COMPETITION AND MARKET CONCENTRATION

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ABSTRACT

Hospital markets have become highly concentrated due to increasing numbers of mergers and acquisitions. These consolidations in hospital markets may have anticompetitive or procompetitive effects due to increasing market power, economies of scale and scope and quality consequences. In this chapter, market competition and concentration and their antitrust implications in hospital markets are examined. After a brief summary of recent changes in hospital markets, the chapter focuses on the relevant economics literature on price, cost and quality consequences of market concentration, and their implications and connections with the merger guidelines and antitrust policies.

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1. INTRODUCTION

Health care industry has been influenced by changes in the market structure and new technological developments during the recent decades. With the new technological developments in medicine, some less complex care moved out of the hospitals that led to decrease in demand for inpatient services. This recent change in hospital care created excess capacity in hospital markets, and therefore hospitals started to explore potential financial gains through horizontal consolidations. This has resulted in a wave of mergers in 1990s, which transformed the US, Canadian and European hospital markets. This, in turn, created concerns among policy makers and researchers in terms of its welfare implications.

Hospital markets in the US became highly concentrated due to increasing numbers of mergers during the last decades (for an extensive review see Gaynor and Haas-Wilson, 1999). Within 2 years, from 1994 to 1996, more than 40% of all hospitals were involved in mergers, acquisitions, joint ventures or partnerships. Only in 1997, there were more than 200 hospital mergers (Haas-Wilson and Gaynor, 1998). Between 1990 and 2003, market concentration increased by about 50 percent in US hospital markets. By 2003, almost ninety percent of people living in larger Metropolitan Statistical Areas (MSAs) faced highly concentrated markets (Town, et al., 2006). During the same period, Canadian hospital industry showed a similar trend. In Ontario, Health Services Restructuring Commission has been created in 1996 to direct public hospitals to “amalgamate, transfer or accept programs, change volumes, cease to operate, or make any other changes considered to be in the public interest” (Health Services Restructuring Commission, 2000:11). In 1996-1997, there were about 33% reductions in the numbers
of hospital corporations operating in Ontario due to wide ranging site closures and program transfers (Preyra and Pink, 2006).

Increase in concentration in hospital markets has raised concerns among researchers and policy makers because of potential anticompetitive consequences of mergers. It is expected that profit maximizing firms exercise market power if the numbers of competitors in the market decrease. However, it is also likely that mergers may enhance social welfare by creating efficiency gains due to economies of scale and scope. This can be achieved through a decrease in redundant services and investments, and reductions in management and administration costs. Efficiency gains can be quite substantial in small markets if there are significantly large numbers of expensive service duplications such as magnetic resonance imaging (MRI) and computed tomography (CT) scans. Horizontal consolidations in hospital markets can also affect service quality. As the focus is placed more and more on the impact of market concentration on hospital pricing and cost efficiency, potential quality consequences of market concentration has been neglected or not received enough attention from the researchers and policy makers. Horizontal consolidations may result in better treatment outcomes since in some services there may be significant learning effects. An earlier study showed that the mortality rate after open-heart surgery, vascular surgery, transurethral resection of the prostate and coronary bypass decreased with an increase in hospitals’ surgical volume (Luft et al., 1979). On the other hand, hospitals may not have financial incentives to invest in quality enhancing activities if the quality is costly investment and not observable or imperfectly observable, therefore not contractible. As a result, net impact of mergers on social welfare is ambiguous due to opposite effects of hospital prices, cost, and quality consequences.
In this chapter, I examine competition and concentration in hospital markets and their public policy implications. In the following two sections, I review the recent literature on market concentration in hospital markets and its efficiency and quality consequences using evidence from related economics literature. Due to methodological variations including differences in the definition and measurement of relevant geographical markets, the literature provides contradictory evidence. In section four, I briefly review the antitrust guidelines and link it with the empirical literature reviewed in earlier sections by emphasizing methodological issues related to definition and determination of relevant markets for merger litigations. The last section presents the conclusions, and suggestions for further research on market competition and concentration in hospital markets.

2. PRICING, COST EFFICIENCY AND MARKET CONCENTRATION

In the US hospital markets, there has been a shift away from non-price competition towards intensive price-competition in the late 1980s due to major changes in hospital reimbursement schemes. In 1982, California became the first state to pursue health care reform through market based procompetitive policies, and adopted a law to encourage increased price competition in the health care sector by allowing insurance companies to selectively contract with providers. This drastic change in policy led to a shift from patient-driven to payer-driven competition. There have been a large number of studies investigating the impact of this policy change on hospital pricing and costs. In this section, I summarize the findings from this literature by reviewing related research on horizontal consolidations in hospital markets.
2.1. Market Power and Concentration in Hospital Markets

The types of competition in hospital markets have changed from patient-driven to payer-driven competition after deregulation in the markets. During the regulated pricing period, providers had more emphasis on the services and amenities they offered than on the prices they charged. This feature of hospital competition, known as medical arms race (MAR), suggests that having more hospitals operating in the same market would increase investment in unnecessary duplication of expensive capital equipment such as MRI and CT scans, and higher advertising and promotion expenditures in order to attract patients and physicians. This type of market competition implies that higher competition may have unintended consequences in the form of higher, rather than lower, prices and costs.

Many studies have based their analysis on California hospitals. The California Office of Statewide Health Planning and Development (OSHPD) maintains a variety of datasets on various aspects of health care in California. Each non-federal hospital in California is required to submit the annual discharge data, the annual financial data and the quarterly financial data to the OSHPD. The detailed financial data make it possible to calculate the required price and cost variables for hospital behavior models. The richness in the OSHPD data encouraged many researchers to investigate the cost and pricing behaviors in California hospitals (Dranove et al., 1993; Gruber, 1994; Lynk, 1995; Melnick et al., 1992; Zwanziger and Melnick, 1988). The studies examining the effects of market concentration on hospital pricing behavior have different conclusions, since they investigate different hospital markets in different time periods (for an extensive review, see Dranove and White, 1994; Gaynor and Vogt, 2000).
In a review article, Gaynor and Vogt provide a summary and effects of a standard merger on price using the estimated coefficients from ten studies. In their analysis, they assumed that a standard merger is a merger between two hospitals located in the same market with other three hospitals. They also assume that each hospital has equal market share, and the new hospital after the merger will have a market share of 40%, while others continue to have 20% market share each. Except three studies, their simulation shows that the effects of a merger on price range from +2% to +17% with a strong correlation between the effect size and the recency of the data used in the studies. The simulation from three studies suggests that the price effect is in fact negative; -3% based on Lynk and Neumann (1999) & -1% based on Lynk (1995) and Noether (1988).

Some of the papers reviewed in Gaynor and Vogt (2000) examine the association between concentration and price by hospital ownership. Among these, Lynk (1995) became one of the most influential studies on antitrust practice. A district court judge in September 1996 based his decision on a finding from Lynk (1995), and proposed not to block a merger of two non-profit hospitals in Grand Rapids, Michigan. Lynk uses a 1989 hospital discharge data set from California and concludes that after a merger non-profit hospitals are less likely to use their market power. Using the findings from Lynk (1995), Gaynor and Vogt estimate that a standard merger would increase the price by +17% for a merger between two for-profit hospitals, while this effect will be -1% for a merger between two non-profit hospitals. In response to Lynk (1995), Dranove and Ludwick (1999) and Keeler et al. (1999) examine price effects of mergers by types of hospital ownership. They also use data from California and conclude with an opposite result: mergers, even non-profit mergers, are associated with higher prices. According to
simulations in Gaynor and Vogt (2000), Keeler et al. (1999) and Dranove and Ludwick (1999) imply that a standard merger between two non-profit hospitals would increase price by 6% and 17%, respectively.

Using a structural model of demand and pricing in California hospital markets, Gaynor and Vogt (2003) also examine effects of competition on prices by ownership type. They simulate the effects of a merger in San Luis Obispo County that would create a monopoly. Their results show that prices increase by up to 53%, and the predicted price increase would not be substantially smaller even if the hospital were not-for-profit. Similarly, a recent study using data from New York State also provides evidence to support this argument (Zwanziger and Mooney, 2005).

New York State was one of the last two states resisted to the use of price competition in hospital markets in controlling healthcare costs until mid 1990s. In 1996, New York enacted new legislation that opened the hospital markets to price based competition. With the Health Care Reform Act of 1996, all private payers were allowed to negotiate the prices they pay to the hospitals. Using data for the period of 1995-1999, Zwanziger and Mooney study the impact of new legislation on prices in the New York hospital markets. They conclude that hospitals in more competitive markets after 1997 were paid less. Their results show that one standard deviation increase in market concentration index at the mean (approximately 20 percent) was associated with a 10.4 percent increase in prices. This result is also consistent with economic theory that in more competitive markets hospitals do not have extensive market power, and therefore, accept lower prices offered by the insurance companies. With few exceptions, evidence from empirical
studies also supports the view that market concentration leads to higher prices in hospital markets (see also Capps et. al, 2003; Vita and Sacher, 2001).

2.2. Efficiency Gain and Market Competition

As payer driven price competition has become the norm in hospital markets in the US and UK, the providers have started to explore possibilities for mergers and acquisitions to overcome financial pressures. Horizontal consolidation in hospital markets would lead to higher prices as reviewed in previous section, and it may also create efficiency gain. As antitrust agencies emphasize detrimental impacts of potential market power due to horizontal consolidations, efficiency gain is also recognized in merger guidelines as a mitigating factor to be considered to evaluate the welfare consequences of a merger (i.e. Competition Bureau, 2004). However, cost savings would be harder to determine for antitrust agencies since the merging firms themselves provide such information and they have financial incentives to overstate cost savings. Policy makers are concerned that consolidations create hospital market power without any, or not enough offsetting reductions in hospital costs. In other words, a merger may have both positive and negative impacts on social welfare due to efficiency gain and higher prices. Net impact as shown in Figure 1, depends on the magnitude of these two aspects of a merger.

<<Figure 1 about here>>

Figure 1 presents the pre- and post-merger common average cost and the demand curve for two hospitals. Total output and price before the merger are shown with $Q_1$ and $P_1$. Suppose that a merger between two hospitals creates both market power (price increases to $P_2$) and efficiency gain (average cost $AC_1$ decreases to $AC_2$). The net change
in social welfare depends on these two opposite effects. Although output decreases to $Q_2$ and price increases to $P_2$, the merger may still enhance social welfare if the welfare loss (area of triangle $L$) due to market power is less than welfare gain (area of rectangular $G$) due to efficiency. This issue has been an important empirical question, and received attention in the economics literature.

In order to examine potential efficiency gain due to horizontal consolidation, recent studies have focused on effects of mergers on hospital costs. For instance, Dranove and Lindrooth (2003) study the US hospital markets in the period of 1988 to 2000 in order to investigate the impact of mergers which took place between 1989 and 1996. By comparing hospitals that actually merged with those that have the same characteristics but did not merge; the authors conclude that there is significant and persistent savings for mergers after consolidations. Their results are also aligned with the earlier studies (i.e. Connor et al., 1998; Spang et al., 2001). As indicated by Dranove and Lindrooth, hospitals may also create multi-hospital systems, which are the consolidations of two or more hospitals in the same geographic market that have common ownership, but maintain separate physical facilities, separate licenses, and keep separate financial records. Dranove and Lindrooth conclude that system acquisitions did not create similar savings. This implies that system acquisitions may have detrimental impacts on social welfare as it has potential positive impacts on both prices and costs. However, it is still not clear whether hospital consolidations enhance social welfare since the net impact depends on the amount of efficiency gains, specifically the area of rectangular $G$ versus the area of triangle $L$ in Figure 1.
Another line of empirical research has focused on estimating the amount of inefficiency in production and costs. Following the pioneering work by Farrell (1957), others developed alternative models to estimate cost or production efficiency (i.e. Aigner et al., 1977; Cornwell et al., 1990; Schmidt and Sickles, 1984). Aigner et al. (1977) develop a stochastic frontier approach, which is based on the argument that not all deviations from the frontier such as deviations due to luck, climate, and poor machine performance cannot be under firms’ control; therefore they should not be counted as a part of firm inefficiency. Using the methodology introduced in Aigner et al. (1977), Frech and Mobley (2000), among others, study hospital markets to identify the effect of differences in inefficiency on growth and market concentration. Similarly, Zuckerman et al. (1994) use a stochastic frontier cost function to estimate hospital inefficiency, and examine efficiency outcomes of profit motives, market forces and other hospital characteristics. Although this paper includes severity of illness measures, output quality, and patient outcomes in the cost function estimations, as argued in subsequent studies, inefficiency estimates in cross sectional studies can be biased due to hospital specific unobservable variables including imperfectly observable quality in hospital services (Dor, 1994; Skinner, 1994).

As an alternative to cross sectional studies, several studies used panel data models. Among several others (see Linna, 1998; Gerdtham et al., 1999; Rosko, 2001), Sari (2003) applies panel data models using data from Florida hospitals in the period of 1990-1997, and estimates the effect of market competition on hospital efficiency. Sari emphasizes the potential bias due to unobserved quality differences among hospitals. Unobserved output quality may create bias since observed correlation between market concentration and
inefficiency can be due to negative association between market concentration and high quality. After controlling for potential bias due to unobserved quality, the results in Sari (2003) reveal that the association between cost inefficiency and market concentration depends on the level of competitiveness in the market. Hospital cost inefficiency has an inverse U-shaped association with rising market concentration, implying that there is an immediate efficiency gain due to mergers in a competitive market. The source of the savings in mergers can be either exploration of economies of scale (i.e. increasing utilization of expensive equipment) or economies of scope (i.e. operating a single information system for various products) or both. As mergers combine scale and scope effects, the total impacts would even be larger. For instance, a joint information system creates savings due to spreading the fixed costs over increased volumes within output categories, as well as sharing the same information system across output categories. This finding is also consistent with the earlier results that the horizontal integration promotes cost efficiency by decreasing excess capacity in the health care markets (Connor et al., 1997). However, Sari also suggests that mergers do not create efficiency if the level of market competition is moderate. The results suggest that once potential efficiency gain is exploited through mergers in competitive markets, further concentration does not create cost savings until the market becomes almost a monopoly.

It is clear that welfare consequences of market concentration in hospital markets are heavily influenced by potential efficiency gains. Net impact on social welfare depends on the relative magnitude of efficiency gain as opposed to welfare loss due to market power. So far there is no study in the literature which combines the welfare effects of consolidations due to higher prices, quality and efficiency gains.
3. HOSPITAL QUALITY AND COMPETITION

In the economics literature, there has been an ever growing interest on the impacts of market concentration on hospital pricing and cost efficiency, while quality consequences of market concentration have not received enough attention from researchers or antitrust enforcement agencies. Until recently, empirical literature on quality issues has been limited (see Dranove et al., 1992; Robinson and Luft, 1985). Economic theory does not help either since it provides ambiguous conclusions in terms of the quality consequences of market concentration. The theory suggests that hospital competition leads to higher quality under price regulation if the regulated prices are higher than the marginal cost. In regulated markets, hospitals compete by providing higher quality in order to attract more patients. As briefly noted in the previous section, this type of competition may also create incentives for the hospitals to invest in activities that are not necessarily quality enhancing, such as unnecessary tests, duplication of more expensive services and technology (Robinson and Luft, 1985). Since the regulated prices or hospital budgets are adjusted based on the earlier prices and costs under retrospective reimbursement systems, hospital competition increases the cost with or without affecting quality.

In unregulated markets, hospital competition can turn out to be price, quality and price and quality competition. Hospitals in competitive markets have a higher incentive to invest in quality enhancing activities and provide higher quality as long as the marginal gain from providing higher quality exceeds the marginal cost. Spence (1975) studies behavior of a monopolist in setting both price and quality. He concludes that the monopolist either oversupplies or undersupplies the quality relative to the social optimum. A profit-maximizing monopolist firm, as demonstrated in Spence (1975), takes
marginal valuation of quality - the dollar benefits of the product to the marginal consumer - into account. On the contrary, a surplus-maximizing social planner chooses a level of quality, where the marginal cost of quality equals to the average valuation of quality. Depending on the difference between the marginal and average valuations, the quality of care provided by the monopoly may be higher or lower than the social optimum.

In healthcare industry, quality is imperfectly observed by patients and their physicians. In particular, adverse treatment outcomes cannot be identified perfectly because they are either related to severity of patients’ illnesses or poor quality of hospital care or both. Since adverse outcomes in treatment do not necessarily reflect treatment quality, it is difficult to argue that quality can be a contractible input into the production of health for the patient (McGuire, 2000). If the quality is imperfectly observable by the patients and it is a non-contractible input, then it is unlikely that hospitals will have any incentive in providing higher quality. An exception would be the situation in which the hospital aims to develop credibility and reputation in the market by providing high quality hospital services. The incentives to supply high quality services are determined by patients’ ability to infer the quality after receiving care, their beliefs about future quality, and the effects of present reputation on the future market share (for a theoretical discussion, see Shapiro, 1983). This implies that the impacts of competition on quality in deregulated hospital markets are ambiguous.

Relatively few empirical studies explore quality consequences of market concentration and competition. And the empirical evidence provided in this literature supports the economic theory that the results can be in any direction. For instance, Ho
and Hamilton (2000) assert that consolidations in hospital markets had no impact on mortality but increased the readmission rates. However, Kessler and McClellan (2000) conclude that competition in hospital markets has significantly reduced adverse health outcomes after 1990.

Ho and Hamilton (2000) compare the quality of hospital care before and after mergers in California between 1992 and 1995. They use inpatient mortality for heart attack, 90-day readmission for heart attack patients and discharge within 48 hour for normal newborn babies. They conclude that the recent mergers have not had a measurable impact on inpatient mortality, but readmission rates and early discharges increased due to the mergers. Although the authors argue that the recent mergers have not had a detrimental impact on quality, they suggest that additional research needs to be conducted to improve our understanding about the quality consequences of consolidations in hospital markets.

Kessler and McClellan (2000) develop a model to estimate the effects of hospital competition on costs and health outcomes for all non-rural Medicare patients who were hospitalized for a treatment of a new heart attack in the period of 1985-1994. They construct competition indices using a hospital choice model, in which each individual’s potentially relevant geographic market includes all nonfederal hospitals within 35 miles of her residence or within 100 miles for large and teaching hospitals. In their model, the hospital market competition is assumed to be a function of predicted patient flows from a hospital choice model. They conclude that before 1990 the competition did not have a strong positive impact on adverse health outcomes. However, after 1990 the adverse health outcomes decreased significantly due to competition. Gowrisankaran and Town
Kessler and Geppert (2005) reach an opposite conclusion in terms of welfare implications of competition for Medicare patients. They estimate the effects of hospital competition on quality of care and hospital expenditures for elderly Medicare beneficiaries in the US, who had a heart attack in the period of 1985-1996. The authors find that high risk patients in competitive markets receive more intensive treatment than in uncompetitive markets, and they also experience better health outcomes. On the other hand, low risk patients receive more intensive treatment in highly concentrated markets, but they do not experience better health outcomes. Based on this finding, the authors conclude that competition improves health outcomes and at the same time creates savings.
quality. The quality indicators in this study capture various dimensions of quality by identifying in-hospital complications and inappropriate procedures directly from patient discharge records. This study contributes to the literature by using more comprehensive quality measures and data from up-to 16 states in the US for the 1992-1997 period. The results of this study suggest that quality consequences of hospital mergers are substantial. For instance, a hypothetical merger, which increases hospital market share by 10%, increases complications by 7.6 %, and increases wound infections by 8.3 %. Hospitals with higher market share also utilize more inappropriate procedures. If the hospital’s market share increases by 10 %, it is likely that inappropriate surgical utilization increases by 5.4 %. The results also support that the complication rates and inappropriate surgeries are 1.4 % and 1.02 % higher in concentrated markets compared to competitive markets.

While the results in Sari (2002) support positive associations between market competition and higher quality, there are other papers which find contrary results (see Mukamel et al., 2002; Propper et al., 2004; Volpp et al., 2003). Contrary to the theoretical expectation, the evidence is also ambiguous in price regulated markets (see Gowrisankaran and Town, 2003; Kessler and McClellan, 2000; Kessler and Geppert, 2005; Tay, 2003). These contrary findings can be explained by the possible variations in the price-cost margin in various geographical regions. They can also be explained by differences in quality and output measures, or methodological differences including differences in the definition and measurement of relevant geographical markets. Some of these important empirical issues are extensively discussed in the earlier literature and in this book by Burgess (2007). It seems that the most important aspect in merger litigations
would be the definition of relevant market and the identification of potential competitors. This has also been an important empirical issue in the hospital competition literature. In the next section, I will review the antitrust guidelines and link it with the empirical evidence by emphasizing methodological issues related to definition and determination of relevant markets for merger litigations.

4. MERGER GUIDELINES AND ANTITRUST POLICIES

In market economies, policy makers protect consumers and other producers against anticompetitive actions of the merging firms by using antitrust policies. The merger guidelines are essentially similar across countries. For instance, *U.S. Horizontal Merger Guidelines* define the sound merger enforcement as enforcement that “must prevent anticompetitive mergers, yet avoid deterring the larger universe of procompetitive or competitively neutral mergers” (U.S. Department of Justice and the Federal Trade Commission, 1997:1). In its *Merger Enforcement Guidelines*, Canadian Competition Bureau has the same objective. In these guidelines, a merger is assumed to be anticompetitive if it is likely to prevent competition, and the action is motivated by the economic interest of merging entity. In other words, the mergers are anticompetitive if they are likely to create, maintain or enhance the ability of the merged entity to exercise market power. The exercise of market power creates a transfer of surplus from consumers to producers due to the ability of the merged entity to maintain price above competitive levels for a significant period of time.

The guidelines are implemented by different enforcement agencies in various countries through a similar routine sequence of steps. U.S. Department of Justice and the
Federal Trade Commission, and the Canadian Competition Bureau Guidelines clearly define these steps as: determining product and relevant geographic markets, identifying competitors in the market, estimating pre- and post market concentration index, identifying potential competitive effects, and considering any factors that mitigate anticompetitive effects (i.e. cost efficiency).

A market is defined as the smallest group of products, and the smallest geographic area in which a hypothetical monopolist would impose and sustain a significant and non-transitory price increase above the pre-merger price level. This definition is based on substitutability and focuses on demand responses to changes in relative prices. The ability of a firm to raise price depends on buyers’ willingness to pay the higher price, and therefore depends on availability of alternative options at a lower price in the same market. This implies that identifying the relevant market and potential competitors plays a crucial role in determining anticompetitive implications of a merger.

Most of the empirical studies on hospital concentration and competition define the relevant markets using one of the three approaches: geographical areas such as counties or metropolitan statistical areas, areas based on distances between hospitals such as area covering a 15- to 30-mile radius around each hospital, or areas based on patient migration or patient flow. Once the appropriate market is determined, the studies calculate aggregate market concentration, most commonly, using Herfindahl-Hirschman Index (HHI), which is a summation of market share for each hospital in a given market, ranges from 0 (highly competitive market) to 10,000 (monopolist). The guidelines also acknowledge HHI as an appropriate index and define the markets with post-merger HHI below 1000 as the antitrust safety zone. In other words, these are considered to be
unconcentrated markets in which adverse competitive effects from mergers are not expected. Therefore mergers in these markets do not require further attention from antitrust agencies.

It is obvious that defining the relevant market and potential competitors is extremely important in applying antitrust regulations, and estimating potential welfare gain or loss due to the market concentration. The assumption that the geographical boundaries or fixed distances would be appropriate measures in determining the relevant market implies that the distance is the only relevant product characteristics for consumers in making decisions to get treatment from hospitals. In other words, substitution among different hospital products depends only on physical distance. This assumption does not seem appropriate since individuals may even travel to another country in order to get better treatment. The differences in the hospital quality or even perceived quality are important factors in determining the patients’ choices, implying that the relevant market needs to be determined using patient flows. This feature of healthcare markets has been recognized by researchers and whenever patient migration data are available, the markets are defined using patient migration or flow data. Despite improvements with this alternative approach, it is likely that higher quality hospitals attract patients from longer distances; hence the measured market area for them will be larger than that of neighboring lower quality hospitals. This even implies that higher quality hospitals have more competitors and less market power compared to lower quality neighboring hospitals (Tay, 2003). As a solution, subsequent studies used predicted patient flows, which are estimated using a hospital choice model, rather than the actual flows (i.e. Kessler and McClellan, 2000).
This suggests that hospital quality plays a critical role in competition for patients, as well as in expanding market area.

Although the guidelines are primarily concerned with the prices and efficiencies after any merger, there is still some emphasis on the effects of mergers on other dimensions of competition such as quality, product choice, service, and innovation (Competition Bureau, 2004; U.S. Department of Justice and the Federal Trade Commission, 1997). Quality consequences of mergers have recently received more attention in the economics literature. However, due to difficulties in observing and measuring hospital quality, antitrust agencies have not sufficiently emphasized quality implications of mergers in merger litigations (Hammer and Sage, 2002). Even if there is efficiency gain after a merger, it is likely that the saving could be through quality distortions. Under this scenario, it is difficult to argue that the merger enhances social welfare even if post-merger prices stay the same. Further research focusing on the impacts of market concentration on efficiency and quality, and their welfare implications would shed light on the anticompetitive implications of recent mergers.

5. CONCLUSIONS

This chapter provides important insights for antitrust implications of concentration in hospital markets using evidence from recent economics literature. Hospital markets have become concentrated due to mergers, acquisitions, joint ventures and partnerships. They have also been influenced by changes in market structure due to an increasing role of managed care in the United States. These changes in the market structure transformed the
hospital competition from non-price competition towards intensive price-competition. The literature supports the view that an increase in concentration in hospital markets leads to higher prices; therefore it has negative welfare consequences. As noted by the antitrust agencies in their merger guidelines, achieving cost efficiency is a potential mitigating factor that needs to be considered in examining welfare implications of a merger in hospital markets.

The cost savings through concentration can be achieved due to economies of scale and scope. However, it is also likely that quality distortion can be an alternative source of the savings. There are some studies supporting the view that concentration creates efficiency gain, while some others argue that concentration has a negative impact on health outcomes and quality. It is, therefore, not clear whether the net impact on social welfare would be positive since the result depends on efficiency gain, market power, and quality consequences of concentration. Since they have been motivated by the economic theory, the guidelines recognize these aspects of a merger. However, antitrust agencies have not sufficiently emphasized quality implications of mergers in merger litigations due to the difficulties in observing and measuring hospital quality. While recent empirical literature attempts to overcome the shortcomings of earlier studies by introducing alternative measures and methodologies – new output and quality measures, various market definitions and modeling, structural models etc. - there is still no study demonstrating combined welfare effects of horizontal consolidations due to market power, efficiency gain and quality. Additional research that would provide new empirical evidence by taking several aspects of consolidations into account will enhance our
understanding about the consequences of mergers and will guide the competition policy, and future merger litigations.

In this chapter, I restrict the discussions to the welfare implications of horizontal consolidations in hospital markets. However, another striking development in the U.S. healthcare industry has been the formation of strategic partnerships between hospitals and physician groups that may also have important welfare consequences. As noted in Gaynor (2006), vertical integrations between physicians and hospitals can have anticompetitive impacts due to a foreclosure effect in both hospital and physician markets. It is possible that vertical integration could foreclose rival hospitals and physician groups from access to hospital and physician services. This can increase market power in both physician and hospital markets. Vertical integrations may also result in higher prices due to an increase in bargaining power of the integrated unit with insurers. Further research in this important area that received recent attention in the literature (Ciliberto and Dranove, 2006; Cuellar and Gertler, 2006) will also be helpful in formulating and applying future antitrust policies.

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Fig. 1. Welfare implications of a merger