice, and design of the benefit package. To break this logjam, political will and joint, bipartisan leadership at the level of the President and Congress are an absolute necessity.
- Legislative initiatives such as HIPAA of 1996 have aimed at enhancing fairness in the health care system through enhancing the portability of health insurance coverage (of particular value to persons whose employment status changes and to those whose job-based health insurance would otherwise "lock" them into their current position). Indirectly, increased portability improves access to health insurance.

Several medical education reforms are currently under consideration - geared to ameliorating geographic inequities of access to physicians and physician services and to balancing physician specialty mix toward more primary care. For example Young and Coffman (1998) suggest the following changes in the financing of graduate medical education:

- Base graduate medical education subsidies on actual costs and distribute those subsidies more uniformly.
- Focus reductions in residency positions on procedural specialties, thus moving closer to an ultimate 50-50 mix of primary care and non-primary care specialists.
- Provide graduate medical education payments directly to ambulatory, community, and managed care sites, thus eliminating the inpatient bias in funding for medical education.
- Create an "all-payer fund" into which all health insurers (private as well as public) contribute toward medical education. (This recommendation assumes that health care payments are a reasonably efficient mechanism for financing medical education, at least in part. As a "quasi-public good", medical education conveys "positive externalities" - benefits to persons who do not pay in proportion to what they receive, and who cannot practically be excluded from the consumption of those benefits.)
- Monitor the results of changes in funding mechanisms to ensure that these reforms do not adversely affect the access of low-income and otherwise disadvantaged persons to health care.

The experience of the Physician Shortage Area Program, or PSAP (Rabinowitz et al, 1999) illustrates the kind of private initiatives in medical education that have promise for "re-balancing" the geographic distribution of physicians. The researchers followed PSAP graduates from Jefferson Medical College for 22 years post-graduation. The researchers discerned that PSAP graduates were three times more likely to end up practicing in rural areas than non-PSAP graduates. While the evaluation design was weak, the findings are suggestive<sup>7</sup>. Proactively recruiting medical school applicants from rural areas and who express credible intentions to practice in rural areas post-graduation might significantly increase the relative supply of physicians, especially those in primary care. Those seeking to reform the geographic and specialty distribution of physicians must also attend carefully to the package of social and economic incentives that influence physician location decisions.

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<sup>7</sup> The study design did not appear to "match" the control group of non-PSAP graduates to the PSAP on personal characteristics or baseline preferences, and no "pre-test" period was included.

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