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Abstract

The goal of this paper is to identify key issues concerning the nature of competition in health care markets and its impacts on quality and social welfare and to identify pertinent findings from the theoretical and empirical literature on this topic. The theoretical literature in economics on competition and quality, the theoretical literature in health economics on this topic, and the empirical findings on competition and quality in health care markets are surveyed and their findings assessed. Theory is clear that competition increases quality and improves consumer welfare when prices are regulated (for prices above marginal cost), although the impacts on social welfare are ambiguous. When firms set both price and quality, both the positive and normative impacts of competition are ambiguous. The body of empirical work in this area is growing rapidly. At present it consists entirely of work on hospital markets. The bulk of the empirical evidence for Medicare patients shows that quality is higher in more competitive markets. The empirical results for privately insured patients are mixed across studies.

Contents

1

Introduction

One of the most important industries in the U.S. economy is health care, accounting for nearly two trillion dollars in expenditure annually (Smith *et al.*, 2006). Markets play an important role in the delivery and financing of health care in the United States. As a consequence, antitrust enforcement is a significant component of health care policy. This industry is also one in which competition is a real issue, given the extensive consolidation that has occurred in recent years (Gaynor and Haas-Wilson, 1999).

During the second half of the 1990s, a dramatic wave of hospital consolidation occurred in the United States. One source puts the total number of hospital mergers from 1994–2000 at over 900 deals (Jaklevic, 2002, and www.levinassociates.com), on a base of approximately 6,100 hospitals. Further, many local markets, including quite a few large cities such as Boston, Minneapolis, Pittsburgh, Philadelphia, St. Louis, and San Francisco (and others), have come to be dominated by two to three large hospital systems. Not surprisingly, many health plans have complained about rising prices as a result of these consolidations (Lesser and Ginsburg, 2001).

Table 1.1 Hospital market concentration, 1985–2000[a]

Year	Median HHI[b]	Change[c]	Mean HHI	Change
1985	3,028	–	3,483	–
1990	3,112	84	3,665	182
1995	3,353	241	3,991	326
2000	3,995	642	4,391	400

[a] *Source*: American hospital association. Data are for all U.S. Metropolitan Statistical Areas.
[b] Herfindahl–Hirschmann Index.
[c] Total change over the previous five years.

Table 1.1 provides statistics on concentration in hospital markets at five year intervals over the period 1985–2000.[1] The table shows that the Herfindahl–Hirschmann Index (HHI)[2] for U.S. hospitals has been steadily increasing over time. In particular, the median HHI increased from 3,028 in 1985 to 3,995 in 2000. This is an increase of almost 1,000 points on a very large base. An HHI of 3,000 indicates a very concentrated market – for example, a market with three equally sized firms will have an HHI close to this value (3,333). The FTC and DOJ consider markets with an HHI above 1,800 as highly concentrated.[3] For highly concentrated markets such as these, the enforcement agencies consider any increase in the HHI of 100 points or more as presumptively anticompetitive (Federal Trade Commission and Department of Justice, 1992). The increase in median concentration from 1985 to 2000 is far greater than that threshold.

Hospital markets have been an active area of antitrust enforcement. Since 1984, the federal antitrust authorities have brought 11 suits seeking to block hospital mergers, and engaged in many other activities combating anticompetitive practices.[4] The major emphasis in these

[1] These data are for metropolitan statistical areas (MSAs) only. This represents the vast majority of the population and hospitals in the United States.
[2] The HHI is defined as the sum of firms' squared market shares, $\text{HHI} = \sum_{i=1}^{N} s_i^2$, where s_i is firm i's market share, and N is the number of firms. The HHI increases as the number of firms decreases or asymmetry of market shares increases. It has a maximum of 10,000 for a monopoly and has a minimum at $10{,}000/N$, where the market is divided equally between N firms.
[3] Markets with an HHI below 1,000 are considered unconcentrated, and those with an HHI between 1,000 and 1,800 are designated as moderately concentrated (Federal Trade Commission and Department of Justice, 1992). In practice, concentration levels higher than the cutoffs in the Guidelines are often tolerated (see Federal Trade Commission, 2004).
[4] See http://www.ftc.gov/ and http://www.usdoj.gov/ for detailed information.

cases has been effects on price. A major concern in health care, however, is effects on quality.[5]

Quality is of major concern in health care for a number of reasons. First, the effect of health care quality on an individual's well-being can be very great, and often will be more important than the quality of other goods or services. Second, due to the pervasive presence of insurance against health care expenditures, health care consumers are not exposed to the full expense associated with their health care decisions. Thus, in the presence of a reduced role for price, quality looms larger in consumer choice, and serves as an important rationing device. In the case of beneficiaries of the U.S. Medicare program,[6] price is irrelevant for choice. Medicare pays hospitals and doctors fixed prices for their services,[7] thus a Medicare beneficiary pays the same amount regardless of where she obtains service. Thus, for Medicare in particular, we would expect quality to be salient.[8]

This is not to say that price is not important. Most people with health insurance in the United States have some form of managed care insurance (Gabel *et al.*, 2000). One of the defining features of managed care is restriction of consumer choice. Plan enrollees are allowed to choose from a pre-approved subset of doctors and hospitals in their area – not all doctors or hospitals. Managed care plans thus bargain with doctors and hospitals over prices. Hospitals or doctors with prices that are too high will be excluded. In principle, managed care plans are acting as agents for consumers. Consumers want to reduce the price of care, since higher prices result in higher premiums and lower consumption of other goods.

However, quality is obviously important as well as price. Indeed, many health care analysts have identified quality problems as a major failing of the U.S. health care system (Kohn *et al.*, 1999, Institute of Medicine, 2001). The problems identified by the Institute of Medicine

[5] Of course health care is not the only industry where effects on quality are important – it is, however, particularly salient here.

[6] Mostly those over age 65, but also some disabled individuals, notably those with end-stage renal disease (kidney failure).

[7] Prices are regulated to be the same for a given service in a given location at a particular point in time. Regulated prices for a particular service vary by location and over time.

[8] This will also be true for in many European health systems.

(2001) include "overuse," "underuse," and "misuse" of health care. Overuse includes phenomena such as performance of major surgery (e.g., hysterectomy, heart surgery) without appropriate reasons, and the use of antibiotics where they are ineffective, such as for viral infections. Underuse is the failure of patients to receive acknowledged appropriate treatment for their conditions, such as the failure of 79% of heart attack patients to receive β-blockers within 90 days of discharge. Misuse refers to medical errors. Kohn *et al.* (1999) estimate that as many as 98,000 people per year die due to medical errors. According to the Institute of Medicine (2001) all of these kinds of problems are common in U.S. health care.

In addition, a recent study (Banks *et al.*, 2006) found that "the U.S. population in late middle age is less healthy than the equivalent British population for diabetes, hypertension, heart disease, myocardial infarction, stroke, lung disease, and cancer." Standard risk factors, such as smoking, drinking, obesity, and socioeconomic status do little to explain the health differences between the U.S. and U.K., implying that quality of care may be a factor behind these differences.

Antitrust is important for health care quality, since health care quality is determined via markets.[9] The courts and the antitrust enforcement agencies have not dealt with quality in a uniform manner, however. In some antitrust cases, impacts on quality have been explicitly considered. In many cases, however, it has been simply presumed that price competition will lead to beneficial effects on quality.[10]

In this paper, I review the state of knowledge in economics on issues relevant to the assessment of the impact of competition in health care markets on quality. This is relevant for antitrust policy in the United States, where there are well-established health care markets, and for the evaluation of market oriented reform proposals in Europe and elsewhere. I limit myself to the economics literature, or papers published outside of traditional economics journals, but nonetheless using an economics approach. I do not survey the health services research literature

[9] See Sage *et al.* (2003) for a discussion of the role of competition policy in determining health care quality.

[10] See Hammer and Sage (2002) for a comprehensive review of the treatment of health care quality by the courts in antitrust cases.

on quality, in particular the literature on outcomes research. That literature is primarily concerned with measurement, as opposed to assessing the impact of competition. Romano (2003) provides an excellent review of this literature.

In what follows, I first discuss performance standards for competition, then review relevant findings from economic theory, then consider empirical evidence on health care competition and quality. The final section of this paper contains a summary and conclusions.

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