

Lab Management Decisions

Under DRG's

by

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ABSTRACT

The change to a prospective payment system for Medicare and Medicaid patients has forced hospital laboratories to adopt new management strategies. This paper examines those strategies and proposes that hospitals that are more stressed under the new payment system will adopt more of these strategies. Data is gathered through a survey of four hospitals in a local service area, and analyzed to test the hypotheses.

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I. INTRODUCTION

Annual expenditures on personal medical services have increased from 10.8 billion in 1950 to 150 billion by 1977. In 1967 43 billion or 5.6% of the GNP (from 4.1% in 1950) was spent on personal medical services. By 1977 8.2% of the GNP was being allocated to personal medical services. Even after adjustment of these figures for population increases, per capita medical expenditures over the last 20 years have stayed very close to the annual percentage increase in total medical expenditure from \$78.35 per year in 1950 to \$736.92 per year in 1977.(1) The federal government has financed the largest portion of this bill, accounting for 40 billion of the 150 billion spent in 1977.(2)

The rapid and continuing increase in the amount of our nation's resources being devoted to personal medical services and the increasing role of our government in financing those services has raised the issue of health to the forefront of public policy and opinion. In a book entitled In Critical Condition, Senator Edward Kennedy addressed his readers as follows: "Are you aware that all Americans today (1972) are paying over 170 percent of the hospital daily service charges they paid in 1960? Do you know that medical costs force Americans of every income level to mortgage their families future, sell their homes, give up their children's college education and even declare bankruptcy? Many are hounded by

collection agencies hired by hospitals and doctors. Many have their salaries garnisheed; some are sued."(3) If public wrath was engendered against the practitioners of health care in 1972 when Kennedy wrote this book, one can hardly imagine how incendiary the fury has become in the period of 1980's inflation. Scrutiny of the economics of health care delivery has become even sharper.

In the 1980's it has become a national concern to halt this spiralling inflation in health care. The most effective measure so far has been the institution of a prospective payment system for Medicare and Medicaid. The prospective payment system, called Diagnostic Related Groups (DRG's), limits the amount the government will pay for each hospital stay of a Medicare or Medicaid patient. It seems deceptively simple, the hospital receives one per capita payment for each DRG (patient) admitted. If it uses more resources treating that patient than the government will pay for, it loses that money. But, those hospitals that can treat that patient for less than what the government is willing to pay, are rewarded as being cost-effective by being allowed to pocket part of the savings. This is the federal government's plan to force hospitals to accomplish two objectives: to lower their operating costs and bring their increases in line with the general inflation rate; and to place hospital administrator's in the role of controlling the physicians who are the purchasers of the expensive hospital resources (for their

patient).

So far the plan seems to be working. Hospital occupancy rates are down across the nation, lengths of stay for Medicare and Medicaid patients have been reduced, and many procedures that once were done routinely at hospitals are now done in other facilities.(4) The cumulative effect of all this is that hospitals are scrambling to fill beds and recover from low occupancy rates that have left them in the role the American automakers were in when foreign imports forced them to rethink their entire operations. Hospitals are being forced to think in terms of the costs of services they offer and how they offer them. They are caught in a period of organizational crisis and to survive they must learn to operate in the most efficient way possible and to cut costs anywhere they can.

This paper examines how hospitals have responded to DRG's by looking at one part of the hospital that may be severely effected, the hospital's laboratory. As one of the hospital's largest ancillary departments, the effect of DRG's has been to convert the laboratory from a profit center to a cost center. In the past, the more tests ordered on a patient the more money paid to the hospital from the old retrospective payment system that reimbursed the hospital for all costs incurred in treating the patient. But with DRG's, more tests simply raise the cost of treating each patient, and increase the likelihood that the hospital will spend more treating that patient than the government will pay and there-

by accruing additional costs to the hospital.

In this era of cost containment the hospital may respond to both financial and political pressures by adopting certain strategies that would decrease expenditures on inpatients while increasing revenue from outpatient procedures, which are not covered under DRG's. These strategies would force the hospital to possibly make certain management decisions within the laboratory that could range from severe change to "business as usual". This paper will study how DRG's has effected hospital laboratories and how dependent that change is on the severity of pressure being put on an individual hospital. In simple terms it will examine the effect of the prospective payment system on hospital management decisions that effect the laboratory.

The paper will be a case study of a mid-sized midwestern city with four hospitals serving the county area. A survey, attached in the appendix, will be sent to each hospital's administration to determine the financial and political pressure it is operating under along with some basic information about the hospital itself. A phone or personal interview will be conducted with the laboratory manager to determine what management strategies have been instituted in their lab since DRG's. The information will then be studied to see if those hospitals with the higher pressures effect more survival management strategies on their labs.

II. BACKGROUND

Review of Prospective Payment

Prospective payment may be the most revolutionary development in the health care field since the introduction of Medicare itself in the 60's. Critics of the Medicare system have observed that the retrospective cost reimbursement policy contained a very positive incentive for excessive spending. Since its inception, Medicare has rapidly grown into a major government expense, in 1983 alone \$54 billion in billings were submitted.(5) Requirements for greater efficiency and cost effectiveness in Medicare and the health care system as a whole is an issue whose solutions have been long overdue. Prospective payment is the government's solution. The purpose and intent of DRG's and the prospective payment system is to provide more incentive to be cost conscious and less incentive to provide unnecessary services.

For the past three decades, the financial incentives built into the hospital reimbursement system rewarded increases in access, meaning increases in the number of facilities, beds and services. Also rewarded were increases and improvements in quality, such as the newest technology and more highly trained personnel. The post-World War II con-

struction era, fueled by Hill-Burton grants, and the growth of services under the Medicare program show how hospitals have responded to the financial incentives of this period. Now under the Medicare prospective pricing law, the financial incentives are changing. The government has not abandoned access or quality as concerns, but clearly, the emphasis of the new payment system is on cost containment. The government is trying to stem the rising expenditures for Medicare. By rewarding hospitals which keep their costs below Medicare's preset prices, the government hopes to encourage more cost-conscious management and cost-effective clinical decision making by hospitals and physicians.

The Medicare prospective payment system came from the federal government's need to reduce its rate of increase in health care expenditures. A cost based approach to doing this was the basis of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA). TEFRA set cost-per-case limits for hospital payments for the next three fiscal years. But Congress, in direct response to the continuing rise in Medicare expenditures and the forecast of serious deficits in the Social Security trust fund (including the Medicare trust fund), perceived a need to change the financial incentives in the Medicare payment system. The severity of the problem faced by Congress is described in a study by the Congressional Budget Office (CBO). Noting that Medicare outlays increased at an annual rate of 20% between 1980 and 1982, the CBO study predicted; "Under the projections, Medicare will constitute

10% of the [federal] budget by 1988 and the Hospital Insurance Trust Fund will be exhausted by late 1987." (6)

Congress acted swiftly to further restrain any increases under the Medicare system by passing the Social Security Amendment of 1983, Public Law 98-21, prospective payment reform. The Congressional aim was to:

- 1) Project accurately the annual outflow of Medicare funds.
- 2) Restrain the rate of increase of federal expenditures under the Medicare program.
- 3) Reverse providers' economic incentives by rewarding hospitals financially for keeping costs under set prices.
- 4) Place hospitals at financial risk for utilization of resources that exceed the set prices.
- 5) Use hospitals to encourage more cost-conscious behaviour by physicians. (7)

As its basis for setting prices, the Medicare plan uses a patient classification system of diagnosis-related groups (DRGs). The DRG system assumes that hospital cases can be grouped into clinically coherent classifications--DRGs--which are similar in resource consumption. The DRG patient classification was developed at Yale and the Health Care Financing Administration helped fund its development and its implementation on an experimental basis in New Jersey hospitals. (8)

The hospitals covered by the law operated one fiscal

year under TEFRA's cost-per-case limits before moving to the new DRG system. Prospective pricing replaced TEFRA for hospital fiscal years that began on or after October 1, 1983.(9) Prospective pricing applies to all hospitals except children's, psychiatric, rehabilitation, and long-term care hospitals. The prospective pricing law covers only inpatient services. Hospital outpatient services, capital costs, and educational expenses will continue to be reimbursed on the basis of retrospectively determined costs.

Although the Reagan administration recommended and Congress considered going immediately to a single, national DRG price list, the final legislation provided for a transitional period of three years. During these first years the hospital's own specific costs are taken into account in computing reimbursements. But consideration of hospital-specific costs steadily diminish until, by year four of the program, the hospital's payment is based entirely on a national DRG price list, adjusted only for urban and rural differences and area wages.

The Medicare system fundamentally changes the way hospitals do business. Under cost-based reimbursement, the more services provided, the more the hospital received, within limits. Under prospective pricing, the hospital will now be at risk for the difference between its costs and the prices set and paid per discharge by Medicare. Thus, it will become increasingly important for hospitals to manage patient service volumes effectively in order to keep their overall costs

below the DRG prices. No one seems to know how hospital managers will react to this new era of prospective payment, but many have speculated. In the review of the literature articles were looked for that explain how organizations cope with crisis and retrenchment, especially hospitals, in order to form some hypotheses on how hospitals will manage their laboratories under these types of conditions.

Literature Review

For purposes of reviewing the literature, one main topic area was looked at, that of retrenchment and crisis. Articles were found on how organizations in general cope with periods of scarcity and many more articles on how hospitals and laboratories might cope with their period of scarcity - the era of prospective payment. Most of these articles, are speculative in nature. Scarcity is a new concept in the health care field and we have not coped with it long enough to see many studies on how or why we respond in certain ways.

One interesting study on how organizations cope with crisis was written by Milburn, Schuler, and Watman. They defined both a personal and an organizational response to crisis. The organizational response could be short term and then focus on the long term. The short term responses were a ten-

dency to centralize operations, and to switch to quantifiable concepts to evaluate performance. This means an organization's first response might be to "look to the leader" in any decision making and to "tighten the belt" by emphasizing cost effectiveness and efficiency. Layoffs and merging departments to eliminate duplication of services might be examples of these belt-tightening measures. In the long term other strategies might appear such as replacing the chief executive or getting into new products and markets.(10)

Most other articles were from the public sector and tended to emphasize layoffs as the only response to periods of cutbacks in funds. If we examine the public sector in regards to the article by Milburn et. al., the short term strategies are the only ones available to them. A state mental health department cannot diversify into other markets or services without approval of the legislature, in essence they are captured by their own market and many of the concepts Milburn applies to private sector companies cannot be applied to the public sector. In times of crisis, organizations do what they can in the form of short term strategies and hope that funding may return with the next administration.

Hospitals have always been stuck in the category of quasi-public institutions because they operate in a sector that is public concern and yet the predominant hospital form is private not for profit. In adopting long and short term strategies for survival the consensus seems to be to act more

like a business and less like a public agency. Howard and Beatrice Rowland speak through experience of the "Troubled Hospital Syndrome". This syndrome usually happens to hospitals experiencing low occupancy rates and chronic deficits. When hospitals experience these they usually respond in three ways. They take inside steps to raise revenue and cut costs, such as raising charges, boosting admissions through physician recruitment or adding new services or cutting costs with voluntary time off or layoffs. The second response is usually to improve the physical plant in order to make it more attractive to both patient and physician. An aggressive building plan at a time of low revenue is thought by the authors to be a sign of extreme trouble in the organization. Lastly a hospital in trouble will try to merge with another hospital or corporation in order to bail-out its losses.(11) The authors base these strategies on experience only and yet they seem to coincide with Milburn's article on coping strategies of organizations in general.

The focus of most of the articles on hospital adaptive strategies to DRG's are prospective "how to" types of articles that emphasize business strategies to cope with this new period of retrenchment. One article titled, "Positioning Academic Medical Centers To Thrive In The Next Decade.", predicts a 20 to 25% decrease in hospital beds by 1990. Hospital strategy in this period of decline must be to increase their share of the market. To do this they must have a selective marketing strategy towards their excellent programs

and maintain a competitive cost advantage over other medical centers. The author suggests three ways to do this that may sound familiar: a merger or acquisition to increase beds and enhance informal and formal "networking"; enhance brand name recognition to differentiate hospital products in the market place; and consider alternative sources of revenue and market them. (12)

Another article by Midyette and Loup says much the same thing in the form of a "market based hospital prospective payment action plan". They recommend applying market strategies for DRG survival. Their plan includes cost cutting strategies such as finding the true costs of each DRG and identifying which are your hospitals "winners and losers". Also improving operations in areas where costs can be cut such as medical records, discharge planning, medical staff, admitting and ancillary departments may help tremendously. They also recommend considering alternative sources of revenue and marketing them. (13)

Most of the articles found, that apply these strategies to the laboratory were only speculative in nature. Few of the articles deal with what has been done, since DRG's is so new we are only speculating on what could be done to reduce cost and expand new markets. The strategies proposed fall into the two categories of cost containment and marketing new products. Labs may choose to reduce costs in several ways and at the same time market specific revenue producing tests, those tests that are done on outpatients that are not subject

to DRG reimbursement.

The simplest way to reduce costs in a labor intensive area like the laboratory is to decrease staffing. This may be done by layoff or slowly by not replacing employees as turnover occurs, also hours may be cut back voluntarily without layoffs occurring. No articles based solely on layoffs as effective cost cutting strategy were found but many suggested more harmless alternatives such as redistributing staff and using "flex time" to reduce nonproductive hours. A survey done by the magazine Medical Laboratory Observer found that as early as 1984, 60% of hospital labs had changed scheduling, and as much as 33% had cut staff, during the first year of prospective payment.(14) An alternative way to reduce labor costs, that has been suggested, is to substitute lower paid(lower trained) personnel for higher priced employees. One article sees hospitals saying in the future "technologists are too expensive... let's hire MLT's for the bench, and use med techs for supervisory positions." The same article says that in New Jersey the market for medical technologists is already tighter and students are having a harder time finding jobs. Other cost cutting strategies suggested were review of purchasing procedures to find more cost effective vendors, more use of highly automated machinery, and making some reagents in the lab instead of buying them.

One area laboratories may be able to cut costs is in influencing physician orders. Possible ways to influence phy-

sician ordering might be through education to reduce unnecessary orders, analog testing, enhanced reporting through computers, or simply reducing turn-around time in order to reduce numbers of duplicate orders. A complicated study done by a hospital in Detroit tested the idea that if physicians were educated to the costs of the tests they were ordering they would reduce unnecessary testing. Conclusions were that cost-awareness information alone did not significantly alter ordering patterns.(15) Another article by Brenda Becker corroborates the Detroit study, in fact attempts at what she refers to as "utilization control" in New Jersey have been so poor that one frustrated lab manager says "At our community hospital, each physician is a little private enterprise, and nobody is going to tell some of them what to do...doctors don't care about DRG's...they want results and that's it." (16) These experiences suggest that methods that change lab behavior such as analog testing, enhanced reports and reduced turn-around time might be more effective strategies. Analog testing is where a lab automatically continues to the next logical test, without a physicians order, if a positive test is found. This reduces the need to wait for a physician response and may speed up diagnosis allowing a patient to receive treatment sooner and reduce length of stay. Enhanced reporting simply gives the physician more information to base diagnostic decisions on therefore letting him make wiser and more cost effective utilization of lab resources. One last option would be to increase weekend

and off-hour coverage to reduce the turn-around time of lab tests allowing patients to be discharged sooner.

The ultimate and more drastic cost-cutting strategy suggested in many of the articles was to "unbundle" the hospital lab or contract with an outside lab to do more of their testing, leaving only a small "stat lab" in house. Unbundling is the buzzword for removing a service from hospital corporate control and establishing the service under a separate corporate entity. This allows the lab to compete as a reference lab and to solicit business without the interference of government intervention. One article by Leslie Brennan suggests that unbundling may not be the panacea it proposes to be, hospitals may not have the capital required to come up to a level competitive with existing reference labs. "Not only would hospitals have to invest in new instrumentation and added technical personnel, they would also need marketing staffs, courier services, and a heavy commitment to computerization."⁽¹⁶⁾ The trend may be towards doing stat work in house and contracting out for routine high volume tests to a reference lab either affiliated with the hospital or not.

One final cost cutting strategy might be to eliminate the teaching programs for Medical Technology interns. These programs cost money to run and may not produce much in the way of tangible rewards. With the market being reduced for med tech interns and fewer of them being hired hospitals may drop their programs, especially if further Medicare

legislation does not allow reimbursement of these costs.

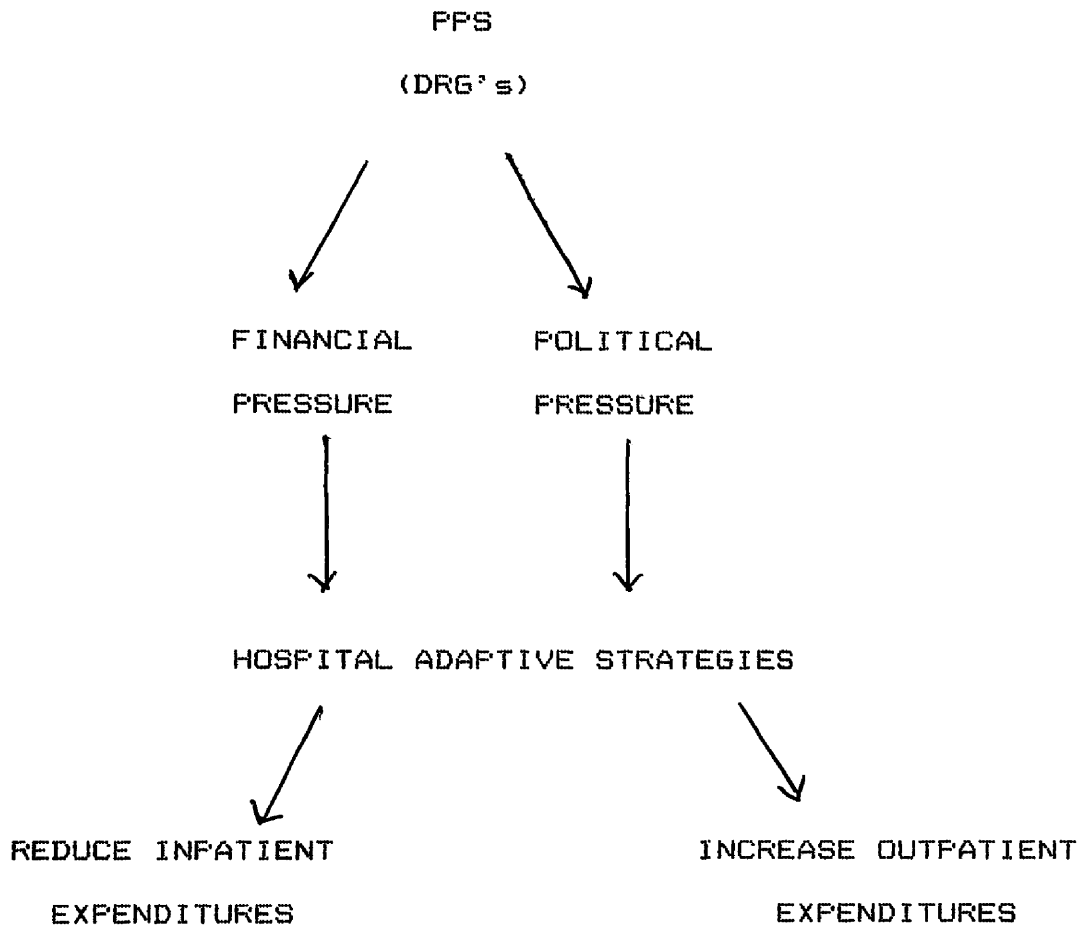
In the area of marketing services, the strategy seems to be to increase the amount of testing done under outpatient reimbursement and to make up for lost inpatient volumes by marketing outpatient testing to local physicians. To be cost competitive with other labs the lab manager must know the true costs that go into production of each test in order to be price competitive, but in this area hospital labs are still hampered by federal regulations that reimburse them for only 62% of the prevailing charges for that test.(17)

III. THEORETICAL FRAMEWORK

Conceptual Model

With all the articles found, there was one prevailing weakness, no one has studied what is happening because it's all too new yet. But the review of the literature suggests an area of study that might be interesting to pursue. Rowland's concept of the troubled hospital might apply to all hospitals under DRG's, where revenues and occupancy ratios are dropping due to prospective pricing. In that case how many of them will adopt the cost cutting strategies suggested in these articles and in their book. The model this paper proposes is that all hospitals under the prospective payment system are subject to financial and possibly political pressures to varying degrees and that because of these pressures they will adopt one or more of the hospital adaptive strategies outlined in the literature review. These strategies will effect management decisions in the laboratory and force labs to pursue some of the proposed cost saving or marketing available.

MODEL



Hypotheses

The proposed hypotheses for this study are listed below:

H1: Hospitals with high financial and political pressure will seek to reduce inpatient expenditures by decreasing staffing in their laboratory.

H2: Hospitals with high financial and political pressure will seek to reduce inpatient expenditures by substituting lower paid personnel for higher paid medical technologists.

H3: Hospitals with high financial and political pressure will seek to reduce inpatient expenditures with more timely test reporting by increasing weekend and off-hour coverage, introducing analog testing and providing physicians with enhanced reporting.

H4: Hospitals with high financial and political pressure will seek to reduce inpatient expenditures by eliminating their teaching programs.

H5: Hospitals with high financial and political pressure will seek to reduce inpatient expenditures by contracting out for

inpatient lab testing.

H6: Hospitals with high financial and political pressure will seek to increase outpatient procedures by marketing their lab to physician's offices.

H7: Hospitals with high financial and political pressure will seek to increase outpatient procedures by performing more pre-admission and post-admission testing.

These relationships are taken directly from the literature review. Milburns study of short term and long term strategies in crisis situations suggest many of the adaptive strategies suggested again in the hospital and laboratory literature, that short term they will stress efficiency and long term focus will be on new markets or products. If we narrow this down to choices available at the laboratory level we come up with the types of management decisions proposed in the above hypotheses. There are other decisions available to the lab manager but many of these would be difficult or impossible to measure and not within the scope of this study.

The independent variables of financial and political pressure may be the hardest to measure and the most subjective measurements in the study. Financial pressure may be inferred using several indicators, Rowland suggests several and for purposes of this study we will use two of their indicators plus one more that makes sense to this author.(17)

For this study a subjective index of high financial pressure will be assigned by observing the following about a hospital:

- (1) Expenses exceed revenues for more than six months of the last fiscal year.
- (2) The cost per case (calculated by length of stay multiplied by cost per patient day) is higher than the national average.
- (3) The drop in occupancy ratio since DRG's was implemented exceeds 10%

A definition of political pressure may be even harder to determine since political pressure may come from many directions, including the community, employee groups such as unions, physicians and interested companies who insure large groups for health care. Again a subjective index of political pressure may be determined using the following as indicators:

- (1) Any recent activity by the community to gain representation with the hospital.
- (2) Any increase in union activity such as a strike threat or unionization effort.
- (3) Any move by the medical staff to organize into a stronger position in relation to the administration.
- (4) Any move by an insurer group or business to negotiate better rates for their employees.

These are at best only indicators of the variables important to the study, but perceptive interviewing should give a fair indication of the pressure each hospital is under.

Basic information about each hospital will also be asked at each interview in case differences occur that may be later explained in terms of organizational structure or type of funding.

The dependent variables are those management strategies outlined in the literature review. These management strategies are the ones most likely to happen if hospitals are indeed in crisis ie. feeling financial and political pressure due to DRG's. It will be interesting to see if there is a direct relationship between hospitals with the highest financial and political pressure and those that pursue the most adaptive strategies.

Methodology

This study will be limited to a case study of four hospitals located in a mid-size midwestern town. No statistical measures can be applied to such a small sample. Data will be collected in a series of phone or personal interviews conducted with either the chief executive officer or the chief financial officer for the institution. Data on lab management decisions will be collected through personal interviews with the lab manager or lab administrator. A copy of proposed questions is included in the appendix.

Because this study is restricted by its small size, it will be hard to generalize information from this small sample to laboratories in general. Also the independent variables are so difficult to measure that it is possible that we may not be measuring them accurately enough. Finally we cannot find all the variables that go into the decision making in an institution, therefore we may be attributing relationships when something entirely out of the scope of this study caused the decision to be made. In other words, in the real world we cannot control experiments and therefore we can only presume a causal relationship between them, at best.

IV. RESULTS

The results of interviews at all four hospitals are presented in Table 1 and 2 at the end of this section. Three out of the four hospitals were private, not for profit type, and had similar bed size. Hospital B was a larger, "municipal" hospital, with a rather loose association with the city. Hospital B receives no funds for operation from the city, but shares a common pension fund, civil service commission, and the mayor appoints members to its board of trustees. Hospital A, the smallest of the four hospitals, is the only

osteopathic hospital in the study. Hospitals A and C started on DRG's October 1, 1983. Hospitals B and D started as of July 1, 1984. All hospitals have had at least one full year under DRG reimbursement.

Table 1 compiles all the data gathered for the independent variables. Occupancy rates, cost per patient day, length of stay, and cost per case data, were taken from data published monthly by the local health planning agency, GLS-HSA. (18) Answers to all other questions were taken from personal interviews. Occupancy rates are measured in percentages, and the drop in occupancy after DRG's is the most critical figure.

Looking at Table 1, the drop in occupancy at all four hospitals was at least 20%. Note that those hospitals with the lowest occupancy rates also had the lowest lengths of stay, which will account for their slightly lower rates. From this statistic alone, financial pressure seems to be evenly distributed across the four hospitals. But if we look at cost per case, a clear difference between the hospitals may be seen. The national average for cost per case is approximately \$3200. (19) Hospital B and C are 41% and 24% higher, respectively, than the national average. Using this indicator, these two hospitals would be the most financially stressed of the group. Because DRG's are reimbursed on a preset cost per case, those hospitals with higher than average costs will be more financially stressed under the

TABLE 1

	HOSPITAL A	HOSPITAL B	HOSPITAL C	HOSPITAL D
BED SIZE	359	528	436	423
TYPE OF HOSPITAL	private	municipal	private	private
OCCUPANCY (in %)				
Pre-DRG	77.2	90.4	81.2	87.5
Post-DRG	52.7	70.8	60.8	58.7
% Change	-24.5	-19.6	-20.4	-28.8
COST PER PATIENT DAY	\$607	\$673	\$552	\$529
LENGTH OF STAY (days)	5.27	6.71	7.20	6.40
COST PER CASE	3199	4514	3972	3386
PRESSURE				
Union	no	no	yes	no
Local Groups	no	no	no	no
Physician	yes	yes	yes	no
Insurers	no	yes	yes	no

system. A better indicator would be cost per case data on only Medicare and Medicaid patients, but this type of data was not available.

Political pressure was much harder to determine, and only a subjective measurement could be taken. From looking at Table 1 , Hospital D certainly seemed to be under the least pressure from outside groups, unions, insurers, and physicians. Hospital A had felt some pressure from their physicians, and this is significant when we consider the decisions made in their lab later in the paper. Hospitals B and C seemed the most concerned with pressures from physicians and insurers. During interviews with administrators of these two hospitals, problems with insurer groups were mentioned several times. Overall Hospital C and B were the most politically pressured.

In order to give each hospital an overall ranking, occupancy rates should be ignored, since all four hospitals have dropped by at least 10%. The financial stress created by this variable is fairly even across the group. Political pressure, although Hospital B and C clearly have more "perceived" pressures, is only a weak indicator , and I would consider it only as a modifier to financial pressure. In other words, if a hospital is feeling some real, measurable, financial pressure, then increased political pressure might force them into more drastic types of decisions. The only objective measure found for financial pressure under DRG's, is cost per case. If we look strictly at this variable, and

use political pressure as a modifier, the results are below:

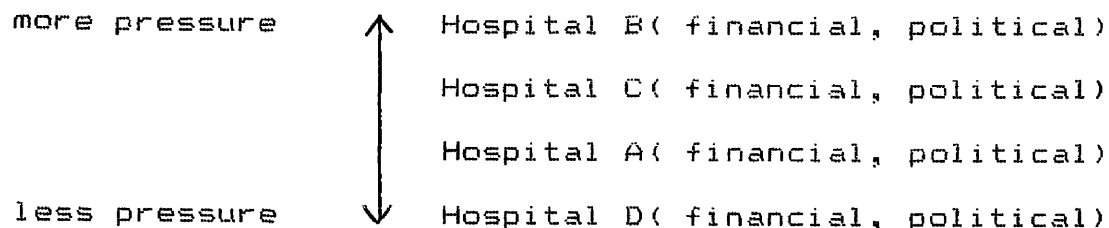


Table 1 would predict that Hospital B and C would institute more of the proposed lab management changes, than Hospitals A and D.

Table 2 includes data taken from interviews with each of the four hospital lab directors, and their records. Test volume for Hospital A includes only those tests done in the hospital lab and another 600,000 tests are sent to an outside lab. Looking at Table 2, lab responses to DRG's, those decisions that were made in all the labs can be ignored. All labs had staff reductions, all have changed staffing patterns, and all have felt an increase in outpatient testing. In this study, all hospitals have felt some financial pressure from a drop in occupancy, that may account for Hypothesis 1 being true for all hospitals in the study. It is interesting to note that hospital B, the most financially stressed did not have a layoff, while all other hospitals did. Hospital B reduced staffing in the lab through early retirement and attrition. More than one of the administrators at the other hospitals said Hospital B had "silently"

TABLE 2

	LAB A	LAB B	LAB C	LAB D
ANNUAL TEST	620,000	2,000,000	1,300,000	1,200,000
FTE'S	57.8	109	63.2	68
UNIONIZED	yes	yes	no	yes
STAFF REDUCED	yes	yes	yes	yes
..... HOW?	layoff	early retirement, attrition	layoff	layoff
SUBSTITUTION*	no	yes	yes	yes
STAFFING PATTERN CHANGE	yes	yes	yes	yes
PHYSICIAN SERVICES (analog testing) (computer reports)	yes	yes	yes	yes
LAB OFFSITE	yes	no	no	no
INCREASED REFERENCE TESTING	yes	no	yes	no
DROPPED TEACHING PROGRAM	yes	no	yes	no
MARKETING	no	no	yes	no
INCREASED OUTPATIENT TESTING	yes	yes	yes	yes
TEST VOLUME DECREASED	yes	no	yes	no

*Substitution is defined as replacing higher cost personnel with lower cost equivalent.

laid off people, avoiding the publicity of highly visible mass layoffs.

Hypothesis 2 did hold true for the two most pressured hospitals. Both of their labs had replaced highly skilled, licensed personnel, with less skilled, or non-licensed. It is interesting to note that Hospital A, whose lab was hit hardest by layoffs, eliminated less skilled workers and kept their highest trained (and paid) workers. Substituting lower paid people in the same jobs at Hospital B and C, could make a direct impact on bringing down their cost per case.

Staffing patterns were changed across the board, so Hypothesis 3 holds true for all hospitals. All four hospitals had tried or were considering analog testing and computer enhanced reports. Degree of pressure, either political or financial, does not seem to have any effect.

Hypothesis 4 had some interesting results. Two questions in the survey determined if a lab had contracted out for inpatient tests(see Appendix). Question 9 determined if a lab had moved any portion of its facilities offsite, and question 10 determined if the lab was sending more of its inpatient testing to a reference lab. These questions appear to be similar, but they have extremely different consequences. If a lab moves part of its facilities offsite, leaving a smaller lab inside the hospital to perform emergency testing only, a drastic reduction in personnel usually occurs. If a lab just sends more of its work to a reference lab, smaller, or perhaps no reduction in personnel may occur.

Hospital A took its lab offsite very early in the first year it was on DRG's. It left a small emergency lab at the hospital that performs about 50% of the lab procedures. The outside lab was established as a joint venture with a group of the hospital staff physicians. The cost savings to the hospital in such ventures can be substantial in terms of personnel and capital equipment. Hospital A's administrator gave three reasons for the move: reduction of operating expense, fewer capital equipment purchases, and "loyalty issues" with the physician group. This hospital with fairly low financial pressure took a drastic step that does not fit the model. This may be a case where the extreme political pressure does modify the outcome. Overall, Hypothesis 4 does not seem to hold true in two out of the four cases.

Again with Hypothesis 5, we see that two of the hospitals do not follow the pattern, but there may be some reasons for this. Hospital Lab A was forced to close their teaching program as a direct result of taking their lab offsite. With such a large reduction in staffing they were not able to maintain an accredited teaching program. Hospital Lab B maintains their program, despite high financial pressure, only because they substitute students for higher paid and trained staff, especially on night shifts and weekends. In this way they can provide cost justification for the program. The accrediting agencies frown on this type of substitution, but it does occur in many labs. Hospital C and D fit the hypothesis because there are no other factors

involved, and they are a more accurate prediction of lab and hospital response.

The last hypothesis was true for three out of the four hospitals. Hospital C, with high financial pressure, has made some effort at marketing their lab to physicians. Hospitals A and D, with low financial pressure, predictably did not. It should be noted that outpatient testing has increased for all the labs, even though only one lab has marketed their testing. This might be explained by a trend towards same day surgeries, where all lab testing is done before surgery as an outpatient, instead of admitting the patient to do the tests.

Overall three of the six hypotheses seemed to fit the data fairly well. Hypotheses 1 and 3 have to be rejected because they were true of all the hospitals studied regardless of their financial or political status. Hypothesis 2 is accepted as stated. Hypotheses 4, 5, and 6 may be tentatively accepted if extenuating factors are considered. One trend that might be noted is that Hospital B, with the highest level of financial stress, does not seem to fit the model. A possible reason for this could be the fact that this is a university affiliated hospital, and is the tri-county center for the highest technological care. These high tech units are expensive to maintain and support, and require very extensive laboratory testing. The pressure to maintain these services, and laboratory support, may be greater at this time than any other pressures.

V. SUMMARY AND CONCLUSIONS

The findings of this case study did not always fit the model proposed. Some hospitals in the study reacted to DRG's in ways that cannot be accounted for in the model. Hospital B had the highest financial risk and yet did not initiate many of the cost saving strategies the model predicted. This may be attributed to the type of hospital it was, which was unique among the hospitals in the study. As mentioned before, university hospitals that are regional care centers, may feel unique pressures to maintain service, and respond to those instead of financial pressure. Some of these types of hospitals have endowment money from sources that private hospitals do not have, and that may relieve some of the financial stress. A more thorough account (if available) of the hospital's individual finances might have accounted for such discrepancies.

Hospital A also did not fit the model, since with relatively low financial pressure, they took a severe step that no other lab in the area felt they had to do. The modifying variable of political pressure might have played a key factor in this decision. Models such as this cannot account for individual decision making that might not fit the norm.

The other two hospitals seemed to fit the model much

better. Hospital C, with fairly high financial and political pressure, did initiate all but one of the proposed management strategies. Hospital D, had the least pressure of all the hospitals, and did initiate only three of the possible adaptive strategies. These two hospitals are most likely representative of the average hospital lab across the nation. A recent nationwide survey of laboratories indicates that more and more labs are adopting these cost cutting measures, along with efforts to increase their outpatient testing volumes. 59% of labs have reduced staffing, many have substitute "poorly trained aides" for medical technologists, and staffing patterns have changed. At least 50% have enhanced reporting in some fashion, increased the amount of work sent to reference labs, and dropped teaching programs. Almost 70% of labs have marketed their services to physician offices, nursing homes, clinics, and veterinarian offices, in an effort to increase volume of tests.(20) It would be hard to prove that this "50%" from the survey correlates with the 50% of hospitals that might be financially and politically stressed, but if they were, they seem to be fitting the model as closely as Hospital C and D from this case study.

There are many other variables that the model does not account for, that could be influencing management decisions, besides the ones that were measured. In the study, things like hospital type and individual decision making did have an influence. Management style might be a variable, in fact one administrator classified himself as a "proactive" manager who

was not willing to sit back and let other hospitals take the initiative. Intense competition and economic factors may be important in what types of strategies a hospital adopts. All of these were not accounted for in the model and may account for some portion of the hypotheses that dont seem to fit. I believe the model can be applied to other hospitals in other cities, if these other factors are accounted for in some way.

APPENDIX

Proposed survey for independent variables.

Contact: Chief Executive Officer or Chief Financial Officer
(phone or personal interview)

Questions:

- 1) What type of hospital is yours, ie. public, private, for profit, not for profit?
- 2) How many beds are you currently licensed for?
- 3) What was your average occupancy before DRG's? What is it now?
- 4) What is your average cost per patient day?
- 5) On your monthly account reports do your costs exceed your revenues? If they have, has it happened more than one month, more than six months in the last year?
- 6) How would you characterize the political climate at your hospital? Explain. The financial outlook? Explain.
- 7) Have any local groups approached your hospital recently lobbying for any issues?
- 8) Has there been any increased union activity in the past or since DRG's went into effect?
- 9) Have your staff physicians repositioned themselves in any way to gain any advantages with administration?
- 10) Have any businesses or insurers approached you about special considerations for their groups?
- 11) When did DRG's go into effect at this hospital?

Proposed survey for dependent variables.

Contact: Lab Manager or Lab Administrator

(personal interview)

Questions:

- 1) What is the annual test volume in your laboratory?
- 2) How many employees do you have? In full time equivalents.
- 3) How many of those are Med. Techs., lab assistants, phlebotomists, clerical or other?
- 4) Do you have a union in the lab? What employees are unionized?
- 5) Since DRG's went into effect at your hospital have you reduced staffing? If so, how? Was it by layoff, early retirement, or other means? How many employees were affected and in what classifications?
- 6) Since DRG's have you substituted lower paid personnel for higher paid positions? How?
- 7) Since DRG's have you changed your staffing patterns? Are you considering doing so?
- 8) Have you considered offering or are you currently offering new services to physicians such as analog testing, or computer enhanced reporting?
- 9) Have you moved any portion of your lab office or are you considering doing so?
- 10) Since DRG's, are you sending more or less tests to reference labs?

- 11) Do you still maintain a teaching program for Med. Techs?
If not, when did you drop it?
- 12) Are you doing any marketing of your outpatient testing to physicians?
- 13) Has pre-admission and post-admission testing gone up since DRG's? What has been your increase in outpatient testing?
- 14) Have there been any other changes in your laboratory that you attribute to DRG's? What are they?

FOOTNOTES

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- 2) Ibid.
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- 4) American Hospital Association, Managing Under Prospective Pricing (Chicago: American Hospital Association, 1983), p. II:2.
- 5) Ibid., p. II:1.
- 6) Ibid.
- 7) Ibid.
- 8) Ibid., p. II:3.
- 9) Ibid., p. III:4.
- 10) T. Milburn, R. Schuler, and K. Wadman, "Organizational Crisis," Human Relations 36 (December 1983):69-70.
- 11) Howard and Beatrice Rowland, Hospital Administration Handbook, (Rockville Md.: Aspen Publications, 1984), p. 233.
- 12) D. Morris, "Positioning Academic Medical Centers and Teaching Hospitals to Thrive in the Next Decade," Health Care Strategic Management, January 1985, pp. 18-19.
- 13) Loup and Midyette, "A Generic Market-Based Prospective Payment Action Plan," Health Care Strategic Management, October 1983, p. 16.

- 14) Robert Fitzgibbon, and Bernard Statland, gen. ed., DRG Survival Manual for the Clinical Lab, (Oradell N.J.: Medical Economics Books, 1985), p. 104.
- 15) Ibid., pp. 215-216.
- 16) R.M. Grossman, "A Review of Physician Cost Containment Strategies for Laboratory Testing," Medical Care 21 (August 1983):798.
- 17) Fitzgibbon, DRG Survival Manual for the Clinical Lab, p. 214.
- 18) Ibid., p. 183.
- 19) Medical Management Development Associates, "Seminar on Marketing and Managing the Clinical Lab Under FPS," Spring 1985, p. 2.
- 20) Rowland, Hospital Administration Handbook, pp. 233-234.

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