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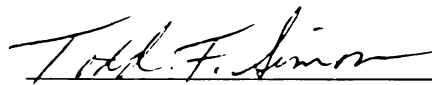
THE EFFECT OF MARKET STRUCTURE, OWNERSHIP,  
AND SYSTEM AFFILIATION  
ON THE ADVERTISING BEHAVIOR OF HOSPITALS

presented by

LAUREN OLIVER STRACH

has been accepted towards fulfillment  
of the requirements for

Ph.D. degree in Mass Media

  
Major professor

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**THE EFFECT OF MARKET STRUCTURE, OWNERSHIP,  
AND SYSTEM AFFILIATION  
ON THE ADVERTISING BEHAVIOR OF HOSPITALS**

**By**

**Lauren Oliver Strach**

**A DISSERTATION**

**Submitted to  
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ABSTRACT

THE EFFECT OF MARKET STRUCTURE, OWNERSHIP,  
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By

Lauren Oliver Strach

The hospital industry has embraced advertising in the past fifteen years since it began advertising. In 1988, the projected spending on marketing for U.S. hospitals topped \$1.34 billion. How has the advertising in this industry developed over time? Has it followed similar behaviors of other industries? Or has it developed norms of its own? What this study examined was how advertising behavior was influenced by market structure, ownership, and system affiliation. The basic hypotheses were that for-profit ownership, hospital system affiliation, and strong competitive pressures would result in advertising behaviors that reflect a more purposeful and well-reasoned approach to the investing of advertising dollars.

Data from a national telephone survey of hospital marketing directors was used. Economic models, ownership theories, and corporate/system philosophies were used to predict the advertising behaviors.

Advertising behavior was measured by examining advertising expenditures, media selection and usage patterns, groups targeted (consumers, employers, physicians, or other

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referrers), and market research expenditures. Other independent variables controlled for include size, average occupancy rate, and area population. Regression analysis was used to test the hypotheses.

Study results suggest that, overall, the relationships between competition and system affiliation and advertising behaviors do not exist as predicted. Ownership did have an effect on advertising expenditures and groups targeted. Number of competitors, ownership, and hospital size also did have an effect on individual media used.

## ACKNOWLEDGMENTS

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## CHAPTER I

### INTRODUCTION

Hospitals have now been players in the advertising arena for 15 years, a relatively brief time compared to almost any other industry. In that period industry staffs have had to develop rules of thumb, market research profiles, and advertising acumen to guide their promotional efforts. There was no body of knowledge that they could turn to, no comparable industry to look to for guidance. Everything had to be developed from scratch. But great efforts were made to capitalize on this new marketing opportunity. And by 1988 the projected spending on marketing for U.S. hospitals topped \$1.34 billion, up from \$700 million in 1985.<sup>1</sup>

Had the hospital industry found those rules of thumb, that sought-after acumen, or were hospital marketers flying by the seat of their pants when it came to investing their advertising dollars? No single study can completely address that issue, but the purpose of this study is to examine the effects of market structure, ownership, and system affiliation on the advertising behavior of hospitals. This study will then examine if these major economic conditions influence hospitals' marketing actions--as they have in many other non-marketing areas--or if most

hospitals are still advertising in ways that do not reflect the economic and competitive structure of their hospital.

The challenge of this study is in the exploratory search for insights--pulling together knowledge, theories, and practices from the subject fields of advertising, economics, health care, and marketing. This search is further complicated by the unique qualities inherent in health care. Health care is a service and has certain attributes in common with services in general--it is a non-standardized product in terms of the staff, procedures followed, rules and regulations. It is intangible in part because most patient visits involve procedures returning them to the way they were before, giving them back good health. Health care is perishable and production/consumption must be simultaneous. There is no way to stockpile the appendectomies on a slow day, and no way to go ahead with the operation if the patient suddenly gets the flu. Within most cities there are a few, dominant hospitals dividing the main hospital care, inpatient market, but now more and more small alternative care facilities are growing that are carving out small, specialized pieces of the market. And finally, another issue is the high level of perceived risk by customers. Felt risk is further complicated by the decisionmaking process in times of emergency hospitalization. If you want to make an informed choice, the alternatives and their strengths better be known ahead

of time. All of these factors, from the lack of previous research to the nature of the service industry itself, contribute to making the behaviors of this industry difficult to assess.

This study, then, must be exploratory. No other industry--or research about it--provides a measuring stick to examine the behavior of hospitals, which gets back to the challenge of this research. It is an exploratory study, testing relationships that have been hypothesized based on knowledge gleaned from the divergent subject fields. The need for this type of research, research that examines the role of advertising and its economic effects, is expressed by Albion and Farria in their book The Advertising Controversy: Evidence on the Economic Effects of Advertising:<sup>2</sup>

...research on the economic effects of advertising in service industries is greatly needed. Including government services, service industries account for over 50 percent of the gross national product and 60 percent of employment in the United States. Yet, research has been sparse with only a little amount published on the banking sector. The effects of advertising in these types of industries may, in fact, be quite different from those surveyed in this book.

In addition, they state a further complicating factor that influences any study in this area:<sup>3</sup>

There is no single theory explaining the economic effects of advertising from which economists can make reliable deductions and predictions. Instead there are several theories--all of which are more or less plausible.

Given this challenge, this study will attempt to determine if any patterns in market structure, ownership and system affiliation can be identified in advertising growth and activity. Due to the relative newness of the market and the localized nature of the service, research of this kind has not yet been done. This project looks beyond the question of mere dollars spent by whom in what area, and tries to evaluate observed behavior in the context of economic and competitive variables. Advertising behavior will be measured by examining advertising expenditures, media selected (television, radio, newspaper/magazines, billboards, or direct mail), groups targeted (consumers, employers, physicians, or other referrers), and market research expenditures. The desired net result will be insights that have both academic and industry applications. What is being proposed is that for-profit ownership, hospital system affiliation, and strong competitive pressures will result in advertising behaviors that reflect a more planned, well-reasoned, and knowledgeable approach to the investing of advertising dollars.

## INDUSTRY OVERVIEW

Historical Perspective

Change dominated the hospital environment of the 1980s. Changes in regulations, financing, and market structure have altered the managerial parameters so completely that hospitals have had to begin experimenting with new and competitive approaches for survival.

Changes in financing were one of the most dramatic developments. In 1966, the Medicare and Medicaid programs opened the door for expansion of both hospital costs and inpatient demand. These programs, in which the federal and state governments paid hospitals according to their costs (plus two percent for Medicare), substantially increased the use of health care by the aged and medically indigent.<sup>4</sup> And the demand for employee health insurance went up with the inflationary economy. Employees often preferred to receive the inflationary income increases in health insurance and other fringe benefits, to avoid paying increased income tax.<sup>5</sup> As more and more of the health care costs began being covered by the government and insurance companies, consumers' concerns with direct health care costs began to decrease. In 1965, before the introduction of the new government programs, the government was paying for only 23.5 percent of total personal health care expenditures, but in 1985 the government's share had risen to 41.1 percent. And by 1985 patients were only

paying for 9.4 percent of the total hospital bill, with the government paying 53.9 percent and private insurance paying 35.6 percent.<sup>6</sup>

Due to the low direct patient cost for hospital care, hospital use is generally believed to be less responsive to cost than any other medical service.<sup>7</sup> And the use of the health care product is different from any other similar service. In an emergency situation, there is seldom enough time to shop in most hospital "purchase" situations. Unless the consumer has prior knowledge of hospital offerings in the area, or unless hospital selection is dictated by a health insurance program, the consumer usually acts with minimal knowledge, or defers to the physician.<sup>8</sup> With elective medical care and those surgeries scheduled with advance notice, there is a little more time to shop, but the average consumer may not know enough to make an informed choice.

With providers being reimbursed for their costs plus two percent (cost-plus basis), and with a growing economy with increasing inflation, many thought health care prices could be increased with little fear of diminished demand. But health care costs, as a percent of the GNP, grew from 5.9 percent in 1965 to 10.7 percent in 1985.<sup>9</sup> Any competition taking place in this growth environment was typically non-price-improving quality and broadening the range of new, and usually expensive, services, facilities,

technology, and staff, to attract the physicians who brought in the patients.<sup>10</sup> New programs could be cross-subsidized by increasing costs in other profitable areas.

This period of unbridled growth was too expensive to continue indefinitely. The recession of 1981 hit those industries with the most comprehensive health insurance benefits--automobile and steel--the hardest. Health insurers began to feel the pressure to hold their costs down. A survey of 1,185 companies in 1984 found that the percentage of companies requiring deductible payments for their employees' inpatient care grew from 30 percent in 1982 to 63 percent in 1984.<sup>11</sup> Two additional results came out of this increased concern of insurers. First, the insurers became more concerned with utilization, concurrent review, second opinions for surgery, and preauthorization for admission, all of which contributed to the second effect, the development of excess hospital capacity.<sup>12</sup> In 1983, over 18 percent of hospitals had occupancy rates of less than 50 percent, while only 22 percent had rates greater than 80 percent.<sup>13</sup> Occupancy rates for short-term general hospitals decreased from 78 percent in 1980 to 64.8 percent in 1985.<sup>14</sup>

In 1983 the use of diagnostic related groupings (DRGs) was introduced to pay hospitals for Medicare expenses. The days of automatic cost-plus reimbursement that allowed hospitals to ignore rising costs and cross-subsidize

unprofitable services were gone. Now hospitals were forced to actively work to decrease their own expenses. Price competition and reduction of the average length of stay were two responses. Physicians affiliated with HMOs were already being rewarded for reducing their patients' overall medical bills, and now hospitals joined them in a concerted effort to slow rapidly increasing health care costs.

External pressures, one regulatory and the other economic, foreshadowed the development of industry competition. These included federal legislation that created excess hospital and physician capacity, and the strong interest of businesses in reducing their employees' health costs.<sup>15</sup>

But it was the Federal Trade Commission's application of the antitrust laws to health care that fully opened the competitive floodgates.<sup>16</sup> Until the FTC's actions in 1975, the health profession was considered one of the "learned professions" and therefore free from antitrust regulations. Medical societies and state practice acts were free to inhibit competition through fee splitting, limiting advertising, delegation of tasks, corporate practices, and restraints on innovative forms of health care delivery.<sup>17</sup> Before the dust settled, the FTC had filed 27 health care antitrust cases.

The American Medical Association did not accept the change in its members' status lightly. The FTC actions

were appealed to the Supreme Court, but the decision, rendered in 1982, was a clear signal that health care providers were not exempt from the antitrust laws.<sup>19</sup> Despite the stated position and protests of the AMA that "...the standards of quality established by the American Medical Association and other medical societies... are being undermined by a federal agency that possesses no medical qualifications,"<sup>20</sup> the courts went ahead and applied the antitrust laws to the health care field. Health care was recognized as a commercial marketplace in which goods and services are bought and sold.

The net effect of the industry changes and deregulation was the introduction of new forms of market structure--including increasing competition and growth in for-profit ownership and multi-hospital systems. Issues such as economies of scale and competitive positioning gained importance. Wide variations in per unit costs among similar hospitals, large annual increases in hospital costs, and the underutilization of facilities had often been cited as indicators of extensive industry inefficiencies.<sup>21</sup> And development of various innovative alternative care systems increased competitive pressures from nontraditional sources.

The unique and atypical characteristics of health care had kept the industry as a whole from evolving as a true competitive economic market--that is, an industry with many

firms acting to maximize their profits and many individual consumers acting to maximize their utility. When new firms can enter the market and compete away excess profits, production is forced to become as efficient as possible, and resources are directed into their most productive uses.<sup>21</sup> Pauly and Langwell, researchers for the National Center for Health Services, contend that three fundamental conditions complicate the economic market for health services:<sup>22</sup>

1. There is considerable uncertainty concerning the risk of contracting an illness, the appropriateness and efficacy of available treatments, and the potential costs of medical care.
2. Because of the nature and complexity of medical services, information available to consumers is less than adequate for economic decision making.
3. There has developed a national commitment to the concept that access to basic essential health services should be guaranteed to everyone without respect to income or ability to pay.

Most economic research supposes planned or intended purchases, most research assumes rational and informed consumer decision-making, and most research on competition presumes little or no regulatory pressures, but none of those suppositions are appropriate in this industry.

Other barriers to a perfect competition model include such issues as government regulations determining whether or not a hospital may open, a hospital's eligibility for governmental programs, control over who may practice medicine, and governance of medical staff responsibilities,

among other things.<sup>23</sup> But while these conditions may prevent hospitals from following a monopolistic competition model as closely as some industries, health care is evolving towards that direction more than ever before in its history.

### Structural Elements

One of the complicating factors in the study of the hospital industry is the lack of a comparable industry to look to for guidance. Health care is a subset of service industries in general, but it is unique in so many ways that direct comparisons are not possible. One researcher puts it this way--sociologists and organizational theorists long have "...considered the hospital the archetypal complex organization, characterized by multiple goals, elaborate coordination and control problems, and complex technologies."<sup>24</sup> Health care has become inextricably linked to its organizational contexts. For example, the structure of the hospital is typically organized along product lines. This would include departments such as quality assessment, infection control, and utilization review reporting to the vice-president/medical director; departments such as fiscal services, information systems, and medical records reporting to the vice-president/chief financial officer; and departments such as physician services, surgical services, and patient services reporting

to the vice-president/chief operating officer.<sup>25</sup> This product line approach is a common form of structural organization for mid-sized businesses in general, but in reality the lines of authority and power are very different from the reporting lines. A similar example might be a university or college where one must be familiar with that institution to understand how the real chain of command works.

Bradford Gray argues that most views of competitive market forces do not properly adjust for many key elements of health care.<sup>26</sup> He presents the following list of factors that have the potential to interfere with normal market function:

1. the great knowledge imbalance between providers and recipients of medical services;
2. the inability of the patient to judge much more than superficial aspects of quality;
3. the essential fiduciary role required of the physician;
4. the necessity of third-party payment because of the unpredictability and cost of medical expenses, but which substantially reduces the patient's price sensitivity and attenuates market restraints on prices;
5. the importance of a community-wide perspective on the need for services, particularly of high-cost, low-utilization services such as 24-hour emergency room coverage, burn treatment units, and neo-natal intensive care units;
6. the fact that there are people who need care who cannot afford it; and,
7. the fact that individuals' needs for care are unpredictable and tend to be inversely related to ability to pay.

The focus in this section is on those differences that have the potential to affect advertising behavior--the role of the physician, the decision-making process, and the mix of for-profit and nonprofit hospitals. Then the role of advertising in the hospital marketing program will be discussed.

Physicians are important to hospitals for three main reasons. They primarily determine which hospital to admit their patients to, they determine the patient length of stay, and they often have a significant voice in the decision-making process of the institution. For these reasons, and others, the attitude of the medical staff towards advertising becomes critical.

Some doctors, many of whom have admitting privileges to multiple hospitals, have gone on record as being actively opposed to the investment of hospital funds in a competitive marketing war. The following quote summarizes the position:

Is it acceptable for a health institution to expend community resources to increase its power, dominance or influence by increasing the inpatient census when that may cause another institution to decline? Many influential people in the field feel quite strongly that hospitals should not use precious resources to devour each other. They feel that there is little room for divisive competitive promotion today.<sup>27</sup>

This position was illustrated in a case study of Hackley Hospital, in Muskegon, Michigan. There, in 1987, the Muskegon County Medical Society sent a letter to the

presidents of the three local hospitals calling for an end to competitive advertising. The result for Hackley Hospital was that it agreed to a voluntary hiatus from purely competitive advertising, only continuing educational advertising while studying the matter.<sup>24</sup> The point of this illustration is that, while hospitals are advertising, it is difficult to know what sort of pressures are being applied by hospital staff (who probably have the ability to admit their patients to other facilities if they are unhappy with management policy) that may be working against the influences of a competitive industry. This sort of control is much like the effect of direct regulation of an internal nature. Some researchers have even gone so far as to suggest that hospitals are controlled de facto by their medical staffs, which offers all kinds of interesting possibilities for explaining why hospital behavior eludes description by existing models of economic behavior.<sup>25</sup>

Given these factors, the decision-making process in a hospital is not easy to understand. With hospitals, one often speaks of decision-making as though there were a single decisionmaker, while hospitals in fact are exceedingly complex organizations made up of a variety of groups, each with different priorities, such as the governing body, administrators, medical staff, and nonmedical staff.<sup>26</sup> And each group has an effect on hospital policy, although to varying degrees. And so, it could be that competition

effects on advertising behavior of hospitals are being mediated in complex ways by characteristics of the services being delivered and the training of the health care providers. But nevertheless, as competition increases some degree of changes in hospital behaviors will follow.

In addition, the picture becomes further complicated when the rise of hospital systems is considered. A major result of that phenomenon is a shift of the locus of control from community boards to regional and national health care corporations. The effect of system affiliation on advertising behavior is one of the areas examined by this study, given its rapid growth.

Finally, the mix of for-profit and nonprofit hospitals has the potential to affect the advertising behaviors seen in a local market as each hospital follows the priorities set by its governing board. The specific differences that may arise are covered more extensively in the next sections.

Having considered these influencing factors, then, the next step is to examine hospital marketing in general, and advertising in particular, and to see how they fit into the picture of this industry. Marketing in general can be defined as a managerial process involving analysis, planning, implementation, and control of those functions directed towards the purpose of selling the product or service offered by the organization.<sup>21</sup> The marketing

mix--product/service design, pricing, communication, and distribution--is then developed to maximize that selling potential based on the overall organization strategy. One way of further subdividing the communication or promotional piece of this mix for hospitals would include public relations/publicity, advertising, personal selling, sales promotion, and word-of-mouth communication.<sup>22</sup> All of these modes may be used, and can be useful, for some of the same purposes of communicating imagery, information, and purchasing incentives to consumers.<sup>23</sup>

However, it seems too optimistic to assume all hospitals have reached a level of integration with their marketing and advertising since the philosophy of hospitals being market-driven is so recent. Many marketing directors in hospitals do not have a background in marketing, much less advertising, or their experience is from another industry.<sup>24</sup> Therefore, what this study is hoping to do is identify which hospital segments would be most likely to have reached this stage of market awareness as evidenced by the advertising behaviors. This study proposes it will be those hospitals facing strong competition, with for-profit ownership, and that are system affiliated. And it is hoped that these differences will be able to be identified despite the complex organizational and structural context of hospitals.

## REVIEW OF THE LITERATURE

How hospital advertising behavior will differ by competition, ownership, and system affiliation is not known, but some propositions can be developed by examining what is known about the general behavior of hospitals in those contexts. The literature that is reviewed here is an attempt to develop some thoughts on how these elements might interact to affect advertising behaviors. The focus on the advertising theory review relates to marketing activities as a whole, not to the communication based advertising research, as this study is evaluating the aggregate behaviors of the industry, rather than the effects of advertising at the individual consumer level. In the next chapter, specific advertising behaviors will be discussed and hypotheses linking the structural elements and the behavioral elements of hospital advertising will be developed.

### The Effect of Advertising on Competition

Information is an important prerequisite for medical services competition, and advertising is becoming an important information source. Information has the potential to alter how much demand exists for a hospital's service. Before the advent of health care advertising, information about competitor hospitals was nearly nonexistent. A patient was typically unaware of differences in

accessibility, pricing, and quality, reducing the substitutability of hospitals.<sup>25</sup> Advertising now provides some of that information and lowers both the consumer's cost of acquiring that information and the hospital's cost of disseminating it.

Theoretical literature identifies two main schools of thought on the competitive effects of advertising. The "advertising equals market power" theory, based on work from Bain and Comanor and Wilson,<sup>26</sup> (among others), views advertising as changing consumer preferences, building brand loyalty, making it more difficult for new products to enter the market, increasing barriers to entry, and lowering price elasticity. Ultimately advertising decreases competition and leads to higher prices. Albion and Farria in The Advertising Controversy summarize thirty years of research on this theory in this way:<sup>27</sup>

Testing the effect of advertising on industry competition is fraught with many obstacles. No single underlying economic theory guides research efforts, and therefore many interpretations exist for the same piece of empirical evidence... Cautious generalization suggests that advertising is related positively with concentration and profitability, but it is not clear either what that means or when the relationship is stronger or weaker. Other factors need to be delineated, possibly case by case at first, with considerations of consumers' responsiveness to advertising an important aid in such work.

The other major school of thought is the "advertising equals information" theory. The main tenets of this theory state that advertising provides information to consumers which, increasing the elasticity of demand and price

sensitivity, has the overall effect of lowering prices and reducing monopoly power.<sup>30</sup> And it may be that these models are not incompatible, that the dominance of one or the other may be contingent on the industry and the market. For the health care industry, for new providers to break into the market, the public must be informed quickly and persuasively about the services.<sup>31</sup> And advertising can serve that function like few other forms of communication.<sup>40</sup>

Feldstein, in his text Health Care Economics (3rd edition), claims that for the hospital industry at least, advertising does result in lower rather than higher prices.<sup>41</sup> Empirical evidence to support this claim is limited, but there is one classic area of study that is frequently cited. Advertising by optometrists has a long history of regulation in various states. In a study based on 1970 data, Benham and Benham<sup>42</sup> measured the degree of information control in each state and compared it to the prices that consumers were charged for eyeglasses. The evidence clearly showed that the greater the limitation on information available to the consumer the greater the price paid for optometric services. This study further determined that the effect of information control was greater on the less educated, that they were more likely to pay high prices than the more educated consumer in similar situations. These results were confirmed by a more recent study

(1984) by the FTC that found "the presence of advertising causes substantial and significant declines in the prices of eye examinations offered by all types of optometrists."<sup>43</sup>

An important prerequisite to competition in health services is information, which, as stated above, advertising can provide.<sup>44</sup> Advertising provides this assistance in two ways: first, it gives the consumer information on the similarity and differences between competitors, thus allowing the consumer to evaluate the degree of substitutability, and second, it reduces the search costs for the consumer since the various media are so accessible. The search costs of obtaining health care information other ways can be very high.<sup>45</sup>

Hospitals advertise. In the beginning (mid-1970s), their campaigns were not very focused. One of the most popular copy appeals was of the soft-sell, "We Care" variety. Over the past 10 years the appeals, the research, and the strategies have become increasingly sophisticated, particularly in larger hospitals.<sup>46</sup> According to one industry magazine, "Hospital administrators are beginning to realize that using image advertising to tell consumers 'we care' isn't enough."<sup>47</sup>

However, this study proposes that planned, purposeful, and well-reasoned marketing behavior goes beyond mere hospital size, and instead has a strong link to the

corporate philosophy (as dictated by ownership and system affiliation) and the competitive environment. For-profit hospitals will be driven to increase their net return, system-affiliated hospitals will benefit from corporate management, and hospitals in very competitive environments will be forced to maximize their advertising efforts to counteract the competition. These behaviors will be exhibited by increased advertising expenditures and different media use patterns. In addition a greater percentage of the marketing budget will go toward non-direct consumer groups (employers, physicians, and other referrers, the three groups affecting hospital usage patterns in large volumes of patients) instead of focusing on the direct patient/consumer, and increased market research activity.

The different media use pattern predicted is that hospitals that have a more planned, purposeful and well-reasoned advertising strategy--those hospitals facing heavy competition, that are system affiliated, and that are for-profit--will have a different media use strategy that will include utilizing a wider diversity of advertising media.

Those hospitals with a more developed advertising strategy will also have objectives that are more clearly delineated that factor in specific goals in terms of target market (for example, to increase the number of births in

the obstetrics department by 15 percent in the next six months), and also in terms of media reach and frequency (for example, to reach 60 percent of women of child-bearing age in the greater Grand Rapids area at least four times during the month of June). Typically, all of these needs cannot be met by one medium alone. Each medium, particularly in a local market, such as the one most hospitals are operating in, contributes specific strengths and weaknesses. Advertising campaigns focused on one medium alone tend to build impressions with a particular segment of the population--the hardcore users of that medium. By utilizing a broader spectrum of media, those media impressions can be dispersed more effectively.<sup>40</sup>

The need to spread the reach of the message through various media is further compounded when the fact that a typical hospital offers at least 50 different services is considered.<sup>41</sup> While women have traditionally been the health care gatekeepers,<sup>42</sup> hospitals must consider targeting every segment of the market which reflects their incredibly diverse patient pool. As one advertising expert puts it, "varying message delivery by media generally produces better advertising results than concentration in a single medium or area within a medium."<sup>43</sup> With an effective media mix program, frequency of exposure does not bunch up with one group of heavy users of that medium, but spreads the reach to obtain a greater cumulative

coverage.<sup>22</sup> For example, if a hospital does all of its advertising in the local newspaper, readers of the newspaper will get a very high rate of exposure to the messages from that hospital. However, those members of the population who are not newspaper readers will get absolutely no coverage. In this case it would be "more effective" to spread the advertising budget beyond newspapers. By working for more effective coverage the hoped for response is more effective advertising results, however that is being measured for the advertising campaign, whether it is through increased awareness as measured by follow-up marketing research, or increased usage of a particular program such as early breast cancer detection mammograms.

Even with a preference for a primary medium, which may be most effective for many of the communication objectives, there are probably at least a few objectives that can be attained more effectively, or at a lower cost, through a different medium.<sup>23</sup> Billboards, for example, would rarely be considered appropriate as a primary medium, but located near the point-of-purchase, the hospital in this case, they offer an obvious distinct advantage not available through any other medium.<sup>24</sup>

Beyond the fact that the use of multiple media levels out impressions across audiences, there can also be a synergistic effect on advertising awareness generated through using a combination of media.<sup>25</sup> Awareness of

course, may not actually lead to the final use of the product/service, however, a complete lack of awareness almost guarantees that the service will not be as likely to be considered by the consumer. The "imagery transfer" of the advertisement, the message or thought recreated in the mind's eye, is enhanced when the message is repeated through different visuals, print, or sounds.

The idea of a more planned, purposeful and well-reasoned advertising strategy using multiple media is supported by the actual advertising practices of the top 200 national companies (by advertising dollar).<sup>56</sup> Among these companies there was a decided commitment to using several media, with the majority of the companies commonly using three different media.

Those hospitals with a more highly developed advertising strategy will develop a specific media plan as part of their overall advertising program. Characteristics of the local media that need to be considered are:<sup>57</sup>

1. What audience does the medium select?
2. How are exposures distributed among its audience?
3. What are the creative characteristics of the medium?
4. What is the minimum cost of entering the medium?
5. What are the production requirements of the medium?
6. What is the merchandising value of the medium?

With these questions in mind, as well as the limitations imposed by their own budgets, the hospitals can place their messages in the most effective medium

available, with supporting roles played by secondary media. An accurate determination of how these characteristics decide media use is not always an easy or obvious task, which brings the issue back to the market structure affecting the hospital involved. Those hospitals facing competition, feeling strong pressures to be more effective in their advertising, that are system affiliated and potentially benefiting from the knowledge gained by other system members and refined at the system headquarters, and that are for-profit where getting the best return on the advertising dollar is a major goal, will be more likely to correctly identify and then utilize that knowledge. The hospitals in those three situations will have a more highly developed advertising strategy and will respond by having a different media use program than those hospitals not in those categories. To better understand why this may be true, it would be useful to delve more deeply into the underlying factors surrounding hospitals that find themselves in those situations. The next three sections will address those issues in more detail.

### Hospital Competition

One of the most useful ways of studying an industry's behavior is to look at its market structure, market performance, and market conduct.<sup>24</sup> Before addressing the hospital industry specifically, it is useful to consider these terms in general and how they are used in the economic literature. Market structure refers to the relatively stable aspects of the market that influence buyer and seller rivalries, such as buyer and seller concentration, product differentiation, barriers to entry and exit, and the growth rate of market demand. Market performance examines an industry's actual contribution to society relative to its potential to the achievement of certain goals such as efficiency, progressiveness, full employment, and equitability. And finally, there is market conduct, which looks at policies adopted by the industry players in relation to pricing, product, and other features that influence market transactions. It is this last factor that is particularly relevant for this study, as advertising can play a significant role in non-price competitive behaviors. And market conduct becomes especially significant in markets with either monopolistic competition or oligopoly, where firms react to each others' actions with sometimes complex consequences for the local industry.<sup>25</sup>

The classic economic theory of monopolistic

competition claims that producers have three ways to increase their market share--they can alter their product, their price, or their selling costs (advertising).<sup>60</sup> One of the purposes of this research is to examine one part of competitive behavior, the selling costs or advertising behaviors of hospitals, to evaluate the response to competitive environmental forces. Advertising behavior, then, is being used as a sort of proxy measure in this study, for competitive behaviors in general.

Producers increase their net advertising expenditures to get increasing returns. Several tendencies account for the increased net returns of increased advertising.<sup>61</sup> First, results are frequently cumulative with repetition. Although there may be diminishing returns on the money spent (that is, the biggest impact is the first time an advertisement is seen, the tenth time an impact will be substantially smaller), additional investment does result in some additional returns. A pure profit-maximizer would then expend advertising outlays to the point where the last dollar spent just buys another dollar of revenue.<sup>62</sup> In addition, with increasing information available in the environment, there is decreasing uncertainty for the consumer overall, which ultimately has the potential to affect consumer behavior.

Beyond that there are economies of scale with advertising expenditures that can affect the spending strategy

that is taken. Specific fixed costs are required just to access certain media, so the more that is spent, the more that fixed cost can be spread. And finally, depending on the amount of time or space purchased, there can be media discounts as well.

When factoring in these various considerations, hospitals must try to identify the optimal level of advertising expenditure. That optimal level, difficult to determine even with simple consumer goods, may be a particularly elusive one for hospitals. But what is known, at least for industries in general, is that expenditure level is influenced by the advertising behavior of the competition. This paper hypothesizes that it will be the same for hospitals, that it will be affected by the number of competitors, and also by ownership and system affiliation. If the majority of the sellers are advertising, then all of the sellers are pressured to get involved with advertising or risk losing the market share that is potentially influenced through media.

The theory of monopolistic competition states that when products are differentiated, buyers have the opportunity to develop preferences, which sends them to those sellers based on those preferences.<sup>63</sup> Unfortunately, the assumption of an informed consumer cannot be made with hospitals. Therefore, the role of advertising is not only to persuade consumers to patronize a particular hospital,

but also to inform the public about health care and the options so that increasingly informed decisions on the basis of hospital differentiation can be made.

The other economic theory that may be relevant for this industry is the oligopolistic model. There are high barriers to entry that keep many parties from entering the hospital industry--governmental, economies of scale, and cost to enter. There are only a few well-defined players in each local hospital market whose individual actions are noted by, and can potentially affect, the other players. Oligopoly falls between monopoly and monopolistic competition since there are presumed to be only a "few" firms in an oligopolistic market.<sup>64</sup> A crucial aspect of this model is that each seller, in this case each hospital, is large enough to influence the market; therefore, each firm must consider not only the effects of its own decisions, but the likely response of its competitors to those decisions.<sup>65</sup> Another relevant characteristic that seems to apply to the hospital industry is that prices are higher (than might be found in a purely competitive market) and in some cases are unresponsive to changes in the cost structure of a firm in an oligopolistic market.<sup>66</sup> Cowling et al, take this concept and address it in the context of advertising behavior. They claim that, compared with non-oligopolistic behavior, advertising will be lower and prices higher.<sup>67</sup> Studies of oligopolies indicate that competition often

occurs outside the arena of price,"<sup>64</sup> in such areas as advertising outlay, product modification, and special services offered to the buyer. Quality is one area that has predominated hospital competition.<sup>65</sup> The outcome has been characterized by excessive quality and capital expenditures and unnecessary duplication of services, often developed to lure referring physicians to utilize that particular hospital over others where he/she may have admitting privileges.

While the oligopolistic model also has the ability to explain how advertising activities by industry members affect other members, it seems that it doesn't fit the industry overall as well as monopolistic competition when looking at the number of competitors existing in the market. One study that examined hospital competitors in local markets found that 23 percent of the hospitals had no competitors (a monopolistic situation), 18 percent had only one competitor, 21 percent had 2-4 competitors (an oligopolistic situation), and 37 percent had 5 or more competitors.<sup>70</sup> Obviously there are differences in what economic model would be the most applicable, with monopoly conditions existing in some markets, but the single largest and most important segment of the hospitals would seem to fall into the monopolistic competition category. This category carries with it an increased importance over the others since the national market leaders are usually found in

population centers where there would be many other hospitals. They are the pace setters where the most progressive responses to competition could be found.

Any discussion of competition requires a specific definition of the boundaries of that market. This has been particularly difficult for hospitals. Many of the more obvious geographic designations, such as SMSAs or counties, have been useful for health planning authorities, but have proven to be poor approximations of economic markets.<sup>71</sup> Crossing a county or even a state line may provide the most convenient hospital care for those patients living near the boundaries. Every hospital has very specific patient origin information, such as what percentage of their patients come from which zip code area, but obtaining this information and adapting it on a national basis would be very difficult.<sup>72</sup> Any other approximation used by researchers must reflect the tendency for patients to utilize the hospital closest to their homes. And if physicians are going to admit at multiple hospitals, they must be close enough to allow for daily patient rounds.

A 1986 study found the average physician having admitting privileges at 2.1 hospitals.<sup>73</sup> Using the "reasonable commuting distance" criteria, a 15-mile radius definition of a competitive market has been developed by researchers supported by the National Center for Health Services Research.<sup>74</sup> This approximation may not be as good as using

the specific zip code information, but it seems to be a workable alternative that is more easily operationalized. In market research surveys, for example, almost any hospital marketer would easily be familiar with the approximate population within a 15-mile radius of the hospital, and also how many other hospitals are operating in that area.<sup>75</sup> To ask that same marketer patient census information by zip code would not only be difficult in terms of the marketer obtaining that information and reporting it, but also difficult in terms of the researcher then taking that information, plotting it on a map, and extrapolating information that would be useful on a national basis.

The Health Services Research study by Luft and Maerki<sup>76</sup> examined the distances between 6,520 short-term general hospitals in the lower 48 states by using geographic coordinates relating to their addresses. The study found that, at a 15-mile radius, only 23 percent of the hospitals have no neighbors, while 63 percent have fewer than five neighbors. At the other extreme, within a 15-mile radius, 13.7 percent of all hospitals have 31 or more neighbors. These densely-populated markets, most prevalent in the New England, Mid-Atlantic, and East North Central census regions (U.S. census region definitions), would have the potential for very competitive behavior. Such high levels of competition (31 or more competitors)

were completely missing from East South Central, Mountain, and Pacific census regions. Those hospitals with no competitors within a 15-mile radius would have some monopoly power. How these two extremes behave in their marketing strategies is one of the issues to be addressed by this study.

### Hospital Ownership

One of the main differences between for-profit and nonprofit hospitals is reflected in their basic objectives. For-profit hospitals typically follow a profit-maximizing model for hospital behavior; nonprofit hospitals follow a utility maximizing model.<sup>77</sup> For-profits are corporations owned by investors. They have an obligation by charter to enhance the wealth of their shareholders. Their mission is usually stated in terms of growth, efficiency, and quality. Nonprofit hospitals are corporations without owners or owned by "members," typically tax-exempt charities. They also have a legal obligation to fulfill a stated purpose (provide teaching, research, services, etc.), and they must be economically viable to do so.<sup>78</sup> Their mission is often stated in terms of charity, quality, and community service, but they may also pursue growth objectives.

The utility-maximizing model says the hospital may price to increase its profit in the short-run, but those profits will then be reinvested in facilities or services that will increase the quality of the hospital. The net effect of increasing quality will be an increase in the overall costs. But increased quality should also increase demand and physician support.<sup>79</sup>

Neither model alone is adequate to explain observed hospital behaviors. Other models that have been used to

explain economic behavior in general would include managers working to maximize their own utility (pursuing goals in their own self-interest),<sup>40</sup> sales revenue maximizing (to avoid the disadvantages of declining sales revenues),<sup>41</sup> present value maximizing (as a way to maximize the growth of the firm),<sup>42</sup> and the coalition behavioral maximizing theory (based on the interaction of goals, expectations, and choice).<sup>43</sup> Further theories based on observed behavior of decision-making in nonprofit hospitals include: (1) recovery of costs; (2) output maximization; (3) output and quality maximization; (4) utility maximization; and (5) cash flow maximization.<sup>44</sup> However, without examining the behavior of individual hospitals it is useful to focus on the profit-maximizing model and the utility-maximizing model as generally describing the behavior of these two types of hospitals. They are also useful in pointing out the differences between the two types of ownership. The nonprofits are committed to serving all financial categories of patients. While for-profits are not opposed to that approach per se, they do take certain precautions to protect their profitability.

Unprofitable patients can be avoided in various ways.<sup>45</sup> First, facilities can be located away from low-income areas. Second, hospitals can avoid offering services used disproportionately by the poor and underinsured. Finally, they can have screening and admission policies that

discourage patients unable to pay. Past studies have shown that for-profit hospitals are more likely than nonprofits to use each of the strategies. For-profit hospitals are more prevalent in states with rapidly increasing income levels, high per capita income, and extensive insurance coverage.<sup>44</sup> For example, in 1985, 60.7 percent of the for-profit hospitals were located in California, Florida, Louisiana, Tennessee, and Texas.<sup>47</sup>

Overall there were 5,611 community (general, short-term) hospitals in 1987. Of those, 3,274 (58 percent) were non-governmental nonprofit, 828 (15 percent) were for-profit, and 1,509 (27 percent) were state and local government-owned community hospitals.<sup>48</sup> While there are nearly four times as many nonprofit hospitals than for-profit, the latter category is growing. In some regions of the country, in a few states where for-profit ownership is concentrated (the South, Southwest, and West), it constitutes one-third to one-half of the hospitals.<sup>49</sup>

The real question is how the differences in basic philosophies affect actual managerial behavior of for-profit versus nonprofit hospitals. For-profits tend to characterize nonprofits as not responsive to changing economic conditions, slow in decision making and lacking in entrepreneurial spirit. Nonprofits see for-profits as corner-cutters, predatory, and unconcerned with community health needs.<sup>50</sup> Nonprofits tend to take financial risks

to avoid failure, while for-profits are more aggressive, taking risks to achieve greater financial gain.<sup>91</sup> The economic unknown is whether nonprofit ownership lends itself to lower production costs since the hospital does not have to pay dividends to its stockholders or, instead, are the incentives faced by the management such that nonprofit hospitals are poorer performers?<sup>92</sup> While all of these observations may have an intuitive appeal, quantitative studies can offer more specific insights.

One of the most comprehensive studies on the effects of ownership and system affiliation on the economic performance of hospitals was done by Renn, Schramm, Watt, and Derzon (1985), analyzing the 1980 Medicare cost report and additional data from a national sample of 561 hospitals.<sup>93</sup> Their conclusions found for-profit hospitals having higher debt-to-asset ratios, greater capital costs as a percentage of operating costs, and less capital-intensive plants. They did not find any consistent case-mix differences among the hospitals. But the clearest pattern that emerged was that in 1980 the similarities among hospitals of the same ownership type were much greater than among hospitals of the same affiliation type (whether they belonged to a hospital system or not). One significant point to remember when considering the implications from this study is that 1980 data were used, and it does not reflect the major financial changes of the DRG

reimbursement policy.

The results from that comprehensive study seem to support the concept that for-profit hospitals, as they seek to maximize their profits, will behave in a more assertive economic manner to achieve that goal, than their nonprofit counterparts. This study will evaluate if that behavior extends to their marketing departments. Does their advertising strategy reflect a calculated, well-planned approach to maximize the impact of their advertising investments and to maximize the potential advantages offered by a more purposeful advertising strategy? Chapter II offers specific hypotheses that will be examined to test that question.

### System Affiliation

While hospital systems have been in existence for decades, they have only gained prominence in the public arena since the late 1960s. Originally developed as apostolic outreaches of the Catholic church, and as a convenient bureaucratic structure for the federal government,<sup>24</sup> today many other reasons make an association with a multi-hospital system a desirable one. Environmental stresses contributing to the growth of systems include excess hospital capacity, rising costs, changes in capital financing, and the in-flow of funds from third party-payers.<sup>25</sup>

In 1986, 2,031 facilities belonged to 164 multihospital systems with a total of 355,859 beds, representing nearly 33 percent of the total general, short-term hospital beds. Characteristics of the systems, in 1986, were:<sup>26</sup>

| <u>Type/Number of Systems</u> | <u># of Units</u> | <u>Number of Beds/System</u> |
|-------------------------------|-------------------|------------------------------|
| Investor-owned (26)           | 967               | 140,289                      |
| Secular nonprofit (67)        | 442               | 71,790                       |
| Catholic (37)                 | 358               | 85,035                       |
| Other religious (20)          | 158               | 35,837                       |
| Public (14)                   | 106               | 22,908                       |

The main issue is how the decision-making powers of the system are determined, either through corporate ownership, or through individual managerial control.

The main advantage of belonging to a hospital system is financial. Theoretically, it is more cost-effective to operate several hospitals than a single one. These cost

savings can come about in a number of ways:<sup>27</sup>

1. Improved access to capital, which reduces the cost of replacement, expansion, or construction of new facilities--this allows a buffer for current operations by providing a less costly line of credit to fund existing obligations,
2. Greater ability to diversify services, thereby allowing more comprehensive product differentiation for capturing all market segments--particularly target markets where there is high marginal revenue,
3. Increased efficiency from sharing facilities, equipment, and personnel, thereby maximizing the return on investment in these assets,
4. Improved economies of scale because mass purchasing allows hospitals to produce services at lower costs.

The potential for economies of scale remains one of the strongest arguments for system membership. Economies are possible in different areas such as access to capital markets, lower interest costs on debt, volume discounts on supplies, advertising for all specialties and services offered by an organization, lower malpractice premiums, and lower data processing costs.<sup>28</sup> In the past, with regulatory and financing methods primarily controlling the structure of the industry, the benefits of economies of scale were blunted--not so in the current environment.

These proposed advantages can be achieved through both vertical and horizontal growth. With increasing competitive forces, sometimes it is the development of vertical ties to other health-related businesses that will contribute the most growth to the overall system. Looking at the eight largest investor-owned hospital corporations in 1983,

the following pattern of vertical integration emerged:<sup>22</sup>

426 acute care hospitals  
 272 long-term care units  
 234 hospital management contracts  
 163 medical office buildings  
 103 pharmacies  
 102 psychiatric hospitals  
 89 ambulatory care centers  
 34 alcohol or substance abuse centers  
 38 home health agencies  
 62 dialysis centers  
 32 clinics  
 3 radiology units  
 2 medical laboratories  
 1 freestanding diagnostic center

The actual financial advantages of system ownership have not proven as unequivocally successful, at least in the financial arena, as the theoretical literature would seem to suggest. Eli Ginzberg, in a 1988 article for The New England Journal of Medicine, claims that the for-profit chains have never gained the predicted competitive cost advantage.<sup>23</sup> Reasons he cites include pricing policies geared to optimizing their profits, acquisition policies to increase market share, the propensity for large corporations to accumulate excessive staff, and the fact that hospital care is a local service, with labor accounting for 50 to 60 percent of the total costs, which limits the potential gain from economies of scale.

The potential benefits offered by economies of scale<sup>24</sup> may well be very applicable to advertising. For example, the system's production facilities can be centralized and the level of staff expertise refined. Campaigns

that are developed for a hospital in one area can perhaps be altered to fit other similar situations. And although the market research results would be unique to each community, the knowledge of effective information gathering techniques can be shared. For these reasons, as well as the overall ones cited above, the advertising behaviors of system-affiliated hospitals should be more purposeful and well-reasoned than that of freestanding hospitals.

1. Steven Steiber, "Advertising Cuts Represent Marketing Shakeout," Hospitals, (Nov., 20, 1988), p. 46.
2. Mark S. Albion and Paul W. Farris, The Advertising Controversy: Evidence on the Economic Effects of Advertising, (Boston: Auburn House Publ. Co., 1981), p. 183.
3. Ibid., p. 191.
4. Paul J. Feldstein, The Politics of Health Legislation (Ann Arbor, Mich.: Health Administration Press Publications, 1988), p. 128.
5. Ibid.
6. Paul J. Feldstein, Health Care Economics (New York: John Wiley & Sons, 1988), pp. 33-35.
7. Feldstein, Health Care Economics, p. 35.
8. Steven R. Eastaugh, Medical Economics and Health Finance (Dover, Mass.: Auburn House Publishing Co., 1981), p. 133.
9. Daniel R. Waldo, Katherine R. Levit, and Helen Lazenby, "National Health Expenditures, 1985," Health Care Financing Review, Vol. 8, (Fall 1986), Table 1, p. 13.
10. Everett A. Johnson and Richard L. Johnson, Hospitals Under Fire (Rockville, Maryland: Aspen Publications, 1986), p. 11; Feldstein, Health Care Economics, p. 247.
11. "Company Practices in Health Care Cost Management," Hewitt Associates, 1984.
12. Feldstein, The Politics of Health Legislation, p. 136.
13. Hospital Statistics (Chicago: American Hospital Association, 1984).
14. Feldstein, Health Care Economics, p. 312.
15. Ibid.
16. Feldstein, The Politics of Health Legislation, p. 131.
17. Ibid., pp. 136-137.
18. American Medical Ass'n, 94 F.T.C. 701 (1979), aff'd as modified, 638 F. 2d 443 (2d Cir. 1980), aff'd by an equally divided Court, 455 U.S. 676 (1982) ("AMA").

19. William Rial, "Should the FTC Regulate American Medicine?" National Journal (Sept. 11, 1982), pp. 1576-77.
20. Feldstein, Health Care Economics, p. 248.
21. Sunny G. Yoder, "Economic Theories of For-Profit and Not-for-Profit Organizations," from For-Profit Enterprise in Health Care, W. McNerny, editor, (Washington, D.C.: National Academy Press, 1986), p. 19.
22. Mark V. Pauly and Kathryn M. Langwell, "Research on Competition in the Market for Health Services: Problems and Prospects," Inquiry 20 (Summer 1983), pp. 142-143.
23. W. McNerney, p. 10.
24. Jeffery A. Alexander and Terry L. Amburgey, "The Dynamics of Change in the American Hospital Industry: Transformation or Selection?" Medical Care Review 44:2 (Fall 1987), p. 279.
25. Taken from Hackley Hospital Organizational Chart, Muskegon, Michigan, 7/8/88.
26. Bradford Gray, For-Profit Enterprise in Health Care, Bradford Gray, editor. (Washington, D.C.: National Academy Press, 1986), p. 13.
27. Tim Garton, "Marketing Health Care: Its Untapped Potential." In Health Care Marketing: Issues and Trends, Philip D. Cooper, ed. (Germantown, MD: Aspen Systems Corp., 1979), p. 65.
28. Lauren Oliver Strach, The Marketing of Hospital Care in Muskegon, Michigan: A Case Study, Preliminary Examination #2, (Graduate Studies in Mass Media, Michigan State University, July 1989), p. 55.
29. M.V. Pauly and M. Redisch, "The Not-for-Profit Hospital as a Physicians' Cooperative," American Economic Review, 63 (March 1973), pp. 87-99.
30. Luft et al, "Hospital Behavior in a Local Market Context," p. 219.
31. Philip Kotler and Roberta N. Clarke, Marketing for Healthcare Organizations, (Englewood Cliffs, NJ: Prentice-Hall Pub., 1987), p. 5.
32. Everett A. Johnson and Richard L. Johnson, Hospitals in Transition (Rockville, MD: Aspen Pub., 1982), p. 12.

33. Albion and Farris, p. 8.
34. Therese Droze, "Marketing's Role Still Unclear, Undefined," Hospitals (Sept., 20, 1988), p. 75.
35. Feldstein, Health Care Economics, p. 320.
36. William S. Comanor and Thomas A. Wilson, "The Effects of Advertising on Competition: A Survey," Journal of Economic Literature 17 (June 1979), 453-476; Joe S. Bain, Barriers to New Competition (Cambridge, Mass.: Harvard University Press, 1956).
37. Albion and Farris, p. 67-68.
38. P. Nelson, "Advertising as Information," Journal of Political Economy, 81 (July-August, 1974), 729-745; "The Economic Consequences of Advertising," Journal of Business, 48 (April 1975), pp. 213-241.
39. L. Barry Coatslo, "Antitrust Enforcement in Health Care," The New England Journal of Medicine, 313 (Oct. 3, 1985), p. 902.
40. Feldstein, Health Care Economics, p. 322.
41. Feldstein, p. 320.
42. Lee Benham and Alexandra Benham, "Regulating Through the Professions: A Perspective on Information Control," Journal of Law and Economics (October 1975).
43. John E. Kwoka, Jr., "Advertising and the Price and Quality of Optometric Services," American Economic Review, 74 (1) (March 1984), p. 213.
44. Ibid.
45. Ibid., p. 322.
46. Kari Super, "Hospitals Will Favor 'Hard-Sell' in Advertising, Experts Predict," Modern Healthcare, (January 3, 1986), p. 74.
47. Ibid.
48. Don Schultz, Dennis Martin, and William Brown, Strategic Advertising Campaigns, (Lincolnwood, Ill.: NTC Business Books, 1987), p. 342.
49. Trevor Fisk, Advertising Health Services: What Works--What Fails, (Chicago: Pluribus Press, 1986), p. 44.

50. Barbara Bellman Alpern, Reaching Women, (Chicago: Pluribus Press, 1987), p. 23.
51. Schultz et al, p. 342
52. John Burnett, Promotion Management, (St. Paul, Minn.: West, Pub., 1984), p. 362.
53. John Rossiter and Larry Percy, Advertising and Promotion Management, (New York: McGraw-Hill Pub., 1987), pp. 396-397.
54. Burnett, p. 331.
55. Schultz, et al, p. 343.
56. Donald Evanston, "Media Mix--Do We Practice What We Preach?" Journal of Advertising Research, 24 (5) (Oct/Nov 1984), p. I-4.
57. David Nylen, Advertising, (Cincinnati: South-Western Publ. Co., 1986), p. 294.
58. Richard Caves, American Industry: Structure, Conduct, and Performance. 6th Edition (Englewood Cliffs, N.J.: Prentice-Hall, 1987), pp. 14, 17, 58-66.
59. Ibid., p. 64.
60. Edward Hastings Chamberlin, The Theory of Monopolistic Competition, 8th edition (Cambridge, Mass.: Harvard University Press, 1962).
61. Ibid., pp. 133-134.
62. Caves, p. 58.
63. Ibid., p. 69.
64. Robert B. Ekelund and David S. Saurman, Advertising and the Market Process: A Modern Economic View, (San Francisco: The Pacific Research Institute for Public Policy, 1988), p. 23.
65. Harold S. Luft, et al, "Hospital Behavior in a Local Market Context," Medical Care Review, 43 (Fall 1986), p. 223.
66. Ibid.
67. Keith Cowling, John Cable, Michael Kelly and Tony McGuinness, Advertising and Economic Behavior, (London: The Macmillan Press, Ltd., 1975), p. 10.

68. Baumol, p. 58.

69. Richard J. Arnould and Lawrence M. DeBrock, "Competition and Market Failure in the Hospital Industry: A Review of the Evidence," Medical Care Review, 43:2 (Fall 1986), p. 267.

70. Harold S. Luft and Susan C. Maerke, "Competitive Potential of Hospitals and Their Neighbors," Contemporary Policy Issues, 3 (Winter 1984-1985), pp. 89-102.

71. Harold S. Luft, et al, p. 237.

72. Ibid.

73. Robert A. Musacchio, Stephen Zuckerman, Lynn E. Jensen, Larry Freshnock, "Hospital Ownership and the Practice of Medicine: Evidence from the Physician's Perspective," from For-Profit Enterprise in Health Care, p. 174.

74. Luft and Maerki, pp. 89-102.

75. Steven Steiber, Steiber Research Group, interview, June 1989.

76. Luft and Maerki, pp. 89-102.

77. Feldstein, Health Care Economics, pp. 226-229.

78. Bradford H. Gray, For-Profit Enterprise in Health Care, (Washington, D.C.: National Academy Press, 1986), p. 6.

79. Ibid.

80. Oliver Williamson, The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm, (Englewood Cliffs: Prentice-Hall, 1964), pp. 1-140.

81. William J. Baumol, Business Behavior, Value and Growth, 2nd ed. (New York: Harcourt, Brace & World, Inc., 1967), pp. 45-52.

82. Robin Marria, The Economic Theory of "Managerial" Capitalism, (New York: The Free Press of Glencoe, 1964).

83. Richard M. Cyert and James G. March, A Behavioral Theory of the Firm, (Englewood Cliffs: Prentice-Hall, 1963), pp. 26-43.

84. Karen Davis, "Economic Theories of Behavior on Nonprofit, Private Hospitals," Economic and Business Bulletin, 24 (Winter 1972), pp. 1-13.
85. Mark Schlesinger, Theodore R. Marmor, and Richard Smithey, "Nonprofit and For-Profit Medical Care: Shifting Roles and Implications for Health Policy," Journal of Health Politics, Policy and Law, 12 (Fall 1987), p. 444.
86. C. Bays, "Patterns of Hospital Growth: The Case of Profit Hospitals," Medical Care, 21 (1983), pp. 850-857; J. Kushman and C. Nuckton, "Further Evidence on the Relative Performance of Proprietary and Nonprofit Hospitals," Medical Care, 15 (1977), pp. 189-204; B. Steinwald and D. Neuhauser, "The Role of the Proprietary Hospital," Journal of Law and Contemporary Problems, 35 (1970), pp. 817-838.
87. Hospital Statistics: Data from the American Hospital Association 1986 Annual Survey, (Chicago: American Hospital Association, 1987), Table 5C.
88. Hospital Statistics, 1988 edition, (Chicago: American Hospital Association), Table 5A.
89. McNerney, p. 184.
90. Johnson and Johnson, p. 329.
91. Ibid., p. 15.
92. Feldstein, Health Care Economics, p. 226.
93. Steven C. Renn, Carl J. Schramm, J. Michael Watt, and Robert A. Derzon, "The Effects of Ownership and System Affiliation on the Economic Performance of Hospitals," Inquiry, 22 (Fall 1985), pp. 219-236.
94. Johnson and Johnson, pp. 349-350.
95. Diana Barrett, Multihospital Systems, (Cambridge, Mass.: Oelgeschlager, Gunn, and Hain, Pub., Inc., 1980), p. 6.
96. "1987 Multi-Unit Provider's Survey," Modern Healthcare (June 5, 1987), p. 52.
97. Howard L. Smith and Richard Reid, Competitive Hospitals, (Rockville, Md.: Aspen Publications, 1986), p. 132.
98. Feldstein, The Politics of Health Legislation, p. 142.

99. W. McNerney (ed.), For-Profit Enterprise and Health Care, (Washington, D.C.: National Academy Press, 1986), p. 40.
100. Eli Ginzberg, "For-Profit Medicine," The New England Journal of Medicine, 319, 12 (Sept. 22, 1988), p. 758.
101. Feldstein, Health Care Economics, p. 238.

## CHAPTER II

### HYPOTHESES OF ADVERTISING BEHAVIOR

The purpose of this study is to examine how certain elements of market structure, ownership, and system affiliation effect the advertising behavior of hospitals. In the previous chapter a review of the literature examined how those elements might interact to affect advertising behaviors. In this chapter the specific behaviors will be discussed and hypotheses developed relating the structural elements and the behavioral elements of hospital advertising. The primary focus will be on the advertising behaviors themselves in light of the theoretical underpinnings reviewed in Chapter I that serve as a background.

#### Advertising Expenditures

The most visible element of the marketing mix is the advertising component. Those hospitals taking a very assertive stance in their marketing will have a larger amount of funds spent on advertising than their less aggressive counterparts. This study proposes that this spending behavior can be accounted for, in part, by market structure, ownership, and system affiliation.

In more competitive markets there will be a greater pressure to inform the consumer of hospital selection

options. Through advertising, hospitals will attempt to differentiate themselves by informing the consumers of the specific services they offer and the unique benefits they provide. There will also be the challenge to respond to and match the behavior of the advertising market leader. If one or two hospitals are making a major commitment to advertising in a local region, it is very difficult for the other hospitals to ignore that lead.

Also, it is proposed that for-profit ownership, with its typical profit-maximizing behavior,<sup>1</sup> will seek to utilize any opportunity to increase its financial position. Advertising offers a way of attracting patients by going directly to the consumers, bypassing the traditional physician-referral basis for admission. This contrasts with the utility-maximizing approach of the nonprofit hospital that seeks to serve a broad financial spectrum of patients, to fulfill the objective of offering quality healthcare to the community. In other words, the theories of competition would indicate that one type of behavior, a more competitive type of behavior, would be more in line with traditional competition, however, the nonprofit hospital (the most prevalent type of hospital), has been less inclined to follow those behaviors.

It is also proposed that system-affiliated hospitals will have a higher level of advertising expenditures than freestanding hospitals, because as members of a system, they

have the potential to benefit from the knowledge gained from the experiences of their many hospitals which can be drawn upon by corporate planners. Methods for conducting market research, investigation into specific copy appeals, and more extensive production facilities are just a few of the benefits that could be gained from this wealth of information. Armed with this knowledge, the effect of their advertising dollars should be more carefully planned, which might lend itself to increased investment in advertising.

H1: As competition in local markets increases in intensity, hospitals will have a higher level of advertising expenditures than in less competitive markets.

H2: For-profit hospitals will have a higher level of advertising expenditures than will nonprofit hospitals.

H3: System-affiliated hospitals will have a higher level of advertising expenditures than will freestanding hospitals.

#### Media Mix

With large amounts of money being spent on advertising, the bottom-line question is how it should be spent. There are five basic choices among broad media types--television, radio, newspaper/magazine, billboards, and direct mail. The decision on how to allocate the budget among these alternatives must be made before specific vehicles can be selected and the message developed. Different hospitals will decide upon different media use patterns. Media planning today is increasingly complex, much more so than it was five or ten years ago.<sup>2</sup> Reasons for this include the fact that there

are more media to choose from, and each medium has an increasing number of choices. Also, there is an increasing fragmentation of the audience into demographic segments which further complicates decision-making. Increasing media costs as well as changes in the way advertising is bought and sold are additional reasons why the media planning process requires extra thought and attention.<sup>3</sup>

It is predicted that hospitals which realize this and have a more planned, purposeful, and well-reasoned advertising strategy--those hospitals in very competitive environments, that are system-affiliated and can benefit from corporate management, and that are for-profit and driven to increase their net return--will have a different media use strategy that will include utilizing a wider diversity of advertising media that is available. They will also show differences in individual media use. Those hospitals with a more planned, purposeful, and well-reasoned advertising strategy will also have more clearly delineated objectives that factor in specific goals in terms of target market, reach, and frequency. (Target market is the demographic audience that is being aimed at, reach is the number of different people or households exposed to an advertising schedule during a specific time frame, and frequency refers to the number of times an advertisement reaches the same household or person.<sup>4</sup>) Typically, all of these needs cannot be met by one medium alone. Advertising

campaigns focused on one medium alone tend to build impressions with only a particular segment of the population--the hardcore users of that medium. By using a broader spectrum of media, those general impressions can be dispersed more effectively.<sup>5</sup> Bovee and Arens, in their text Contemporary Advertising (3rd edition), summarize the benefits to be gained from using a media mix rather than focusing on a single medium:<sup>6</sup>

1. To reach people not reached with only one medium.
2. To provide additional repeat exposure in a less expensive secondary medium after optimum reach is obtained in the first medium.
3. To utilize some of the intrinsic values of a medium to extend the creative effectiveness of the advertising campaign (such as music on radio or long copy in print media).
4. To deliver coupons in print media when the primary vehicle in the media plan is broadcast.
5. To produce synergism, an effect achieved when the sum of the parts is greater than expected by adding the individual parts.

One of the key decisions in any advertising campaign is which media to use. This decision, on the activity which will use up most of the advertising budget, influences who is reached, how they are reached, and what message can be told. While much research is available on the pros and cons of each medium in general,<sup>7</sup> what will be focused on here is their strengths and weaknesses relative to health care communication.

In 1988, U.S. hospitals spent \$1.34 billion on

marketing and advertising combined, with \$686 million being spent on advertising. Of the advertising dollars 62 percent, or \$425 million, was spent on print ads alone. Daily newspapers received 70 percent of all print money, with radio receiving fifteen percent of the hospital ad dollar, followed by direct mail (nine percent) and television (seven percent).<sup>a</sup>

Another study reported the impact of various media from the consumers' perspective.<sup>b</sup> According to the survey, which looked at what type of medium reaches the most consumers, 43.6 percent of the respondents cited television, 32 percent cited newspapers, 10.8 percent hospital brochures, and 13 percent other, including radio, billboards, and magazines.

What specific advantages does each medium have to offer the hospital advertiser? This is a critical question if a wider diversity of media is going to be more desirable.

Local newspapers are an obvious choice for hospital advertising. They provide a broad reach and have the opportunity for frequent repetition. The print format can work with a complex message, giving an interested consumer the opportunity to reread and digest the information, an essential element for complex messages. Newspapers are also one of the best options when a direct response is wanted. People can clip coupons or tear out advertisements with desired telephone numbers or other information.

The downside of the newspaper is that it is too mass a marketing vehicle. Its overall selectivity is geographical (although some segmenting can occur by different sections of the paper, such as sports and the women's sections). Thus, many people may be reached who are not in the target market. Also the reproduction quality varies, so if pictures are a main focus of the advertisement it may not come through as clearly and cleanly as desired.

The other main medium for hospitals, growing in popularity, is direct mail. Used correctly, it can be the most targeted and focused advertising approach of all. Used another way, it can be a method of blanketing every home through a non-selective mail campaign. Mailing lists can be developed, many from the hospital's own records, that drastically reduce wasted coverage. There is no other way to target as effectively. Hospitals should be cautious about using information from patient medical histories before checking the state laws. In many states, using medical histories for marketing purposes is illegal. Only information used with the consumer's consent is permissible.<sup>12</sup> The print quality can be as good as one wants to purchase and longer messages can easily be sent. Response vehicles are also easy to include, even self-addressed, stamped envelopes. A recent survey found that more than 33 percent of U.S. households had received a direct mailing from a health care provider in the last

year.<sup>11</sup>

The downside of direct mail is getting people to attend to the message--to open the envelope. With the growing tide of unsolicited mail that consumers receive, their responsiveness decreases with each additional piece. Many consumers have a negative attitude toward unsolicited "junk mail" and may automatically throw it away.<sup>12</sup> Getting a grabber with a strong pull on an envelope is not easily done. The other disadvantage of direct response is the cost--it is the most expensive medium on a cost-per-exposure basis<sup>13</sup>. Attractive mailing pieces are not inexpensive, and the printing costs make it uneconomical to run a low volume, as the cost per exposure becomes prohibitive.

Television, with its mixture of written and spoken words, visuals, and action, is the medium with the highest impact potential.<sup>14</sup> It can also offer a very broad reach, which is both a strength and a weakness. Broad demographic groups can be targeted by vehicle selection. For a health care advertisement to be effective in a 30-second TV spot, its message must be reduced to a brief, simple proposition with a strong, memorable appeal. Caring, compassion, sensitivity, and a sense of urgency can all be communicated through body language and implication most effectively in a television commercial.<sup>15</sup>

However, a strong negative is the relatively high cost

of using television for a local hospital.<sup>16</sup> Not only is there the cost of buying time, but there is also production cost. Television viewers have a highly developed taste for quality commercials in a technical sense, and anything less reflects poorly on the advertiser. Clutter is another problem with television. With so many messages being aimed at the consumer, the tendency to selectively tune them out increases. The context of the television program itself may affect consumer receptivity.

While television, direct mail, and newspapers are the prevalent advertising media for health care, radio and outdoor advertising can also be used to supplement an advertising campaign.

Radio offers the advantages of targeting specific audiences and the use of sound to capture an audience's attention and set a mood. It is also a low cost medium that offers reach, frequency, and selectivity at one of the lowest costs per thousand.<sup>17</sup> Not only are the media costs low, but the production costs are very affordable. Like television, though, radio requires simplification of the basic message--even beyond that of television. And, as with television, the audience must immediately attend to the message or it is gone. Radio is also a poor direct response medium for all of the reasons mentioned.

Outdoor advertising--billboards--is the medium that requires the simplest message. But no other medium offers

as high repetition potential to regular commuters at a relatively low cost. The main advantage of outdoor advertising is as a reminder of the other elements of an advertising campaign over an extended period of time. The location of the sign will determine how potentially effective it may be. For the money, this may be a good supplemental tool for the campaign.

H4: As competition in local hospital markets increases in intensity, hospitals will advertise in a greater diversity of media than hospitals in less competitive markets.

H5: For-profit hospitals will advertise in a greater diversity of media than will nonprofit hospitals.

H6: System-affiliated hospitals will advertise in a greater diversity of media than will freestanding hospitals.

#### Targeted Segments

Advertising campaigns directed towards the patient/consumer have become an established part of a hospital's marketing mix. But for every message received that successfully alters the hospital usage pattern of a given consumer, only one person or family is affected. A potentially more effective way of getting results from an marketing/advertising campaign in this unique industry is to target those consumers or groups that control larger segments of the population, such as businesses/employers, physicians, and other referrers with the potential to send larger blocks of patients to the hospitals.

Businesses are increasingly aware of the effect of

raising health costs on their labor costs.<sup>10</sup> Merely to maintain the same level of health benefits that firms have been offering may require employees to forego larger wage increases. Businesses have responded in two ways to the rising costs. The first is the increase of company self-insurance programs and the second is the growth of prepaid health plans such as HMOs.<sup>11</sup> These businesses have a very strong economic incentive to shop around for those hospitals that can provide a given quality product at the lowest price.<sup>12</sup> Hospitals may also seek to entice the business market through the offering of preventive care and early disease diagnosis programs that will keep their employees healthier.<sup>13</sup>

In addition, those physicians that have admitting privileges at more than one hospital in a competitive area have choices as to where they will send a patient who does not have a strong preference for one specific hospital (assuming that a patient has not been positively affected by the consumer-oriented advertising efforts of the hospitals). By targeting specific campaigns to these physicians, the hospital may affect a large pool of patients. Referral professionals are a market segment that specialty and tertiary care hospitals are finding exceedingly important.<sup>14</sup> Of course, these physicians are very discriminating in their selection, not likely to have such an important decision swayed by mere marketing pressures, but specific

campaigns that address relevant concerns may have a stronger potential for a significant impact. In a study reported by Hospitals magazine, marketing directors were predicting that for 1988 their budgets for physician marketing activities would increase by 83 percent over the previous year.<sup>23</sup>

Other referrers are hospitals that do not offer the same services that the target hospital does, so the smaller (usually) hospital, will refer patients requiring additional health care (when it is not being done by a physician) to another provider for those needed services. The purpose of directing marketing to those hospitals then, is to encourage them to send more referrals to the specific hospital, rather than to the competition.

Developing campaigns that would effectively achieve the desired results for these three non-direct consumer markets represents a level of knowledge beyond that which typically is run for the mass consumer. Designing effective health care programs for the corporate market involves careful planning and a trained staff that can identify the specific needs of the target group while still providing for a return on investment.<sup>24</sup> Therefore, this study proposes that those hospitals that are in a very competitive environment, that are system-affiliated and can benefit from corporate management, or that are for-profit and driven to increase their net return, will be more likely to target a larger percentage of their marketing budget to the non-direct

consumer market.

H7: As competition in local markets increases in intensity, hospitals will spend a larger percentage of their marketing budget targeting non-direct consumer segments (employers, physicians, and other referrers) than hospitals in less competitive markets.

H8: For-profit hospitals will spend a larger percentage of their marketing budget targeting non-direct consumer segments (employers, physicians, and other referrers) than will nonprofit hospitals.

H9: System-affiliated hospitals will spend a larger percentage of their marketing budget targeting non-direct consumer segments (employers, physicians, and other referrers) than will freestanding hospitals.

#### Market Research Expenditures

Market research information helps with the problem of rational decision making under conditions of uncertainty and offers factual guidance to the marketing executive.<sup>25</sup> Market research addresses questions in the areas of market potential, market share, and market characteristics.<sup>26</sup> It serves to complete the loop of communication from the seller back to the marketer, and to provide feedback to the marketer on the effectiveness of the product and promotion messages. Lehman, in his text Market Research and Analysis (2nd edition), summarizes the benefits that can be gained from this activity:<sup>27</sup>

Marketing research thus exists to serve the information needs of both operations and strategy development. At its most basic level, monitoring sales and market shares provides data for evaluating operations. More imaginative research might focus on alternative program evaluation (e.g., advertising testing). Finally, the most ambitious types of marketing research attempt to assess future markets in terms of customer preferences and competitive actions.

Market research can be useful at many stages of the advertising cycle. There are three basic types of research, with three distinct purposes.<sup>20</sup> The first is developmental research, which is exploratory in nature. It helps uncover various options and identify important factors for further consideration. Developmental research is basically a scouting activity. Examples would include focus groups, unstructured interviews, and observational techniques.<sup>20</sup> The second kind of research is confirmatory research, which is used to explore how sound various options are. Examples of this would include surveys, behavioral laboratory tests, and field experiments.<sup>20</sup> The final kind of research is evaluative research, which examines the effectiveness of certain strategies and tactics after they have been implemented. Examples of this type of research would include day-after recall and other brand recognition measures, customer satisfaction surveys, and brand loyalty studies.<sup>21</sup> Using these types of research one can evaluate the effectiveness of a specific strategy, but it does not tell one whether it was the best strategy available.

The challenge for hospital marketers is to know

enough about the potential uses and limitations of the various kinds of market research so they can get the right information at a reasonable cost and use it intelligently.<sup>22</sup> It was estimated in 1982 that most health care organizations spent less than 1.25 percent of their budgets on recognized marketing research activities, compared to ten times that amount in many industries.<sup>23</sup>

Because the investment in and intelligent use of market research seems more likely to be associated with those hospitals with a more planned, purposeful, and well-reasoned approach to advertising, this study proposes that those hospitals in a very competitive environment, that are system-affiliated and can benefit from corporate management, and that are for-profit and driven to increase their net return will be more likely to spend higher amounts of money on market research.

H10: As competition in local markets increases in intensity, hospitals will spend more money on market research than in less competitive markets.

H11: For-profit hospitals will spend more money on market research than will nonprofit hospitals.

H12: System-affiliated hospitals will spend more money on market research than will freestanding hospitals.

1. Feldstein, Health Care Economics, pp. 226-229.
2. Courtland L. Bovee and William F. Arens, Contemporary Advertising, 3rd edition, (Homewood, Ill.: Irwin, 1989), p. 373.
3. Ibid., pp. 373-375.
4. Ibid., pp. 378-379.
5. Schultz et al, p. 342.
6. Bovee and Arens, p. 400.
7. Any basic advertising or advertising media text offers a discussion of the various media and the qualities of each. Two such texts would be: Contemporary Advertising, by Courtland L. Bovee and William F. Arens, 3rd edition, (Homewood, Ill.: Irwin, 1989), pp. 408-521; and Advertising Media, by Anthony F. McGann and J. Thomas Russell, (Homewood, Ill.: Irwin, 1981), pp. 107-274.
8. Steven Steiber, "National Hospital Ad Expenditures Plateau," Steier Research Group, press release, Nov. 20, 1988.
9. Therese Drose, "Consumers Rate Health Care Advertising," Hospitals (Jan. 5, 1988), p. 29.
10. Linda Perry, "Lack of Follow-Up Can Cost Hospitals Billions--Report," Modern Healthcare (Oct. 14, 1988), p. 38.
11. Fisk, p. 127.
12. Bovee and Arens, p. 495.
13. Bovee and Arens, p. 489.
14. Robin MacStravic, Managing Health Care Marketing Communications, (Rockville, MD.: Aspen Publ., 1986), p. 216.
15. Ibid., p. 217.
16. Ibid., p. 218.
17. Bovee and Arens, p. 417.
18. Feldstein, Health Care Economics, p. 169.
19. Ibid.
20. Ibid., p. 314.

21. Philip Kotler and Roberta N. Clarke, Marketing for Healthcare Organizations, (Englewood Cliffs, N. J.: Prentice-Hall, 1987), p. 282.
22. Adrian L. Roberg, "How to Develop a Successful Marketing Program to Increase Referrals from Physicians and Other Practitioners," from Responding to the Challenge: Health Care Marketing Comes of Age, editor, Philip D. Cooper, (American Marketing Association, 1986), p. 62.
23. Therese Droese, "Physician Marketing Budgets to Grow in '88," Hospitals, (Jan. 20, 1988), p. 32.
24. Paul Tejada and M. Susan Bennett, "Marketing to Corporations--The Agony and the Ecstasy," in Building Marketing Effectiveness in Healthcare, D. Terry Paul, editor, (American Marketing Association, 1985), pp. 50-52.
25. Paul E. Green and Donald S. Tull, Research for Marketing Decisions, 4th edition, (Englewood Cliffs, N.J.: Prentice-Hall, 1978), p. 4.
26. Ibid, p. 6.
27. Donald R. Lehman, Market Research and Analysis, 2nd edition, (Homewood, Ill.: Irwin, 1985), p. 7.
28. Gerald Zaltman and Christine Moorman, "The Management and Use of Advertising Research," Journal of Advertising Research (Dec/Jan, 1988/1989), p. 12.
29. Ibid.
30. Ibid.
31. Ibid.
32. Kotler and Clarke, p. 170.
33. Roberta N. Clarke and Linda J. Shyavitz, "Market Research: When, Why, and How," Health Care Management Review (Winter 1982), p. 33.

## CHAPTER III

### STUDY METHOD

#### Data Collection

The data on the advertising behavior of hospitals was collected using a questionnaire as the main collection tool. The data for this project was collected by The Steiber Research Group (SRG), Chicago, Illinois. The SRG is a team of experts in marketing and research specializing in health services market research. Steven Steiber, Ph.D., president of SRG, was formerly senior vice-president for Research and Development for the Gallup Organization. Steiber serves on the editorial board of the Journal of the American Medical Association, the Journal of Healthcare Marketing, and Healthcare Marketer.

#### Sampling Scheme/Subjects

The data is from a national panel of 250 hospitals, using a stratified, random sampling procedure, controlling for bed size and geographic region (using the nine U.S. census regions). Using a list of all community hospitals in the contiguous 48 states (excluding Alaska and Hawaii), the hospitals were selected randomly using a statistical table for random number generation from a final population of 4368<sup>1</sup>. Hospitals continued to be selected until the

numbers are representative of the national pool, in terms of bed size and geographic region. The same panel of hospitals is then polled by SRG quarterly for one year, with an average response rate of 200 hospitals. At the beginning of the next year, a new sample is selected. Telephone surveys were conducted, with the responses coded by telephone number. Quarterly sampling has been done since 1986. Each survey has the same basic questions about advertising and marketing behavior, with additional questions on various topics being asked on a one-time-only basis.

The average response rate of eighty percent is explained by several factors. First, the polling is done over a seven-to-ten day period. If the director of marketing is not available during that period, then that hospital will not be included, since much of the information is so specific that it would be difficult to obtain accurate responses from a subordinate. Second, since the panel is maintained throughout the year, if any hospitals drop out for some reason during the year, they are not replaced. Therefore, by the fourth quarter polling there would be the fewest respondents of the year. Third, there might be some responses that are excluded for various reasons involving coder error.

The purpose of the quarterly study is to track advertising and marketing expenditures in the health care industry. Crosstab comparisons are made and general trends

identified. The results are reported quarterly in Hospitals magazine, the official magazine of the American Hospital Association (AHA), which commissions the basic study. The high visibility, combined with sponsorship by the AHA, accounts for the high response rate of the surveyed hospitals. Beyond the questions of marketing behavior done for the AHA, SRG has clients that contract with them to research additional questions of various aspects of the industry. These areas of more proprietary concern have included such topics as the market for hospital newsletters, the perceived measure of quality in hospital service, and the perception of hospital consulting firms.

This research was designed as one of the extra studies. Contact was made in February 1989 and the offer was made that SRG would schedule the questions for this study (free of charge) during the summer of 1989. The actual data was collected in July 1989.

Reliability of this survey can be measured in a number of ways. These include computing test-retest reliability (demonstrated by the quarterly sampling done with similar instruments since 1986), assessing how well the sample represents the population (specific comparisons given in Chapter IV), and the determining if the indicators are stable over time (as was seen when the researcher examined the results of previous surveys. For example, there were changes in some categories, such as percent of advertising

budget spent on television, but the changes were reasonable ones that showed a logical progression over time, not sharp, contradictory differences that were not explainable). There is also significant face validity in the survey. Face validity is one aspect of content validity, where the instrument "looks like" it measures what it is intended to measure.<sup>2</sup> The high response rate of this survey helps to guard against selective response bias. If there had been a large number of nonrespondents it would be possible that a particular group with some common characteristics just didn't want to participate in the survey. An example might be if all religious hospitals failed to respond because of the secular nature of this research. Then any results would be flawed since a large group of hospitals would have been excluded and thus the study would not be able to account for behaviors of those hospitals. And, because it is a telephone survey, the likelihood of having the correct respondent (the highest ranking marketer--the marketing director) answering the survey is increased, since he/she may not have the time for a personal interview, nor the inclination to respond to a mail survey which is more easily delegated to an assistant.<sup>3</sup>

Pre-testing of the questions was not done because of the nature of the quarterly survey. Due to analogous research, it was valid to assume familiarity by respondents and to anticipate response consistency. This was the third

time the panel respondents had answered a quarterly survey, so they were familiar with the format of the questions. Also, the questions developed for this study were framed in relation to the question style previously used in the questionnaire. A final check was done in the early phase of collecting the data. If there had seemed to be a problem with the phrasing or categorizing of any of the questions, they could have been corrected at that point. However, this was not necessary because the questions developed for this study were of a relatively straightforward nature that did not leave much room for ambiguous interpretation, since they were not dealing with issues of judgment, practices, and attitudes, but rather were examining objective classifications that were independently verifiable.

#### Operationalization

The specific variables that were studied, based on the earlier discussion, are:

##### Dependent variables\*:

1. advertising expenditures
2. media used (television, radio, newspaper/  
magazine, billboards, direct mail)
3. targeted group (consumers, nonconsumer groups--  
employers, physicians, and other referrers)
4. market research expenditures

Independent variables:

1. system affiliation
2. competition (within a 15-mile radius)  
(number of hospitals)
3. ownership
4. size (authorized beds)
5. hospital average occupancy rate
6. population (within a 15-mile radius)

(\*For the specific levels of measurement used and the questions themselves, see Table 1, APPENDIX A, and the discussion in Chapter IV.)

These independent variables have been selected to determine the most important factors in predicting the dependent variables. The roles of system affiliation, competition, and ownership have already been discussed. The purpose in examining the average occupancy rate is to get a feel for how many empty beds the hospital has relative to the national average. One would think that the lower the average occupancy rate, the more active the promotional activities would be. In 1985, the average occupancy rate for short-term general hospitals was 64.8 percent.<sup>4</sup> It may be that those hospitals with a lower average occupancy rate will be more motivated to advertise. Size is important to consider to see how behaviors differ based on this variable and to control for it in the analysis. One would expect to see some differences in the advertising behaviors of large and small hospitals. Population is another variable that is important to consider and control for since one would expect there to be more hospitals to be competing in areas with higher populations. The most competitive

areas would be where there are more hospitals relative to the area population.

Some operationalizing assumptions made were that competition can be measured by tallying the number of competitors within a 15-mile radius, that the competitors, controlling for size, are perfect substitutes for each other, and that the media options in the markets are equal.

The discussion of measuring a competitive market using a 15-mile radius measure was presented in the literature review of Chapter 1. The assumption that hospitals within a given geographic region are perfect substitutes is the broadest assumption. Hospitals are multiproduct firms offering, in addition to varying inpatient services and amenities, a wide variety of out-patient, education, training, and community services.<sup>5</sup> With a sample of 200-250 hospitals, and controlling for size and competition, it is assumed that these differences will equal out. Competition is a function of the number of firms in a market and the nature of the product (and/or service). But since this study did not evaluate the nature of the product, the correlation between the number of firms and the perception of the nature of the product is accepted--that is, the more firms, the more product competition exists.

The assumption that the media options in the markets are equal is another broad assumption, but one that seems reasonable given the sample size and the representative

sample distribution across national regions. With the measure of competition using a 15-mile radius definition, it would have been difficult to identify the various media available to the hospitals in that limited region and to correlate the data collected. At this stage of exploratory research it is not yet critical to do so. If the hypotheses concerning media use are supported then this would be a good area for further research.

#### Data Analysis

The primary statistical test that was used to analyze the data was multiple regression where the relationship between one dependent variable and multiple independent variables is examined. These straightforward regressions were done to test the hypotheses with two exceptions. For the groups targeted and the measure of media mix diversity further transformations were needed. These will be discussed first, and then the statistical implications of using multiple regression will be addressed.

Two approaches were taken to measure the groups targeted. First, a regression analysis was done on the first dependent variable of groups targeted--direct consumer--with the independent variables. Second, a regression analysis was done on the dependent variable--non-direct consumer groups--with the independent variables. To create the variable "non-direct consumer groups", the responses for

the percentage of budget spent on employers, physicians, and other referrers were summed so that the overall percentage of budget spent on these non-direct consumer groups could be determined.

One other transformation was necessary in order to test the hypotheses. That was the development of a measure of media mix diversity. The measure had to reflect the number of media that a hospital was advertising in as well as the concentration of the budget in each particular medium. In other words, what was needed was a diversity measure that would reflect both spread and concentration. No existing measure was found that would do this, so an attempt was made to develop one to fit the needs of this study. Composite measures are very frequently used in social science research when single indicators are not adequate to capture a complex concept.<sup>6</sup> In this study capturing the concept of media diversity was a complex problem, but it was important to try and develop a measure of diversity since there was no other way to adequately address the media mix used by hospital advertisers.

This measure was developed by assigning a value of one for each of the five media that a hospital could be using--television, radio, newspaper/magazine, billboard, and direct mail. Each hospital then had a score ranging from one to five. Next, the highest concentration of any medium used by an individual hospital was divided by this score to arrive

at the new media mix diversity measure. For example, if a hospital was using all five media, but the single largest percentage of its budget was 50 percent spent on television, then its media mix diversity measure would be a ten (50 divided by five). Using this scale, the highest value could be 100 (100 percent in one medium, 100 divided by one) which would be the least diverse, most concentrated value. Conversely, the lowest value possible would be a four (20 percent in each of the five media, 20 divided by five). These new values were calculated for each case. But, because the values are not linear, a log transformation was done because the distribution differs from the normal.<sup>7</sup> For example, the highest value is 100, but the next highest value theoretically possible is 49 (99 percent in one medium and one percent on another medium, 99 divided by two). This new media mix diversity measure for each hospital, which has the ability to reflect both spread and concentration, was then used in the analysis. This measure was developed despite the fact that developing and validating an index measure without a pre-existing standard is beyond the scope of this study. Typically, experimental research or repeat studies are needed to develop a benchmark measure. The attempt in this study, if nothing else is a first step in that process. There are many problems inherent in the development of any continuum measure, and index construction is not a simple undertaking.<sup>8</sup> With the proposed measure of

media mix the rationale seems logical, but without external validation it may not be as effective in actually measuring differences as hoped. If not, then the individual media use differences between hospitals will take on increased importance. (Discussion of the "best" score for a purposeful and well-reasoned approach to media mix diversity will be deferred until the analysis, when and if the results of the regression are found to be significant.)

To adequately address the questions raised by the research hypotheses some method of multivariate analysis is needed. Multivariate techniques are "...required to adequately study these multiple relationships and obtain a complete, realistic understanding for decision-making."<sup>9</sup>

The primary statistical test used was multiple regression. Multiple regression analysis is a statistical technique that can be used to analyze the relationship between a single dependent variable (the criterion, such as advertising expenditures) and several independent variables (predictors, such as number of hospital competitors, bed size, and ownership type). The objective is to use the several known independent variables to predict the dependent variable, answering the research hypotheses.<sup>10</sup> This technique was used to examine the strength of association between the single dependent variables and several independent variables, to determine which independent variable is the most important in predicting the dependent variable.

This method also controls for the influence of other variables on the two being studied. That is, even though there may be a very high Pearson correlation between any pair of variables, much of that correlation may be related to interactions of other variables that must be controlled for. Pedhauzar puts it this way, "... multiple regression analysis is eminently suited for analyzing the separate and collective effects of two or more independent variables on a dependent variable."<sup>11</sup> Or put another way, "Not surprisingly, the linear regression model...is one of the most popular tools in the marketing researcher's kit."<sup>12</sup> This is one of the reasons multiple regression is appropriate here. The researcher can investigate the relationship between a dependent variable and one or more independent variables with the effect of the other independent variables statistically controlled.<sup>13</sup> Other multivariate techniques such as multivariate analysis of variance or factor analysis were not appropriate to use since this research was not experimental nor was it looking to determine common, underlying factors to describe the interrelationships.

The significance tests associated with multiple regression are based on four assumptions:<sup>14</sup>

1. The sample is drawn at random.
2. Each array of Y for a given combination of X's follows the normal distribution.
3. The regression of Y and X's is linear.
4. All the Y arrays have the same variance.

The statistical assumptions were tested for by examining the data, using such criteria as skewness, kurtosis, and outlying data points. Scatterplots were examined to ensure linearity. Regressions were analyzed with the data as collected, and also, with various transformations, such as log transformations, to see if they improve the squared multiple R. For the dichotomous variables (such as system affiliation and ownership) dummy variable coding was used in the regression equations.<sup>12</sup>

#### Questionnaire

The specific questions asked for this project are in Table 1. For a copy of the entire questionnaire, see Appendix A.

Table 1

## SPECIFIC QUESTIONNAIRE ITEMS

1. (#14)\* What is your advertising budget for 1989?
2. (#3) Thinking about the major advertising media your hospital purchased in second quarter of 1989, what percentage of your advertising dollars were devoted to (if you are not entirely certain, please try an approximation to total 100%):
 

|                      |             |
|----------------------|-------------|
| Television           | Billboards  |
| Radio                | Direct Mail |
| Newspapers/Magazines | Other media |
3. (#27) What is your market research budget for 1989?
4. (#48) Is your hospital a member of a multi-hospital system?
5. (#50) Is your hospital not-for-profit or for-profit?
6. (#54) How many beds are authorized at your hospital?
7. (#55) What is your hospital average occupancy rate for the past twelve months?
8. (#23) What percentage of your total 1989 marketing budget is oriented to:
 

|                           |                 |
|---------------------------|-----------------|
| Consumers                 | Physicians      |
| Business/employer markets | Other referrers |
9. (#56) How many other hospitals are located within 15 miles of your institution?
10. (#62) What is the estimated population in the 15 mile range?

\* The numbers in parentheses represent the corresponding number on the actual questionnaire, which is attached.

1. Hospital Statistics, American Hospital Association, 1988, Table 1.
2. Jum C. Nunnally, Psychometric Theory, 2nd edition, (New York: McGraw-Hill Book Co., 1978), p. 111.
3. Paul E. Green and Donald S. Tull, Research for Marketing Decisions, (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1978), p. 149.
4. Feldstein, Health Care Economics, p. 312.
5. Feldstein, Health Care Economics, p. 238.
6. Earl Babbie, The Practice of Social Research, 4th edition, (Belmont, Calif.: Wadsworth Publ. Co., 1986), p. 361.
7. Tabachnick and Fidell, p. 84.
8. Babbie, p. 363.
9. Joseph F. Hair, Jr., Rolph E. Anderson, Ronald L. Tatham, and Bernie J. Grablovsky, Multivariate Data Analysis, (New York: Macmillan Publ. Co., 1984), p. 4.
10. Ibid., p. 35.
11. Elazer Pedhauzer, Multiple Regression in Behavioral Research, 2nd edition (New York: Holt, Rinehart, and Winston, 1982), p. 6.
12. Green and Tull, p. 304.
13. Tabachnick and Fidell, p. 124.
14. Norman H. Nie, et al, Statistical Package for the Social Sciences, 2nd edition (New York: McGraw-Hill, 1975), p. 341.
15. Tabachnick and Fidell, pp. 7-8.

## CHAPTER IV

### RESULTS

In this section the descriptive statistics relating to the research questions will first be descriptively analyzed using somewhat collapsed categories for general reporting purposes to convey where the majority of the use patterns are. This collapsing was done by simply summing the cross-tabs results of one or more categories to get a richer descriptive flavor. (For example, if hospitals with 1-2 competitors use 100 percent of their advertising budget on newspapers, and so do hospitals with 3-4 competitors, then for reporting purposes to describe the basic results these two categories, 1-2 and 3-4, would be collapsed and reported as hospitals with 1-4 competitors.) This will include a comparison of the sample with the national population, when that information was available. Appendices are also provided which, in a cross-tabulation form, present a complete summary of the data (with non-collapsed categories). Then, a discussion of the conditioning matrices (such as missing data, multicollinearity, violations of normality) will follow. Finally, inferential statistics relating to the hypotheses will be presented.

### Summary of Independent Variables

#### Competition

Competition was measured by evaluating the number of competitor hospitals within a 15-mile radius of the responding hospital. The range of responses went from zero to 30, with a mean response of 5.1 hospitals and a standard deviation of 6.7 hospitals.

#### Ownership

Since ownership type (for-profit or nonprofit) did not represent interval or ratio data, but rather was a qualitative variable, it was coded as a dummy variable which indicated the presence or absence of that quality. Dummy variables are a way of quantifying the attribute.<sup>1</sup> Of the 196 respondents, 159 (81 percent) were nonprofit and 36 (18 percent) were for-profit (the remaining single response was a "no answer"). These numbers are representative of the national population, where 80 percent of the hospitals are nonprofit and 20 percent of the hospitals are for-profit.<sup>2</sup>

#### System Affiliation

Since system affiliation was a yes/no type of question, it was also coded using a dummy variable. Of the 196 respondents, 117 (60 percent) were members of a multi-hospital system and 78 (40 percent) were not. These numbers were not as representative of the national population. On the national level, 38 percent belong to a system, and 62 percent are not system-affiliated.<sup>3</sup> Therefore, the sample

for this study had an overrepresentation of system-affiliated hospitals. This may be due in part to the fact that very few small hospitals (with less than 50 beds) were included in this sample. The very small hospitals may be less likely to be affiliated with a system, and more likely to be a freestanding community owned hospital, than larger hospitals. This overrepresentation should have the effect of accentuating the differences between system-affiliated hospitals and freestanding hospitals. This oversampling of this particular group is not a problem with exploratory research of this nature where the groups being evaluated are sometimes oversampled for to get a more distinct effect.

#### Population

The population range within a 15-mile radius went from 11,500 to 750,000, with a mean response of 213,218 and a standard deviation of 257,870.

#### Size

The size of the hospitals responding, in terms of number of hospital beds, ranged from 25 to 750 beds, with a mean response of 241.6 beds and a standard deviation of 207 beds. Except for either end of the distribution, the comparison to the actual national population was quite close.\*

| <u>Number of Beds</u> | <u>Actual</u> | <u>Sample</u> |
|-----------------------|---------------|---------------|
| less than 50          | 21%           | 4%            |
| 50-99                 | 24            | 27            |
| 100-199               | 24            | 27            |
| 200-299               | 14            | 17            |
| 300-399               | 7             | 9             |
| 400-499               | 4             | 6             |
| 500 +                 | 5             | 11            |

#### Occupancy Rate

The range in responses went from 15 percent occupancy rate to 95 percent, with the average rate being 66 percent. The national average in 1988 was 65.5 percent.<sup>2</sup>

#### Summary of Dependent Variables

##### Advertising Expenditures

Of the 196 respondents, 27 percent of the hospitals did not have a separate budget or spent less than \$25,000 on advertising for the year. For those without a separate advertising budget--six percent, the money spent would probably be accounted for in another budget line item such as marketing, or public relations. This would probably only occur in those hospitals with a fairly small advertising budget. Only five percent spent more than \$500,000. Thirty-three percent spent between \$50,000 and \$199,999. Of the large hospitals (over-400 beds), 43 percent spent over \$200,000 in the most recent year's total budget for advertising. Of the 160 responses to this question, the minimum response was \$12,500 and the maximum was \$1,250,000, with a mean of \$150,390. APPENDIX B provides a breakdown of

advertising expenditure categories by number of beds authorized, system affiliation, for-profit or nonprofit hospital status, number of competitor hospitals, and occupancy rate.

#### Media Used

The discussion of media used can look at both the measure of media mix diversity and the specific use of each of the five media--television, radio, newspaper/magazine, billboard, and direct mail. They can be examined for individual trends that can be explained by competition, ownership, or system affiliation.

##### 1. Television

Sixty-nine percent of the respondents did not use any television in their advertising media mix. Of the hospitals with less than 200 beds, 77 percent did not use any television, while of those with more than 400 beds, 19 percent used 41-50 percent of their budget on television. The range of responses to this question went from zero percent being spent on television advertising to 100 percent. The average response was 12.4 percent, with a standard deviation of 24 percent. APPENDIX C summarizes the percent of budget spent on television.

## 2. Radio

Forty percent of the respondents did not use any radio in their advertising media mix. Twenty-one percent used 1-10 percent of their advertising budget on radio. Radio as an advertising medium was less popular with the larger hospitals (over-400 beds). Both the groups of 0-199 beds and 200-399 beds reported that only 37 percent of the respondents did not use any radio at all, while in the over-400 bed category, 53 percent did not use any radio in their advertising media mix. The range of responses for this question went from zero percent being allocated to radio to 85 percent, with the average response being 19.7 percent, with a standard deviation of 19.9. APPENDIX D summarizes the percent of budget spent on radio advertising.

## 3. Newspapers/Magazines

Of the 196 respondents, only three percent reported that they did not use these print media in their advertising budgets. To briefly summarize the other trends (with somewhat collapsed response categories being used), of the small hospital group (0-199 beds), 27 percent used 31-50 percent of their budget on print, with 10 percent spending all of their budget on print. Of the medium sized hospital group (200-399 beds), 22 percent spent 31-50 percent of their budget on print, with only four percent spending all of their budget. And of the large-sized hospital group (over

400 beds), 26 percent spent 1-20 percent of their budget on print, with 16 percent spending 71-80 percent on print. The responses to this question range from zero percent to one hundred percent being spent on print advertising, with an average of 54.3 percent and a standard deviation of 25.7. APPENDIX E summarizes the percent of budget spent on print advertising.

#### 4. Billboards

Billboards were not nearly as popular a medium as either of the broadcast media or print. Seventy-four percent of the respondents did not spend any money at all on billboards, with 14 percent spending 1-10 percent of their budget. The responses to this question range from zero percent of their advertising budget being spent on billboard advertising to 65 percent, with a mean of 6.4 percent and a standard deviation of 13.9 percent. APPENDIX F summarizes the percent of budget spent on billboard advertising.

#### 5. Direct Mail

Forty-two percent of the respondents did not spend any money on direct mail advertising. Once again there were significant differences by hospital size. Forty-seven percent of the respondents in the small hospital group (0-199 beds) did not use any direct mail advertising, while only 34 percent of the large hospital group (over-400 beds) did not. Thirty-four percent of the large hospital group (over-400 beds) spent 1-10 percent of their advertising

budget on direct mail. Of the smallest group (0-199 beds), only 17 percent spent 1-10 percent of the budget. The medium-sized hospital group (200-399 beds) spent 33 percent of budgets on direct mail, a pattern that is very similar to that of the large hospitals. The responses to this question ranged from zero percent to 95 percent of the advertising budget being allocated to direct mail, with an average response of 20.3 percent and a standard deviation of 22 percent. APPENDIX G summarizes the percent of budget spent on direct mail.

#### Targeted Groups

This set of questions examined whether or not there was a difference in groups targeted by hospitals that could be explained by competition, ownership, and system affiliation. The non-direct consumer groups--employers, physicians, and other referrers--are the groups that have the potential to affect hospital usage patterns among large numbers of patients.

##### 1. Consumers

Of the 173 respondents, 12 percent spent all of their advertising budget on consumer advertising. Eleven percent of the small hospitals (0-199 beds), 14 percent of the mid-sized hospitals (200-399 beds), and only 10 percent of the large hospitals (over-400 beds) focused all of their advertising efforts on the consumer. Thirty-two percent of

the small hospitals spent 71-90 percent of their budget on consumers, while 31 percent of the large hospitals spent in the 51-70 percent range. The response to this question ranged from zero percent being targeted to the consumer market to one hundred percent, with the average response being 63.5 percent with a standard deviation of 26.1. APPENDIX H summarizes the spending patterns on the consumer market.

## 2. Non-consumer Groups

### a. Business/Employer Markets

Thirty-four percent of the respondents did not spend any money on this market. Forty-three percent of the smallest hospitals (0-199 beds), 59 percent of the mid-sized hospitals (200-399 beds), and 44 percent of the largest hospitals (over-400 beds) spent 1-20 percent of their budget targeting business and employer markets. Seventeen percent of the largest hospitals spent 21-30 percent on this market. The response to this question ranged from zero percent being targeted to the business/employer markets to 80 percent, with a mean of 11.5 percent and a standard deviation of 13. APPENDIX I summarizes the spending patterns on the business/employer market.

### b. Physicians

Twenty percent of the hospitals did not spend any of their budget on this group. Twenty-three percent of the small hospitals (0-199 beds), 18 percent of the mid-sized

hospitals (200-399 beds), and 14 percent of the large hospitals (over-400 beds) did not spend any funds on this group. Twenty-eight percent of the large hospitals spent 11-20 percent of their budget on this group. The response to this question ranged from zero percent being targeted directly to referring physicians to 80 percent, with a mean of 20.4 percent and a standard deviation of 18.4. APPENDIX J summarizes the spending patterns on the physician market.

c. Other Referrers

The responses to this question ranged from zero percent to 70 percent, with a mean response of 2.9 percent and a standard deviation of 8.1 percent. APPENDIX K summarizes the spending patterns on the other referrers market.

Market Research Expenditures

Forty-nine percent of the hospitals did not have a separate budget for market research. And 25 percent of the respondents spent less than \$25,000 on market research. Not surprisingly, it was the largest hospitals (over-400 beds) that had the largest budgets for market research. Forty-one percent of them spent \$25,000-\$99,999 on market research. The response to this question ranged from no dollars being spent on market research to \$300,000, with the average expenditure being \$16,051, with a standard deviation of \$34,509. The standard deviation is very large for this

budget item, but that is because the average amount spent is relatively low while the range of amounts spent by the various hospitals is very wide. APPENDIX L summarizes the market research expenditures.

#### Conditioning Matrices for Inferential Statistics

To comply with the assumptions of regression, specific decisions regarding the raw data set were made. These decisions covered missing data, violations of normality, multicollinearity, and reliability of measures. In addition, the sample size surpasses the minimum requirement of at least five times more cases than independent variables.<sup>6</sup>

#### Missing Data

Missing data in this survey fell into three different categories--don't know, refused, and no answer. The missing data was then handled in two ways. For the dependent variables--advertising expenditures, groups targeted, and market research expenditures--missing data was handled by calculating the means from the available data and replacing the missing values with the mean value prior to analysis. According to Tabachnick and Fidell, in the absence of other information, the mean value is the best guess about the value of the variable, since it represents the average response of the other respondents in the survey.<sup>7</sup> This is a conservative method since the mean for the distribution as a

whole does not change and the researcher does not have to guess at missing values while allowing for the maximum number of cases to be used.<sup>4</sup> In this study there was a sample number of 196. For each of the regressions there were relatively few cases that were not able to be used. The only cases that ended up being excluded are those where the missing values were dummy variables (specifically, ownership and system affiliation). The mean values are relatively meaningless for these situations, and the exclusions involved only a few cases (since almost every hospital was able to answer if it was system affiliated or not, and if it was for-profit or nonprofit). By including those cases the degrees of freedom were increased by increasing the sample size, and statistically, it is always better to work with a larger sample. As an extra check on this method, the regressions were also run using case-wise deletion. The results were not significantly different. Another reason for using this method is that for regression equations of this size (one dependent variable and six independent variables) if only one response out of seven was missing then the entire equation with all that additional information would be eliminated. The trade-off of substituting a mean value for one of the variables seemed reasonable in this case. See APPENDIX M for a complete listing of the number of cases used in each regression. Therefore, the mean value method of dealing with missing data was selected

for the specified variables.

However, for the media variables--television, radio, newspapers/magazines, billboards, and direct mail--imputing the mean for a missing value would have changed the nature of the response. These variables were also measuring a second dimension, whether or not the hospital was using that particular medium. Therefore, using the mean value for those cases would have altered the nature of the response, so these cases were deleted, another accepted method for dealing with missing data.<sup>2</sup>

#### Violations of Normality

To adhere to the assumptions of multiple regression, outlying variables were identified and transformed by assigning the value of three standard deviations from the mean to that response. This variable transformation is taken to change the shape of the distribution to more nearly normal.<sup>1,2</sup> All of the data reported in the tables reflect this transformation.

APPENDIX N summarizes the values of skewness and kurtosis for each of the variables (before the transformation). Skewness measures the degree to which a distribution of cases approximates a normal curve. A value of zero will indicate a completely symmetric bell-shaped curve. A positive value reflects a clumping of cases to the left of the mean, and a negative value reflects a clumping or

clustering to the right.<sup>11</sup> Skewness of the variables ranged from -0.444 for consumer targeted to 5.039 for targeting other referrers (values corrected for outliers). These extreme values are not too surprising since, for example, targeting other referrers did not have a good distribution with a mean of 2.867 and a range of 70 (on a scale from 1 to 100 percent), which meant the average score was 2.9 but the responses were all over the board with a spread of 70. Variables such as advertising expenditures and market research expenditures have a great deal of skewness since the largest hospitals have very large budgets and are spending considerably more than the average hospital.

Kurtosis refers to the relative peakedness or flatness of the curve defined by the distribution of cases.<sup>12</sup> A normal curved distribution would have a kurtosis of zero. A positive value would indicate a more peaked distribution, while a negative value would indicate a flatter distribution. The range of values went from -1.833 for system to 34.055 for targeting other referrers. These scores are extreme for the same reason that they were so highly skewed--that is, responses to certain variables had tendencies to have extreme values. APPENDIX O lists the skewness and kurtosis values for all the variables with outliers corrected. The skewness values for the corrected variables ranged from -0.408 for system affiliation to 2.784

for targeting other referrers. The kurtosis values for the corrected variables ranged from -1.833 for system affiliation to 7.342 for targeting other referrers. By correcting for outliers, the values of eleven of the seventeen variables were adjusted.

### Multicollinearity

Multicollinearity is the existence of a perfect linear relationship among some or all of the explanatory variables of a regression model,<sup>13</sup> or to put it another way, it is the situation where two or more of the independent variables are very highly intercorrelated. Nie et al, address the potential problem that multicollinearity can present with multiple regression:<sup>14</sup>

One of the uses of multiple regression as an interpretive tool is to evaluate the relative importance of the independent variables. The situation is somewhat paradoxical, however. The more strongly correlated the independent variables are (excluding, of course, extreme multicollinearity which prevents the coefficients from being calculated at all), the greater the need for controlling the confounding effects. However, the greater the intercorrelation of the independent variables, the less the reliability of the relative importance indicated by the partial regression coefficients.

In this study, two procedures were used to check for signs of multicollinearity. First, the Pearson correlations between the independent variables (outlying variables controlled for) were examined. As seen in Table 2, the only correlations that exceeded 0.500 occurred between the targeted groups of consumers and businesses (-0.541) and consumers and physicians (-0.603) and population and number

of competitor hospitals in a 15-mile radius (0.742). These correlations are not surprising since one would expect that the higher the percentage of advertising budget directed towards businesses and physicians, the less the percentage being spent on direct consumer groups would be, (and in fact, a negative correlation was found). And one would also expect the number of hospitals to rise with the local population (a positive correlation, which was found). However, these coefficients did not exceed the "rule of thumb" of looking for correlations among the independent variables that exceed 0.8. If none are found, then one can reasonably conclude that multicollinearity is not a problem.<sup>15</sup> Supporting that conclusion is the fact that none of the regression equations had a high R-squared value, with statistically insignificant coefficients.<sup>16</sup>

The second significant check for multicollinearity is auxiliary regressions, that is, regressing each independent variable on the remaining independent variables (excluding the dummy-coded independent variables). Since multicollinearity arises because one or more of the regressors are approximate or exact linear combinations of the other regressors, this is another way to test for the presence of multicollinearity.<sup>17</sup> As seen in APPENDIX P, none of the auxiliary regressions had a squared multiple R exceeding 0.49. Therefore, this second test supports the conclusion that multicollinearity is not a problem for this data set.

Table 2

## PEARSON CORRELATION MATRIX

|         | TV     | radio  | new/mag | billb  | dirmail | advexp |
|---------|--------|--------|---------|--------|---------|--------|
| TV      | 1.000  |        |         |        |         |        |
| radio   | -0.062 | 1.000  |         |        |         |        |
| new/mag | -0.306 | -0.301 | 1.000   |        |         |        |
| billb   | -0.008 | 0.417  | -0.133  | 1.000  |         |        |
| dirmail | -0.078 | -0.158 | -0.294  | 0.005  | 1.000   |        |
| advexp  | -0.018 | -0.015 | -0.038  | -0.054 | -0.055  | 1.000  |
| cons    | 0.097  | 0.128  | 0.086   | 0.208  | -0.015  | 0.136  |
| busi    | -0.123 | -0.294 | -0.011  | -0.119 | 0.251   | -0.112 |
| phys    | -0.051 | -0.071 | -0.041  | -0.054 | -0.070  | -0.010 |
| other   | 0.180  | 0.180  | -0.272  | -0.130 | 0.175   | -0.065 |
| MRexp   | 0.092  | -0.051 | -0.150  | 0.173  | 0.197   | 0.069  |
| system  | 0.308  | -0.076 | -0.314  | -0.080 | 0.338   | -0.156 |
| owner   | 0.092  | 0.048  | -0.210  | -0.189 | 0.176   | 0.102  |
| size    | 0.372  | -0.193 | -0.104  | -0.118 | 0.047   | 0.165  |
| census  | -0.116 | 0.012  | -0.009  | -0.010 | -0.045  | -.298  |
| comhos  | -0.102 | -0.351 | 0.201   | -0.271 | 0.041   | 0.189  |
| pop     | 0.014  | -0.347 | 0.267   | -0.253 | -0.162  | 0.415  |

|        | cons   | busi   | phys   | other  | MRexp  |
|--------|--------|--------|--------|--------|--------|
| cons   | 1.000  |        |        |        |        |
| busi   | -0.541 | 1.000  |        |        |        |
| phys   | -0.603 | 0.092  | 1.000  |        |        |
| other  | -0.218 | -0.086 | -0.056 | 1.000  |        |
| MRexp  | -0.048 | 0.048  | 0.120  | 0.059  | 1.000  |
| system | -0.321 | 0.254  | 0.056  | 0.267  | -0.063 |
| owner  | -0.335 | 0.250  | 0.161  | 0.290  | -0.090 |
| size   | 0.095  | -0.038 | 0.107  | -0.029 | 0.349  |
| census | 0.009  | -0.115 | 0.193  | -0.171 | 0.234  |
| comhos | -0.019 | -0.060 | 0.204  | 0.032  | 0.048  |
| pop    | 0.173  | -0.219 | 0.116  | -0.102 | 0.033  |

|        | system | owner  | size  | census | comhos | pop   |
|--------|--------|--------|-------|--------|--------|-------|
| system | 1.000  |        |       |        |        |       |
| owner  | 0.313  | 1.000  |       |        |        |       |
| size   | 0.196  | -0.228 | 1.000 |        |        |       |
| census | -0.246 | -0.247 | 0.472 | 1.000  |        |       |
| comhos | 0.016  | -0.069 | 0.343 | 0.294  | 1.000  |       |
| pop    | -0.181 | -0.018 | 0.258 | 0.282  | 0.742  | 1.000 |

Abbreviations: news/mag--newspaper/magazine; billb--bill-board; dirmail--direct mail; advexp--advertising expenditures; cons--consumer; busi--business; phy--physician; MRexp--market research expenditures; system--system affiliation; owner--for-profit or nonprofit ownership; size--number of beds; census--percentage occupancy rate; comhos--number of competitor hospitals in 15-mile radius; pop--population in a 15-mile radius.

### Hypotheses Tests

The twelve hypotheses were tested using multiple regression analysis. The level of significance for this analysis was set at  $\alpha=0.05$  using a 2-tailed T-test.<sup>14</sup>

#### Hypothesis 1

Hypothesis 1 predicted that, as competition increased, hospitals would have a higher level of advertising expenditures. The independent variables related to advertising expenditures explained 34 percent of the variance (squared multiple R). (See APPENDIX Q.) Results were significant for bed size of the hospital and for population within a 15-mile radius as seen in Table 3. (The standard coefficients for all of the significant variables were positive. However, since the the effect of number of competitor hospitals was not significant, Hypothesis 1 was not supported.

#### Hypothesis 2

Hypothesis 2 stated that for-profit hospitals will have a higher level of advertising expenditures than nonprofit hospitals. As seen in Table 3, ownership was not significant. Hypothesis 2 was not supported.

Table 3

STANDARDIZED REGRESSION COEFFICIENTS FOR  
ADVERTISING EXPENDITURES, MEDIA MIX,  
TARGETED GROUPS, AND MARKET RESEARCH EXPENDITURES\*

|            | <u>Adv Exp</u> | <u>Media Mix</u> | <u>Tar Group</u> |               | <u>MarRes Exp</u> |
|------------|----------------|------------------|------------------|---------------|-------------------|
|            |                |                  | <u>Dir</u>       | <u>NonDir</u> |                   |
| # of Comp  | -0.053         | -0.085           | -0.144           | 0.082         | -0.046            |
| Ownership  | 0.127          | -0.003           | -0.184*          | 0.207*        | -0.067            |
| Sys Affil  | -0.047         | 0.023            | -0.021           | -0.011        | 0.001             |
| Hoasp Size | 0.341*         | 0.096            | 0.025            | 0.026         | 0.455*            |
| Occup Rate | -0.080         | 0.028            | -0.064           | 0.008         | -0.086            |
| Population | -0.443*        | 0.063            | -0.072           | 0.123         | 0.239*            |

\* sig at p < 0.050

Table 4

STANDARDIZED REGRESSION COEFFICIENTS  
FOR INDIVIDUAL MEDIA\*

|            | <u>TV</u> | <u>Radio</u> | <u>News/Mag</u> | <u>Billb</u> | <u>DirMail</u> |
|------------|-----------|--------------|-----------------|--------------|----------------|
| # of Comp  | -0.068    | -0.273*      | -0.033          | -0.062       | 0.164          |
| Ownership  | 0.041     | 0.001        | -0.163          | -0.086       | 0.189*         |
| Sys Affil  | 0.100     | -0.055       | -0.063          | 0.077        | 0.015          |
| Hoasp Size | 0.313*    | -0.054       | -0.123          | 0.022        | -0.013         |
| Occup Rate | 0.089     | 0.062        | -0.147          | 0.089        | 0.019          |
| Population | -0.084    | -0.041       | 0.151           | 0.056        | 0.095          |

\*sig at p < 0.050

### Hypothesis 3

Hypothesis 3 stated that system-affiliated hospitals will have a higher level of advertising expenditures than freestanding hospitals. As seen in Table 3, no significant results were found. Therefore, Hypothesis 3 was not supported, merely belonging to a hospital system does not result in increased advertising expenditures.

### Hypothesis 4

Hypothesis 4 stated that, as competition increased, hospitals would advertise in a greater diversity of media than hospitals in less competitive markets. This statement was evaluated in two ways. First, a series of regressions was done, one for each medium, to see how usage of that specific medium changed when looking at competition, ownership, and system affiliation, while controlling for size, census, and area population. Then, secondly, a measure of media mix diversity was developed and used as the dependent variable, and the regressions were rerun.

When television usage was evaluated, 11.7 percent of the variance was explained, with a significant F-ratio. Of the independent variables, as seen in Table 4, however, only size was significant. When radio usage was evaluated, 10.5 percent of the variance was explained. But only the number of competitor hospitals was significant, and that was a negative relationship. When direct mail usage was

evaluated, 9.9 percent of the variance was explained, and ownership type was significant. For the other independent media variables--newspaper/magazine and billboards--neither of the regressions was significant. (See APPENDIX R for regression equations.)

For the media mix variable, which reflects both the diversity of media used by each individual hospital as well as the concentration in the media with the highest percentage of the budget spent, the regression was not significant, as summarized in Table 3 (for the regression see APPENDIX S).

Therefore, Hypothesis 4 was supported only for the use of a single medium--radio. As competition increases, the use of radio decreases.

#### Hypothesis 5

Hypothesis 5 stated that for-profit hospitals will advertise in a greater diversity of media than will non-profit hospitals. As seen in Tables 3 and 4, this hypothesis was not supported for the media mix variable. And there was only a difference in the use of one medium--direct mail. Therefore, Hypothesis 5 was supported only for the use of a single medium--direct mail. For-profit hospitals use direct mail more than nonprofit hospitals.

## Hypothesis 6

Hypothesis 6 stated that system-affiliated hospitals will advertise in a greater diversity of media than will freestanding hospitals. As seen in Tables 3 and 4, this hypothesis was not supported for individual media use or for the media mix variable. Therefore, Hypothesis 6 was not supported.

## Hypothesis 7

Hypothesis 7 stated that, as competition increases, hospitals will spend a larger percentage of their marketing budget targeting non-direct consumer segments such as employers, physicians, and other referrers, than on direct consumers. Two regressions were run, one with consumers as the dependent variable, one with non-consumer groups as the dependent variable. Table 3 shows the results of the direct consumer group targeted. As seen in APPENDIX T, only 8.3 percent of the variance was explained by this regression, which is a very small amount.

However, since the number of competitive hospitals in a 15-mile radius was not significant for either regression, Hypothesis 7 was not supported, the mere presence of additional competitors did not appear to affect the targeting of the marketing budget.

## Hypothesis 8

Hypothesis 8 stated that for-profit hospitals will spend a larger percentage of their marketing budget targeting non-direct consumer segments--employers, physicians, and other referrers--than nonprofit hospitals. As seen in Table 3, Hypothesis 8 was supported. Ownership does have an effect on the spending patterns related to targeted groups.

The T-statistic for direct consumers was negative, which, when interpreted, says that as the percentage of budget targeted towards the direct consumer groups increases, the percentage of for-profit ownership decreases (the number of nonprofit owners increase). This result was confirmed when the regression for non-direct consumer groups was run, as seen in Table 3. Once again only a small amount of the variance was accounted for, 7.8 percent, but the F-test reflected the overall significance of the regression. (For complete regressions see APPENDICES H-K.) Once again, ownership was the only significant independent variable. This time the value of the T-statistic was positive, which interpreted, says that as the percentage of budget targeted towards the non-direct consumer increases (dependent variable), the percentage of for-profit ownership (independent variable) increases. Therefore, Hypothesis 8 was supported.

## Hypothesis 9

Hypothesis 9 stated that system-affiliated hospitals will spend a larger percentage of their marketing budget targeting non-direct consumer segments--employers, physicians, and other referrers--than freestanding hospitals. As seen in Table 3, no significant results were found. Therefore, Hypothesis 9 was not supported. Merely belonging to a system or not belonging to a system does not appear to alter the way in which advertising is directed to various groups of consumers, either direct or non-direct.

## Hypothesis 10

Hypothesis 10 stated that, as competition increases hospitals will spend more money on market research. As seen in APPENDIX L, 30.9 percent of the variance was explained, and the F-test reflected the overall significance of the regression. In the regression, the hospital size and area population were significant (see Table 3). The number of competitor hospitals in the 15-mile radius was not significant, however. Therefore, Hypothesis 10 was not supported. The mere presence of more competition does not appear to alter the amount of money spent on market research.

### Hypothesis 11

Hypothesis 11 stated that for-profit hospitals will spend more money on market research than nonprofit hospitals. As seen in Table 3, ownership was not significant. Therefore, Hypothesis 11 was not supported. Ownership type does not seem to affect the amount of money spent on market research.

### Hypothesis 12

Hypothesis 12 stated that system-affiliated hospitals will spend more money on market research than freestanding hospitals. As seen in Table 3, system-affiliation was not significant. Therefore, Hypothesis 12 was not supported. System affiliation, or lack of system affiliation, does not seem to affect the amount of money spent on market research.

1. Damodar N. Gujarati, Basic Econometrics, 2nd ed. (McGraw-Hill Book Co., 1988), p. 431.
2. Hospital Statistics, (Chicago: American Hospital Association, 1988), Table 5A.
3. AHA Guide to the Health Care Field, (Chicago: American Hospital Association, 1989), Table B-3.
4. Hospital Statistics, Table 5A.
5. Ibid.
6. Tabachnick and Fidell, p. 129.
7. Ibid., p. 65.
8. Ibid.
9. Ibid., p. 61.
10. Ibid., p. 70.
11. Nie, et al, p. 185.
12. Ibid.
13. Gujarati, p. 284.
14. Nie et al, p. 340.
15. Michael S. Lewis-Beck, Applied Regression, Sage University Paper, no. 07-022 (Newbury Park, Calif.: Sage Publications, 1989), p. 60.
16. Ibid., p. 59.
17. Gujarati, p. 300.
18. Ibid., pp. 113-116.

## CHAPTER V

### DISCUSSION

The challenge of this study was to examine the advertising behavior of hospitals. To do this, theories, knowledge, and practices from the subject fields of advertising, economics, health care, and marketing were used to develop a foundation for this research. The general purpose of this study was to determine if any patterns in market structure, ownership, and system affiliation could be identified in the advertising behavior of hospitals. Specific advertising behavior was measured by examining advertising expenditures, media selected, groups targeted, and market research expenditures. The theoretical arguments were constructed in line with standard economic analysis and prevailing industry thought. However, the results of the data analysis revealed that very few of the hypothesized relationships were found to exist. Overall, market structure does not seem to affect advertising behavior. Hospitals in competitive markets (as measured by their advertising behaviors) did not behave as firms under conditions of monopolistic competition would behave (Hypotheses 1, 4, 7, and 10). Hospitals are not benefiting in their advertising behavior from system affiliation (Hypotheses 3, 6, 9, and 12) or from for-profit ownership (Hypotheses 2, 5, 8, and

11). At this point, then, some analysis of why the predicted relationships did not emerge and implications for future research can be developed.

The first section of this chapter discusses the findings related to market structure, ownership, and system affiliation. The next section will discuss the impact of the other independent variables that were controlled for and how they influenced the advertising behavior. The third section evaluates implications of the study for the industry. And finally, implications for the research community are presented.

#### Hospital Competition

This study failed to confirm the effect of competition on advertising behavior as predicted by economic theory. None of the dependent variables--advertising expenditures (Hypothesis 1), media mix (Hypothesis 4), groups targeted (Hypothesis 7), or market research expenditures (Hypothesis 10)--was affected by the level of competition in a 15-mile radius of the hospital. This result was a surprising one considering that 35 percent of the respondents had five or more competitor hospitals within a 15-mile radius (see APPENDIX B). It had been predicted that the presence of many hospitals would serve as a stimulus for the other hospitals to advertise, simply because if one player in the market is trying to differentiate itself that way, then the

other players are usually forced to at least try to match those efforts. It had seemed in a market with five or more competitors, at least one would strike out as the advertising market leader, pressuring the others to follow. But this reasoning was not supported.

The only result was in individual media used where one medium--radio--was significant. As the number of competitors increased, the use of radio decreased. This relationship may reflect the fact that radio requires a simplification of the basic message.<sup>1</sup> And in a market where there are many competitors, this simplification may make it very difficult to distinguish the messages from the various hospitals.

One reason for the lack of significant results may be that one of the basic operationalizing assumptions made for the purpose of this study--that hospitals (in a sample of this size) could be considered perfect substitutes for each other--was so broad that it obscured any other effect. Competition is a function of the number of firms in a market and the nature of the product or service. This study accepted the economic norm that if there are more firms in a market, there is more product competition. But that may not be the case in this industry, at least not as expressed in the advertising behavior of the hospitals.

For example, in a market of five hospitals, while all of the hospitals may offer basic surgery and overnight

primary care, perhaps only two hospitals compete in the emergency room category, so there would not be monopolistic competition existing. In that case, then, Hospital A would be influenced by the advertising behavior of Hospital B, perhaps getting into an escalating advertising war over promotion of emergency room services, but they could totally ignore the advertising of Hospitals C-E, which may be having a similar competition over wellness programs. Hospitals cannot promote all of their programs during the year. They need to selectively identify the most profitable, desirable, or unique services that they offer, centers where they might have a competitive advantage, and focus their promotional efforts on them and on the targeted markets that might use them. Therefore, depending on which services they have identified as the critical ones for that promotional period, the specific hospitals another hospital looks to as direct competitors would change. In this way, then, the hospitals would be responding to individual competitive pressures, not to the gross number of hospitals in the area. The product/service would be so specialized that substitutability would be unlikely.

The assumption that the hospitals were perfect substitutes for each other was one that was not accepted initially in the data collection phase. In the questionnaire, the hospitals were asked if they provided primary, secondary, or tertiary care (primary care is the most basic level of

hospital care with minimal facilities to handle complex medical cases; tertiary care is at the other extreme, such as a university or research hospital handling the most advanced medical cases; secondary care falls somewhere in between on the continuum). These designations are ones they were asked to make, since the American Hospital Association does not categorize hospitals in that manner, or in any other manner related to product offering. The problem with this identification process was that many hospitals provided a primary level of care in one area, such as cardiology, secondary care in other areas, such as a burn unit and oncology, and perhaps tertiary care in their obstetrics unit. As a result, in response to that question they would mark all three responses. Needless to say, this was not a useful way to describe hospital differences for the analysis purposes of this paper.

A more basic theoretical explanation for lack of findings (as measured by the advertising behavior of hospitals) may lie with the economic model that was chosen to evaluate the competitive behavior--monopolistic competition. After examining the findings, it may be that the oligopolistic type of model is more appropriate for this industry, even though there are more than 2-4 players in a large segment of the market. There are high barriers to entry that keep many parties from entering the hospital industry--governmental, economies of scale, and cost to

enter. There is only a limited number of well-defined players in each local hospital market whose individual actions are noted by, and can potentially affect, the other players. A crucial aspect of this model is that each seller, in this case each hospital, is large enough to influence the market; therefore, each firm must consider not only the effects of its own decisions, but the likely response of its competitors to those decisions.<sup>2</sup> In addition, with a highly specialized service like health care there are highly developed professional interests linking the total market as well as the normal business interests. Therefore, the standard description of 2-4 players defining an oligopolistic market may not be accurate for this unique industry. It may be that in hospital markets with many more competitors, as is the case in many of the hospital markets, a different definition of the number of players is needed.

Economic studies of oligopolies indicate that competition often occurs outside the arena of price,<sup>3</sup> in such areas as advertising outlay, product modification, and special services offered to the buyer. This is very typical of hospital behavior as quality is one area that has predominated hospital competition.<sup>4</sup> The outcome has been characterized by excessive quality and capital expenditures and unnecessary duplication of services, often developed to lure the referring physicians to utilize that particular hospital over the others where he/she may have admitting

privileges.

Even without explicit collusion among the industry firms, there can still be the effect of unconscious collusion, in which each firm looks to the others and adjusts its behavior accordingly. In this way a local market may subdivide the tertiary treatment of various health care areas such as cardiology, pediatric oncology, or neonatal care. This collusive behavior is in fact largely encouraged by both the state and federal governments with their certificate-of-need (CON) laws. Hospitals must secure the approval of planning agencies at several levels of government for any new hospital investment exceeding a certain dollar amount, an attempt to reduce duplication of sophisticated and highly expensive medical facilities and equipment within a limited geographic region.<sup>5</sup> Hospitals are also required to receive planning agency approval for expansion and for investment in new facilities and services.<sup>6</sup> However, this CON approval, if effective, only seemed to regulate the most expensive of services. In reality, one study that examined the services available in various markets concluded that service availability is strongly influenced by the structure of the supply side of the local hospital market, when not constrained by the CON regulations.<sup>7</sup> Hospital reaction could be categorized in two ways (where in both cases the hospital action is driven by the competition behavior), "medical arms race", where,

depending on the particular service in question, hospitals are more likely to acquire the service when they have a large number of neighbors which offer that service, or "complementary behavior patterns", where hospitals are less likely to offer the service as the number of neighboring hospitals offering the service increases. When viewing hospitals this way, as quasi-public utilities heavily influenced by their local competitors, it becomes more understandable why their behavior in many areas does not conform to the predicted monopolistic competition model. The points made earlier in the literature review acknowledged those differences, but tried to make a case that increasing competition was forcing the market to become more responsive to competitive pressures (in other words, more like other industries). Of course, most of the information that is available on competitive behaviors has been developed with product industries, and it may be that that information does not transfer very well across into the service industries. So, after analyzing the data, that view was not supported.

So, if a market that is described as oligopolistic is evaluated on two dimensions, behavior and number of players, then perhaps this model does fit the hospital industry fairly well, particularly, if the number of players can be expanded due to the influence of the professional interests that bind a local market together. There is no distinct

point delineating where monopolistic competitive behavior ends and oligopolistic behavior begins, but there are certainly indicators, in their advertising behavior at least, that hospital behavior may best be described by the latter model. This potential fit was considered and discussed in the literature review section of Chapter I, but since it is difficult to develop any measure of oligopolistic behavior, it was decided to measure monopolistic competition and its effects as demonstrated by its advertising behavior only. While a clear statement of which model is most appropriate for an industry cannot be made on the basis of one study examining one aspect of competitive behavior, these findings seem to indicate a certain tendency of the industry to behave in an oligopolistic way.

Using the 15-mile radius to define the competitive marketplace may also not have reflected the actual hospital selection process accurately. Major tertiary care centers, such as university or teaching hospitals, treat patients from very large geographic regions. Thus, those hospitals are in direct competition with many widely dispersed hospitals, perhaps even on a national basis.<sup>a</sup> Supporting this view is a study that was done on local market retention in the state of Michigan in 1980. Using in-patient census, researchers were able to measure the average drift of patients to hospitals outside of their local community. For example, for the three mid-sized hospitals in Muskegon,

Michigan, 87 percent of the patients requiring hospitalization used one of the hospitals in the area, while the state average for communities that size (130,000) was 74 percent.<sup>2</sup> In these instances then, for most mid-sized communities in Michigan, one-fourth of the in-patient pool was being serviced by a hospital outside of the 15-mile radius. Nothing in the literature addresses the implications of accounting for these wide ranging competitive factors. For the purpose of this study, only those local competing firms were studied, but perhaps the influence of the more distant firms, the regional tertiary care centers, interfere with the local markets reacting in the predicted manner.

Another major influence affecting how competition is expressed between hospitals is the physicians. Doctors, many of whom have admitting privileges to multiple hospitals, are actively opposed to the investment of hospital funds in a competitive marketing war. The point is, while hospitals are advertising, it is difficult to know what sort of pressures are being applied by hospital staff (who probably have the ability to admit their patients to other facilities if they are unhappy with management policy) that may be working against the mandates of a competitive industry. Some researchers have even gone so far as to suggest that hospitals are controlled de facto by their medical staffs, which offers many interesting possibilities

for explaining why hospital behavior eludes description by existing models of economic behavior.<sup>10</sup>

One last consideration may be that the existing competition is not exerting as strong an influence as one might think. Perhaps the message coming through not only the mass media, but the trade literature as well, about the competitive pressures facing the hospital industry is misleading. Without a doubt certain markets are facing fierce competition, and that story is the one that gets press coverage, but maybe those markets are the exception. Maybe the rest of the markets are relatively economically healthy and not showing signs of competitive stress yet and such alarm is premature, which would also help explain the lack of results in this study, which was based on a nationwide sample. But the low average occupancy rate (64.8 percent in 1985<sup>11</sup>) certainly lends credibility to the idea of the presence of competitive pressures.

#### Hospital Ownership

For-profit ownership was seen in this study as having a positive effect on certain aspects of advertising behavior. It was definitely related to the targeting of non-direct consumer groups, such as businesses/employers, physicians, and other referrers (Hypothesis 8).

Ownership also had an effect on the use of one medium--direct mail (Hypothesis 5). This is a medium growing in

popularity for hospitals. Used correctly, it can be the most targeted and focused advertising approach of all; or, used another way, it can be a method of blanketing every home through a non-selective campaign. For-profit ownership may be more motivated to use this medium, realizing its potential to target the desirable, demographic segments of the market.

However, for-profit ownership was not seen to have an effect on increasing advertising expenditures (Hypothesis 2) or market research expenditures (Hypothesis 11). For-profit ownership did not seek to exploit the potential opportunities to increase its financial position, including spending more on its advertising and market research than its nonprofit competitor.

However, the reason that these for-profit influences were not more strongly felt may be due to the presence of other models of maximizing behavior such as manager utility maximization, sales revenue maximization, or even the pressure to maximize the present value of the firm's future stream of sales revenue. Other models that could be operating in the hospital industry include recovery of costs, output maximization, output and quality maximization, utility maximization, and cost flow maximization (for a further discussion of these alternative models see Chapter 1, Hospital Ownership discussion). Cyert and March reject the assumptions of profit-maximizing behavior as being

unrealistic for three reasons. First, people/firms have several goals which they pursue, not solely profit maximization. Second, managers tend to seek satisfactory rather than maximum profits. Third, the perfect knowledge assumption for rational action by managers is untenable.<sup>12</sup> In addition, with hospitals, one often speaks of decision-making as though there were a single decisionmaker, while hospitals in fact are exceedingly complex organizations made up of a variety of groups, each with different priorities, such as the governing body, administrators, medical staff, and nonmedical staff.<sup>13</sup> Each group has an effect, although to varying degrees. It could be that the effects of ownership on advertising behavior are being mediated in complex ways by characteristics of the services being delivered and the training of the health care providers.

Some research has raised the question as to whether the behavior of nonprofit hospitals truly differs from for-profits.<sup>14</sup> The possibility exists that, as competition increases, nonprofits will begin behaving more like their for-profit competitors.<sup>15</sup> If some markets are not facing extreme competitive pressures, as suggested above, then the owners have more discretion in their behavior, so nonprofits can behave with their non-profit maximizing goals. On the other hand, if there are not great competitive pressures, then perhaps for-profits are even imitating nonprofits in some of their behavior. The hypotheses that were not supported,

that there was not a difference in the advertising expenditures, media mix, or marketing research expenditures, did not state any direction, merely that the behaviors would be different. So, since they were not supported, it could be interpreted either way.

Another consideration may be that, assuming for-profit hospitals have a profit-maximizing motivation to utilize more well-reasoned and purposeful advertising behaviors, they may be conscious of the image that presents to the community which may have the effect of dampening the results. That is, if they are too aggressive and visible in their behaviors by advertising at a higher level than their nonprofit counterparts, they may be perceived in the community as "money-hungry" and not as benevolent, caring, or cost-conscious as the other hospitals. Strong personal values are associated with health care, and certain types of institutional behavior can result in strong negative publicity.<sup>16</sup> Patients want to feel that their welfare is the top priority, not the profit opportunities that they represent. Who knows if they will be charged for unnecessary tests and other procedures? Patients have no way of determining this for themselves; they must trust their physician and the hospital staff to take care of them in the most appropriate way possible. Does this perceived level of care change if the patients are made overly aware of the profit-maximizing nature of the hospital? In this way then,

the nature of the service may vitiate the competitive effects.

#### System Affiliation

The proposed link between system affiliation and more planned, purposeful, and well-reasoned advertising behavior was not supported by any of the measured advertising behaviors (Hypotheses 3, 6, 9, and 12). The predicted link was that, as members of a system, they would benefit by the knowledge gained from the experience of many hospitals and which could be drawn upon by the corporate planners. Methods for collecting market research, investigation into specific copy appeals, and more extensive production facilities were just a few of the potential benefits and economies of scale that could have been gained from membership in a corporation. And with the knowledge of how to advertise more effectively, they might also have been more willing to invest more heavily into the advertising process. But no differences were found in advertising expenditures, media mix, individual media use, groups targeted, or market research expenditures.

One of the reasons affecting the relationship may be that the sample population was not completely representative of the national population. The main variable where that divergence was noted was system affiliation. The actual percentage of hospitals that belong to a system is 38

percent.<sup>17</sup> The study had a percentage of 60 percent. This higher representation may have been due to the selection methods, which stratified the selection by size and region, with very few hospitals with less than fifty beds being included in the sample (4 percent), while nationwide 21 percent of the hospitals have fewer than fifty beds.<sup>18</sup> But if anything, the overrepresentation of system-affiliated hospitals in the study should have had the effect of increasing any measureable relationship that was present, not dampening it.

The lack of results relating to system affiliation was surprising, since affiliation is directly linked to the concept of economies of scale. It seemed that there would be a wealth of knowledge and advertising insight that would be developed and available to the members of a system, which freestanding hospitals would not benefit from. And it still seems so. Perhaps the marketing departments just have not determined effective ways to use their base of knowledge. One specific recommendation of this research, then, would be that the corporate headquarters of the systems look into ways to operationalize this competitive advantage. The only compelling reason that would interfere with that implementation may be that the differences found in each market overwhelm the similarities that urge the pooling of knowledge.

Of course, this advice assumes that this knowledge

would be exhibited through the advertising behaviors that were measured. It may also be that the benefits of system affiliation, knowledge, and expertise actually occur through better quality advertising with a greater impact, through such means as copy appeals, campaign strategies, or specific media vehicles selected. If this is the case, then the lack of results reflect a measurement issue.

#### Other Independent Variables

Of the independent variables that were used in the regressions for control purposes--size of hospital (in terms of number of beds), average occupancy rate, and population within a 15-mile radius--size was the variable that turned up as being the most significant in explaining the variance of the dependent variables.

Size was a significant variable for advertising expenditures, television usage, and market research expenditures. With larger hospitals, there are larger budgets, so more funds in absolute dollars are available for promotional activities. Perhaps an interesting cross-check for future research would be to examine the relationship between percent of yearly budget spent on advertising and market research expenditures. Then direct comparisons could be made among the various hospital sizes to see if the larger hospitals actually do spend more relative to their size, or

if their expenditures are merely proportionately larger.

That television usage was related to hospital size was no real surprise either. With the initial cost of producing a good quality commercial, and the high cost per advertising placement, only the larger hospitals are going to be able to use this medium most effectively. For smaller hospitals, even if their average occupancy rate is the same as the larger hospitals, there is no need to attract as the same number of patients to fill their empty beds, so they may not be as eager to try the more expensive medium.

The only other independent variable that proved significant was population, which was significant for advertising and market research expenditures. These associations also are reasonable. One reason is that the larger the population pool, the more costly the advertising space and the more media vehicles available. Market research, on the other hand, requires a sample size that is somewhat representative of the population. Therefore, in areas of larger populations it might be better to have a larger research sample selected relative to the areas of smaller populations (assuming of course, that a representative sample is necessary or best to meet the needs of the research study).

In addition, it may be that in markets with large populations advertising becomes a more important substitute for general community knowledge and word-of-mouth that

typically exists in smaller markets.

### Research Conclusions

What this study tried to determine is how the advertising behavior of hospitals was affected by various economic variables using theories from the subject areas of advertising, economics, health care, and marketing. And the results showed that very few of the predicted relationships held true. It is ironic that those proposed relationships, as seen in the beginning of this paper, were not ones that were wildly unlikely or counterintuitive. Instead they were relationships that made a great deal of logical sense. Had the hypotheses held true, this study would have been a confirmation of the expected. But instead the opposite was found. Relationships that seemed obvious, based on theoretical predictions, were found not to exist. And so, in discovering this, and assuming the lack of results are not related to flaws in the data collection, measurement, and analysis procedures, then perhaps more interesting conclusions can be drawn. If the relationships proposed here are not useful in explaining industry behavior, then future research needs to begin looking for other explanations.

Implications for Hospital Managers

Despite the rapid growth in hospital advertising, it appears that the level of advertising behavior has not been fully developed when compared to that of its consumer product counterparts. Hospitals are not structuring their advertising to reflect the competitive pressures of their market. Why are they ignoring this critical variable of the external environment? As seen in the earlier discussion, it may be that they are responding to competitive pressures on individual hospitals rather than the entire hospital market. If this is indeed the case, what is the the best strategy for the hospitals to be following? Even if every hospital in the market is promoting a different unique selling point, a different service where it alone has the competitive advantage, there still will be more hospital players competing in the media market for the consumer's attention. Even if the messages are very different, they are still all coming from hospitals, firms that tend to have very similar types of names, often including the name of the community, names of saints, or words associated with alleviation of suffering, that are often perceived by the consumer as being relatively interchangeable services. Therefore, to counteract the competition of the additional messages, the hospital should increase its advertising clout, by increasing the weight of its media voice in the market. This argument presupposes that the hospital's

management assumes that advertising works and is an effective mechanism for attracting consumers to purchase their product. It may be that their basic goal is to keep the hospital name before the public, not to redefine their product. But if that is all they are trying to accomplish, it doesn't seem that it would take five percent of their net sales to do so, which is how much the industry spent in 1989 (advertising-to-sales ratio).<sup>19</sup> This puts them in the same advertising league as household furniture, prepackaged software, and cookies and crackers, but not near the advertising leaders, such as games and toys, soap and detergent, and industrial inorganic chemicals, which are spending nearly fifteen percent of their net sales on advertising. (See APPENDIX V for the complete listing by industry.) In other words, the hospital industry is spending as much on their advertising as some of the traditional, competitive industries, but they are not really acting like competitors.

The only other variable that seems to need particular evaluation by hospital marketers is the average occupancy rate. For this study the mean was 61 percent (see APPENDIX O). It would certainly seem that those hospitals with a lower average occupancy rate should have some pro-active advertising program in place to help overcome this deficiency. Generally, for most industries, increasing advertising expenditures bring increasing returns, although

at a decreasing rate, so unless these hospitals have reached the break-even point of not benefiting from any additional expenditures, it seems that they could use the media to help them increase their occupancy rates, unless this is another example of how this industry is unique from conventional marketing and advertising theory.

In conclusion, then, it would seem that hospital marketers, as effectively as they may be doing their job currently, could benefit from taking a wider view of the economic interactions of their external environment. In fact, if the conventional theories regarding marketing behaviors do indeed hold true for this industry, then the hospital marketers are not doing their jobs well at all, as measured by the behaviors in this study. The question is, where does the explanation lie? In the industry, in the behaviors of marketers that are not applying advertising theories, or in the measurement issues in this study? It seems at this point that it may be a combination of all three, but the overwhelming factor that keeps arising is the unique nature of this large industry.

Implications for Future Research

Hospitals are advertising, but not in the predicted ways. The question is, does that merely reflect the design and goals of this specific study, or does that accurately reflect the overall nature of hospital advertising? Is it possible that in the 15 years that hospitals have been advertising their behaviors have not advanced to the point where predictions of logical marketing behavior, gained from other product and service industries, can be expected to apply? And if not, why not? Is it merely a matter of time--that in another five years this study could be replicated and the hypotheses supported? Or are there dynamics in the industry that overwhelm the effects and keep the players from behaving in predictable ways (given the theoretical knowledge available) relative to other industries? If the latter is true, then researchers in this area must look for new models to explain the advertising behavior of hospitals. Or might the difference in observed behaviors reflect the inability of advertising to be as effective in this industry, as it is in other consumer-oriented industries, given the basic nature of the service it offers? Is the effort to describe health care as an economic good overshadowed by the effect of health care as a social good? This consideration harks back to the original purpose of the charitable organization that evolved as a freestanding community hospital whose presence was there to serve the

public and every person had a right to use its services.

Perhaps the search for these new theories needs to begin at the local market level, by examining the many facets of hospital behavior that have the potential to impact advertising behavior. Otherwise, if large survey studies like this continue, with the existing models of economics, marketing, health care, and advertising used as the theoretical underpinnings, then the results may be similar to those of this study. They reveal where the economic, marketing, and advertising behavior deviates from the expected norms, but they lack the strength to explain why the deviations took place. Any new framework would need to reconsider the economic models that have been traditionally used to describe hospital behavior. It is becoming increasingly clear that standard economic models are not adequate to explain the behavior of this industry.

Some specific areas that could be examined further include determining the percent of yearly budget spent on advertising and market research expenditures. In this way, comparisons among different sized hospitals, different ownership types, and different system affiliation types would be easier to make. It would control for the fact that larger hospitals have larger budgets, and thus spend a larger dollar amount on almost every budget item.

Another area of further research would be to categorize the hospitals in some way which would allow for distinctions

among hospital types which would help overcome the operationalizing problem of assuming perfect substitutability. There is no existing way to easily do that, but by using the American Hospital Association's Hospital Guide which lists all the services that are offered by each hospital, a profile could be developed that would allow hospitals to be categorized as primary, secondary, or tertiary. To develop this profile, hospital experts would have to be surveyed for their opinions on the profiles of which hospitals fit into which categories. Then comparisons in the industry could be made controlling for hospital type, which could be related back to market structure by evaluating the number of competitors found in each category. An example might be that monopolistic behavior would be found in those markets where a number of mid-sized, secondary hospitals are operating, or that oligopolitic behavior might be a better explanation.

And finally, further research could be done on the influence of physicians over hospital selection. Many surveys have shown patients playing an ever-increasing role in the selection of hospitals, but does this accurately reflect the situation? Are patients actually selecting the hospitals themselves, or are physicians merely becoming more subtle in their influence over hospital selection? Obviously asking either the physicians or the patients will not reveal this information, if indeed that is what is going on,

so a less direct approach may be more appropriate. One such idea would be to interview hospital marketers on their opinions of what they have observed. Hopefully their advertising strategies would reflect their beliefs in this area. For instance, if they truly believe that physicians are the overwhelming factor in hospital selection, then more of their marketing efforts would be directed to non-direct consumer groups to influence the influential, or to more of a consumer education focus to counteract the physicians in their advertising copy. Product advertising, with the goal of pulling consumers in to use a particular service, would be less likely to be used.

Hospitals are advertising. And while this study did not identify many differences in their advertising behavior, this continues to be an area where research is needed, particularly if advertising is going to continue to play an important role in the non-price competitive behavior of hospitals.

1. Bovee and Arens, p. 474.
2. Harold S. Luft, et al, "Hospital Behavior in a Local Market Context," Medical Care Review, 43 (Fall 1986), p. 223.
3. Baumol, p. 58.
4. Arnould and DeBrock, p. 267.
5. Feldstein, Health Care Economics, p. 265.
6. Ibid., p. 267.
7. Harold S. Luft, et al, "The Role of Specialized Clinical Services in Competition among Hospitals," Inquiry, 23 (Spring, 1986), pp. 83-94.
8. Arnould and DeBrock, p. 261.
9. Julie Strach, Competitive Analysis, Hackley Hospital, Muskegon, Michigan, 1987, Fig. 1.
10. M.V. Pauly and M. Redisch, "The Not-for-Profit Hospital as a Physicians' Cooperative," American Economic Review, 63 (March 1973), pp. 87-99.
11. Feldstein, Health Care Economics, p. 312.
12. Richard Cyert and James March, A Behavioral Theory of the Firm, (Englewood Cliffs, N.J.: Prentice-Hall, 1963), pp. 4-22.
13. Luft et al, "Hospital Behavior in a Local Market Context," p. 219.
14. R. E. Herzlinger and W. S. Krasker, "Who Profits from NonProfits?" Harvard Business Review, (Jan/Feb 1987), pp. 93-105.
15. Cyril F. Chang and Howard Tuckman, "The Profits of Not-for-Profit Hospitals," Journal of Health Politics, Policy, and Law, 13 (Fall 1988), p. 546.
16. Gray, p. 10.
17. American Hospital Association Guide to the Health Care Field, Table B-3.
18. Hospital Statistics, (Chicago: AHA, 1989-1990 edition), Table 5A.

19. "Advertising-to-Sales Ratios, 1989," Advertising Age  
(Nov. 13, 1989), p. 32.

## **APPENDIX A**

### **STUDY QUESTIONNAIRE**

## 1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

*May I please speak with (marketer's name from list)? Hello, I'm \_\_\_\_ calling for The Steiber Research Group and Hospitals Magazine. As you may recall, we asked you to serve on our panel of selected marketers from across the United States. We are recontacting you with a brief survey of how your marketing department operates. This survey will take 10 minutes to complete and all answers given will be kept strictly confidential.*

Respondent's Name and Phone Number: \_\_\_\_\_

Interviewer's Number: \_\_\_\_\_

(NOTE: IF YOU ARE NOT SPEAKING WITH THE HOSPITAL MARKETER DIRECTLY, ASK TO SPEAK WITH HIM OR HER. IF NECESSARY, SCHEDULE A CALLBACK AND WHEN YOU DO REACH THE MARKETER, REPEAT INTRO. IF YOU ARE SPEAKING WITH THE MARKETER, PROCEED.)

1. What amount of your 1989 advertising budget is specifically earmarked for the third quarter of 1989 (July/August/September)?  
(OPEN ENDED AND CODE)

|                              |        |
|------------------------------|--------|
| No separate budget.....      | 01 5-6 |
| Less than \$25,000.....      | 02     |
| \$25,000 to \$49,999 .....   | 03     |
| \$50,000 to \$99,999 .....   | 04     |
| \$100,000 to \$199,999 ..... | 05     |
| \$200,000 to \$499,999 ..... | 06     |
| \$500,000 to \$999,999 ..... | 07     |
| \$1,000,000 or more .....    | 08     |
| Don't Know .....             | 09     |
| Refused .....                | 10     |

2. What amount of your 1989 advertising budget was actually spent on advertising in the second quarter of the year (April/May/June)?

|                              |        |
|------------------------------|--------|
| No separate budget.....      | 01 7-8 |
| Less than \$25,000.....      | 02     |
| \$25,000 to \$49,999 .....   | 03     |
| \$50,000 to \$99,999 .....   | 04     |
| \$100,000 to \$199,999 ..... | 05     |
| \$200,000 to \$499,999 ..... | 06     |
| \$500,000 to \$999,999 ..... | 07     |
| \$1,000,000 or more .....    | 08     |
| Don't Know .....             | 09     |
| Refused .....                | 10     |

Thinking about the major advertising media your hospital purchased in the second quarter of 1989, what percentage of your advertising dollars were devoted to:

(READ AND ROTATE 3-8; OPEN ENDED AND CODE FROM CODE LIST)

|                         |       |       |
|-------------------------|-------|-------|
| 3. Television           | _____ | 9-10  |
| 4. Radio                | _____ | 11-12 |
| 5. Newspapers/Magazines | _____ | 13-14 |
| 6. Billboards           | _____ | 15-16 |
| 7. Direct Mail          | _____ | 17-18 |
| 8. Other Media          | _____ | 19-20 |

## CODE LIST

|               |    |                             |    |
|---------------|----|-----------------------------|----|
| 0%/None ..... | 01 | 71-80% .....                | 09 |
| 1-10% .....   | 02 | 81-90% .....                | 10 |
| 11-20% .....  | 03 | 91-99% .....                | 11 |
| 21-30% .....  | 04 | 100%/All .....              | 12 |
| 31-40% .....  | 05 | Don't Know .....            | 13 |
| 41-50% .....  | 06 | No advertising budget ..... | 14 |
| 51-60% .....  | 07 | Refused/NA .....            | 15 |
| 61-70% .....  | 08 |                             |    |

Focusing now on print advertising specifically (newspapers and magazines), what percentage of your print dollars in the second quarter of 1989 were devoted to:

(READ AND ROTATE 9-13; OPEN ENDED AND CODE FROM LIST)

|                                             |       |       |
|---------------------------------------------|-------|-------|
| 9. Daily newspapers                         | _____ | 21-22 |
| 10. Local magazines                         | _____ | 23-24 |
| 11. Trade publications                      | _____ | 25-26 |
| 12. National magazines with local placement | _____ | 27-28 |
| 13. Other media                             | _____ | 29-30 |

## CODE LIST

|               |    |                             |    |
|---------------|----|-----------------------------|----|
| 0%/None ..... | 01 | 71-80% .....                | 09 |
| 1-10% .....   | 02 | 81-90% .....                | 10 |
| 11-20% .....  | 03 | 91-99% .....                | 11 |
| 21-30% .....  | 04 | 100%/All .....              | 12 |
| 31-40% .....  | 05 | Don't Know .....            | 13 |
| 41-50% .....  | 06 | No advertising budget ..... | 14 |
| 51-60% .....  | 07 | Refused/NA .....            | 15 |
| 61-70% .....  | 08 |                             |    |

14. Only thinking about paid, commercial advertising, what is your most recent year's total budget for advertising at your hospital?  
(WANT TOTAL LINE ITEM BUDGET FOR ALL PAID ADVERTISING)
- |                                        |    |       |
|----------------------------------------|----|-------|
| No separate budget (SKIP TO Q17) ..... | 01 | 31-32 |
| Less than \$25,000 .....               | 02 |       |
| \$25,000 to \$49,999 .....             | 03 |       |
| \$50,000 to \$99,999 .....             | 04 |       |
| \$100,000 to \$199,999 .....           | 05 |       |
| \$200,000 to \$499,999 .....           | 06 |       |
| \$500,000 to \$999,999 .....           | 07 |       |
| \$1,000,000 or more .....              | 08 |       |
| Don't Know (SKIP TO Q17) .....         | 09 |       |
| Refused (SKIP TO Q17) .....            | 10 |       |
15. Would you say your advertising budget for this year is greater than, less than or the same as last year?
- |                                |   |    |
|--------------------------------|---|----|
| Greater than .....             | 1 | 33 |
| Less than .....                | 2 |    |
| The same (SKIP TO Q17) .....   | 3 |    |
| Don't Know (SKIP TO Q17) ..... | 4 |    |
| Refused/NA (SKIP TO Q17) ..... | 5 |    |
16. (IF CHANGE IN Q15) Thinking about the change in your advertising budget, what were the reasons for that change?  
(MULTIPLE RESPONSE)
- |                                  |    |       |
|----------------------------------|----|-------|
| Budget cuts .....                | 01 | 34-35 |
| Budget increase .....            | 02 | 36-37 |
| Increased competition .....      | 03 | 38-39 |
| New product lines .....          | 04 |       |
| Image campaign .....             | 05 |       |
| No return of ad investment ..... | 06 |       |
| Other (SPECIFY: _____) .....     | 07 |       |
| Don't Know .....                 | 16 |       |
| Refused/NA .....                 | 17 |       |
17. Are you currently tracking the effectiveness of your paid commercial advertising?
- |                                |   |    |
|--------------------------------|---|----|
| Yes .....                      | 1 | 40 |
| No (SKIP TO Q19) .....         | 2 |    |
| Don't Know (SKIP TO Q19) ..... | 3 |    |
| Refused/NA (SKIP TO Q19) ..... | 4 |    |
18. (IF YES IN Q17) What methods are being used to track advertising effectiveness?  
(OPEN-ENDED; MULTIPLE RESPONSE)
- |                                  |    |       |
|----------------------------------|----|-------|
| In-house response tracking ..... | 01 | 41-42 |
| Market research .....            | 02 | 43-44 |
| Census up .....                  | 03 | 45-56 |
| Image recognition .....          | 04 |       |
| Other (SPECIFY: _____) .....     | 05 |       |
| Don't Know .....                 | 15 |       |
| Refused/NA .....                 | 16 |       |

## 19. Do you have a formal ad copy approval process for your advertising copy?

Yes ..... 1 47  
 No ..... 2  
 Don't Know ..... 3  
 Refused/NA ..... 4

20. (IF YES IN Q19) Who is involved in the approval of the advertising copy?  
(ALLOW MULTIPLE RESPONSE)

Marketing department head ..... 01 48-49  
 Department being advertised ..... 02 50-51  
 Hospital legal advisor/council ..... 03 52-53  
 Hospital administration ..... 04  
 Physician committee ..... 05  
 Myself ..... 06  
 Board of directors ..... 07

Other (SPECIFY: \_\_\_\_\_) 08

Don't Know ..... 20  
 Refused/NA ..... 21

## 21. What percentage of your ad copy in the past 12 months was produced by an outside ad agency?

0%/None ..... 01 54-55  
 1-10% ..... 02  
 11-20% ..... 03  
 21-30% ..... 04  
 31-40% ..... 05  
 41-50% ..... 06  
 51-60% ..... 07  
 61-70% ..... 08  
 71-80% ..... 09  
 81-90% ..... 10  
 91-99% ..... 11  
 100%/All ..... 12  
 Don't Know ..... 13  
 No advertising budget ..... 14  
 Refused/NA ..... 15

22. Including all facets of marketing except your salary, such as research, other salaries, advertising, etc., what is your most recent year's marketing budget for your hospital?  
(WANT TOTAL LINE ITEM BUDGET FOR ALL MARKETING OPERATIONS EXCLUDING RESPONDENT'S SALARY)

No separate budget ..... 01 56-57  
 Less than \$25,000 ..... 02  
 \$25,000 to \$49,999 ..... 03  
 \$50,000 to \$99,999 ..... 04  
 \$100,000 to \$199,999 ..... 05  
 \$200,000 to \$499,999 ..... 06  
 \$500,000 to \$999,999 ..... 07  
 \$1,000,000 or more ..... 08  
 Don't Know ..... 09  
 Refused ..... 10

## What percentage of your most recent year's marketing budget was devoted to ...

(READ AND ROTATE Q23-26-; CODE EXACT PERCENTAGE)

23. Consumers ..... 58-60  
 24. Business/Employer markets ..... 61-63  
 25. Physicians ..... 64-66  
 26. Other referrers ..... 67-69

27. Now, thinking only about contracted market research, what is your most recent year's total budget for contracted market research at your hospital?

(WANT BOTTOM LINE TOTAL FOR ALL CONTRACTED MARKET RESEARCH)

|                             |    |       |
|-----------------------------|----|-------|
| No separate budget.....     | 01 | 70-71 |
| Less than \$25,000.....     | 02 |       |
| \$25,000 to \$49,999.....   | 03 |       |
| \$50,000 to \$99,999.....   | 04 |       |
| \$100,000 to \$199,999..... | 05 |       |
| \$200,000 to \$499,999..... | 06 |       |
| \$500,000 to \$999,999..... | 07 |       |
| \$1,000,000 or more.....    | 08 |       |
| Don't Know.....             | 09 |       |
| Refused .....               | 10 |       |

28. Thinking about everything your job has demanded of you in the past year, what are your principal areas of responsibility?

(PROBE FOR THREE MENTIONS)

|                                       |    |       |
|---------------------------------------|----|-------|
| Advertising/Promotion.....            | 01 | 72-73 |
| Market research .....                 | 02 | 74-75 |
| Planning.....                         | 03 | 76-77 |
| Public relations/Communications ..... | 04 |       |
| Fund development/construction .....   | 05 |       |
| Administration.....                   | 06 |       |
| Finance.....                          | 07 |       |
| Product management.....               | 08 |       |
| Sales.....                            | 09 |       |
| Media relations.....                  | 10 |       |
| Product Management/Product Sales..... | 11 |       |
| Physician relations.....              | 12 |       |

Other (SPECIFY: \_\_\_\_\_)13

Other (SPECIFY: \_\_\_\_\_)23

Other (SPECIFY: \_\_\_\_\_)33

Don't Know..... 44

Refused/NA..... 45

29. What is your full position title with the hospital?  
(SPECIFY TWO CATEGORIES: TITLE AND DEPARTMENT)

TITLE

|                                                        |    |       |
|--------------------------------------------------------|----|-------|
| Administrator/CEO/President .....                      | 01 | 78-79 |
| Assistant .....                                        | 02 |       |
| Assistant director .....                               | 03 |       |
| Assistant manager .....                                | 04 |       |
| Assistant vice president .....                         | 05 |       |
| Associate .....                                        | 06 |       |
| Associate vice president/Associate administrator ..... | 07 |       |
| Director .....                                         | 08 |       |
| Manager .....                                          | 09 |       |
| Vice president/Senior vice president .....             | 10 |       |

Other (SPECIFY: \_\_\_\_\_) 11

|                  |    |
|------------------|----|
| Don't Know ..... | 21 |
| Refused .....    | 22 |

DEPARTMENT

|                                                            |    |       |
|------------------------------------------------------------|----|-------|
| Communications .....                                       | 01 | 80-81 |
| Development .....                                          | 02 |       |
| Marketing .....                                            | 03 |       |
| Market Research .....                                      | 04 |       |
| Planning .....                                             | 05 |       |
| Public Relations/Community Relations/Media Relations ..... | 06 |       |

Other (SPECIFY: \_\_\_\_\_) 27

|                  |    |
|------------------|----|
| Don't Know ..... | 28 |
| Refused .....    | 29 |

30. How long have you held this position with the hospital?  
(OPEN ENDED AND CODE)

|                                    |   |    |
|------------------------------------|---|----|
| Less than six months .....         | 1 | 82 |
| 6 months to less than 1 year ..... | 2 |    |
| 1-2 years .....                    | 3 |    |
| 3-4 years .....                    | 4 |    |
| 5-6 years .....                    | 5 |    |
| 6+ years .....                     | 6 |    |
| Don't Know .....                   | 7 |    |
| Refused .....                      | 8 |    |

31. What was your position title prior to this one?  
(SPECIFY THREE CATEGORIES: TITLE (FIRST CATEGORY), DEPARTMENT (SECOND CATEGORY) AND IF EARLIER POSITION WAS AT ANOTHER HOSPITAL, AT THIS HOSPITAL, IN ANOTHER BUSINESS SETTING OR OTHER (THIRD CATEGORY)

TITLE

|                                                     |    |       |
|-----------------------------------------------------|----|-------|
| Administrator/CEO/President .....                   | 01 | 83-84 |
| Assistant .....                                     | 02 |       |
| Assistant director .....                            | 03 |       |
| Assistant manager .....                             | 04 |       |
| Assistant vice president .....                      | 05 |       |
| Associate .....                                     | 06 |       |
| Associate vice president/Associate administrator .. | 07 |       |
| Director .....                                      | 08 |       |
| Manager .....                                       | 09 |       |
| Vice president/Senior vice president .....          | 10 |       |

Other (SPECIFY: \_\_\_\_\_) 11

|                  |    |
|------------------|----|
| Don't Know ..... | 21 |
| Refused .....    | 22 |

DEPARTMENT

|                                                                |    |       |
|----------------------------------------------------------------|----|-------|
| Communications .....                                           | 01 | 85-86 |
| Development .....                                              | 02 |       |
| Marketing .....                                                | 03 |       |
| Market Research .....                                          | 04 |       |
| Planning .....                                                 | 05 |       |
| Public Relations/Community Relations/<br>Media Relations ..... | 06 |       |

Other (SPECIFY: \_\_\_\_\_) 07

|                  |    |
|------------------|----|
| Don't Know ..... | 17 |
| Refused .....    | 18 |

EARLIER POSITION

|                                   |    |       |
|-----------------------------------|----|-------|
| At this hospital .....            | 01 | 87-88 |
| At another hospital .....         | 02 |       |
| In another business setting ..... | 03 |       |
| Was a student .....               | 04 |       |

Other (SPECIFY: \_\_\_\_\_) 05

|                  |    |
|------------------|----|
| Don't Know ..... | 15 |
| Refused/NA ..... | 16 |

32. From whom do you find the most support for marketing in the hospital?  
(ONE RESPONSE ONLY)

|                                   |    |       |
|-----------------------------------|----|-------|
| CEO/Administrator/President ..... | 01 | 89-90 |
| Direct Supervisor .....           | 02 |       |
| Hospital Board .....              | 03 |       |
| Physicians .....                  | 04 |       |
| Nurses .....                      | 05 |       |
| Other Employees .....             | 06 |       |
| Community .....                   | 07 |       |

Other (SPECIFY: \_\_\_\_\_) 08

|                  |    |
|------------------|----|
| Don't Know ..... | 15 |
| Refused/NA ..... | 16 |

---

33. From whom do you find the least support for marketing in the hospital?  
(ONE RESPONSE ONLY)

CEO/Administrator/President ..... 01 91-92  
 Direct Supervisor ..... 02  
 Hospital Board ..... 03  
 Physicians ..... 04  
 Nurses ..... 05  
 Other Employees ..... 06  
 Community ..... 07

Other (SPECIFY: \_\_\_\_\_) 08

Don't Know ..... 15  
 Refused/NA ..... 16

---

34. To whom do you directly report to in the hospital?  
(ONE RESPONSE ONLY)

President/CEO/Administrator ..... 01 93-94  
 Vice President ..... 02  
 Director ..... 03

Other (SPECIFY: \_\_\_\_\_) 04

No one/Am head of hospital ..... 05  
 Hospital Board ..... 06  
 Don't Know ..... 10  
 Refused/NA ..... 11

---

35. In general, would you say the CEO of your organization will be giving much greater, somewhat greater, the same, somewhat smaller or much smaller support for marketing activities for the rest of this year and in 1990?

Much greater ..... 5 95  
 Somewhat greater ..... 4  
 The same ..... 3  
 Somewhat smaller ..... 2  
 Much smaller ..... 1  
 Don't Know ..... 6  
 Refused/NA ..... 7

---

36. What is your principal goal as a marketer for your hospital?  
(PROBE FOR ONE RESPONSE ONLY; PRINCIPAL GOAL)

Increase patient census ..... 01 96-97  
 Identify new services/products ..... 02  
 Shift payor mix ..... 03  
 Develop public relations ..... 04

Increase referrals in (SPECIFY: \_\_\_\_\_) 05

Develop new products/services ..... 06  
 Implement cost-containment ..... 07  
 Increase overall revenues ..... 08  
 Determine pricing strategies ..... 09  
 Enhancing physician relationships ..... 10

Other (SPECIFY: \_\_\_\_\_) 11

Don't Know ..... 20  
 Refused/NA ..... 21

37. Does your hospital employ any individuals in direct sales positions?

Yes (GO TO Q46)..... 01 98  
 No (SKIP TO Q46)..... 02  
 Don't Know (SKIP TO Q46)..... 03  
 Refused/NA (SKIP TO Q46)..... 04

38. (IF YES TO Q37 ASK) What services do these sales professionals represent?  
 (OPEN -ENDED AND CODE; ALLOW TWO RESPONSES)

Occupational health/business..... 01 99-100  
 Sports medicine..... 02 101-2  
 Psychiatric services..... 03  
 Substance abuse..... 04  
 Maternity services..... 05  
 Geriatric/elderly services..... 06  
 Non-obstetrical women's services..... 07

Other (SPECIFY: \_\_\_\_\_) 08

Don't Know..... 15  
 Refused/NA..... 16

39. Did your sales representatives have actual sales experience prior to assuming their present sales position?

Yes, all of them..... 1 103  
 Yes, some of them..... 2  
 No sales experience..... 3  
 Don't Know..... 4  
 Refused/NA..... 5

40. Do your sales representatives receive straight salary, commissions or a combination of salary and commissions?

Straight salary..... 1 104  
 Commission only..... 2  
 Salary and commission..... 3  
 Don't Know..... 4  
 Refused/NA..... 5

41. To whom do your sales representatives report?  
 (OPEN ENDED AND CODE)

Administrator/CEO..... 01 105-6  
 Marketing supervisor..... 02  
 Clinical departments they sell..... 03  
 Planning supervisor..... 04  
 Development supervisor..... 05

Other (SPECIFY: \_\_\_\_\_) 06

Don't Know..... 16  
 Refused/NA..... 17

42. In what markets do your sales representatives work?  
 (OPEN ENDED; CODE ALL RESPONSES)

Consumers/patients..... 01 107-8  
 Business..... 02 109-10  
 Physicians..... 03 111-12

Other (SPECIFY: \_\_\_\_\_) 04 113-14

Don't Know..... 10  
 Refused..... 11

43. How successful has sales been for your hospitals? Have they been very successful, somewhat successful, had mixed results, somewhat unsuccessful or very unsuccessful?
- |                            |   |     |
|----------------------------|---|-----|
| Very successful.....       | 1 | 115 |
| Somewhat successful.....   | 2 |     |
| Mixed results.....         | 3 |     |
| Somewhat unsuccessful..... | 4 |     |
| Very unsuccessful.....     | 5 |     |
| Don't Know.....            | 6 |     |
| Refused.....               | 7 |     |
- 
44. Is your sales function supported by telemarketing?
- |                               |   |     |
|-------------------------------|---|-----|
| Yes.....                      | 1 | 116 |
| No (SKIP TO Q46).....         | 2 |     |
| Don't Know (SKIP TO Q46)..... | 3 |     |
| Refused/NA (SKIP TO Q46)..... | 4 |     |
- 
45. How successful has telemarketing been for your hospitals? Has it been very successful, somewhat successful, had mixed results, somewhat unsuccessful or very unsuccessful?
- |                                  |   |     |
|----------------------------------|---|-----|
| Very successful.....             | 5 | 117 |
| Somewhat successful.....         | 4 |     |
| Mixed results.....               | 3 |     |
| Somewhat unsuccessful.....       | 2 |     |
| Very unsuccessful.....           | 1 |     |
| No telemarketing operations..... | 6 |     |
| Don't Know.....                  | 7 |     |
| Refused.....                     | 8 |     |
- 
46. Do you plan to bring sales or sales staff on board at your hospital within the next year?
- |                 |   |     |
|-----------------|---|-----|
| Yes.....        | 1 | 118 |
| No.....         | 2 |     |
| Don't Know..... | 3 |     |
| Refused/NA..... | 4 |     |

Now a few questions for statistical purposes...

47. What is your highest academic degree?
- |                                             |    |        |
|---------------------------------------------|----|--------|
| BA.....                                     | 01 | 119-20 |
| BS.....                                     | 02 |        |
| MA.....                                     | 03 |        |
| MS.....                                     | 04 |        |
| MPH (Masters of Public Health).....         | 05 |        |
| MHA (Masters of Health Administration)..... | 06 |        |
| DPH (Doctorate of Public Health).....       | 07 |        |
| Other (SPECIFY: _____).....                 | 08 |        |
| Don't Know.....                             | 15 |        |
| Refused/NA.....                             | 16 |        |
- 
48. Is your hospital a member of a multi-hospital system?
- |                               |   |     |
|-------------------------------|---|-----|
| Yes.....                      | 1 | 121 |
| No (SKIP TO Q50).....         | 2 |     |
| Don't Know (SKIP TO Q50)..... | 3 |     |
| Refused/NA (SKIP TO Q50)..... | 4 |     |
- 
49. (IF YES IN Q48) How many years has your hospital been a member of a multi-hospital system?
- |                              |   |     |
|------------------------------|---|-----|
| Less than 3 years.....       | 1 | 122 |
| 3 to less than 5 years.....  | 2 |     |
| 5 to less than 7 years.....  | 3 |     |
| 7 to less than 9 years.....  | 4 |     |
| 9 to less than 11 years..... | 5 |     |
| 11 or more years.....        | 6 |     |
| Don't Know.....              | 7 |     |
| Refused/NA.....              | 8 |     |

50. Is your hospital not-for-profit or for-profit?

|                      |   |     |
|----------------------|---|-----|
| Not-for-profit ..... | 1 | 123 |
| For-profit .....     | 2 |     |
| Don't Know .....     | 3 |     |
| Refused/NA .....     | 4 |     |

51. Excluding yourself, approximately how many Full Time Equivalent (FTE) staff members are assigned to marketing at your facility?

|                      |   |     |
|----------------------|---|-----|
| None .....           | 1 | 124 |
| 1/2 FTE .....        | 2 |     |
| 1 FTE .....          | 3 |     |
| 2 FTEs .....         | 4 |     |
| 3-4 FTEs .....       | 5 |     |
| 5-6 FTEs .....       | 6 |     |
| 7 FTEs or More ..... | 7 |     |
| Don't Know .....     | 8 |     |
| Refused/Na .....     | 9 |     |

52. Which of the following income groups represents your gross salary with benefits according to the most recent year's budget?

(IF THEY ARE NEW TO THE POSITION, ASK AT WHAT SALARY THEY WERE HIRED.  
READ CATEGORIES UNTIL RESPONSE IS OBTAINED.)

|                         |    |        |
|-------------------------|----|--------|
| Under \$15,000 .....    | 01 | 125-26 |
| \$15,000-\$19,999 ..... | 02 |        |
| \$20,000-\$24,999 ..... | 03 |        |
| \$25,000-\$29,999 ..... | 04 |        |
| \$30,000-\$34,999 ..... | 05 |        |
| \$35,000-\$39,999 ..... | 06 |        |
| \$40,000-\$44,999 ..... | 07 |        |
| \$45,000-\$49,999 ..... | 08 |        |
| \$50,000-\$54,999 ..... | 09 |        |
| \$55,000-\$59,999 ..... | 10 |        |
| \$60,000-\$69,999 ..... | 11 |        |
| \$70,000-\$79,999 ..... | 12 |        |
| \$80,000-\$99,999 ..... | 13 |        |
| \$100,000 + .....       | 14 |        |
| Don't Know .....        | 15 |        |
| Refused/NA .....        | 16 |        |

53. Does your hospital provide ...(READ RESPONSES)?

|                      |   |     |
|----------------------|---|-----|
| Primary care .....   | 1 | 127 |
| Secondary care ..... | 2 |     |
| Tertiary care .....  | 3 |     |

Other (SPECIFY: \_\_\_\_\_) 4

|                               |   |  |
|-------------------------------|---|--|
| Don't Know (DON'T READ) ..... | 8 |  |
| Refused/NA (DON'T READ) ..... | 9 |  |

54. How many beds are authorized at your hospital?

|                       |   |     |
|-----------------------|---|-----|
| Less than 50 .....    | 1 | 128 |
| 50 to 100 beds .....  | 2 |     |
| 100 to 199 beds ..... | 3 |     |
| 200 to 299 beds ..... | 4 |     |
| 300 to 399 beds ..... | 5 |     |
| 400 to 499 beds ..... | 6 |     |
| 500 + beds .....      | 7 |     |
| Don't Know .....      | 8 |     |
| Refused/NA .....      | 9 |     |

55. What is your hospital average occupancy rate for the past 12 months?  
(INPATIENT ONLY)

|                  |    |        |
|------------------|----|--------|
| 0%/None .....    | 01 | 129-30 |
| 1-10% .....      | 02 |        |
| 11-20% .....     | 03 |        |
| 21-30% .....     | 04 |        |
| 31-40% .....     | 05 |        |
| 41-50% .....     | 06 |        |
| 51-60% .....     | 07 |        |
| 61-70% .....     | 08 |        |
| 71-80% .....     | 09 |        |
| 81-90% .....     | 10 |        |
| 91-99% .....     | 11 |        |
| 100%/All .....   | 12 |        |
| Don't Know ..... | 13 |        |
| Refused/NA ..... | 14 |        |

56. How many other hospitals are there, within 15 miles of your hospital?

|                  |    |        |
|------------------|----|--------|
| 1 .....          | 01 | 131-32 |
| 2 .....          | 02 |        |
| 3-4 .....        | 03 |        |
| 5-6 .....        | 04 |        |
| 7-8 .....        | 05 |        |
| 9-10 .....       | 06 |        |
| 11-15 .....      | 07 |        |
| 16-20 .....      | 08 |        |
| 20 or more ..... | 09 |        |
| Don't Know ..... | 10 |        |
| Refused/NA ..... | 11 |        |

Thinking about the ownership of these hospitals in your area, how many represent ... (READ AND ROTATE Q57-60; CODE FROM LIST BELOW)

|                                 |       |        |
|---------------------------------|-------|--------|
| 57. Freestanding not-for-profit | _____ | 133-34 |
| 58. Freestanding for-profit     | _____ | 135-36 |
| 59. System not-for-profit       | _____ | 137-38 |
| 60. System for-profit           | _____ | 139-40 |

## CODE LIST

|                  |    |
|------------------|----|
| 1 .....          | 01 |
| 2 .....          | 02 |
| 3-4 .....        | 03 |
| 5-6 .....        | 04 |
| 7-8 .....        | 05 |
| 9-10 .....       | 06 |
| 11-15 .....      | 07 |
| 16-20 .....      | 08 |
| 20 or more ..... | 09 |
| Don't Know ..... | 10 |
| Refused/NA ..... | 11 |

61. Approximately how many beds are authorized within 15 miles of your hospital excluding your hospital?

|                    |    |        |
|--------------------|----|--------|
| Less than 200..... | 01 | 141-42 |
| 200 to 299 .....   | 02 |        |
| 300 to 399 .....   | 03 |        |
| 400 to 499 .....   | 04 |        |
| 500 to 599 .....   | 05 |        |
| 600 to 699 .....   | 06 |        |
| 700 to 799 .....   | 07 |        |
| 800 to 899 .....   | 08 |        |
| 900 to 999 .....   | 09 |        |
| 1000 to 1099 ..... | 10 |        |
| 1100 to 1199 ..... | 11 |        |
| 1200 to 1299 ..... | 12 |        |
| 1300 to 1399 ..... | 13 |        |
| 1400 to 1499 ..... | 14 |        |
| 1500 to 1599 ..... | 15 |        |
| 1600 to 1699 ..... | 16 |        |
| 1700 to 1799 ..... | 17 |        |
| 1800 to 1899 ..... | 18 |        |
| 1900 to 1999 ..... | 19 |        |
| 2000 + beds.....   | 20 |        |
| Don't Know .....   | 21 |        |
| Refused/NA.....    | 22 |        |

62. What is the estimated population within 15 miles of your hospital?

|                        |    |        |
|------------------------|----|--------|
| less than 25,000 ..... | 01 | 143-44 |
| 25,001-50,000 .....    | 02 |        |
| 50,001-100,000 .....   | 03 |        |
| 100,001-150,000 .....  | 04 |        |
| 150,001-200,000 .....  | 05 |        |
| 200,001-250,000 .....  | 06 |        |
| 250,001-300,000 .....  | 07 |        |
| 300,001-400,000 .....  | 08 |        |
| 400,001-500,000 .....  | 09 |        |
| 500,001 and over.....  | 10 |        |
| Don't Know .....       | 11 |        |
| Refused/NA.....        | 12 |        |

## 63. (BY OBSERVATION -- DO NOT ASK)

## Sex of Respondent

|              |   |     |
|--------------|---|-----|
| Male .....   | 1 | 145 |
| Female ..... | 2 |     |

## 64. (DO NOT ASK -- CODE FROM LIST)

REGION

|                                                                                                                                                  |   |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---|-----|
| NEW ENGLAND (Connecticut, Maine, Massachusetts, New Hampshire,<br>Rhode Island, Vermont) .....                                                   | 1 | 146 |
| MIDDLE ATLANTIC (New Jersey, New York,<br>Pennsylvania) .....                                                                                    | 2 |     |
| SOUTH ATLANTIC (Delaware, District of Columbia, Florida,<br>Georgia, Maryland, North Carolina, South Carolina, Virginia,<br>West Virginia) ..... | 3 |     |
| EAST NORTH CENTRAL (Illinois, Indiana, Michigan, Ohio,<br>Wisconsin) .....                                                                       | 4 |     |
| EAST SOUTH CENTRAL (Alabama, Kentucky, Mississippi, Tennessee) .....                                                                             | 5 |     |
| WEST NORTH CENTRAL (Iowa, Kansas, Minnesota, Missouri,<br>Nebraska, North Dakota, South Dakota) .....                                            | 6 |     |
| WEST SOUTH CENTRAL (Arkansas, Louisiana, Oklahoma, Texas) .....                                                                                  | 7 |     |
| MOUNTAIN (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico,<br>Utah, Wyoming) .....                                                         | 8 |     |
| PACIFIC (Alaska, California, Hawaii, Oregon, Washington) .....                                                                                   | 9 |     |

## 65. (DO NOT ASK - CODE FROM LIST)

STATE

## NORTHEAST

|                     |    |
|---------------------|----|
| Connecticut .....   | 01 |
| Maine .....         | 02 |
| Massachusetts ..... | 03 |
| New Hampshire ..... | 04 |
| Rhode Island .....  | 05 |
| Vermont .....       | 06 |
| New Jersey .....    | 07 |
| New York .....      | 08 |
| Pennsylvania .....  | 09 |

## NORTH CENTRAL

|                    |    |
|--------------------|----|
| Illinois .....     | 10 |
| Indiana .....      | 11 |
| Michigan .....     | 12 |
| Ohio .....         | 13 |
| Wisconsin .....    | 14 |
| Iowa .....         | 15 |
| Kansas .....       | 16 |
| Minnesota .....    | 17 |
| Missouri .....     | 18 |
| Nebraska .....     | 19 |
| North Dakota ..... | 20 |
| South Dakota ..... | 21 |

## SOUTH

|                            |    |
|----------------------------|----|
| Delaware .....             | 22 |
| District of Columbia ..... | 23 |
| Florida .....              | 24 |
| Georgia .....              | 25 |
| Maryland .....             | 26 |
| North Carolina .....       | 27 |
| South Carolina .....       | 28 |
| Virginia .....             | 29 |
| West Virginia .....        | 30 |
| Alabama .....              | 31 |
| Kentucky .....             | 32 |
| Mississippi .....          | 33 |
| Tennessee .....            | 34 |
| Arkansas .....             | 35 |
| Louisiana .....            | 36 |
| Oklahoma .....             | 37 |
| Texas .....                | 38 |

## WEST

|                  |    |
|------------------|----|
| Arizona .....    | 39 |
| Colorado .....   | 40 |
| Idaho .....      | 41 |
| Montana .....    | 42 |
| Nevada .....     | 43 |
| New Mexico ..... | 44 |
| Utah .....       | 45 |
| Wyoming .....    | 46 |
| California ..... | 47 |
| Oregon .....     | 48 |
| Washington ..... | 49 |

147-48

**APPENDIX B**

**TOTAL ADVERTISING EXPENDITURES**

## 1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 14: THINKING ONLY ABOUT PAID, COMMERCIAL ADVERTISING, WHAT IS YOUR MOST RECENT YEAR'S TOTAL BUDGET FOR ADVERTISING AT YOUR HOSPITAL?

|                                    | NUMBER OF BEDS<br>AUTHORIZED |             | REGION HOSPITAL<br>IS LOCATED |          | HOSPITAL<br>SYSTEM |           | PROFIT<br>HOSPITAL |          | OTHER<br>HOSPITALS |           | OCCUPANCY TRACKING<br>RATE |          | ADS       |                           |
|------------------------------------|------------------------------|-------------|-------------------------------|----------|--------------------|-----------|--------------------|----------|--------------------|-----------|----------------------------|----------|-----------|---------------------------|
|                                    | 0-<br>199                    | 200-<br>399 | NE                            | NC       | SO                 | WEST      | YES                | NO       | NOT-<br>FOR        | FOR       | 1-2                        | 3+       | 0-60      | 61+ YES NO                |
| TOTAL                              | 196                          | 113         | 51                            | 32       | 37                 | 57        | 74                 | 28       | 117                | 78        | 159                        | 36       | 47        | 102 86 98 132 57          |
| TOTAL RESPONSES                    |                              |             |                               |          |                    |           |                    |          |                    |           |                            |          |           |                           |
| NO SEPARATE BUDGET                 | 12<br>6%                     | 8<br>7%     | 1<br>2%                       | 3<br>9%  | 3<br>8%            | 6<br>11%  | 3<br>4%            | 0<br>0%  | 7<br>6%            | 5<br>6%   | 11<br>7%                   | 1<br>3%  | 4<br>9%   | 2<br>4% 8% 2% 9%          |
| LESS THAN \$25,000                 | 41<br>21%                    | 33<br>29%   | 6<br>12%                      | 2<br>6%  | 9<br>24%           | 11<br>19% | 16<br>22%          | 5<br>18% | 25<br>21%          | 16<br>21% | 35<br>22%                  | 6<br>17% | 9<br>19%  | 12<br>15% 24 15 18 23 40% |
| \$25,000 TO \$49,999               | 20<br>10%                    | 20<br>18%   | 0<br>0%                       | 0<br>0%  | 4<br>11%           | 6<br>11%  | 10<br>14%          | 0<br>0%  | 10<br>9%           | 10<br>13% | 13<br>8%                   | 7<br>19% | 6<br>13%  | 6<br>9% 11 9 10 9 16%     |
| \$50,000 TO \$99,999               | 34<br>17%                    | 21<br>19%   | 11<br>22%                     | 2<br>6%  | 6<br>16%           | 10<br>18% | 15<br>20%          | 3<br>11% | 22<br>19%          | 12<br>15% | 25<br>16%                  | 9<br>25% | 11<br>23% | 16<br>13% 19 13 26 8 14%  |
| \$100,000 TO \$199,999             | 32<br>16%                    | 14<br>12%   | 13<br>25%                     | 5<br>16% | 8<br>22%           | 7<br>12%  | 9<br>12%           | 8<br>29% | 20<br>17%          | 12<br>15% | 28<br>18%                  | 4<br>11% | 10<br>21% | 20<br>15% 19 20 26 6 11%  |
| \$200,000 TO \$499,999             | 24<br>12%                    | 3<br>3%     | 12<br>24%                     | 9<br>28% | 5<br>14%           | 7<br>12%  | 8<br>11%           | 4<br>14% | 14<br>12%          | 10<br>13% | 19<br>12%                  | 4<br>11% | 5<br>11%  | 18<br>7% 6 18 24 0 0%     |
| \$500,000 TO \$999,999             | 6<br>3%                      | 2<br>2%     | 1<br>2%                       | 3<br>9%  | 0<br>0%            | 1<br>2%   | 3<br>4%            | 2<br>7%  | 5<br>4%            | 1<br>1%   | 4<br>3%                    | 2<br>6%  | 0<br>0%   | 3<br>3% 3 3 6 0 0%        |
| \$1,000,000 OR MORE<br>(1,250,000) | 3<br>2%                      | 0<br>0%     | 1<br>2%                       | 2<br>6%  | 0<br>0%            | 1<br>2%   | 1<br>1%            | 1<br>4%  | 2<br>2%            | 1<br>1%   | 2<br>1%                    | 1<br>3%  | 0<br>0%   | 3<br>1% 2 3 0 0%          |

## 1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 14: THINKING ONLY ABOUT PAID, COMMERCIAL ADVERTISING, WHAT IS YOUR MOST RECENT YEAR'S TOTAL BUDGET FOR ADVERTISING AT YOUR HOSPITAL?

|                   | NUMBER OF BEDS<br>AUTHORIZED |             | REGION HOSPITAL<br>IS LOCATED |             | HOSPITAL<br>SYSTEM |             | PROFIT<br>HOSPITAL |             | OTHER<br>HOSPITALS |     | OCCUPANCY<br>RATE |     | TRACKING<br>ADS |     |    |    |     |    |
|-------------------|------------------------------|-------------|-------------------------------|-------------|--------------------|-------------|--------------------|-------------|--------------------|-----|-------------------|-----|-----------------|-----|----|----|-----|----|
|                   | 0-<br>199                    | 200-<br>399 | 400+<br>499                   | 500-<br>599 | 600-<br>699        | 700-<br>799 | 800-<br>899        | 900-<br>999 | 1-2                | 3+  | 0-60              | 61+ | YES             | NO  |    |    |     |    |
| TOTAL             | 196                          | 113         | 51                            | 32          | 37                 | 57          | 74                 | 28          | 117                | 78  | 159               | 36  | 47              | 102 | 86 | 98 | 132 | 57 |
| TOTAL RESPONSES   | 16                           | 10          | 4                             | 2           | 2                  | 5           | 6                  | 3           | 6                  | 9   | 14                | 2   | 1               | 12  | 3  | 7  | 11  | 5  |
| DON'T KNOW        | 8X                           | 9X          | 8X                            | 6X          | 5X                 | 9X          | 8X                 | 11X         | 5X                 | 12X | 9X                | 6X  | 2X              | 12X | 3X | 7X | 8X  | 9X |
| REFUSED/NO ANSWER | 8                            | 2           | 2                             | 4           | 0                  | 3           | 3                  | 2           | 6                  | 2   | 8                 | 0   | 1               | 5   | 4  | 4  | 5   | 1  |
|                   | 4X                           | 2X          | 4X                            | 13X         | 0X                 | 5X          | 4X                 | 7X          | 5X                 | 3X  | 5X                | 0X  | 2X              | 5X  | 5X | 4X | 4X  | 2X |

## **APPENDIX C**

### **PERCENT OF BUDGET SPENT ON TELEVISION**

1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 3: THINKING ABOUT THE MAJOR ADVERTISING MEDIA YOUR HOSPITAL PURCHASED IN THE SECOND QUARTER OF 1989, WHAT PERCENTAGE OF YOUR ADVERTISING DOLLARS WERE DEVOTED TO TELEVISION?

| NUMBER OF BEDS<br>AUTHORIZED |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | REGION HOSPITAL<br>IS LOCATED |  |  |  | HOSPITAL<br>SYSTEM |  |  |  | PROFIT<br>HOSPITAL |  |  |  | OTHER<br>HOSPITALS |  |  |  | OCCUPANCY TRACKING<br>RATE |  |  |  | ADS |  |  |  |             |  |  |  |     |  |  |  |    |  |  |  |      |  |  |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| TOTAL                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 199                           |  |  |  | 399                |  |  |  |                    |  |  |  |                    |  |  |  |                            |  |  |  |     |  |  |  |             |  |  |  |     |  |  |  |    |  |  |  |      |  |  |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 3: THINKING ABOUT THE MAJOR ADVERTISING MEDIA YOUR HOSPITAL PURCHASED IN THE SECOND QUARTER OF 1989, WHAT PERCENTAGE OF YOUR ADVERTISING DOLLARS WERE DEVOTED TO TELEVISION?

|                       | NUMBER OF BEDS AUTHORIZED |      | REGION HOSPITAL IS LOCATED |    | HOSPITAL SYSTEM |      | PROFIT HOSPITAL |    | OTHER HOSPITALS |     | OCCUPANCY RATE |    | TRACKING ADS |     |     |    |     |    |
|-----------------------|---------------------------|------|----------------------------|----|-----------------|------|-----------------|----|-----------------|-----|----------------|----|--------------|-----|-----|----|-----|----|
|                       | 0- 200-                   | 400+ | NE                         | NC | SO              | WEST | YES             | NO | WOT-            | FOR | 1-2            | 3+ | 0-60         | 61+ | YES | NO |     |    |
| TOTAL                 | 199                       | 399  |                            |    |                 |      |                 |    |                 |     |                |    |              |     |     |    |     |    |
| TOTAL RESPONSES       | 196                       | 113  | 51                         | 32 | 37              | 57   | 74              | 28 | 117             | 78  | 159            | 36 | 47           | 102 | 86  | 98 | 132 | 57 |
| 71-80%                | 4                         | 0    | 1                          | 3  | 1               | 1    | 1               | 4  | 0               | 0   | 4              | 0  | 0            | 4   | 2   | 2  | 3   | 1  |
|                       | 2%                        | 0%   | 2%                         | 9% | 3%              | 2%   | 1%              | 3% | 0%              | 3%  | 3%             | 0% | 0%           | 4%  | 2%  | 2% | 2%  | 2% |
| 81-90%                | 3                         | 0    | 2                          | 1  | 1               | 0    | 2               | 0  | 2               | 1   | 2              | 1  | 1            | 2   | 0   | 3  | 2   | 1  |
|                       | 2%                        | 0%   | 4%                         | 3% | 3%              | 0%   | 3%              | 0% | 2%              | 1%  | 1%             | 3% | 2%           | 2%  | 0%  | 3% | 2%  | 2% |
| 91-99%                | 2                         | 1    | 0                          | 1  | 1               | 0    | 1               | 0  | 1               | 1   | 2              | 0  | 0            | 2   | 0   | 2  | 2   | 0  |
|                       | 1%                        | 1%   | 0%                         | 3% | 3%              | 0%   | 1%              | 0% | 1%              | 1%  | 1%             | 0% | 0%           | 2%  | 0%  | 2% | 2%  | 0% |
| 100%/ALL              | 1                         | 0    | 1                          | 0  | 0               | 1    | 0               | 1  | 0               | 0   | 0              | 1  | 0            | 1   | 0   | 0  | 1   | 0  |
|                       | 1%                        | 0%   | 2%                         | 0% | 0%              | 1%   | 0%              | 1% | 0%              | 0%  | 0%             | 3% | 0%           | 1%  | 0%  | 0% | 1%  | 0% |
| DON'T KNOW            | 0                         | 0    | 0                          | 0  | 0               | 0    | 0               | 0  | 0               | 0   | 0              | 0  | 0            | 0   | 0   | 0  | 0   | 0  |
|                       | 0%                        | 0%   | 0%                         | 0% | 0%              | 0%   | 0%              | 0% | 0%              | 0%  | 0%             | 0% | 0%           | 0%  | 0%  | 0% | 0%  | 0% |
| NO ADVERTISING BUDGET | 3                         | 2    | 1                          | 0  | 2               | 0    | 1               | 0  | 2               | 1   | 3              | 0  | 1            | 1   | 1   | 2  | 0   | 2  |
|                       | 2%                        | 2%   | 2%                         | 0% | 5%              | 0%   | 1%              | 0% | 2%              | 1%  | 2%             | 0% | 2%           | 1%  | 1%  | 2% | 0%  | 4% |
| REFUSED/NO ANSWER     | 6                         | 5    | 0                          | 1  | 1               | 3    | 1               | 1  | 1               | 5   | 6              | 0  | 0            | 3   | 2   | 2  | 1   | 1  |
|                       | 3%                        | 4%   | 0%                         | 3% | 3%              | 5%   | 1%              | 4% | 1%              | 6%  | 4%             | 0% | 0%           | 3%  | 2%  | 2% | 1%  | 2% |

## **APPENDIX D**

### **PERCENT OF BUDGET SPENT ON RADIO**

1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 4: THINKING ABOUT THE MAJOR ADVERTISING MEDIA YOUR HOSPITAL PURCHASED IN THE SECOND QUARTER OF 1989, WHAT PERCENTAGE OF YOUR ADVERTISING DOLLARS WERE DEVOTED TO RADIO?

|                 | NUMBER OF BEDS<br>AUTHORIZED |             | REGION HOSPITAL<br>IS LOCATED |     | HOSPITAL<br>SYSTEM |      | PROFIT<br>HOSPITAL |     | OTHER<br>HOSPITALS |     | OCCUPANCY<br>RATE |            | TRACKING<br>ADS |     |     |     |     |     |
|-----------------|------------------------------|-------------|-------------------------------|-----|--------------------|------|--------------------|-----|--------------------|-----|-------------------|------------|-----------------|-----|-----|-----|-----|-----|
|                 | 0- 200-<br>199               | 400+<br>399 | NE                            | WC  | SO                 | WEST | YES                | NO  | NOT-<br>FOR        | FOR | 1-2               | 3+<br>0-60 | 61+<br>YES      | NO  |     |     |     |     |
| TOTAL           | 196                          | 113         | 51                            | 32  | 37                 | 57   | 74                 | 28  | 117                | 78  | 159               | 36         | 47              | 102 | 86  | 98  | 132 | 57  |
| TOTAL RESPONSES | 196                          | 113         | 51                            | 32  | 37                 | 57   | 74                 | 28  | 117                | 78  | 159               | 36         | 47              | 102 | 86  | 98  | 132 | 57  |
| 0X/NONE         | 78                           | 42          | 19                            | 17  | 18                 | 22   | 28                 | 10  | 51                 | 26  | 62                | 16         | 14              | 54  | 33  | 38  | 51  | 26  |
|                 | 40X                          | 37X         | 53X                           | 49X | 39X                | 38X  | 36X                | 44X | 33X                | 39X | 44X               | 30X        | 53X             | 38X | 39X | 39X | 39X | 46X |
| 1-10X           | 42                           | 21          | 14                            | 7   | 8                  | 10   | 17                 | 7   | 25                 | 17  | 34                | 7          | 16              | 14  | 21  | 21  | 32  | 10  |
|                 | 21X                          | 19X         | 27X                           | 22X | 22X                | 18X  | 23X                | 25X | 21X                | 22X | 21X               | 19X        | 34X             | 14X | 24X | 21X | 24X | 18X |
| 11-20X          | 17                           | 10          | 5                             | 2   | 2                  | 8    | 6                  | 1   | 10                 | 7   | 13                | 4          | 3               | 9   | 10  | 6   | 14  | 3   |
|                 | 9X                           | 9X          | 10X                           | 6X  | 5X                 | 14X  | 8X                 | 4X  | 9X                 | 9X  | 8X                | 11X        | 6X              | 9X  | 12X | 6X  | 11X | 5X  |
| 21-30X          | 20                           | 11          | 5                             | 4   | 2                  | 3    | 10                 | 5   | 12                 | 8   | 17                | 3          | 7               | 9   | 7   | 12  | 16  | 4   |
|                 | 10X                          | 10X         | 10X                           | 13X | 5X                 | 5X   | 14X                | 18X | 10X                | 10X | 11X               | 8X         | 15X             | 9X  | 8X  | 12X | 12X | 7X  |
| 31-40X          | 10                           | 7           | 2                             | 1   | 1                  | 2    | 7                  | 0   | 7                  | 3   | 8                 | 2          | 2               | 2   | 6   | 4   | 7   | 3   |
|                 | 5X                           | 6X          | 4X                            | 3X  | 3X                 | 4X   | 9X                 | 0X  | 6X                 | 4X  | 5X                | 6X         | 4X              | 2X  | 7X  | 4X  | 5X  | 5X  |
| 41-50X          | 15                           | 10          | 5                             | 0   | 2                  | 6    | 3                  | 4   | 6                  | 9   | 13                | 2          | 3               | 7   | 6   | 9   | 8   | 6   |
|                 | 8X                           | 9X          | 10X                           | 0X  | 5X                 | 11X  | 4X                 | 14X | 5X                 | 12X | 8X                | 6X         | 6X              | 7X  | 7X  | 9X  | 6X  | 11X |
| 51-60X          | 2                            | 2           | 0                             | 0   | 0                  | 0    | 1                  | 1   | 2                  | 0   | 1                 | 1          | 0               | 1   | 1   | 1   | 1   | 1   |
|                 | 1X                           | 2X          | 0X                            | 0X  | 0X                 | 0X   | 1X                 | 4X  | 2X                 | 0X  | 1X                | 3X         | 0X              | 1X  | 1X  | 1X  | 1X  | 2X  |
| 61-70X          | 0                            | 0           | 0                             | 0   | 0                  | 0    | 0                  | 0   | 0                  | 0   | 0                 | 0          | 0               | 0   | 0   | 0   | 0   | 0   |
|                 | 0X                           | 0X          | 0X                            | 0X  | 0X                 | 0X   | 0X                 | 0X  | 0X                 | 0X  | 0X                | 0X         | 0X              | 0X  | 0X  | 0X  | 0X  | 0X  |

## 1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 4: THINKING ABOUT THE MAJOR ADVERTISING MEDIA YOUR HOSPITAL PURCHASED IN THE SECOND QUARTER OF 1989, WHAT PERCENTAGE OF YOUR ADVERTISING DOLLARS WERE DEVOTED TO RADIO?

|                          | NUMBER OF BEDS<br>AUTHORIZED |             | REGION HOSPITAL<br>IS LOCATED |             | HOSPITAL<br>SYSTEM |             | PROFIT<br>HOSPITAL |             | OTHER<br>HOSPITALS |               | OCCUPANCY TRACKING<br>RATE |               | ADVERTISING<br>YES NO |               |    |    |     |    |
|--------------------------|------------------------------|-------------|-------------------------------|-------------|--------------------|-------------|--------------------|-------------|--------------------|---------------|----------------------------|---------------|-----------------------|---------------|----|----|-----|----|
|                          | 0-<br>199                    | 200-<br>399 | 400+<br>499                   | 500-<br>599 | 600-<br>699        | 700-<br>799 | 800-<br>899        | 900-<br>999 | 1000-<br>1099      | 1100-<br>1199 | 1200-<br>1299              | 1300-<br>1399 | 1400-<br>1499         | 1500-<br>1599 |    |    |     |    |
| TOTAL                    | 196                          | 113         | 51                            | 32          | 37                 | 57          | 74                 | 28          | 117                | 78            | 159                        | 36            | 47                    | 102           | 86 | 98 | 132 | 57 |
| TOTAL RESPONSES          |                              |             |                               |             |                    |             |                    |             |                    |               |                            |               |                       |               |    |    |     |    |
| 71-80%                   | 1                            | 1           | 0                             | 0           | 0                  | 1           | 0                  | 0           | 1                  | 1             | 1                          | 0             | 1                     | 0             | 0  | 1  | 0   | 1  |
|                          | 1X                           | 1X          | 0X                            | 0X          | 0X                 | 2X          | 0X                 | 0X          | 0X                 | 1X            | 1X                         | 0X            | 2X                    | 0X            | 0X | 1X | 0X  | 2X |
| 81-90%                   | 2                            | 2           | 0                             | 0           | 0                  | 2           | 0                  | 0           | 1                  | 1             | 1                          | 1             | 0                     | 2             | 0  | 1  | 2   | 0  |
|                          | 1X                           | 2X          | 0X                            | 0X          | 0X                 | 4X          | 0X                 | 0X          | 1X                 | 1X            | 1X                         | 3X            | 0X                    | 2X            | 0X | 1X | 2X  | 0X |
| 91-99%                   | 0                            | 0           | 0                             | 0           | 0                  | 0           | 0                  | 0           | 0                  | 0             | 0                          | 0             | 0                     | 0             | 0  | 0  | 0   | 0  |
|                          | 0X                           | 0X          | 0X                            | 0X          | 0X                 | 0X          | 0X                 | 0X          | 0X                 | 0X            | 0X                         | 0X            | 0X                    | 0X            | 0X | 0X | 0X  | 0X |
| 100%/ALL                 | 0                            | 0           | 0                             | 0           | 0                  | 0           | 0                  | 0           | 0                  | 0             | 0                          | 0             | 0                     | 0             | 0  | 0  | 0   | 0  |
|                          | 0X                           | 0X          | 0X                            | 0X          | 0X                 | 0X          | 0X                 | 0X          | 0X                 | 0X            | 0X                         | 0X            | 0X                    | 0X            | 0X | 0X | 0X  | 0X |
| DON'T KNOW               | 1                            | 1           | 0                             | 0           | 1                  | 0           | 0                  | 0           | 0                  | 1             | 1                          | 0             | 0                     | 0             | 0  | 1  | 1   | 0  |
|                          | 1X                           | 1X          | 0X                            | 0X          | 3X                 | 0X          | 0X                 | 0X          | 0X                 | 1X            | 1X                         | 0X            | 0X                    | 0X            | 0X | 1X | 1X  | 0X |
| NO ADVERTISING<br>BUDGET | 3                            | 2           | 1                             | 0           | 2                  | 0           | 1                  | 0           | 2                  | 1             | 3                          | 0             | 1                     | 1             | 1  | 2  | 0   | 2  |
|                          | 2X                           | 2X          | 2X                            | 0X          | 5X                 | 0X          | 1X                 | 0X          | 2X                 | 1X            | 2X                         | 0X            | 2X                    | 1X            | 1X | 2X | 0X  | 4X |
| REFUSED/NO ANSWER        | 5                            | 4           | 0                             | 1           | 1                  | 3           | 1                  | 0           | 1                  | 4             | 5                          | 0             | 0                     | 3             | 1  | 2  | 0   | 1  |
|                          | 3X                           | 4X          | 0X                            | 3X          | 3X                 | 5X          | 1X                 | 0X          | 1X                 | 5X            | 3X                         | 0X            | 0X                    | 3X            | 1X | 2X | 0X  | 2X |

## **APPENDIX E**

### **PERCENT OF BUDGET SPENT ON NEWSPAPERS/MAGAZINES**

1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 5: THINKING ABOUT THE MAJOR ADVERTISING MEDIA YOUR HOSPITAL PURCHASED IN THE SECOND QUARTER OF 1989, WHAT PERCENTAGE OF YOUR ADVERTISING DOLLARS WERE DEVOTED TO NEWSPAPERS/MAGAZINES?

|                 | NUMBER OF BEDS<br>AUTHORIZED |             | REGION HOSPITAL<br>IS LOCATED |     | HOSPITAL<br>SYSTEM |     | PROFIT<br>HOSPITAL |     | OTHER<br>HOSPITALS |             | OCCUPANCY<br>RATE |     | TRACKING<br>ADS |      |            |     |     |     |
|-----------------|------------------------------|-------------|-------------------------------|-----|--------------------|-----|--------------------|-----|--------------------|-------------|-------------------|-----|-----------------|------|------------|-----|-----|-----|
|                 | 0-<br>199                    | 200-<br>399 | 400+<br>400+                  | NE  | NC                 | SO  | WEST               | YES | NO                 | NOT-<br>FOR | FOR               | 1-2 | 3+              | 0-60 | 61+<br>YES | NO  |     |     |
| TOTAL           | 196                          | 113         | 51                            | 32  | 37                 | 57  | 74                 | 28  | 117                | 78          | 159               | 36  | 47              | 102  | 86         | 98  | 132 | 57  |
| TOTAL RESPONSES |                              |             |                               |     |                    |     |                    |     |                    |             |                   |     |                 |      |            |     |     |     |
| 0X/NONE         | 5                            | 3           | 1                             | 1   | 1                  | 0   | 4                  | 0   | 2                  | 3           | 4                 | 1   | 1               | 3    | 1          | 2   | 2   | 2   |
|                 | 3X                           | 3X          | 2X                            | 3X  | 3X                 | 0X  | 5X                 | 0X  | 2X                 | 4X          | 3X                | 3X  | 2X              | 3X   | 1X         | 2X  | 2X  | 4X  |
| 1-10X           | 21                           | 11          | 6                             | 4   | 4                  | 4   | 9                  | 4   | 14                 | 7           | 16                | 5   | 3               | 15   | 5          | 15  | 17  | 4   |
|                 | 11X                          | 10X         | 12X                           | 13X | 11X                | 7X  | 12X                | 14X | 12X                | 9X          | 10X               | 14X | 6X              | 15X  | 6X         | 15X | 13X | 7X  |
| 11-20X          | 14                           | 8           | 2                             | 4   | 3                  | 2   | 7                  | 2   | 12                 | 2           | 10                | 4   | 2               | 11   | 7          | 7   | 12  | 1   |
|                 | 7X                           | 7X          | 4X                            | 13X | 8X                 | 4X  | 9X                 | 7X  | 10X                | 3X          | 6X                | 11X | 4X              | 11X  | 8X         | 7X  | 9X  | 2X  |
| 21-30X          | 18                           | 6           | 7                             | 5   | 0                  | 7   | 10                 | 1   | 15                 | 3           | 13                | 5   | 6               | 12   | 7          | 11  | 13  | 5   |
|                 | 9X                           | 5X          | 14X                           | 16X | 0X                 | 12X | 14X                | 4X  | 13X                | 4X          | 8X                | 14X | 13X             | 12X  | 8X         | 11X | 10X | 9X  |
| 31-40X          | 25                           | 14          | 6                             | 5   | 4                  | 1   | 15                 | 5   | 19                 | 6           | 18                | 6   | 8               | 10   | 12         | 13  | 21  | 4   |
|                 | 13X                          | 12X         | 12X                           | 16X | 11X                | 2X  | 20X                | 18X | 16X                | 8X          | 11X               | 17X | 17X             | 10X  | 14X        | 13X | 16X | 7X  |
| 41-50X          | 25                           | 17          | 5                             | 3   | 5                  | 9   | 8                  | 3   | 9                  | 16          | 21                | 4   | 4               | 9    | 13         | 12  | 15  | 10  |
|                 | 13X                          | 15X         | 10X                           | 9X  | 14X                | 16X | 11X                | 11X | 8X                 | 21X         | 13X               | 11X | 9X              | 9X   | 15X        | 12X | 11X | 18X |
| 51-60X          | 11                           | 7           | 4                             | 0   | 0                  | 5   | 3                  | 3   | 8                  | 3           | 7                 | 4   | 6               | 3    | 5          | 5   | 9   | 2   |
|                 | 6X                           | 6X          | 8X                            | 0X  | 0X                 | 9X  | 4X                 | 11X | 7X                 | 4X          | 4X                | 11X | 13X             | 3X   | 6X         | 5X  | 7X  | 4X  |
| 61-70X          | 7                            | 4           | 2                             | 1   | 3                  | 1   | 2                  | 1   | 3                  | 4           | 6                 | 1   | 2               | 4    | 2          | 4   | 6   | 1   |
|                 | 4X                           | 4X          | 4X                            | 3X  | 8X                 | 2X  | 3X                 | 4X  | 3X                 | 5X          | 4X                | 3X  | 4X              | 4X   | 2X         | 4X  | 5X  | 2X  |

## 1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 5: THINKING ABOUT THE MAJOR ADVERTISING MEDIA YOUR HOSPITAL PURCHASED IN THE SECOND QUARTER OF 1989, WHAT PERCENTAGE OF YOUR ADVERTISING DOLLARS WERE DEVOTED TO NEWSPAPERS/MAGAZINES?

|                       | NUMBER OF BEDS AUTHORIZED |         | REGION HOSPITAL IS LOCATED |     | HOSPITAL SYSTEM |      | PROFIT HOSPITAL |     | OTHER HOSPITALS |     | OCCUPANCY RATE |      | TRACKING ADS |     |     |     |     |     |
|-----------------------|---------------------------|---------|----------------------------|-----|-----------------|------|-----------------|-----|-----------------|-----|----------------|------|--------------|-----|-----|-----|-----|-----|
|                       | 0-199                     | 200-399 | 400+ ME                    | NC  | SO              | WEST | YES             | NO  | NOT- FOR        | 1-2 | 3+             | 0-60 | 61+          | YES | NO  |     |     |     |
| TOTAL                 | 196                       | 113     | 51                         | 32  | 37              | 57   | 74              | 28  | 117             | 78  | 159            | 36   | 47           | 102 | 86  | 98  | 132 | 57  |
| TOTAL RESPONSES       |                           |         |                            |     |                 |      |                 |     |                 |     |                |      |              |     |     |     |     |     |
| 71-80X                | 26                        | 16      | 5                          | 5   | 5               | 8    | 8               | 5   | 13              | 13  | 24             | 2    | 4            | 16  | 12  | 11  | 15  | 11  |
|                       | 13X                       | 14X     | 10X                        | 16X | 14X             | 14X  | 11X             | 18X | 11X             | 17X | 15X            | 6X   | 9X           | 16X | 14X | 11X | 11X | 19X |
| 81-90X                | 15                        | 6       | 7                          | 2   | 4               | 9    | 1               | 1   | 8               | 7   | 15             | 0    | 7            | 5   | 7   | 8   | 10  | 5   |
|                       | 8X                        | 5X      | 14X                        | 6X  | 11X             | 16X  | 1X              | 4X  | 7X              | 9X  | 9X             | 0X   | 15X          | 5X  | 8X  | 8X  | 8X  | 9X  |
| 91-99X                | 5                         | 3       | 2                          | 0   | 2               | 1    | 0               | 2   | 2               | 3   | 4              | 1    | 1            | 4   | 2   | 2   | 5   | 0   |
|                       | 3X                        | 3X      | 4X                         | 0X  | 5X              | 2X   | 0X              | 7X  | 2X              | 4X  | 3X             | 3X   | 2X           | 4X  | 2X  | 2X  | 4X  | 0X  |
| 100X/ALL              | 14                        | 11      | 2                          | 1   | 3               | 6    | 5               | 0   | 8               | 6   | 12             | 2    | 1            | 6   | 10  | 4   | 4   | 9   |
|                       | 7X                        | 10X     | 4X                         | 3X  | 8X              | 11X  | 7X              | 0X  | 7X              | 8X  | 8X             | 6X   | 2X           | 6X  | 12X | 4X  | 3X  | 16X |
| DON'T KNOW            | 1                         | 0       | 1                          | 0   | 0               | 1    | 0               | 0   | 0               | 0   | 1              | 0    | 0            | 0   | 0   | 0   | 1   | 0   |
|                       | 1X                        | 0X      | 2X                         | 0X  | 0X              | 2X   | 0X              | 0X  | 0X              | 0X  | 1X             | 0X   | 0X           | 0X  | 0X  | 0X  | 1X  | 0X  |
| NO ADVERTISING BUDGET | 3                         | 2       | 1                          | 0   | 2               | 0    | 1               | 0   | 2               | 1   | 3              | 0    | 1            | 1   | 1   | 2   | 0   | 2   |
|                       | 2X                        | 2X      | 2X                         | 0X  | 5X              | 0X   | 1X              | 0X  | 2X              | 1X  | 2X             | 0X   | 2X           | 1X  | 1X  | 2X  | 0X  | 4X  |
| REFUSED/NO ANSWER     | 6                         | 5       | 0                          | 1   | 1               | 3    | 1               | 1   | 2               | 4   | 5              | 1    | 1            | 3   | 2   | 2   | 2   | 1   |
|                       | 3X                        | 4X      | 0X                         | 3X  | 3X              | 5X   | 1X              | 4X  | 2X              | 5X  | 3X             | 3X   | 2X           | 3X  | 2X  | 2X  | 2X  | 2X  |

## 1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 5: THINKING ABOUT THE MAJOR ADVERTISING MEDIA YOUR HOSPITAL PURCHASED IN THE SECOND QUARTER OF 1989, WHAT PERCENTAGE OF YOUR ADVERTISING DOLLARS WERE DEVOTED TO NEWSPAPERS/MAGAZINES?

|                          | NUMBER OF BEDS<br>AUTHORIZED |             | REGION HOSPITAL<br>IS LOCATED |     | HOSPITAL<br>SYSTEM |      | PROFIT<br>HOSPITAL |     | OTHER<br>HOSPITALS |     | OCCUPANCY TRACKING<br>RATE |    | ADS  |               |     |     |     |     |
|--------------------------|------------------------------|-------------|-------------------------------|-----|--------------------|------|--------------------|-----|--------------------|-----|----------------------------|----|------|---------------|-----|-----|-----|-----|
|                          | 0-<br>199                    | 200-<br>399 | 400+<br>NE                    | MC  | SO                 | WEST | YES                | NO  | NOT-<br>FOR        | FOR | 1-2                        | 3+ | 0-60 | 61+<br>YES NO |     |     |     |     |
| TOTAL                    | 196                          | 113         | 51                            | 32  | 37                 | 57   | 74                 | 28  | 117                | 78  | 159                        | 36 | 47   | 102           | 86  | 98  | 132 | 57  |
| TOTAL RESPONSES          |                              |             |                               |     |                    |      |                    |     |                    |     |                            |    |      |               |     |     |     |     |
| 71-80%                   | 26                           | 16          | 5                             | 5   | 5                  | 8    | 8                  | 5   | 13                 | 13  | 24                         | 2  | 4    | 16            | 12  | 11  | 15  | 11  |
|                          | 13%                          | 14%         | 10%                           | 16% | 14%                | 14%  | 11%                | 18% | 11%                | 17% | 15%                        | 6% | 9%   | 16%           | 14% | 11% | 11% | 19% |
| 81-90%                   | 15                           | 6           | 7                             | 2   | 4                  | 9    | 1                  | 1   | 8                  | 7   | 15                         | 0  | 7    | 5             | 7   | 8   | 10  | 5   |
|                          | 8%                           | 5%          | 14%                           | 6%  | 11%                | 16%  | 1%                 | 4%  | 7%                 | 9%  | 9%                         | 0% | 15%  | 5%            | 8%  | 8%  | 8%  | 9%  |
| 91-99%                   | 5                            | 3           | 2                             | 0   | 2                  | 1    | 0                  | 2   | 2                  | 3   | 4                          | 1  | 1    | 4             | 2   | 2   | 5   | 0   |
|                          | 3%                           | 3%          | 4%                            | 0%  | 5%                 | 2%   | 0%                 | 7%  | 2%                 | 4%  | 3%                         | 3% | 2%   | 4%            | 2%  | 2%  | 4%  | 0%  |
| 100%/ALL                 | 14                           | 11          | 2                             | 1   | 3                  | 6    | 5                  | 0   | 8                  | 6   | 12                         | 2  | 1    | 6             | 10  | 4   | 4   | 9   |
|                          | 7%                           | 10%         | 4%                            | 3%  | 8%                 | 11%  | 7%                 | 0%  | 7%                 | 8%  | 8%                         | 6% | 2%   | 6%            | 12% | 4%  | 3%  | 16% |
| DON'T KNOW               | 1                            | 0           | 1                             | 0   | 0                  | 1    | 0                  | 0   | 0                  | 0   | 1                          | 0  | 0    | 0             | 0   | 0   | 1   | 0   |
|                          | 1%                           | 0%          | 2%                            | 0%  | 0%                 | 2%   | 0%                 | 0%  | 0%                 | 0%  | 1%                         | 0% | 0%   | 0%            | 0%  | 0%  | 1%  | 0%  |
| NO ADVERTISING<br>BUDGET | 3                            | 2           | 1                             | 0   | 2                  | 0    | 1                  | 0   | 2                  | 1   | 3                          | 0  | 1    | 1             | 1   | 2   | 0   | 2   |
|                          | 2%                           | 2%          | 2%                            | 0%  | 5%                 | 0%   | 1%                 | 0%  | 2%                 | 1%  | 2%                         | 0% | 2%   | 1%            | 1%  | 2%  | 0%  | 4%  |
| REFUSED/NO ANSWER        | 6                            | 5           | 0                             | 1   | 1                  | 3    | 1                  | 1   | 2                  | 4   | 5                          | 1  | 1    | 3             | 2   | 2   | 2   | 1   |
|                          | 3%                           | 4%          | 0%                            | 3%  | 3%                 | 5%   | 1%                 | 4%  | 2%                 | 5%  | 3%                         | 3% | 2%   | 3%            | 2%  | 2%  | 2%  | 2%  |

## **APPENDIX F**

### **PERCENT OF BUDGET SPENT ON BILLBOARDS**

1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 6: THINKING ABOUT THE MAJOR ADVERTISING MEDIA YOUR HOSPITAL PURCHASED IN THE SECOND QUARTER OF 1989, WHAT PERCENTAGE OF YOUR ADVERTISING DOLLARS WERE DEVOTED TO BILLBOARD?

|                 | NUMBER OF BEDS<br>AUTHORIZED |           |           | REGION HOSPITAL<br>IS LOCATED |           |           | HOSPITAL<br>SYSTEM |           | PROFIT<br>HOSPITAL |             | OTHER<br>HOSPITALS |           | OCCUPANCY TRACKING<br>RATE |           | ADS       |           |           |           |
|-----------------|------------------------------|-----------|-----------|-------------------------------|-----------|-----------|--------------------|-----------|--------------------|-------------|--------------------|-----------|----------------------------|-----------|-----------|-----------|-----------|-----------|
|                 | 0- 200- 400+                 |           |           | NE                            | MC        | SO        | WEST               | YES       | NO                 | NOT-<br>FOR | 1-2                | 3+        | 0-60                       | 61+       | YES       | NO        |           |           |
|                 | TOTAL                        | 199       | 399       |                               |           |           |                    |           |                    |             |                    |           |                            |           |           |           |           |           |
| TOTAL RESPONSES | 196                          | 113       | 51        | 32                            | 37        | 57        | 74                 | 28        | 117                | 78          | 159                | 36        | 47                         | 102       | 86        | 98        | 132       | 57        |
| 0X/NONE         | 146<br>74X                   | 85<br>75X | 38<br>72X | 23<br>76X                     | 28<br>76X | 42<br>74X | 55<br>74X          | 21<br>75X | 89<br>76X          | 56<br>72X   | 115<br>72X         | 30<br>83X | 29<br>62X                  | 78<br>76X | 67<br>78X | 71<br>72X | 96<br>73X | 48<br>84X |
| 1-10X           | 27<br>14X                    | 13<br>12X | 8<br>16X  | 6<br>19X                      | 4<br>11X  | 9<br>16X  | 11<br>15X          | 3<br>11X  | 16<br>14X          | 11<br>14X   | 25<br>16X          | 2<br>6X   | 10<br>21X                  | 15<br>15X | 7<br>8X   | 19<br>19X | 23<br>17X | 4<br>7X   |
| 11-20X          | 7<br>4X                      | 3<br>3X   | 3<br>6X   | 1<br>3X                       | 1<br>3X   | 2<br>4X   | 3<br>4X            | 1<br>4X   | 3<br>3X            | 4<br>5X     | 6<br>4X            | 1<br>3X   | 3<br>6X                    | 3<br>3X   | 4<br>5X   | 2<br>2X   | 6<br>5X   | 1<br>2X   |
| 21-30X          | 2<br>1X                      | 2<br>2X   | 0<br>0X   | 0<br>0X                       | 0<br>0X   | 2<br>3X   | 0<br>0X            | 2<br>2X   | 2<br>2X            | 0<br>0X     | 0<br>0X            | 2<br>6X   | 1<br>2X                    | 1<br>1X   | 1<br>1X   | 1<br>1X   | 1<br>1X   | 1<br>2X   |
| 31-40X          | 1<br>1X                      | 1<br>1X   | 0<br>0X   | 0<br>0X                       | 0<br>0X   | 1<br>1X   | 0<br>0X            | 1<br>1X   | 1<br>1X            | 0<br>0X     | 0<br>0X            | 1<br>3X   | 1<br>2X                    | 0<br>0X   | 1<br>1X   | 0<br>0X   | 1<br>1X   | 0<br>0X   |
| 41-50X          | 1<br>1X                      | 0<br>0X   | 1<br>2X   | 0<br>0X                       | 0<br>0X   | 1<br>2X   | 0<br>0X            | 1<br>1X   | 1<br>1X            | 0<br>0X     | 1<br>1X            | 0<br>0X   | 0<br>0X                    | 1<br>1X   | 1<br>1X   | 0<br>0X   | 1<br>1X   | 0<br>0X   |
| 51-60X          | 0<br>0X                      | 0<br>0X   | 0<br>0X   | 0<br>0X                       | 0<br>0X   | 0<br>0X   | 0<br>0X            | 0<br>0X   | 0<br>0X            | 0<br>0X     | 0<br>0X            | 0<br>0X   | 0<br>0X                    | 0<br>0X   | 0<br>0X   | 0<br>0X   | 0<br>0X   | 0<br>0X   |
| 61-70X          | 1<br>1X                      | 0<br>0X   | 1<br>3X   | 1<br>3X                       | 1<br>3X   | 0<br>0X   | 0<br>0X            | 0<br>0X   | 1<br>1X            | 0<br>0X     | 1<br>1X            | 0<br>0X   | 1<br>2X                    | 0<br>0X   | 0<br>0X   | 1<br>1X   | 1<br>1X   | 0<br>0X   |

1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 6: THINKING ABOUT THE MAJOR ADVERTISING MEDIA YOUR HOSPITAL PURCHASED IN THE SECOND QUARTER OF 1989, WHAT PERCENTAGE OF YOUR ADVERTISING DOLLARS WERE DEVOTED TO BILLBOARDS?

|                          | NUMBER OF BEDS<br>AUTHORIZED |     |    |    | REGION HOSPITAL<br>IS LOCATED |    |    |     | HOSPITAL<br>SYSTEM |    |     |    | PROFIT<br>HOSPITAL |     |    |    | OTHER<br>HOSPITALS |    |  |  | OCCUPANCY TRACKING<br>RATE |  |  |  | ADS    |  |
|--------------------------|------------------------------|-----|----|----|-------------------------------|----|----|-----|--------------------|----|-----|----|--------------------|-----|----|----|--------------------|----|--|--|----------------------------|--|--|--|--------|--|
|                          | 0- 200- 400+<br>199 399      |     |    |    | ME NC SO WEST                 |    |    |     | YES NO             |    |     |    | NOT- FOR           |     |    |    | 1-2 3+             |    |  |  | 0-60 61+                   |  |  |  | YES NO |  |
|                          | TOTAL                        |     |    |    |                               |    |    |     |                    |    |     |    |                    |     |    |    |                    |    |  |  |                            |  |  |  |        |  |
| TOTAL RESPONSES          | 196                          | 113 | 51 | 32 | 37                            | 57 | 74 | 28  | 117                | 78 | 159 | 36 | 47                 | 102 | 86 | 98 | 132                | 57 |  |  |                            |  |  |  |        |  |
| 71-80X                   | 0                            | 0   | 0  | 0  | 0                             | 0  | 0  | 0   | 0                  | 0  | 0   | 0  | 0                  | 0   | 0  | 0  | 0                  | 0  |  |  |                            |  |  |  |        |  |
|                          | 0X                           | 0X  | 0X | 0X | 0X                            | 0X | 0X | 0X  | 0X                 | 0X | 0X  | 0X | 0X                 | 0X  | 0X | 0X | 0X                 | 0X |  |  |                            |  |  |  |        |  |
| 81-90X                   | 0                            | 0   | 0  | 0  | 0                             | 0  | 0  | 0   | 0                  | 0  | 0   | 0  | 0                  | 0   | 0  | 0  | 0                  | 0  |  |  |                            |  |  |  |        |  |
|                          | 0X                           | 0X  | 0X | 0X | 0X                            | 0X | 0X | 0X  | 0X                 | 0X | 0X  | 0X | 0X                 | 0X  | 0X | 0X | 0X                 | 0X |  |  |                            |  |  |  |        |  |
| 91-99X                   | 0                            | 0   | 0  | 0  | 0                             | 0  | 0  | 0   | 0                  | 0  | 0   | 0  | 0                  | 0   | 0  | 0  | 0                  | 0  |  |  |                            |  |  |  |        |  |
|                          | 0X                           | 0X  | 0X | 0X | 0X                            | 0X | 0X | 0X  | 0X                 | 0X | 0X  | 0X | 0X                 | 0X  | 0X | 0X | 0X                 | 0X |  |  |                            |  |  |  |        |  |
| 100X/ALL                 | 0                            | 0   | 0  | 0  | 0                             | 0  | 0  | 0   | 0                  | 0  | 0   | 0  | 0                  | 0   | 0  | 0  | 0                  | 0  |  |  |                            |  |  |  |        |  |
|                          | 0X                           | 0X  | 0X | 0X | 0X                            | 0X | 0X | 0X  | 0X                 | 0X | 0X  | 0X | 0X                 | 0X  | 0X | 0X | 0X                 | 0X |  |  |                            |  |  |  |        |  |
| DON'T KNOW               | 0                            | 0   | 0  | 0  | 0                             | 0  | 0  | 0   | 0                  | 0  | 0   | 0  | 0                  | 0   | 0  | 0  | 0                  | 0  |  |  |                            |  |  |  |        |  |
|                          | 0X                           | 0X  | 0X | 0X | 0X                            | 0X | 0X | 0X  | 0X                 | 0X | 0X  | 0X | 0X                 | 0X  | 0X | 0X | 0X                 | 0X |  |  |                            |  |  |  |        |  |
| NO ADVERTISING<br>BUDGET | 3                            | 2   | 1  | 0  | 2                             | 0  | 1  | 0   | 2                  | 1  | 3   | 0  | 1                  | 1   | 1  | 2  | 0                  | 2  |  |  |                            |  |  |  |        |  |
|                          | 2X                           | 2X  | 2X | 0X | 5X                            | 0X | 1X | 0X  | 2X                 | 1X | 2X  | 0X | 2X                 | 1X  | 1X | 2X | 0X                 | 4X |  |  |                            |  |  |  |        |  |
| REFUSED/NO ANSWER        | 8                            | 7   | 0  | 1  | 1                             | 3  | 1  | 3   | 2                  | 6  | 8   | 0  | 1                  | 3   | 4  | 2  | 3                  | 1  |  |  |                            |  |  |  |        |  |
|                          | 4X                           | 6X  | 0X | 3X | 3X                            | 5X | 1X | 11X | 2X                 | 8X | 5X  | 0X | 2X                 | 3X  | 5X | 2X | 2X                 | 2X |  |  |                            |  |  |  |        |  |

**APPENDIX G**

**PERCENT OF BUDGET SPENT ON DIRECT MAIL**

|                 | NUMBER OF BEDS AUTHORIZED |     |      |     | REGION HOSPITAL IS LOCATED |     |      |     | HOSPITAL SYSTEM |     |     |     | PROFIT HOSPITAL |     |     |     | OTHER HOSPITALS |      |     |     | OCCUPANCY TRACKING |  |  |  |
|-----------------|---------------------------|-----|------|-----|----------------------------|-----|------|-----|-----------------|-----|-----|-----|-----------------|-----|-----|-----|-----------------|------|-----|-----|--------------------|--|--|--|
|                 | 0- 200- 400+              |     |      |     | NE NC SO WEST YES NO       |     |      |     | HOSPITAL SYSTEM |     |     |     | PROFIT HOSPITAL |     |     |     | OTHER HOSPITALS |      |     |     | OCCUPANCY TRACKING |  |  |  |
|                 | 199                       | 200 | 400+ | NE  | NC                         | SO  | WEST | YES | NO              | YES | NO  | YES | NO              | YES | NO  | 1-2 | 3+              | 0-60 | 61+ | YES | NO                 |  |  |  |
| TOTAL           | 199                       | 200 | 400+ | NE  | NC                         | SO  | WEST | YES | NO              | YES | NO  | YES | NO              | YES | NO  | 1-2 | 3+              | 0-60 | 61+ | YES | NO                 |  |  |  |
| TOTAL RESPONSES | 126                       | 113 | 51   | 32  | 37                         | 57  | 74   | 28  | 117             | 78  | 152 | 36  | 47              | 102 | 86  | 98  | 122             | 51   |     |     |                    |  |  |  |
| 0X/NONE         | 83                        | 53  | 19   | 11  | 12                         | 30  | 32   | 9   | 47              | 35  | 71  | 12  | 16              | 38  | 39  | 38  | 44              | 39   |     |     |                    |  |  |  |
|                 | 42X                       | 47X | 37X  | 34X | 32X                        | 53X | 43X  | 32X | 40X             | 45X | 45X | 33X | 34X             | 37X | 45X | 39X | 33X             | 68X  |     |     |                    |  |  |  |
| 1-10X           | 47                        | 19  | 17   | 11  | 8                          | 13  | 17   | 9   | 25              | 22  | 41  | 75  | 20              | 20  | 17  | 28  | 37              | 9    |     |     |                    |  |  |  |
|                 | 24X                       | 17X | 33X  | 34X | 22X                        | 23X | 23X  | 32X | 21X             | 28X | 26X | 14X | 43X             | 20X | 20X | 29X | 28X             | 16X  |     |     |                    |  |  |  |
| 11-20X          | 12                        | 7   | 3    | 2   | 5                          | 2   | 4    | 1   | 10              | 2   | 9   | 3   | 0               | 11  | 6   | 6   | 10              | 2    |     |     |                    |  |  |  |
|                 | 6X                        | 6X  | 6X   | 6X  | 14X                        | 4X  | 5X   | 4X  | 9X              | 3X  | 6X  | 8X  | 0X              | 11X | 7X  | 6X  | 8X              | 4X   |     |     |                    |  |  |  |
| 21-30X          | 13                        | 6   | 5    | 2   | 3                          | 5   | 4    | 1   | 7               | 6   | 10  | 3   | 2               | 9   | 6   | 5   | 13              | 0    |     |     |                    |  |  |  |
|                 | 7X                        | 5X  | 10X  | 6X  | 8X                         | 9X  | 5X   | 4X  | 6X              | 8X  | 6X  | 8X  | 4X              | 9X  | 7X  | 5X  | 10X             | 0X   |     |     |                    |  |  |  |
| 31-40X          | 9                         | 7   | 1    | 1   | 1                          | 2   | 3    | 3   | 4               | 5   | 8   | 1   | 2               | 4   | 4   | 5   | 7               | 2    |     |     |                    |  |  |  |
|                 | 5X                        | 6X  | 2X   | 3X  | 3X                         | 4X  | 4X   | 11X | 3X              | 6X  | 5X  | 3X  | 4X              | 4X  | 5X  | 5X  | 4X              |      |     |     |                    |  |  |  |
| 41-50X          | 2                         | 1   | 0    | 1   | 1                          | 0   | 1    | 0   | 2               | 0   | 1   | 1   | 1               | 1   | 1   | 1   | 2               | 0    |     |     |                    |  |  |  |
|                 | 1X                        | 1X  | 0X   | 3X  | 3X                         | 0X  | 1X   | 0X  | 2X              | 0X  | 1X  | 3X  | 2X              | 1X  | 1X  | 1X  | 2X              | 0X   |     |     |                    |  |  |  |
| 51-60X          | 9                         | 5   | 2    | 2   | 1                          | 1   | 6    | 1   | 9               | 0   | 3   | 6   | 2               | 7   | 4   | 5   | 8               | 0    |     |     |                    |  |  |  |
|                 | 5X                        | 4X  | 4X   | 6X  | 3X                         | 2X  | 8X   | 4X  | 8X              | 0X  | 2X  | 17X | 4X              | 7X  | 5X  | 5X  | 6X              | 0X   |     |     |                    |  |  |  |
| 61-70X          | 2                         | 2   | 0    | 0   | 0                          | 0   | 1    | 1   | 2               | 0   | 0   | 2   | 1               | 1   | 1   | 1   | 2               | 0    |     |     |                    |  |  |  |
|                 | 1X                        | 2X  | 0X   | 0X  | 0X                         | 0X  | 1X   | 4X  | 2X              | 0X  | 0X  | 6X  | 2X              | 1X  | 1X  | 1X  | 2X              | 0X   |     |     |                    |  |  |  |

1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 7: THINKING ABOUT THE MAJOR ADVERTISING MEDIA YOUR HOSPITAL PURCHASED IN THE SECOND QUARTER OF 1989, WHAT PERCENTAGE OF YOUR ADVERTISING DOLLARS WERE DEVOTED TO DIRECT MAIL?

|                          | NUMBER OF BEDS<br>AUTHORIZED |             | REGION HOSPITAL<br>IS LOCATED |    | HOSPITAL<br>SYSTEM |      | PROFIT<br>HOSPITAL |    | OTHER<br>HOSPITALS |     | OCCUPANCY TRACKING<br>RATE |    | ADS  |               |    |    |     |    |
|--------------------------|------------------------------|-------------|-------------------------------|----|--------------------|------|--------------------|----|--------------------|-----|----------------------------|----|------|---------------|----|----|-----|----|
|                          | 0-<br>199                    | 200-<br>399 | NE                            | NC | SO                 | WEST | YES                | NO | NOT-<br>FOR        | FOR | 1-2                        | 3+ | 0-60 | 61+<br>YES NO |    |    |     |    |
| TOTAL                    | 196                          | 113         | 51                            | 32 | 37                 | 57   | 74                 | 28 | 117                | 78  | 159                        | 36 | 47   | 102           | 86 | 98 | 132 | 57 |
| TOTAL RESPONSES          | 196                          | 113         | 51                            | 32 | 37                 | 57   | 74                 | 28 | 117                | 78  | 159                        | 36 | 47   | 102           | 86 | 98 | 132 | 57 |
| 171-80%                  | 5                            | 4           | 1                             | 0  | 0                  | 1    | 3                  | 1  | 3                  | 2   | 3                          | 2  | 0    | 4             | 4  | 1  | 3   | 2  |
| -                        | 3%                           | 4%          | 2%                            | 0% | 0%                 | 2%   | 4%                 | 4% | 3%                 | 3%  | 2%                         | 6% | 0%   | 4%            | 5% | 1% | 2%  | 4% |
| 81-90%                   | 0                            | 0           | 0                             | 0  | 0                  | 0    | 0                  | 0  | 0                  | 0   | 0                          | 0  | 0    | 0             | 0  | 0  | 0   | 0  |
|                          | 0%                           | 0%          | 0%                            | 0% | 0%                 | 0%   | 0%                 | 0% | 0%                 | 0%  | 0%                         | 0% | 0%   | 0%            | 0% | 0% | 0%  | 0% |
| 91-99%                   | 1                            | 0           | 1                             | 0  | 1                  | 0    | 0                  | 0  | 1                  | 0   | 1                          | 0  | 0    | 1             | 0  | 1  | 1   | 0  |
|                          | 1%                           | 0%          | 2%                            | 0% | 3%                 | 0%   | 0%                 | 0% | 1%                 | 0%  | 1%                         | 0% | 0%   | 1%            | 0% | 1% | 1%  | 0% |
| 100%/ALL                 | 0                            | 0           | 0                             | 0  | 0                  | 0    | 0                  | 0  | 0                  | 0   | 0                          | 0  | 0    | 0             | 0  | 0  | 0   | 0  |
|                          | 0%                           | 0%          | 0%                            | 0% | 0%                 | 0%   | 0%                 | 0% | 0%                 | 0%  | 0%                         | 0% | 0%   | 0%            | 0% | 0% | 0%  | 0% |
| DON'T KNOW               | 0                            | 0           | 0                             | 0  | 0                  | 0    | 0                  | 0  | 0                  | 0   | 0                          | 0  | 0    | 0             | 0  | 0  | 0   | 0  |
|                          | 0%                           | 0%          | 0%                            | 0% | 0%                 | 0%   | 0%                 | 0% | 0%                 | 0%  | 0%                         | 0% | 0%   | 0%            | 0% | 0% | 0%  | 0% |
| NO ADVERTISING<br>BUDGET | 3                            | 2           | 1                             | 0  | 2                  | 0    | 1                  | 0  | 2                  | 1   | 3                          | 0  | 1    | 1             | 1  | 2  | 0   | 2  |
|                          | 2%                           | 2%          | 2%                            | 0% | 5%                 | 0%   | 1%                 | 0% | 2%                 | 1%  | 2%                         | 0% | 2%   | 1%            | 1% | 2% | 0%  | 4% |
| REFUSED/NO ANSWER        | 10                           | 7           | 1                             | 2  | 3                  | 3    | 2                  | 2  | 5                  | 5   | 9                          | 1  | 2    | 5             | 3  | 5  | 5   | 1  |
|                          | 5%                           | 6%          | 2%                            | 6% | 8%                 | 5%   | 3%                 | 7% | 4%                 | 6%  | 6%                         | 3% | 4%   | 5%            | 3% | 5% | 4%  | 2% |

## **APPENDIX H**

### **PERCENT OF BUDGET SPENT TARGETING CONSUMERS**

1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 23: WHAT PERCENTAGE OF YOUR MOST RECENT YEAR'S MARKETING BUDGET WAS DEVOTED TO CONSUMERS?

|                 | NUMBER OF BEDS<br>AUTHORIZED |             | REGION HOSPITAL<br>IS LOCATED |     | HOSPITAL<br>SYSTEM |     | HOSPITAL<br>PROFIT |     | OTHER<br>HOSPITALS |             | OCCUPANCY TRACKING<br>RATE |     | ADS        |            |     |     |     |    |
|-----------------|------------------------------|-------------|-------------------------------|-----|--------------------|-----|--------------------|-----|--------------------|-------------|----------------------------|-----|------------|------------|-----|-----|-----|----|
|                 | 0-<br>199                    | 200-<br>399 | 400+<br>400+                  | WE  | NC                 | SO  | WEST               | YES | NO                 | NOT-<br>FOR | FOR                        | 1-2 | 3+<br>0-60 | 61+<br>YES | NO  |     |     |    |
| TOTAL           | 173                          | 100         | 44                            | 29  | 32                 | 47  | 68                 | 26  | 108                | 65          | 136                        | 36  | 42         | 92         | 76  | 89  | 124 | 45 |
| TOTAL RESPONSES | 173                          | 100         | 44                            | 29  | 32                 | 47  | 68                 | 26  | 108                | 65          | 136                        | 36  | 42         | 92         | 76  | 89  | 124 | 45 |
| 0X/NONE         | 1                            | 1           | 0                             | 0   | 0                  | 1   | 0                  | 0   | 0                  | 1           | 1                          | 0   | 0          | 1          | 0   | 1   | 0   | 1  |
|                 | 1X                           | 1X          | 0X                            | 0X  | 0X                 | 1X  | 0X                 | 0X  | 0X                 | 2X          | 1X                         | 0X  | 0X         | 1X         | 0X  | 1X  | 0X  | 2X |
| 1-10X           | 6                            | 5           | 1                             | 0   | 1                  | 2   | 2                  | 3   | 3                  | 3           | 5                          | 1   | 1          | 4          | 1   | 5   | 2   | 3- |
|                 | 3X                           | 5X          | 2X                            | 0X  | 3X                 | 2X  | 3X                 | 8X  | 3X                 | 5X          | 4X                         | 3X  | 2X         | 4X         | 1X  | 6X  | 2X  | 7X |
| 11-20X          | 6                            | 4           | 0                             | 2   | 0                  | 1   | 4                  | 1   | 6                  | 0           | 2                          | 4   | 1          | 5          | 3   | 3   | 5   | 1  |
|                 | 3X                           | 4X          | 0X                            | 7X  | 0X                 | 2X  | 6X                 | 4X  | 6X                 | 0X          | 1X                         | 11X | 2X         | 5X         | 4X  | 3X  | 4X  | 2X |
| 21-30X          | 10                           | 3           | 4                             | 3   | 4                  | 2   | 4                  | 0   | 7                  | 3           | 8                          | 2   | 2          | 5          | 2   | 8   | 7   | 2  |
|                 | 6X                           | 3X          | 9X                            | 10X | 13X                | 4X  | 6X                 | 0X  | 6X                 | 5X          | 6X                         | 6X  | 5X         | 5X         | 3X  | 9X  | 6X  | 4X |
| 31-40X          | 24                           | 10          | 11                            | 3   | 3                  | 6   | 11                 | 4   | 19                 | 5           | 16                         | 8   | 5          | 15         | 11  | 12  | 20  | 4  |
|                 | 14X                          | 10X         | 25X                           | 10X | 9X                 | 13X | 16X                | 15X | 18X                | 8X          | 12X                        | 22X | 12X        | 16X        | 14X | 13X | 16X | 9X |
| 41-50X          | 16                           | 12          | 2                             | 2   | 4                  | 4   | 6                  | 2   | 5                  | 11          | 12                         | 4   | 4          | 6          | 8   | 6   | 12  | 2  |
|                 | 9X                           | 12X         | 5X                            | 7X  | 13X                | 9X  | 9X                 | 8X  | 5X                 | 17X         | 9X                         | 11X | 10X        | 7X         | 11X | 7X  | 10X | 4X |
| 51-60X          | 17                           | 9           | 5                             | 3   | 3                  | 4   | 6                  | 4   | 13                 | 4           | 13                         | 3   | 6          | 6          | 10  | 7   | 14  | 3  |
|                 | 10X                          | 9X          | 11X                           | 10X | 9X                 | 9X  | 15X                | 12X | 12X                | 6X          | 10X                        | 8X  | 14X        | 7X         | 13X | 8X  | 11X | 7X |
| 61-70X          | 21                           | 10          | 5                             | 6   | 5                  | 6   | 8                  | 2   | 11                 | 10          | 17                         | 4   | 5          | 13         | 7   | 14  | 17  | 4  |
|                 | 12X                          | 10X         | 11X                           | 21X | 16X                | 13X | 12X                | 8X  | 10X                | 15X         | 13X                        | 11X | 12X        | 14X        | 9X  | 16X | 14X | 9X |

**QUESTION 23: WHAT PERCENTAGE OF YOUR MOST RECENT YEAR'S MARKETING BUDGET WAS DEVOTED TO CONSUMERS?**

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## **APPENDIX I**

### **PERCENT OF BUDGET SPENT TARGETING BUSINESSES/EMPLOYERS**

1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 24: WHAT PERCENTAGE OF YOUR MOST RECENT YEAR'S MARKETING BUDGET WAS DEVOTED TO BUSINESS/EMPLOYER MARKETS?

|                 | NUMBER OF BEDS AUTHORIZED |         |      | REGION HOSPITAL IS LOCATED |     | HOSPITAL SYSTEM |      | PROFIT HOSPITAL |     | OTHER HOSPITALS |     | OCCUPANCY RATE |     | TRACKING ADS |                 |
|-----------------|---------------------------|---------|------|----------------------------|-----|-----------------|------|-----------------|-----|-----------------|-----|----------------|-----|--------------|-----------------|
|                 | 0-199                     | 200-399 | 400+ | NE                         | NC  | SO              | WEST | YES             | NO  | NOT- FOR        | FOR | 1-2            | 3+  | 0-60         | 61+ YES NO      |
| TOTAL           | 173                       | 100     | 44   | 29                         | 32  | 47              | 68   | 26              | 108 | 65              | 136 | 36             | 42  | 92           | 76 89 124 45    |
| TOTAL RESPONSES | 173                       | 100     | 44   | 29                         | 32  | 47              | 68   | 26              | 108 | 65              | 136 | 36             | 42  | 92           | 76 89 124 45    |
| 0X/NONE         | 58                        | 36      | 12   | 10                         | 11  | 18              | 22   | 7               | 34  | 24              | 49  | 9              | 10  | 33           | 27 27 33 24     |
|                 | 34X                       | 36X     | 27X  | 34X                        | 34X | 38X             | 32X  | 27X             | 31X | 37X             | 36X | 25X            | 24X | 36X          | 30X 27X 53X     |
| 1-10X           | 55                        | 28      | 15   | 12                         | 10  | 14              | 24   | 7               | 35  | 20              | 43  | 11             | 16  | 26           | 21 32 46 7      |
|                 | 32X                       | 28X     | 34X  | 41X                        | 31X | 30X             | 35X  | 27X             | 32X | 31X             | 32X | 31X            | 38X | 28X          | 36X 37X 16X     |
| 11-20X          | 27                        | 15      | 11   | 1                          | 4   | 10              | 8    | 5               | 16  | 11              | 23  | 4              | 9   | 14           | 15 11 20 6      |
|                 | 16X                       | 15X     | 25X  | 3X                         | 13X | 21X             | 12X  | 19X             | 15X | 17X             | 17X | 11X            | 21X | 15X          | 20X 12X 16X 13X |
| 21-30X          | 20                        | 11      | 4    | 5                          | 5   | 3               | 8    | 4               | 14  | 6               | 13  | 7              | 4   | 13           | 7 13 15 5       |
|                 | 12X                       | 11X     | 9X   | 17X                        | 16X | 6X              | 12X  | 15X             | 13X | 9X              | 10X | 19X            | 10X | 14X          | 9X 15X 12X 11X  |
| 31-40X          | 11                        | 8       | 2    | 1                          | 2   | 2               | 5    | 2               | 8   | 3               | 7   | 4              | 2   | 5            | 5 5 8 3         |
|                 | 6X                        | 8X      | 5X   | 3X                         | 6X  | 4X              | 7X   | 8X              | 7X  | 5X              | 5X  | 11X            | 5X  | 5X           | 7X 6X 7X        |
| 41-50X          | 0                         | 0       | 0    | 0                          | 0   | 0               | 0    | 0               | 0   | 0               | 0   | 0              | 0   | 0            | 0 0 0 0         |
|                 | 0X                        | 0X      | 0X   | 0X                         | 0X  | 0X              | 0X   | 0X              | 0X  | 0X              | 0X  | 0X             | 0X  | 0X           | 0X 0X 0X 0X     |
| 51-60X          | 0                         | 0       | 0    | 0                          | 0   | 0               | 0    | 0               | 0   | 0               | 0   | 0              | 0   | 0            | 0 0 0 0         |
|                 | 0X                        | 0X      | 0X   | 0X                         | 0X  | 0X              | 0X   | 0X              | 0X  | 0X              | 0X  | 0X             | 0X  | 0X           | 0X 0X 0X 0X     |
| 61-70X          | 1                         | 1       | 0    | 0                          | 0   | 0               | 0    | 1               | 0   | 1               | 1   | 0              | 0   | 1            | 0 1 1 0         |
|                 | 1X                        | 1X      | 0X   | 0X                         | 0X  | 0X              | 0X   | 4X              | 0X  | 2X              | 1X  | 0X             | 0X  | 1X           | 0X 1X 1X 0X     |

1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 24: WHAT PERCENTAGE OF YOUR MOST RECENT YEAR'S MARKETING BUDGET WAS DEVOTED TO BUSINESS/EMPLOYER MARKETS?

|                          | NUMBER OF BEDS<br>AUTHORIZED |             |             | REGION HOSPITAL<br>IS LOCATED |    | HOSPITAL<br>SYSTEM |      | PROFIT<br>HOSPITAL |     | OTHER<br>HOSPITALS |     | OCCUPANCY TRACKING<br>RATE |    | ADS  |              |
|--------------------------|------------------------------|-------------|-------------|-------------------------------|----|--------------------|------|--------------------|-----|--------------------|-----|----------------------------|----|------|--------------|
|                          | 0-<br>199                    | 200-<br>399 | 400+<br>399 | NE                            | NC | SO                 | WEST | YES                | NO  | NOT-<br>FOR        | FOR | 1-2                        | 3+ | 0-60 | 61+ YES NO   |
| TOTAL                    | 173                          | 100         | 44          | 29                            | 32 | 47                 | 68   | 26                 | 108 | 65                 | 136 | 36                         | 42 | 92   | 76 89 124 45 |
| TOTAL RESPONSES          | 173                          | 100         | 44          | 29                            | 32 | 47                 | 68   | 26                 | 108 | 65                 | 136 | 36                         | 42 | 92   | 76 89 124 45 |
| 71-80X                   | 1                            | 1           | 0           | 0                             | 0  | 1                  | 0    | 1                  | 0   | 0                  | 0   | 1                          | 0  | 1    | 0 1 0        |
|                          | 1X                           | 1X          | 0X          | 0X                            | 0X | 1X                 | 0X   | 1X                 | 0X  | 3X                 | 2X  | 1X                         | 0X | 1X   | 0X 1X 0X     |
| 81-90X                   | 0                            | 0           | 0           | 0                             | 0  | 0                  | 0    | 0                  | 0   | 0                  | 0   | 0                          | 0  | 0    | 0 0 0        |
|                          | 0X                           | 0X          | 0X          | 0X                            | 0X | 0X                 | 0X   | 0X                 | 0X  | 0X                 | 0X  | 0X                         | 0X | 0X   | 0X 0X 0X     |
| 91-99X                   | 0                            | 0           | 0           | 0                             | 0  | 0                  | 0    | 0                  | 0   | 0                  | 0   | 0                          | 0  | 0    | 0 0 0        |
|                          | 0X                           | 0X          | 0X          | 0X                            | 0X | 0X                 | 0X   | 0X                 | 0X  | 0X                 | 0X  | 0X                         | 0X | 0X   | 0X 0X 0X     |
| 100X/ALL                 | 0                            | 0           | 0           | 0                             | 0  | 0                  | 0    | 0                  | 0   | 0                  | 0   | 0                          | 0  | 0    | 0 0 0        |
|                          | 0X                           | 0X          | 0X          | 0X                            | 0X | 0X                 | 0X   | 0X                 | 0X  | 0X                 | 0X  | 0X                         | 0X | 0X   | 0X 0X 0X     |
| DON'T KNOW               | 0                            | 0           | 0           | 0                             | 0  | 0                  | 0    | 0                  | 0   | 0                  | 0   | 0                          | 0  | 0    | 0 0 0        |
|                          | 0X                           | 0X          | 0X          | 0X                            | 0X | 0X                 | 0X   | 0X                 | 0X  | 0X                 | 0X  | 0X                         | 0X | 0X   | 0X 0X 0X     |
| NO ADVERTISING<br>BUDGET | 0                            | 0           | 0           | 0                             | 0  | 0                  | 0    | 0                  | 0   | 0                  | 0   | 0                          | 0  | 0    | 0 0 0        |
|                          | 0X                           | 0X          | 0X          | 0X                            | 0X | 0X                 | 0X   | 0X                 | 0X  | 0X                 | 0X  | 0X                         | 0X | 0X   | 0X 0X 0X     |
| REFUSED/NO ANSWER        | 0                            | 0           | 0           | 0                             | 0  | 0                  | 0    | 0                  | 0   | 0                  | 0   | 0                          | 0  | 0    | 0 0 0        |
|                          | 0X                           | 0X          | 0X          | 0X                            | 0X | 0X                 | 0X   | 0X                 | 0X  | 0X                 | 0X  | 0X                         | 0X | 0X   | 0X 0X 0X     |

## **APPENDIX J**

### **PERCENT OF BUDGET SPENT TARGETING PHYSICIANS**

1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 25: WHAT PERCENTAGE OF YOUR MOST RECENT YEAR'S MARKETING BUDGET WAS DEVOTED TO PHYSICIANS?

|                 | NUMBER OF BEDS<br>AUTHORIZED |             | REGION HOSPITAL<br>IS LOCATED |     | HOSPITAL<br>SYSTEM |      | PROFIT<br>HOSPITAL |     | OTHER<br>HOSPITALS |     | OCCUPANCY TRACKING<br>RATE |     | ADS  |            |         |     |     |     |
|-----------------|------------------------------|-------------|-------------------------------|-----|--------------------|------|--------------------|-----|--------------------|-----|----------------------------|-----|------|------------|---------|-----|-----|-----|
|                 | 0-<br>199                    | 200-<br>399 | NE                            | NC  | SO                 | WEST | YES                | NO  | NOT-<br>FOR        | FOR | 1-2                        | 3+  | 0-60 | 61+ YES NO |         |     |     |     |
| TOTAL           | 173                          | 100         | 44                            | 29  | 32                 | 47   | 68                 | 26  | 108                | 65  | 136                        | 36  | 42   | 92         | 76      | 89  | 124 | 45  |
| TOTAL RESPONSES |                              |             |                               |     |                    |      |                    |     |                    |     |                            |     |      |            |         |     |     |     |
| 0X/NONE         | 35                           | 23          | 8                             | 4   | 6                  | 11   | 13                 | 5   | 24                 | 11  | 28                         | 7   | 8    | 21         | 12      | 21  | 22  | 12  |
|                 | 20X                          | 23X         | 18X                           | 14X | 19X                | 23X  | 19X                | 19X | 22X                | 17X | 21X                        | 19X | 19X  | 23X        | 16X-24X | 18X | 27X | 27X |
| 1-10X           | 36                           | 25          | 6                             | 5   | 9                  | 10   | 12                 | 5   | 21                 | 15  | 30                         | 6   | 11   | 14         | 16      | 19  | 20  | 15  |
|                 | 21X                          | 25X         | 14X                           | 17X | 28X                | 21X  | 18X                | 19X | 19X                | 23X | 22X                        | 17X | 26X  | 15X        | 21X     | 21X | 16X | 33X |
| 11-20X          | 37                           | 19          | 10                            | 8   | 9                  | 9    | 14                 | 5   | 21                 | 16  | 33                         | 4   | 8    | 21         | 18      | 17  | 33  | 4   |
|                 | 21X                          | 19X         | 23X                           | 28X | 28X                | 19X  | 21X                | 19X | 19X                | 25X | 24X                        | 11X | 19X  | 23X        | 24X     | 19X | 27X | 9X  |
| 21-30X          | 26                           | 16          | 6                             | 4   | 0                  | 8    | 11                 | 7   | 18                 | 8   | 17                         | 9   | 8    | 12         | 16      | 9   | 22  | 4   |
|                 | 15X                          | 16X         | 14X                           | 14X | 0X                 | 17X  | 16X                | 27X | 17X                | 12X | 13X                        | 25X | 19X  | 13X        | 21X     | 10X | 18X | 9X  |
| 31-40X          | 19                           | 8           | 7                             | 4   | 3                  | 6    | 7                  | 3   | 12                 | 7   | 14                         | 4   | 4    | 12         | 7       | 10  | 13  | 5   |
|                 | 11X                          | 8X          | 16X                           | 14X | 9X                 | 13X  | 10X                | 12X | 11X                | 11X | 10X                        | 11X | 10X  | 13X        | 9X      | 11X | 10X | 11X |
| 41-50X          | 10                           | 2           | 5                             | 3   | 4                  | 3    | 2                  | 1   | 5                  | 5   | 9                          | 1   | 1    | 6          | 4       | 6   | 8   | 2   |
|                 | 6X                           | 2X          | 11X                           | 10X | 13X                | 6X   | 3X                 | 4X  | 5X                 | 8X  | 7X                         | 3X  | 2X   | 7X         | 5X      | 7X  | 6X  | 4X  |
| 51-60X          | 5                            | 4           | 1                             | 0   | 0                  | 0    | 5                  | 0   | 3                  | 2   | 2                          | 3   | 1    | 3          | 2       | 3   | 4   | 1   |
|                 | 3X                           | 4X          | 2X                            | 0X  | 0X                 | 0X   | 7X                 | 0X  | 3X                 | 3X  | 1X                         | 8X  | 2X   | 3X         | 3X      | 3X  | 3X  | 2X  |
| 61-70X          | 2                            | 2           | 0                             | 0   | 0                  | 0    | 2                  | 0   | 1                  | 1   | 1                          | 1   | 0    | 2          | 0       | 2   | 1   | 1   |
|                 | 1X                           | 2X          | 0X                            | 0X  | 0X                 | 0X   | 3X                 | 0X  | 1X                 | 2X  | 1X                         | 3X  | 0X   | 2X         | 0X      | 2X  | 1X  | 2X  |

**QUESTION 25: WHAT PERCENTAGE OF YOUR MOST RECENT YEAR'S MARKETING BUDGET WAS DEVOTED TO PHYSICIANS?**

|                       | NUMBER OF BEDS AUTHORIZED |     |    |    | REGION HOSPITAL IS LOCATED |    |    |    | HOSPITAL SYSTEM |    |     |    | PROFIT HOSPITAL |    |    |    | OTHER HOSPITALS |    |  |  | OCCUPANCY TRACKING |  |  |  |
|-----------------------|---------------------------|-----|----|----|----------------------------|----|----|----|-----------------|----|-----|----|-----------------|----|----|----|-----------------|----|--|--|--------------------|--|--|--|
|                       |                           |     |    |    |                            |    |    |    |                 |    |     |    |                 |    |    |    |                 |    |  |  |                    |  |  |  |
|                       | 0- 200- 400+ 199 399      |     |    |    | ME NC SO WEST YES NO       |    |    |    | HOSPITAL SYSTEM |    |     |    | NOT- FOR        |    |    |    | 1-2 3+ 0-60 61+ |    |  |  | YES NO             |  |  |  |
| TOTAL                 | 199                       | 399 |    |    |                            |    |    |    |                 |    |     |    |                 |    |    |    |                 |    |  |  |                    |  |  |  |
| -----                 |                           |     |    |    |                            |    |    |    |                 |    |     |    |                 |    |    |    |                 |    |  |  |                    |  |  |  |
| TOTAL RESPONSES       |                           |     |    |    |                            |    |    |    |                 |    |     |    |                 |    |    |    |                 |    |  |  |                    |  |  |  |
|                       | 173                       | 100 | 44 | 29 | 32                         | 47 | 68 | 26 | 108             | 65 | 136 | 36 | 42              | 92 | 76 | 89 | 124             | 45 |  |  |                    |  |  |  |
| -----                 |                           |     |    |    |                            |    |    |    |                 |    |     |    |                 |    |    |    |                 |    |  |  |                    |  |  |  |
| 71-80X                | 3                         | 1   | 1  | 1  | 1                          | 0  | 2  | 0  | 3               | 0  | 2   | 1  | 1               | 1  | 1  | 2  | 1               | 1  |  |  |                    |  |  |  |
|                       | 2X                        | 1X  | 2X | 3X | 3X                         | 0X | 3X | 0X | 3X              | 0X | 1X  | 3X | 2X              | 1X | 1X | 2X | 1X              | 2X |  |  |                    |  |  |  |
| -----                 |                           |     |    |    |                            |    |    |    |                 |    |     |    |                 |    |    |    |                 |    |  |  |                    |  |  |  |
| 81-90X                | 0                         | 0   | 0  | 0  | 0                          | 0  | 0  | 0  | 0               | 0  | 0   | 0  | 0               | 0  | 0  | 0  | 0               | 0  |  |  |                    |  |  |  |
|                       | 0X                        | 0X  | 0X | 0X | 0X                         | 0X | 0X | 0X | 0X              | 0X | 0X  | 0X | 0X              | 0X | 0X | 0X | 0X              | 0X |  |  |                    |  |  |  |
| -----                 |                           |     |    |    |                            |    |    |    |                 |    |     |    |                 |    |    |    |                 |    |  |  |                    |  |  |  |
| 91-99X                | 0                         | 0   | 0  | 0  | 0                          | 0  | 0  | 0  | 0               | 0  | 0   | 0  | 0               | 0  | 0  | 0  | 0               | 0  |  |  |                    |  |  |  |
|                       | 0X                        | 0X  | 0X | 0X | 0X                         | 0X | 0X | 0X | 0X              | 0X | 0X  | 0X | 0X              | 0X | 0X | 0X | 0X              | 0X |  |  |                    |  |  |  |
| -----                 |                           |     |    |    |                            |    |    |    |                 |    |     |    |                 |    |    |    |                 |    |  |  |                    |  |  |  |
| 100X/ALL              | 0                         | 0   | 0  | 0  | 0                          | 0  | 0  | 0  | 0               | 0  | 0   | 0  | 0               | 0  | 0  | 0  | 0               | 0  |  |  |                    |  |  |  |
|                       | 0X                        | 0X  | 0X | 0X | 0X                         | 0X | 0X | 0X | 0X              | 0X | 0X  | 0X | 0X              | 0X | 0X | 0X | 0X              | 0X |  |  |                    |  |  |  |
| -----                 |                           |     |    |    |                            |    |    |    |                 |    |     |    |                 |    |    |    |                 |    |  |  |                    |  |  |  |
| DON'T KNOW            | 0                         | 0   | 0  | 0  | 0                          | 0  | 0  | 0  | 0               | 0  | 0   | 0  | 0               | 0  | 0  | 0  | 0               | 0  |  |  |                    |  |  |  |
|                       | 0X                        | 0X  | 0X | 0X | 0X                         | 0X | 0X | 0X | 0X              | 0X | 0X  | 0X | 0X              | 0X | 0X | 0X | 0X              | 0X |  |  |                    |  |  |  |
| -----                 |                           |     |    |    |                            |    |    |    |                 |    |     |    |                 |    |    |    |                 |    |  |  |                    |  |  |  |
| NO ADVERTISING BUDGET | 0                         | 0   | 0  | 0  | 0                          | 0  | 0  | 0  | 0               | 0  | 0   | 0  | 0               | 0  | 0  | 0  | 0               | 0  |  |  |                    |  |  |  |
|                       | 0X                        | 0X  | 0X | 0X | 0X                         | 0X | 0X | 0X | 0X              | 0X | 0X  | 0X | 0X              | 0X | 0X | 0X | 0X              | 0X |  |  |                    |  |  |  |
| -----                 |                           |     |    |    |                            |    |    |    |                 |    |     |    |                 |    |    |    |                 |    |  |  |                    |  |  |  |
| REFUSED/NO ANSWER     | 0                         | 0   | 0  | 0  | 0                          | 0  | 0  | 0  | 0               | 0  | 0   | 0  | 0               | 0  | 0  | 0  | 0               | 0  |  |  |                    |  |  |  |
|                       | 0X                        | 0X  | 0X | 0X | 0X                         | 0X | 0X | 0X | 0X              | 0X | 0X  | 0X | 0X              | 0X | 0X | 0X | 0X              | 0X |  |  |                    |  |  |  |

## **APPENDIX K**

### **PERCENT OF BUDGET SPENT TARGETING OTHER REFERRERS**

**QUESTION 26: WHAT PERCENTAGE OF YOUR MOST RECENT YEAR'S MARKETING BUDGET WAS DEVOTED TO OTHER REFERRERS?**

[illegible]

**APPENDIX L**

**TOTAL MARKET RESEARCH EXPENDITURES**

1989 NATIONAL HOSPITAL MARKETERS SURVEY THIRD QUARTER

QUESTION 27: WHAT IS YOUR MOST RECENT YEAR'S TOTAL BUDGET FOR CONTRACTED MARKET RESEARCH AT YOUR HOSPITAL?

|                                    | NUMBER OF BEDS<br>AUTHORIZED |             | REGION HOSPITAL<br>IS LOCATED |          | HOSPITAL<br>SYSTEM |           | PROFIT<br>HOSPITAL |           | OTHER<br>HOSPITALS |           | OCCUPANCY TRACKING<br>RATE |           | ADS       |                            |
|------------------------------------|------------------------------|-------------|-------------------------------|----------|--------------------|-----------|--------------------|-----------|--------------------|-----------|----------------------------|-----------|-----------|----------------------------|
|                                    | 0-<br>199                    | 200-<br>399 | NE                            | NC       | SO                 | WEST      | YES                | NO        | NOT-<br>FOR        | FOR       | 1-2                        | 3+        | 0-60      | 61+ YES NO                 |
| TOTAL                              | 196                          | 113         | 51                            | 32       | 37                 | 57        | 74                 | 28        | 117                | 78        | 159                        | 36        | 47        | 102 86 98 132 57           |
| NO SEPARATE BUDGET                 | 96<br>69%                    | 72<br>33%   | 17<br>22%                     | 7<br>22% | 17<br>46%          | 26<br>46% | 41<br>55%          | 12<br>43% | 58<br>50%          | 38<br>49% | 72<br>45%                  | 24<br>67% | 25<br>33% | 43<br>42% 43 53 38 40% 47% |
| LESS THAN \$25,000                 | 49<br>25%                    | 26<br>23%   | 16<br>31%                     | 7<br>22% | 8<br>22%           | 16<br>28% | 19<br>26%          | 6<br>21%  | 28<br>24%          | 21<br>27% | 40<br>25%                  | 8<br>22%  | 11<br>23% | 24<br>31% 27 22 36 27% 23% |
| \$25,000 TO \$49,999               | 15<br>8%                     | 4<br>4%     | 5<br>10%                      | 6<br>19% | 4<br>11%           | 3<br>5%   | 4<br>5%            | 4<br>14%  | 10<br>9%           | 5<br>6%   | 12<br>8%                   | 3<br>8%   | 4<br>9%   | 10<br>10% 5 10 13 10% 4%   |
| \$50,000 TO \$99,999               | 12<br>6%                     | 0<br>0%     | 5<br>10%                      | 7<br>22% | 5<br>14%           | 3<br>5%   | 3<br>4%            | 1<br>4%   | 9<br>8%            | 3<br>4%   | 12<br>8%                   | 0<br>0%   | 2<br>4%   | 10<br>10% 2 10 12 9% 0%    |
| \$100,000 TO \$199,999             | 3<br>2%                      | 0<br>0%     | 1<br>2%                       | 2<br>6%  | 0<br>0%            | 1<br>2%   | 2<br>3%            | 0<br>0%   | 2<br>2%            | 1<br>1%   | 3<br>2%                    | 0<br>0%   | 1<br>2%   | 0<br>0% 3 3 0 2% 0%        |
| \$200,000 TO \$499,999             | 1<br>1%                      | 0<br>0%     | 0<br>0%                       | 1<br>3%  | 0<br>0%            | 1<br>2%   | 0<br>0%            | 0<br>0%   | 1<br>1%            | 0<br>0%   | 1<br>1%                    | 0<br>0%   | 0<br>0%   | 1<br>1% 0 1 0 1% 0%        |
| \$500,000 TO \$999,999             | 0<br>0%                      | 0<br>0%     | 0<br>0%                       | 0<br>0%  | 0<br>0%            | 0<br>0%   | 0<br>0%            | 0<br>0%   | 0<br>0%            | 0<br>0%   | 0<br>0%                    | 0<br>0%   | 0<br>0%   | 0<br>0% 0 0 0 0% 0%        |
| \$1,000,000 OR MORE<br>(1,250,000) | 0<br>0%                      | 0<br>0%     | 0<br>0%                       | 0<br>0%  | 0<br>0%            | 0<br>0%   | 0<br>0%            | 0<br>0%   | 0<br>0%            | 0<br>0%   | 0<br>0%                    | 0<br>0%   | 0<br>0%   | 0<br>0% 0 0 0 0% 0%        |

**APPENDIX M**

**NUMBER OF USABLE CASES FOR REGRESSION EQUATIONS**

## APPENDIX M

## NUMBER OF USABLE CASES FOR REGRESSION EQUATIONS

(196 possible)

| <u>Dependent Variable</u>     | <u>Cases</u> |
|-------------------------------|--------------|
| Advertising Expenditures      | 194          |
| Television                    | 180          |
| Radio                         | 168          |
| Newspapers/Magazines          | 171          |
| Billboards                    | 176          |
| Direct Mail                   | 169          |
| Media Mix                     | 194          |
| Targeted Group/Direct Con     | 194          |
| Targeted Group/Non-direct Con | 194          |
| Market Research Expenditures  | 194          |

## **APPENDIX N**

### **SKEWNESS AND KURTOSIS OF INDEPENDENT VARIABLES**

## APPENDIX N

## SKEWNESS AND KURTOSIS OF INDEPENDENT VARIABLES

Total Observations: 196

|            | TV      | Radio  | News/Mag | Billb  | DirMail |
|------------|---------|--------|----------|--------|---------|
| N of Cases | 182     | 170    | 172      | 178    | 171     |
| Minimum    | 0.000   | 0.000  | 0.000    | 0.000  | 0.000   |
| Maximum    | 100.000 | 85.000 | 100.000  | 65.000 | 95.000  |
| Mean       | 12.418  | 19.706 | 54.331   | 6.404  | 20.292  |
| Stand Dev  | 23.656  | 19.864 | 25.718   | 13.961 | 22.121  |
| Skewness   | 1.901   | 0.491  | 0.252    | 1.849  | 0.712   |
| Kurtosis   | 2.842   | -0.341 | -0.900   | 1.967  | -0.172  |

|            | Adexp       | Consum  | Business | Phyc1  | Other  |
|------------|-------------|---------|----------|--------|--------|
| N of Cases | 160         | 173     | 173      | 173    | 173    |
| Minimum    | 12500.000   | 0.000   | 0.000    | 0.000  | 0.000  |
| Maximum    | 1250000.000 | 100.000 | 80.000   | 80.000 | 70.000 |
| Mean       | 150390.625  | 63.532  | 11.474   | 20.399 | 2.867  |
| Stand Dev  | 217901.756  | 26.140  | 12.981   | 18.358 | 8.078  |
| Skewness   | 3.178       | -0.391  | 1.674    | 0.985  | 4.734  |
| Kurtosis   | 11.578      | -0.753  | 4.598    | 0.556  | 29.707 |

|            | MRexp      | System | Owner | Size    | Census |
|------------|------------|--------|-------|---------|--------|
| N of Cases | 176        | 195    | 195   | 196     | 196    |
| Minimum    | 0.000      | 0.000  | 0.000 | 25.000  | 15.000 |
| Maximum    | 300000.000 | 1.000  | 1.000 | 750.000 | 95.000 |
| Mean       | 16051.136  | 0.600  | 0.185 | 241.582 | 65.980 |
| Stand Dev  | 34509.257  | 0.491  | 0.389 | 207.100 | 26.886 |
| Skewness   | 4.505      | -0.408 | 1.626 | 1.462   | 1.920  |
| Kurtosis   | 27.882     | -1.833 | 0.643 | 1.165   | 1.636  |

|              | Comhos | Pop        |
|--------------|--------|------------|
| N of Cases   | 196    | 174        |
| Minimum      | 0.000  | 12500.000  |
| Maximum      | 30.000 | 750000.000 |
| Mean         | 5.145  | 213218.391 |
| Standard Dev | 6.665  | 257870.029 |
| Skewness     | 1.977  | 1.363      |
| Kurtosis     | 3.397  | 0.293      |

Abbreviations: Adexp--dollars of advertising expenditures; Consum, business, phyc1, other--percent of budget directed to consumers, businesses, physicians, other referrers; MRexp--dollars spent on market research expenditures; system--affiliated or not; owner--profit or nonprofit; size--number of beds; census--percent occupancy; comhos--number of competitor hospitals in a 15-mile radius; pop--population in a 15-mile radius

## **APPENDIX O**

### **SKEWNESS AND KURTOSIS OF INDEPENDENT VARIABLES WITH OUTLIERS CORRECTED**

## APPENDIX O

SKEWNESS AND KURTOSIS OF INDEPENDENT VARIABLES  
WITH OUTLIERS CORRECTED

Total Observations: 196

|            | TV     | Radio  | News/Mag | Billb  | DirMail |
|------------|--------|--------|----------|--------|---------|
| N of Cases | 196    | 196    | 196      | 196    | 196     |
| Minimum    | 0.000  | 0.000  | 0.000    | 0.000  | 0.000   |
| Maximum    | 83.386 | 72.010 | 100.000  | 48.287 | 86.655  |
| Mean       | 12.190 | 19.559 | 54.331   | 6.320  | 20.250  |
| Stand Dev  | 22.000 | 18.018 | 24.083   | 12.973 | 20.507  |
| Skewness   | 1.838  | 0.334  | 0.269    | 1.810  | 0.711   |
| Kurtosis   | 2.497  | -0.724 | -0.607   | 1.506  | -0.002  |

|            | Adexp      | Consum  | Business | Phyc1  | Other  |
|------------|------------|---------|----------|--------|--------|
| N of Cases | 196        | 196     | 196      | 196    | 196    |
| Minimum    | 12500.000  | 0.000   | 0.000    | 0.000  | 0.000  |
| Maximum    | 740677.654 | 100.000 | 48.047   | 72.122 | 25.628 |
| Mean       | 142309.497 | 63.767  | 11.224   | 20.329 | 2.545  |
| Stand Dev  | 158325.296 | 24.558  | 11.114   | 17.018 | 5.609  |
| Skewness   | 2.460      | -0.444  | 1.006    | 0.975  | 2.784  |
| Kurtosis   | 6.707      | -0.441  | 0.538    | 0.711  | 7.342  |

|            | MRexp      | System | Owner | Size    | Census |
|------------|------------|--------|-------|---------|--------|
| N of Cases | 196        | 195    | 195   | 196     | 196    |
| Minimum    | 0.000      | 0.000  | 0.000 | 25.000  | 15.000 |
| Maximum    | 114126.194 | 1.000  | 1.000 | 750.000 | 95.000 |
| Mean       | 14553.712  | 0.600  | 0.185 | 241.582 | 60.825 |
| Stand Dev  | 23964.404  | 0.491  | 0.389 | 207.100 | 16.124 |
| Skewness   | 2.422      | -0.408 | 1.626 | 1.462   | -0.203 |
| Kurtosis   | 5.781      | -1.833 | 0.643 | 1.165   | -0.078 |

|              | Comhos | Pop        |
|--------------|--------|------------|
| N of Cases   | 196    | 196        |
| Minimum      | 0.000  | 12500.000  |
| Maximum      | 25.140 | 750000.000 |
| Mean         | 5.071  | 213218.391 |
| Standard Dev | 6.408  | 242888.311 |
| Skewness     | 1.828  | 1.447      |
| Kurtosis     | 2.537  | 0.709      |

**APPENDIX P**

**AUXILIARY REGRESSIONS**

## APPENDIX P

## AUXILIARY REGRESSIONS

2 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q54 N: 194 MULTIPLE R: .581 SQUARED MULTIPLE R: .337  
 ADJUSTED SQUARED MULTIPLE R: .320 STANDARD ERROR OF ESTIMATE: 171.568

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | -53.199     | 52.790    | 0.000    | .         | -1.008 | 0.315     |
| Q56      | 3.406       | 2.651     | 0.103    | 0.553     | 1.285  | 0.200     |
| Q50      | -174.937    | 33.982    | -0.328   | 0.869     | -5.148 | 0.000     |
| Q48      | 161.380     | 27.219    | 0.381    | 0.856     | 5.929  | 0.000     |
| Q55      | 2.782       | 0.810     | 0.217    | 0.885     | 3.434  | 0.001     |
| Q62      | 0.000       | 0.000     | 0.236    | 0.537     | 2.919  | 0.004     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | 2817850.313    | 5   | 563570.063  | 19.146  | 0.000 |
| RESIDUAL   | 5533863.604    | 188 | 29435.445   |         |       |

2 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q55 N: 194 MULTIPLE R: .409 SQUARED MULTIPLE R: .167  
 ADJUSTED SQUARED MULTIPLE R: .145 STANDARD ERROR OF ESTIMATE: 14.979

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | 56.400      | 2.106     | 0.000    | .         | 26.780 | 0.000     |
| Q56      | 0.168       | 0.232     | 0.065    | 0.550     | 0.722  | 0.471     |
| Q50      | 2.570       | 3.163     | 0.062    | 0.765     | 0.812  | 0.418     |
| Q48      | -7.085      | 2.537     | -0.215   | 0.751     | -2.793 | 0.006     |
| Q54      | 0.021       | 0.006     | 0.272    | 0.704     | 3.434  | 0.001     |
| Q62      | 0.000       | 0.000     | 0.156    | 0.522     | 1.698  | 0.091     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | 8471.939       | 5   | 1694.388    | 7.552   | 0.000 |
| RESIDUAL   | 42179.237      | 188 | 224.358     |         |       |

Q56=number of competitors; Q50=ownership type; Q48=system affiliation; Q54=hospital size; Q55=census; Q62=population

## AUXILIARY REGRESSIONS (CONT'D)

2 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q56 N: 194 MULTIPLE R: .672 SQUARED MULTIPLE R: .452  
 ADJUSTED SQUARED MULTIPLE R: .437 STANDARD ERROR OF ESTIMATE: 4.700

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|--------------------|--------|-----------|
| CONSTANT | -0.224      | 1.450     | 0.000              | -0.155 | 0.877     |
| Q50      | 0.351       | 0.994     | 0.022              | 0.762  | 0.724     |
| Q48      | 0.183       | 0.812     | 0.014              | 0.721  | 0.822     |
| Q54      | 0.003       | 0.002     | 0.085              | 0.668  | 0.200     |
| Q55      | 0.016       | 0.023     | 0.043              | 0.835  | 0.471     |
| Q62      | 0.000       | 0.000     | 0.622              | 0.806  | 10.347    |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | 3424.269       | 5   | 684.854     | 31.001  | 0.000 |
| RESIDUAL   | 4153.212       | 188 | 22.092      |         |       |

2 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q62 N: 194 MULTIPLE R: .697 SQUARED MULTIPLE R: .486  
 ADJUSTED SQUARED MULTIPLE R: .473 STANDARD ERROR OF ESTIMATE: 177061.645

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|--------------------|--------|-----------|
| CONSTANT | -17776.774  | 54611.541 | 0.000              | -0.326 | 0.745     |
| Q56      | 22692.257   | 2193.066  | 0.583              | 0.860  | 10.347    |
| Q50      | 39584.462   | 37348.889 | 0.063              | 0.767  | 1.060     |
| Q48      | -47826.638  | 30404.777 | -0.096             | 0.730  | -1.573    |
| Q54      | 214.869     | 73.619    | 0.183              | 0.693  | 2.919     |
| Q55      | 1452.874    | 855.598   | 0.097              | 0.846  | 1.698     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | .557898E+13    | 5   | .111580E+13 | 35.591  | 0.000 |
| RESIDUAL   | .589396E+13    | 188 | .313508E+11 |         |       |

Q56=number of competitors; Q50=ownership type; Q48=system affiliation; Q54=hospital size; Q55=census; Q62=population

**APPENDIX Q**

**COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON ADVERTISING EXPENDITURES**

## APPENDIX Q

**COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON ADVERTISING EXPENDITURES**

2 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q14 N: 194 MULTIPLE R: .584 SQUARED MULTIPLE R: .341  
ADJUSTED SQUARED MULTIPLE R: .320 STANDARD ERROR OF ESTIMATE: 130865.013

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | 71179.292   | 40374.378 | 0.000    | .         | 1.763  | 0.080     |
| Q56      | -1338.733   | 2030.633  | -0.053   | 0.548     | -0.659 | 0.511     |
| Q50      | 51540.913   | 27686.645 | 0.127    | 0.762     | 1.862  | 0.064     |
| Q48      | -15223.026  | 22619.353 | -0.047   | 0.721     | -0.673 | 0.502     |
| Q54      | 260.344     | 55.630    | 0.341    | 0.663     | 4.680  | 0.000     |
| Q55      | -787.968    | 637.198   | -0.080   | 0.833     | -1.237 | 0.218     |
| Q62      | 0.288       | 0.054     | 0.443    | 0.514     | 5.348  | 0.000     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | .166048E+13    | 6   | .276746E+12 | 16.160  | 0.000 |
| RESIDUAL   | .320250E+13    | 187 | .171257E+11 |         |       |

Q14=advertising expenditures; Q56=number of competitors;  
Q50=ownership type; Q48=system affiliation; Q54=hospital  
size; Q55=census; Q62=population

**APPENDIX R**

**COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON INDIVIDUAL MEDIUM USE**

## APPENDIX R

COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON INDIVIDUAL MEDIUM USE

## TELEVISION

16 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q3 N: 180 MULTIPLE R: .342 SQUARED MULTIPLE R: .117  
 ADJUSTED SQUARED MULTIPLE R: .086 STANDARD ERROR OF ESTIMATE: 21.916

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | -4.078      | 6.976     | 0.000    | .         | -0.585 | 0.560     |
| Q56      | -0.268      | 0.394     | -0.068   | 0.511     | -0.682 | 0.496     |
| Q50      | 2.384       | 4.735     | 0.041    | 0.760     | 0.503  | 0.615     |
| Q48      | 4.694       | 3.918     | 0.100    | 0.728     | 1.198  | 0.233     |
| Q54      | 0.035       | 0.010     | 0.313    | 0.656     | 3.550  | 0.000     |
| Q55      | 0.124       | 0.110     | 0.089    | 0.819     | 1.121  | 0.264     |
| Q62      | -0.000      | 0.000     | -0.084   | 0.498     | -0.830 | 0.408     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | 10971.141      | 6   | 1828.524    | 3.807   | 0.001 |
| RESIDUAL   | 83095.519      | 173 | 480.321     |         |       |

## RADIO

28 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q4 N: 168 MULTIPLE R: .325 SQUARED MULTIPLE R: .105  
 ADJUSTED SQUARED MULTIPLE R: .072 STANDARD ERROR OF ESTIMATE: 18.663

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | 22.562      | 6.260     | 0.000    | .         | 3.604  | 0.000     |
| Q56      | -0.901      | 0.342     | -0.273   | 0.517     | -2.633 | 0.009     |
| Q50      | 0.026       | 4.190     | 0.001    | 0.766     | 0.006  | 0.995     |
| Q48      | -2.197      | 3.489     | -0.055   | 0.722     | -0.630 | 0.530     |
| Q54      | -0.005      | 0.009     | -0.054   | 0.657     | -0.589 | 0.557     |
| Q55      | 0.075       | 0.099     | 0.062    | 0.814     | 0.754  | 0.452     |
| Q62      | -0.000      | 0.000     | -0.041   | 0.500     | -0.385 | 0.700     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | 6603.208       | 6   | 1100.535    | 3.160   | 0.006 |
| RESIDUAL   | 56079.344      | 161 | 348.319     |         |       |

Q3=television; Q4=radio; Q56=number of competitors; Q50=ownership type; Q48=system affiliation; Q54=hospital size; Q55=census; Q62=population

## APPENDIX R

COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON INDIVIDUAL MEDIUM USE (CON'D)

## NEWSPAPERS/MAGAZINES

25 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q5 N: 171 MULTIPLE R: .270 SQUARED MULTIPLE R: .073  
ADJUSTED SQUARED MULTIPLE R: .039 STANDARD ERROR OF ESTIMATE: 25.245

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | 73.531      | 8.173     | 0.000    | .         | 8.997  | 0.000     |
| Q56      | -0.142      | 0.446     | -0.033   | 0.513     | -0.319 | 0.750     |
| Q50      | -10.859     | 5.731     | -0.163   | 0.765     | -1.895 | 0.060     |
| Q48      | -3.279      | 4.561     | -0.063   | 0.741     | -0.719 | 0.473     |
| Q54      | -0.016      | 0.012     | -0.123   | 0.640     | -1.305 | 0.194     |
| Q55      | -0.233      | 0.131     | -0.147   | 0.820     | -1.771 | 0.078     |
| Q62      | 0.000       | 0.000     | 0.151    | 0.493     | 1.409  | 0.161     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | 8199.527       | 6   | 1366.588    | 2.144   | 0.051 |
| RESIDUAL   | 104522.695     | 164 | 637.334     |         |       |

## BILLBOARDS

20 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q6 N: 176 MULTIPLE R: .142 SQUARED MULTIPLE R: .020  
ADJUSTED SQUARED MULTIPLE R: .000 STANDARD ERROR OF ESTIMATE: 13.777

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | 0.748       | 4.488     | 0.000    | .         | 0.167  | 0.868     |
| Q56      | -0.143      | 0.247     | -0.062   | 0.497     | -0.577 | 0.565     |
| Q50      | -2.948      | 2.979     | -0.086   | 0.763     | -0.990 | 0.324     |
| Q48      | 2.158       | 2.504     | 0.077    | 0.734     | 0.862  | 0.390     |
| Q54      | 0.001       | 0.006     | 0.022    | 0.665     | 0.233  | 0.816     |
| Q55      | 0.074       | 0.069     | 0.089    | 0.842     | 1.070  | 0.286     |
| Q62      | 0.000       | 0.000     | 0.056    | 0.486     | 0.514  | 0.608     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | 658.775        | 6   | 109.796     | 0.578   | 0.747 |
| RESIDUAL   | 32078.691      | 169 | 189.815     |         |       |

Q5=newspapers/magazines; Q6=billboards; Q56=number of  
competitors; Q50=ownership type; Q48=system affiliation;  
Q54=hospital size; Q55=census; Q62=population

## APPENDIX R

COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON INDIVIDUAL MEDIUM USE (CONT'D)

## DIRECT MAIL

27 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q7 N: 169 MULTIPLE R: .314 SQUARED MULTIPLE R: .099  
 ADJUSTED SQUARED MULTIPLE R: .066 STANDARD ERROR OF ESTIMATE: 21.276

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | 11.984      | 7.069     | 0.000    | .         | 1.695  | 0.092     |
| Q56      | 0.606       | 0.389     | 0.164    | 0.501     | 1.560  | 0.121     |
| Q50      | 10.595      | 4.808     | 0.189    | 0.755     | 2.204  | 0.029     |
| Q48      | 0.690       | 3.963     | 0.015    | 0.706     | 0.174  | 0.862     |
| Q54      | -0.001      | 0.010     | -0.013   | 0.635     | -0.137 | 0.891     |
| Q55      | 0.025       | 0.111     | 0.019    | 0.824     | 0.227  | 0.821     |
| Q62      | 0.000       | 0.000     | 0.095    | 0.483     | 0.888  | 0.376     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | 8047.452       | 6   | 1341.242    | 2.963   | 0.009 |
| RESIDUAL   | 73332.557      | 162 | 452.670     |         |       |

Q7=direct mail; Mix=media mix variable; Q56=number of competitors; Q50=ownership type; Q48=system affiliation; Q54=hospital size; Q55=census; Q62=population

**APPENDIX S**

**COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON MEDIA MIX**

## APPENDIX S

COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON MEDIA MIX

2 CASES DELETED DUE TO MISSING DATA.

DEP VAR: MIX N: 194 MULTIPLE R: .126 SQUARED MULTIPLE R: .016  
 ADJUSTED SQUARED MULTIPLE R: .000 STANDARD ERROR OF ESTIMATE: 6.826

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | 21.117      | 2.106     | 0.000    | .         | 10.028 | 0.000     |
| Q56      | -0.092      | 0.106     | -0.085   | 0.548     | -0.871 | 0.385     |
| Q50      | -0.049      | 1.444     | -0.003   | 0.762     | -0.034 | 0.973     |
| Q48      | 0.314       | 1.180     | 0.023    | 0.721     | 0.266  | 0.790     |
| Q54      | 0.003       | 0.003     | 0.096    | 0.663     | 1.073  | 0.285     |
| Q55      | 0.012       | 0.033     | 0.028    | 0.833     | 0.352  | 0.725     |
| Q62      | 0.000       | 0.000     | 0.063    | 0.514     | 0.623  | 0.534     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | 140.191        | 6   | 23.365      | 0.502   | 0.807 |
| RESIDUAL   | 8712.152       | 187 | 46.589      |         |       |

Q7=direct mail; Mix=media mix variable; Q56=number of competitors; Q50=ownership type; Q48=system affiliation; Q54=hospital size; Q55=census; Q62=population

**APPENDIX T**

**COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON TARGETED GROUPS**

## APPENDIX T

COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON TARGETED GROUPS

## DIRECT CONSUMERS

2 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q23 N: 194 MULTIPLE R: .288 SQUARED MULTIPLE R: .083  
 ADJUSTED SQUARED MULTIPLE R: .054 STANDARD ERROR OF ESTIMATE: 24.011

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | 76.233      | 7.408     | 0.000    | .         | 10.291 | 0.000     |
| Q56      | -0.568      | 0.373     | -0.144   | 0.548     | -1.524 | 0.129     |
| Q50      | -11.666     | 5.080     | -0.184   | 0.762     | -2.296 | 0.023     |
| Q48      | -1.059      | 4.150     | -0.021   | 0.721     | -0.255 | 0.799     |
| Q54      | 0.003       | 0.010     | 0.025    | 0.663     | 0.285  | 0.776     |
| Q55      | -0.098      | 0.117     | -0.064   | 0.833     | -0.838 | 0.403     |
| Q62      | -0.000      | 0.000     | -0.072   | 0.514     | -0.740 | 0.460     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | 9777.641       | 6   | 1629.607    | 2.827   | 0.012 |
| RESIDUAL   | 107813.331     | 187 | 576.542     |         |       |

## NON-DIRECT CONSUMERS

2 CASES DELETED DUE TO MISSING DATA.

DEP VAR: NONCOM N: 194 MULTIPLE R: .279 SQUARED MULTIPLE R: .078  
 ADJUSTED SQUARED MULTIPLE R: .048 STANDARD ERROR OF ESTIMATE: 22.995

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | 27.218      | 7.094     | 0.000    | .         | 3.837  | 0.000     |
| Q56      | 0.308       | 0.357     | 0.082    | 0.548     | 0.865  | 0.388     |
| Q50      | 12.512      | 4.865     | 0.207    | 0.762     | 2.572  | 0.011     |
| Q48      | -0.525      | 3.975     | -0.011   | 0.721     | -0.132 | 0.895     |
| Q54      | 0.003       | 0.010     | 0.026    | 0.663     | 0.306  | 0.760     |
| Q55      | 0.011       | 0.112     | 0.008    | 0.833     | 0.100  | 0.921     |
| Q62      | 0.000       | 0.000     | 0.123    | 0.514     | 1.256  | 0.211     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | 8365.472       | 6   | 1394.245    | 2.637   | 0.018 |
| RESIDUAL   | 98880.011      | 187 | 528.770     |         |       |

Q23=consumers; noncom=non-direct consumers; Q56=number of competitors; Q50=ownership type; Q48=system affiliation; Q54=hospital size; Q55=census; Q62=population

## **APPENDIX U**

**COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON MARKET RESEARCH EXPENTITURES**

## APPENDIX U

COMPETITION, OWNERSHIP, AND SYSTEM AFFILIATION  
REGRESSED ON MARKET RESEARCH EXPENDITURES

2 CASES DELETED DUE TO MISSING DATA.

DEP VAR: Q27 N: 194 MULTIPLE R: .556 SQUARED MULTIPLE R: .309  
ADJUSTED SQUARED MULTIPLE R: .287 STANDARD ERROR OF ESTIMATE: 20345.747

| VARIABLE | COEFFICIENT | STD ERROR | STD COEF | TOLERANCE | T      | P(2 TAIL) |
|----------|-------------|-----------|----------|-----------|--------|-----------|
| CONSTANT | 6239.022    | 6277.055  | 0.000    | .         | 0.994  | 0.322     |
| Q56      | -176.589    | 315.705   | -0.046   | 0.548     | -0.559 | 0.577     |
| Q50      | -4170.781   | 4304.477  | -0.067   | 0.762     | -0.969 | 0.334     |
| Q48      | 30.097      | 3516.659  | 0.001    | 0.721     | 0.009  | 0.993     |
| Q54      | 52.648      | 8.649     | 0.455    | 0.663     | 6.087  | 0.000     |
| Q55      | -128.106    | 99.066    | -0.086   | 0.833     | -1.293 | 0.198     |
| Q62      | 0.024       | 0.008     | 0.239    | 0.514     | 2.817  | 0.005     |

## ANALYSIS OF VARIANCE

| SOURCE     | SUM-OF-SQUARES | DF  | MEAN-SQUARE | F-RATIO | P     |
|------------|----------------|-----|-------------|---------|-------|
| REGRESSION | .345721E+11    | 6   | .576201E+10 | 13.920  | 0.000 |
| RESIDUAL   | .774085E+11    | 187 | .413949E+09 |         |       |

Q27=market research expenditures; Q56=number of competitors;  
Q50=ownership type; Q48=system affiliation; Q54=hospital  
size; Q55=census; Q62=population

**APPENDIX V**

**ADVERTISING-TO-SALES RATIOS (BY INDUSTRY), 1989**

## Advertising-to-Sales Ratios (by Industry), 1989

| Industry                                 | SIC<br>no. | Ad dollars<br>as percent<br>of sales | Ad dollars<br>as percent<br>of margin | Annual<br>growth<br>rate (%) | Industry                             | SIC<br>no. | Ad dollars<br>as percent<br>of sales | Ad dollars<br>as percent<br>of margin | Annual<br>growth<br>rate (%) |
|------------------------------------------|------------|--------------------------------------|---------------------------------------|------------------------------|--------------------------------------|------------|--------------------------------------|---------------------------------------|------------------------------|
| Alumina, asbestos, misc minerals         | 3290       | 1.3                                  | 3.8                                   | 11.0                         | Light, garden tractors, equip        | 3524       | 4.0                                  | 11.3                                  | 13.6                         |
| Adhesives & sealants                     | 2891       | 4.4                                  | 9.5                                   | 11.3                         | Lumber & other bldg mat-red          | 5211       | 1.8                                  | 6.9                                   | 6.8                          |
| Agriculture chemicals                    | 2870       | 1.2                                  | 4.3                                   | 26.1                         | Machns tools, metal cutting          | 3541       | 1.3                                  | 5.2                                   | 0.5                          |
| Agriculture production-crops             | 100        | 2.1                                  | 6.0                                   | 7.8                          | Magnetoscopic recording media        | 3695       | 3.6                                  | 9.7                                   | 13.7                         |
| Air cond. heating, ranging equip         | 3585       | 1.5                                  | 5.8                                   | 13.3                         | Mail beverages                       | 2082       | 8.4                                  | 21.7                                  | 7.7                          |
| Air cleaner services                     | 4513       | 1.5                                  | 8.4                                   | 9.3                          | Mail business forms                  | 2781       | 0.8                                  | 2.1                                   | 7.2                          |
| Air transport, scheduled                 | 4512       | 1.8                                  | 16.0                                  | 12.7                         | Mailbinding plants                   | 2011       | 1.2                                  | 9.4                                   | 15.3                         |
| Aircraft parts, aux equip, NEC           | 3728       | 0.8                                  | 3.5                                   | 9.4                          | Membership sport & rec clubs         | 7997       | 11.0                                 | 13.5                                  | 18.8                         |
| Apparel & other finished prod            | 2300       | 2.9                                  | 8.0                                   | 7.2                          | Men, youth, boys' wear, wtr clothing | 2320       | 2.7                                  | 9.0                                   | 12.8                         |
| Apparel & accessory stores               | 5600       | 2.4                                  | 5.9                                   | 11.6                         | Metal forgings & stampings           | 3460       | 1.6                                  | 6.0                                   | 7.5                          |
| Auto rent & lease, no drivers            | 5531       | 2.3                                  | 7.0                                   | 10.5                         | Metalworking machinery & equip       | 3540       | 5.5                                  | 14.0                                  | 12.9                         |
| Auto rent & lease, no drivers            | 7510       | 2.8                                  | 4.0                                   | 7.7                          | Misc amusement & rec services        | 7990       | 6.5                                  | 18.0                                  | 15.9                         |
| Automatic regulating services            | 3822       | 8.2                                  | 31.7                                  | 7.9                          | Misc chemical products               | 2880       | 6.1                                  | 17.2                                  | 7.8                          |
| Bakery products                          | 2050       | 1.7                                  | 3.7                                   | 4.8                          | Misc elec machy, equip, supplies     | 3680       | 3.1                                  | 8.9                                   | 112.1                        |
| Beverages                                | 2080       | 9.5                                  | 17.0                                  | 11.3                         | Misc fabricated metal prod           | 3480       | 0.7                                  | 2.7                                   | 12.4                         |
| Bldg mat, hardware, garden-equip         | 5200       | 4.0                                  | 8.5                                   | 18.7                         | Misc food prep, kitchen prod         | 2090       | 2.9                                  | 7.8                                   | 10.9                         |
| Bldg mat, excl. mtl, wtr heaters         | 3452       | 0.9                                  | 2.9                                   | 6.0                          | Misc general mtlr stores             | 5389       | 3.1                                  | 11.8                                  | 3.7                          |
| Bkch-pubishing & printing                | 2731       | 3.3                                  | 8.1                                   | 10.8                         | Misc indust comm machy & equip       | 3580       | 2.4                                  | 7.2                                   | 12.8                         |
| Bedroom fabric mtl cotton                | 2211       | 2.8                                  | 11.7                                  | 6.9                          | Misc manufacturing industries        | 3800       | 3.0                                  | 6.5                                   | 10.5                         |
| Bld & carried bldg, excl. wtr            | 2086       | 2.9                                  | 6.2                                   | 15.5                         | Misc plastic products                | 3080       | 1.9                                  | 10.9                                  | 5.1                          |
| Business services, NEC                   | 7388       | 6.6                                  | 13.2                                  | 5.0                          | Misc shipping goods stores           | 5840       | 3.7                                  | 9.5                                   | 5.2                          |
| Cable & other pay tv services            | 4841       | 2.2                                  | 3.9                                   | 20.3                         | Miscn pcr, videotape production      | 7812       | 9.8                                  | 18.7                                  | 13.2                         |
| Can fruit, veg, preserv, jam, pr         | 2033       | 2.2                                  | 6.9                                   | 7.4                          | Miscn pcr, videotape distrib         | 7822       | 13.0                                 | 15.1                                  | 26.8                         |
| Car/frozen preserv, fruit, veg           | 2030       | 6.9                                  | 17.1                                  | 7.3                          | Miscn picture theaters               | 7830       | 4.3                                  | 20.8                                  | 17.5                         |
| Carpet & rugs                            | 2273       | 0.7                                  | 2.8                                   | 13.0                         | Miscn stores                         | 5716       | 1.7                                  | 11.2                                  | 10.6                         |
| Catalog, mail-order houses               | 5981       | 5.7                                  | 15.8                                  | 11.0                         | Miscn vch parts, supply-whol         | 5010       | 2.8                                  | 20.6                                  | 23.6                         |
| Chemicals & allied prod                  | 2800       | 2.7                                  | 6.7                                   | 13.8                         | Miscn vehicle parts, accessory       | 3714       | 1.6                                  | 6.4                                   | 27.5                         |
| Child daycare services                   | 8361       | 1.6                                  | 3.5                                   | 19.9                         | Miscn vehicles & car bodies          | 3711       | 1.7                                  | 7.3                                   | 12.6                         |
| Cigarettes                               | 2111       | 5.7                                  | 12.9                                  | 9.1                          | Miscn bicycles & parts               | 3751       | 1.6                                  | 6.5                                   | 21.5                         |
| Computer & software stores               | 5734       | 0.9                                  | 3.4                                   | 8.7                          | Miscn & generators                   | 3821       | 0.9                                  | 2.7                                   | 4.5                          |
| Computer integrated sys design           | 7373       | 1.8                                  | 3.9                                   | 12.0                         | Miscn paper-publishing & print       | 2711       | 3.6                                  | 10.2                                  | 12.9                         |
| Comp processing, data prep, etc          | 7374       | 0.7                                  | 2.0                                   | 7.4                          | Office furniture                     | 2520       | 1.2                                  | 3.7                                   | 9.9                          |
| Commercial printing                      | 2780       | 1.9                                  | 6.8                                   | 15.4                         | Office furniture, ex wood            | 2522       | 2.0                                  | 6.0                                   | 9.6                          |
| Communications equip, NEC                | 3688       | 2.1                                  | 5.8                                   | 10.1                         | Office machines, NEC                 | 3678       | 1.4                                  | 4.3                                   | 5.6                          |
| Computer & office equipment              | 3670       | 1.2                                  | 2.7                                   | 9.7                          | Operative builders                   | 1531       | 1.2                                  | 4.2                                   | 21.0                         |
| Computer peripherals ex, NEC             | 3677       | 2.0                                  | 4.7                                   | 12.9                         | Operative-repair bldgs               | 6812       | 3.7                                  | 8.0                                   | 8.2                          |
| Computer stor age devices                | 3672       | 1.1                                  | 4.1                                   | 14.2                         | Orthotic goods                       | 3851       | 10.5                                 | 18.5                                  | 19.7                         |
| Computer terminals                       | 3675       | 2.7                                  | 8.3                                   | 9.8                          | Ortho, prosth, surg appl equip       | 3842       | 1.8                                  | 4.2                                   | 12.5                         |
| Construction machinery & equip           | 3531       | 0.9                                  | 3.3                                   | 14.7                         | Paints, varnishes, lacquers          | 2851       | 3.7                                  | 9.6                                   | 9.5                          |
| Convert paper printed, except bks        | 2670       | 1.9                                  | 4.3                                   | 11.1                         | Paper mills                          | 2621       | 3.6                                  | 11.1                                  | 2.2                          |
| Cosmetics & toiletries                   | 2862       | 4.8                                  | 9.1                                   | 2.7                          | Paint stores & dealers               | 6784       | 3.0                                  | 7.1                                   | 6.8                          |
| Cutlery hand tools, gen helper           | 3420       | 10.9                                 | 21.6                                  | 10.9                         | Pens, pencils, other office mtlr     | 3850       | 5.4                                  | 11.1                                  | 9.2                          |
| Dairy products                           | 2020       | 4.7                                  | 14.6                                  | 9.9                          | Perfumes, cosmetic, toilet prep      | 2844       | 10.4                                 | 16.1                                  | 24.6                         |
| Dental equipment & supplies              | 3843       | 3.2                                  | 7.7                                   | 80.3                         | Periodical-publishing, printing      | 2721       | 3.7                                  | 6.7                                   | 5.4                          |
| Department stores                        | 5311       | 2.9                                  | 14.3                                  | 5.5                          | Personal credit institutions         | 6141       | 1.5                                  | 2.8                                   | 5.8                          |
| Drug & proprietary stores                | 5812       | 1.5                                  | 5.6                                   | 9.9                          | Personal services                    | 7200       | 5.7                                  | 16.0                                  | 3.4                          |
| Eating places                            | 5813       | 3.3                                  | 16.5                                  | 7.8                          | Personnel training                   | 2911       | 2.7                                  | 9.0                                   | 14.3                         |
| Educational services                     | 8200       | 5.0                                  | 9.4                                   | 17.6                         | Pharmaceutical preparations          | 2834       | 6.8                                  | 10.1                                  | 9.8                          |
| Elec meas & test instruments             | 3825       | 2.5                                  | 4.8                                   | 8.6                          | Photo dev, ex radiotelescope         | 4813       | 2.2                                  | 4.5                                   | 2.8                          |
| Elect, other elec eq, ex comp            | 3800       | 3.1                                  | 9.2                                   | 10.7                         | Photo records, audio tape disc       | 3652       | 8.3                                  | 23.2                                  | 13.3                         |
| Electric housewares & fans               | 3624       | 4.0                                  | 15.4                                  | 10.9                         | Photofinishing laboratories          | 7284       | 4.0                                  | 10.9                                  | 9.7                          |
| Electric lighting wiring equip           | 3640       | 3.2                                  | 9.8                                   | 10.0                         | Photographic equip & suppl           | 3861       | 3.6                                  | 9.9                                   | 14.0                         |
| Electrical work                          | 1731       | 1.2                                  | 12.6                                  | 28.1                         | Plastic mat, synthetic resin         | 2820       | 1.2                                  | 6.2                                   | 18.8                         |
| Electromedical apparatus                 | 3845       | 1.3                                  | 2.2                                   | 16.2                         | Plastic products, NEC                | 3088       | 1.9                                  | 5.1                                   | 12.5                         |
| Electronic comp, accessories             | 3670       | 0.9                                  | 2.6                                   | 3.2                          | Plastics, resins, elastomers         | 2821       | 1.6                                  | 4.3                                   | 120.7                        |
| Electronic components, NEC               | 3678       | 1.4                                  | 4.7                                   | 19.6                         | Poultry & related products           | 3280       | 5.7                                  | 12.2                                  | 84.3                         |
| Electronic devices                       | 3671       | 5.1                                  | 10.3                                  | 14.4                         | Poultry slaughter & process          | 2015       | 3.1                                  | 20.7                                  | 12.1                         |
| Electronic components                    | 3678       | 1.6                                  | 3.8                                   | 15.4                         | Prepackaged software                 | 7372       | 4.8                                  | 9.2                                   | 19.2                         |
| Electronic parts, equip-whol, NEC        | 5085       | 1.6                                  | 5.5                                   | 12.0                         | Printing presses machy, equip        | 3665       | 1.1                                  | 2.8                                   | 4.7                          |
| Employment agencies                      | 7381       | 5.7                                  | 17.8                                  | 21.3                         | Prod & comm equip & supply-whol      | 5040       | 3.0                                  | 8.6                                   | 9.6                          |
| Engines & turbines                       | 3510       | 1.7                                  | 6.3                                   | 7.5                          | Pumps & pumping equipment            | 3581       | 1.1                                  | 3.1                                   | 7.9                          |
| Equip excl. mtlr, excl. mtlr, excl. mtlr | 6700       | 1.8                                  | 7.7                                   | 1.2                          | Radio broadcasting stations          | 4832       | 8.8                                  | 22.4                                  | 21.2                         |
| Equip rental & leasing, NEC              | 7369       | 3.7                                  | 5.7                                   | 5.9                          | Radios, tv broadcast comm equip      | 3663       | 1.0                                  | 3.3                                   | 4.6                          |
| Fabricated rubber prod, NEC              | 3080       | 0.4                                  | 1.5                                   | 52.2                         | Radios, tv consumer elec stores      | 5731       | 5.3                                  | 23.8                                  | 16.9                         |
| Facilities, support mtlr, excl. mtlr     | 8744       | 2.4                                  | 34.3                                  | 22.8                         | Radiotelephone communication         | 4812       | 4.2                                  | 8.1                                   | 28.7                         |
| Farm clothing stores                     | 5461       | 1.9                                  | 5.9                                   | 19.8                         | Rail car equipment                   | 3788       | 1.5                                  | 2.3                                   | 6.8                          |
| Farm machinery & equipment               | 3523       | 1.4                                  | 7.6                                   | 14.5                         | Raised & kept stores                 | 5726       | 1.4                                  | 2.3                                   | 13.5                         |
| Finance services                         | 6188       | 0.6                                  | 3.7                                   | 4.1                          | Raising & services ex machines       | 3660       | 2.3                                  | 6.8                                   | 7.8                          |
| Food & kindred products                  | 2000       | 7.8                                  | 18.7                                  | 13.0                         | Retail stores                        | 5680       | 5.8                                  | 12.7                                  | 14.6                         |
| Footwear, except rubber                  | 3140       | 3.4                                  | 9.9                                   | 5.9                          | Rubber & plastic footwear            | 3021       | 5.2                                  | 14.2                                  | 15.4                         |
| Furniture stores                         | 5712       | 7.1                                  | 15.7                                  | 7.0                          | Sausages, other prepared meat pr     | 2013       | 6.9                                  | 21.0                                  | 8.7                          |
| Games, toys, child vch ex dolls          | 3944       | 14.2                                 | 29.3                                  | 6.1                          | Savings inst, not fed short          | 6038       | 0.9                                  | 2.4                                   | 11.5                         |
| Gen med & surgical hospitals             | 8082       | 0.8                                  | 4.5                                   | 12.5                         | Savings inst, fed chartered          | 6035       | 0.8                                  | 1.8                                   | 7.8                          |
| Glass, glassware-crystal, blown          | 3220       | 2.7                                  | 6.7                                   | 7.9                          | Sawing machines & dealers            | 6211       | 3.1                                  | 7.3                                   | 13.6                         |
| Grain mtl products                       | 2040       | 9.4                                  | 20.6                                  | 8.8                          | Sawmills, related devices            | 3674       | 1.0                                  | 2.4                                   | 10.3                         |
| Greeting cards                           | 2771       | 5.1                                  | 10.3                                  | 11.7                         | Shoe stores                          | 5681       | 2.8                                  | 7.4                                   | 7.8                          |
| Groceries & related gds-whol             | 5140       | 1.5                                  | 10.7                                  | 10.6                         | Short-term bus credit, ex ag         | 6153       | 1.2                                  | 2.4                                   | 11.5                         |
| Grocery stores                           | 5411       | 1.3                                  | 5.5                                   | 5.6                          | Shuttlow more fast                   | 6051       | 2.3                                  | 21.1                                  | 15.1                         |
| Guided missiles & space vch              | 3780       | 5.3                                  | 170.1                                 | 6.4                          | Sigs, dispatch, toilet prep          | 2840       | 7.7                                  | 17.4                                  | 8.7                          |
| Hardware, plumbing, heat equip-whol      | 5070       | 1.4                                  | 12.4                                  | 9.5                          | Special clean, patch prep            | 2842       | 14.5                                 | 24.8                                  | 8.0                          |
| Help supply services                     | 7383       | 1.3                                  | 5.3                                   | 2.9                          | Special industry machinery           | 3660       | 7.9                                  | 33.4                                  | 17.5                         |
| Hobby, toy & game shops                  | 5945       | 1.6                                  | 5.0                                   | 11.8                         | Special industry machy, NEC          | 3668       | 1.4                                  | 3.3                                   | 14.9                         |
| Home furniture & equip stores            | 5700       | 5.0                                  | 10.3                                  | 10.5                         | Sports & athletic gds, NEC           | 3848       | 5.5                                  | 15.8                                  | 13.2                         |
| Hospital & medical ex plants             | 8024       | 0.7                                  | 14.9                                  | 28.1                         | Search dot new guide more sys        | 3812       | 0.2                                  | 0.7                                   | 1.3                          |
| Hospital                                 | 8080       | 5.0                                  | 29.7                                  | 24.9                         | Shedding devices, ex cemetery        | 6852       | 1.3                                  | 6.1                                   | 6.0                          |
| Hotels, motels, tourist courts           | 7011       | 3.4                                  | 10.7                                  | 5.8                          | Sugar & confectionary prod           | 2088       | 10.6                                 | 28.9                                  | 10.8                         |
| Household appliances                     | 3620       | 4.2                                  | 14.8                                  | 77.8                         | Surveys, map view apparatus          | 3841       | 2.4                                  | 4.5                                   | 11.9                         |
| Household audio & video eq               | 3851       | 2.8                                  | 9.8                                   | 10.6                         | Swing to discharges, other bldgs     | 7340       | 1.8                                  | 6.2                                   | 4.9                          |
| Household furniture                      | 2510       | 4.8                                  | 14.6                                  | 12.1                         | Swing to discharges, equip           | 3813       | 1.1                                  | 3.2                                   | 7.7                          |
| Ice cream & frozen desserts              | 2034       | 6.9                                  | 25.6                                  | 16.6                         | Tele & telegraph apparatus           | 3881       | 1.6                                  | 3.8                                   | 9.2                          |
| Industrial equipment, chemicals          | 2810       | 16.5                                 | 34.4                                  | 19.8                         | Telegraph & com message comm         | 4822       | 3.3                                  | 53.6                                  | 2.2                          |
| Inf bath, fixtures, fixtures             | 3637       | 1.4                                  | 5.4                                   | 4.5                          | Telexman broadcast stations          | 4833       | 2.5                                  | 6.2                                   | 1.8                          |
| Industrial measurement equip             | 3823       | 1.6                                  | 3.7                                   | 10.7                         | Trains & other bldgs                 | 3011       | 2.0                                  | 7.5                                   | 6.7                          |
| Investment advice                        | 6282       | 8.6                                  | 19.8                                  | 11.3                         | Unsupp plastic film & sheet          | 3081       | 5.3                                  | 20.3                                  | 3.0                          |
| Iron & steel foundries                   | 3320       | 1.2                                  | 4.2                                   | 12.0                         | Variety stores                       | 5331       | 1.9                                  | 7.5                                   | 8.6                          |
| Jewelry & watches-whol                   | 5084       | 3.9                                  | 25.0                                  | 10.6                         | Water transportation                 | 4400       | 5.4                                  | 14.4                                  | 6.2                          |
| Jewelry stores                           | 5844       | 3.3                                  | 6.9                                   | 15.8                         | Wires, mtl, steel wire, wireprod     | 2340       | 3.4                                  | 8.5                                   | 11.4                         |
| Knitting mills                           | 2250       | 1.9                                  | 6.8                                   | 10.0                         | Women's clothing stores              | 5621       | 2.7                                  | 7.5                                   | 6.6                          |
| Lab analytical instruments               | 3828       | 1.7                                  | 3.3                                   | 7.9                          | Womens, mens, pr underwear           | 2330       | 1.7                                  | 6.3                                   | 16.5                         |
| Lab apparatus & furniture                | 3821       | 1.2                                  | 2.7                                   | 16.3                         | Wood light turn, ex upstair          | 2511       | 2.9                                  | 8.8                                   | 18.9                         |

Source: Bureau of Economic Analysis, 1 Shreveport Drive, Lexington, MA 01846 (617) 552-2222. SIC - Standard Industrial Classification. Ad - Advertising. Sales - Sales. Margin - Profit. Growth - Annual growth rate of advertising dollars.

## BIBLIOGRAPHY

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"Advertising-to-Sales Ratios (by Industry), 1989" Advertising Age, (Nov. 13, 1989).

Albion, Mark S. and Paul W. Farris. The Advertising Controversy: Evidence on the Economic Effects of Advertising. Boston: Auburn House Pub. Co., 1981.

Alexander, Jeffrey and Terry Amburgey. "The Dynamics of Change in the American Hospital Industry: Transformation or Selection?" Medical Care Review, 44 (Fall 1987), 279-321.

Alpern, Barbara Bellman. Reaching Women. Chicago: Pluribus Press, 1987.

American Medical Association, 94 F.T.C. 701 (1979), aff'd as modified, 638 F. 2d 443 (2d Cir. 1980), aff'd by an equally divided Court, 455 U.S. 676 (1982) ("AMA").

Arnould, Richard J and Lawrence M. DeBrock. "Competition and Market Failure in the Hospital Industry: A Review of the Evidence." Medical Care Review, 43 (Fall 1986), 253-292.

Babbie, Earl. The Practice of Social Research. Belmont, Calif.: Wadsworth Publ. Co., 1986.

Bain, Joe S. Barriers to New Competition. Cambridge, Mass.: Harvard University Press, 1956.

Barrett, Diana. Multihospital Systems. Cambridge, Mass.: Oelgeschlager, Gunn, and Hain, Pub., 1980.

Baumol, William J. Business Behavior, Value and Growth, 2nd ed. New York: Harcourt, Brace & World, 1967.

Bays, C. "Patterns of Hospital Growth: The Case of Profit Hospitals." Medical Care, 21 (1983), 850-857.

Benham, Lee and Diana. "Regulating Through the Professions: A Perspective on Information Control." Journal of Law and Economics (Oct. 1975).

Bovee, Courtland L. and William F. Arens. Contemporary Advertising, 3rd edition. Homewood, Ill.: Irwin, 1989.

- Burnett, John. Promotion Management. St. Paul, Minn.: West, Pub., 1984.
- Caves, Richard. American Industry: Structure, Conduct, and Performance, 6th Edition. Englewood Cliffs, N.J.: Prentice-Hall, 1987.
- Chamberlin, Edward Hastings. The Theory of Monopolistic Competition. 8th Edition. Cambridge, Mass.: Harvard University Press, 1962.
- Chang, Cyril and Howard Tuckman. "The Profits of Not-for-Profit Hospitals." Journal of Health Politics, Policy, and Law. 13 (Fall 1988), 547-564.
- Clarke, Roberta N. and Linda J. Shyavitz. "Market Research: When, Why, and How." Health Care Management Review (Winter 1982).
- Comanor, William and Thomas A. Wilson. "The Effects of Advertising on Competition: A Survey." Journal of Economic Literature, 17 (June 1979), 453-476.
- "Company Practices in Health Care Cost Management." Hewitt Associates, 1984.
- Coatilo, L. Barry. "Antitrust Enforcement in Health Care." The New England Journal of Medicine, 313 (Oct. 3, 1985).
- Cowling, Keith, John Cable, Michael Kelly, and Tony McGuinness. Advertising and Economic Behaviour. London: MacMillan Press, 1975.
- Cyert, Richard M. and James G. March. A Behavioral Theory of the Firm. Englewood Cliffs, N.J.: Prentice-Hall, 1963.
- Davis, Karen. "Economic Theories of Behavior on Nonprofit, Private Hospitals." Economic and Business Bulletin, 24 (Winter 1972), 1-13.
- Droese, Therese. "Consumers Rate Health Care Advertising." Hospitals (Jan. 5, 1988), p. 29.
- Droese, Therese. "Marketing's Role Still Unclear, Undefined." Hospitals (Sept. 20, 1988), p. 75.
- Droese, Therese. "Physician Marketing Budgets to Grow in '88." Hospitals (Jan. 20, 1988), p. 32.
- Eastaugh, Steven R. Medical Economics and Health Finance. Dover, Mass.: Auburn House Publishing Co., 1981.

- Ekelund, Robert B. and David S. Saurman. Advertising and the Market Process. San Francisco: Pacific Research Institute for Public Policy, 1988.
- Evanson, Donald. "Media Mix--Do We Practice What We Preach?" Journal of Advertising Research, 24 (Oct/Nov 1984).
- Feldstein, Paul J. Health Care Economics. New York: John Wiley and Sons, 1988.
- Feldstein, Paul J. The Politics of Health Legislation. Ann Arbor, Mich.: Health Administration Press Publications, 1988.
- Fisk, Trevor. Advertising Health Services: What Works--What Fails. Chicago: Pluribus Press, 1986.
- Folland, Sherman T. "The Effects of Health Care Advertising." Journal of Health Politics, Policy and Law, 10 (Summer 1985).
- Garton, Tim. "Marketing Health Care: Its Untapped Potential." In Health Care Marketing: Issues and Trends, Philip D. Cooper, ed. Germantown, MD: Aspen Systems Corp., 1979.
- Ginzberg, Eli. "For-Profit Medicine." The New England Journal of Medicine, 319, 12 (Sept. 22, 1988).
- Gray, Bradford H. For-Profit Enterprise in Health Care. Washington, D.C.: National Academy Press, 1986.
- Green, Paul E. and Donald S. Tull. Research for Marketing Decisions, 4th ed. Englewood Cliffs, N.J.: Prentice-Hall, 1978.
- Gujarati, Damodar N. Basic Econometrics. 2nd Edition. McGraw-Hill Book Co., 1988.
- Hair, Joseph F., Jr., Rolph Anderson, Ronald L. Tatham, and Bernie Grablowsky. Multivariate Data Analysis. New York: Macmillan Publishing Co., 1988.
- Herzinger, R. E. and W. S. Krasker. "Who Profits from Nonprofits?" Harvard Business Review (Jan/Feb 1987).
- Hospital Statistics. Chicago: American Hospital Association, 1984.
- Hospital Statistics. Chicago: American Hospital Association, 1987.

Hospital Statistics. Chicago: American Hospital Association, 1988.

Johnson, Everett A. and Richard L. Johnson. Hospitals Under Fire. Rockville, Md.: Aspen Publications, 1986.

Kotler, Philip and Roberta N. Clarke. Marketing for Health-Care Organizations. Englewood Cliffs, N.J.: Prentice-Hall, 1987.

Kushman, J. and C. Nuckton. "Further Evidence on the Relative Performance of Proprietary and Nonprofit Hospitals." Medical Care, 15 (1977).

Kwoka, John E. Jr. "Advertising and the Price and Quality of Optometric Services." American Economic Review, 74 (1) (March 1984).

Lewis-Beck, Michael S. Applied Regression. Sage University Paper, no. 07-022, Newbury Park, Calif.: Sage Publications, 1989.

Lehman, Donald R. Market Research and Analysis, 2nd edition. Homewood, Ill.: Irwin, 1985.

Luft, Harold S. and Susan C. Maerke. "Competitive Potential of Hospitals and Their Neighbors." Contemporary Policy Issues, 3 (Winter 1984-1985).

Luft, Harold S., et al. "The Role of Specialized Clinical Services in Competition among Hospitals." Inquiry, 23 (Spring 1986), 83-94.

Luft, Harold S., et al. "Hospital Behavior in a Local Market Context." Medical Care Review, 43 (Fall 1986).

Marris, Robin. The Economic Theory of "Managerial" Capitalism. New York: The Free Press of Glencoe, 1964.

MacStravic, Robin. Managing Health Care Marketing. Rockville, MD: Aspen Publ., 1986.

McGann, Anthony F. and J. Thomas Russell. Advertising Media. Homewood, Ill.: Irwin, 1981.

McNerney, W. (ed.). For-Profit Enterprise and Health Care. Washington, D.C.: National Academy Press, 1986.

Musacchio, Robert A., Stephen Zuckerman, Lynn E. Jensen, and Larry Freshnock. "Hospital Ownership and the Practice of Medicine: Evidence from the Physician's Perspective." From For-Profit Enterprise in Health Care.

- Nelson, P. "Advertising as Information." Journal of Political Economy. 81 (July-August, 1974).
- Nie, Norman H. et al. Statistical Package for the Social Sciences, 2nd edition. New York: McGraw-Hill, 1975.
- "1987 Multi-Unit Provider's Survey." Modern Healthcare (June 5, 1987).
- Nunnally, Jum C. Psychometric Theory. New York: McGraw-Hill Book Co., 1978.
- Nylen, David. Advertising. Cincinnati: South-Western Publ. Cor., 1986.
- Pauly, Mark V. and Kathryn M. Langwell. "Research on Competition in the Market for Health Services: Problems and Perspectives." Inquiry 20 (Summer 1983).
- Pauly, Mark V. and N. Redisch. "The Not-for-Profit Hospital as a Physicians' Cooperative." American Economic Review, 63 (March 1973).
- Pedhauzer, Elazer. Multiple Regression in Behavioral Research. 2nd Edition. New York: Holt, Rinehart, and Winston, 1982.
- Perry, Linda. "Lack of Follow-Up Can Cost Hospitals Billions--Report." Modern Healthcare (Oct. 14, 1988). p. 38.
- Renn, Stephen C., Carl J. Schramm, J. Michael Watt, and Robert A. Derzon. "The Effects of Ownership and System Affiliation on the Economic Performance of Hospitals." Inquiry 22 (Fall 1985).
- Rial, William. "Should the FTC Regulate American Medicine?" National Journal (Sept. 11, 1982).
- Roberg, Adrian L. "How to Develop a Successful Marketing Program to Increase Referrals from Physicians and Other Practitioners." From Responding to the Challenge: Health Care Marketing Comes of Age, editor, Philip D. Cooper. American Marketing Association, 1986.
- Rossiter, John and Larry Percy. Advertising and Promotion Management. New York: McGraw-Hill Pub., 1987.
- Schlesinger, Mark, Theodore R. Marmor, and Richard Smithey. "Nonprofit and For-Profit Medical Care: Shifting Roles and Implications for Health Policy." Journal of Health Politics, Policy and Law 12 (Fall 1987).

- Schultz, Don, Dennis Martin, and William Brown. Strategic Advertising Campaigns. Lincolnwood, Ill.: NTC Business Books, 1987.
- Smith, Howard, and Richard Reid. Competitive Hospitals. Rockville, Md.: Aspen Publications, 1986.
- Steiber, Stephen. "Advertising Cuts Represent Marketing Shakeout." Hospitals (Nov. 20, 1988).
- Steiber, Stephen. "National Hospital Ad Expenditures Plateau." Steiber Research Group, press release, Nov. 20, 1988.
- Steinwald, B. and D. Neuhauser. "The Role of the Proprietary Hospital." Journal of Law and Contemporary Problems 35 (1970).
- Strach, Julie. Competitive Analysis. Hackley Hospital, Muskegon, Michigan, 1987.
- Super, Kari. "Hospitals Will Favor 'Hard-Sell' in Advertising, Experts Predict." Modern Healthcare (Jan. 3, 1986).
- Tabachnick, Barbara and Linda S. Fidell. Using Multivariate Statistics, 2nd ed. New York: Harper and Row, 1989.
- Tejada, Paul and M. Susan Bennett. "Marketing to Corporations--The Agony and the Ecstasy." From Building Marketing Effectiveness in Healthcare. Editor, D. Terry Paul. American Marketing Association, 1985.
- Waldo, Daniel R., Katherine R. Levit, and Helen Lazenby. "National Health Expenditures, 1985." Health Care Financing Review 8 (Fall 1986).
- Wilkinson, Leland. Systat: The System for Statistics. Evanston, Ill.: Systat, Inc., 1988.
- Williamson, Oliver. The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm. Englewood Cliffs, N.J.: Prentice-Hall, 1964.
- Yoder, Sunny G. "Economic Theories of For-Profit and Non-for-Profit Organizations." from For-Profit Enterprise in Health Care, W. McNerny, editor. Washington, D.C.: National Academy Press, 1986.
- Zaltman, Gerald and Christine Moorman. "The Management and Use of Advertising Research." Journal of Advertising Research, (Dec 1988/Jan 1989), 11-18.

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