

DRGs: An Attempt to Hold Down the Cost of Medicare

by

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## INTRODUCTION AND STATEMENT OF PROBLEM

Over the past few years, an attempt to control soaring Medicare costs has resulted in the development of a diagnosis-specific prospective payment method, known as Diagnosis Related Groups (DRGs). This system categorizes patients according to specific criteria and specifies the amount to be paid to the hospital. The problem is that there are many unanswered questions as to whether or not this is better than the old system, of cost-based, retrospective reimbursement, and whether the DRG system is more costly to the Medicare program.

Those working in the hospital environment are aware of the impact that this new system has had on Flint area hospitals. The shortened hospital stay of Medicare patients has resulted in empty beds, lay-offs, and a feeling of shock and apprehension among employees. Even the doctors fear loss of income, and eventual government control of their practices.

The purpose of this project is to determine whether or not the DRG system is functioning to control the high cost of health and hospital services for hip-replacement patients. The specific research problem involved in this effort is to compare the cost to the Medicare program for these types of operations, before and after the introduction of the DRGs.

Permission has been granted by the hospital president, of McLaren General Hospital, to gather information from data processing records and medical records to do this evaluation.

## HISTORICAL BACKGROUND

The rising cost of health care in the United States presents a major problem for the government. Medicare is a form of government provided health insurance. The need to control expenditures at a reasonable rate is imperative. As reported by Harvey D. Doremus, this concern has been translated into action.

During the 1970's, the hospital industry was singled out by government officials as one of the major contributors to the country's economic problems. In response to this determination, state and federal governments have been devising methods to control the costs of this particular segment of the economy. The most common methods devised thus far to control costs have been utilization review, planning, budget and rate review, prospective reimbursement, and the tightening of reimbursement limitations<sup>1</sup> for government-funded health care programs.

From the idea of prospective reimbursement the next logical step was to have some system of patient classification that attempts to place patients into homogeneous groups. Reasonable rates of reimbursement could then be determined for each group. "The patient classification scheme currently receiving the most attention was developed by R.B. Fetter, J.D. Thompson, and others from Yale University's Institution for Social and Policy Studies. This scheme classifies patients into what are termed 'diagnosis related groups', or DRGs."<sup>2</sup>

Members of the medical profession had a part in laying the foundation for this new system.

Initially, diagnostic groups that were medically similar were developed by physicians. The 83 major diagnostic categories were defined.... The next task was to determine whether any of these 83 categories

could be subdivided to form groups that would add to the homogeneity of the classification scheme from both a length-of-stay and a medical standpoint.<sup>3</sup>

With efforts thus directed toward a system of cost control through prospective reimbursement, opportunity was then offered for researchers at Yale University to make their input into the process of developing the system.

The Center for Health Studies at Yale University had received a grant from the then U.S. Department of Health, Education, and Welfare to develop methods for addressing national health care issues, such as hospital cost control, planning, prospective reimbursement, utilization review, and so on.... It was out of this grant that Yale developed the 383 DRGs.<sup>4</sup>

#### Formula Development

Developing a standard for length of stay in the hospital for each group of patients was necessary. It demanded taking into consideration certain criteria that considered both the need for cost control and for consideration of the well-being of the patient. The first considerations were whether or not the patient's stay in the hospital was warranted, and whether a patient was kept in the hospital too long.

....It was decided that these standards should be diagnosis specific. Groups were then developed based on diagnosis, with consideration also given to other patient attributes such as age, complications, and the like in an attempt to ensure homogeneity of patient type. An average length of stay and length-of-stay distributions were developed for each group. Should patients be discharged sooner than, or remain in the hospital longer than, say 90 percent of the members of their group, their stays would be reviewed.<sup>5</sup>

In order for the system to have wide spread applicability, it was necessary to standardize the patient classification

formula. This became the next step of the developers of the DRG.

In the application of diagnosis related groups to utilization review, individual institutions used their own patient data. It was felt, though, that there was a need for a standard patient classification scheme that could be applied in any given hospital or to local, regional, or national patient populations. It was from this need that Fetter, Thompson, and others developed the current patient classification scheme referred to as diagnosis related groups.<sup>6</sup>

To further broaden the data base and to arrive at the ultimate system of DRGs, a computer system was used that made use of extensive medical and demographic information.

A technique called AUTOGRP (for automatic grouping system) was employed to conduct the subgrouping analysis. This interactive computer system is designed to allow for a rapid analysis of large volumes of complex medical and demographic information -- in this case, approximately 500,000 hospital records from 118 hospitals in New Jersey, 150,000 records from one Connecticut hospital, and 52,000 records of federally funded patients from 50 hospitals in South Carolina were analyzed. From this data base, 383 individual DRGs were formed that are clinically and statistically related with regards to inpatient length of stay. The independent variables that were used in the formation of the groups were primary diagnosis, presence of secondary diagnosis, primary surgical procedure, secondary procedure, and age.<sup>7</sup>

More recent information, obtained from the Medical Assistance Program Bulletin 5360-84-13, indicates that to date there are 470 individual DRGs.

#### Administrative Experience, Problems, and Exceptions

The State of New Jersey pioneered in developing a DRG system. One of the things the authorities discovered was that there are some people who cannot be put into the group, and therefore must

be classified as exceptions.

New Jersey hospitals normally are paid a predetermined sum for each case, regardless of how long the patient stays, and regardless of the services the patient receives... However, this is the case only insofar as the patient is not an 'out-lier', -- a patient with an atypically short or long length of stay for a particular group -- who is thereby disqualified from a DRG... ..approximately 30 percent of patients in New Jersey hospitals are classified as out-liers.<sup>8</sup>

So, although exceptions must be made, the system remains functional and effective.

Another problem that Donald Simborg warns about is what he calls "DRG CREEP".<sup>9</sup> Because many DRG groups are closely related, yet are extremely different in reimbursement values, Simborg sees the possibility of hospital personnel and physicians actually manipulating the classifications in order to gain. He says, "DRG creep may be defined as a deliberate and systematic shift in a hospital's reported case mix in order to improve reimbursement."<sup>10</sup> "It is hoped that hospitals will refrain from disseminating the more virulent forms of DRG creep; however, the potential for a broad spectrum of manifestations certainly exists."<sup>11</sup>

The presence of these and other problems merely challenge someone to solve them, they do not necessarily destroy the system.

Federal and state governments have concluded that the primary goal of direct regulatory and competitive reimbursement models is to slow the growth of hospital costs.... This method (DRGs) has potentially broad implications for the financial stability and internal organization of hospitals. At the very least, it apparently

will sharpen the hospital community's awareness of the need to minimize costs and conserve resources.<sup>12</sup>

### DRGs and Medicare

Medicare is run by the Health Care Financing Administration. It is a Federal health program for people 65 or older and certain disabled people. It is an agency of the Department of Health and Human Services, and operates under the authority of the Federal Social Security System. The DRG system was adopted by the Medicare program. It is the set of rules that physicians and hospitals now must abide by. In 1984, final rules were published in the Federal Register.

SUMMARY: This final rule amends the Medicare regulations published as an interim final rule on September 1, 1983 (48FR 39752). Those regulations implement Title VI of the Social Security Amendments of 1983 (Pub. L. 98-21), which changed the method of payment for inpatient hospital services from a cost-based, retrospective reimbursement system to a prospective payment system based on diagnosis...<sup>13</sup>

### LITERATURE REVIEW

Among the positive products of the introduction of the DRG system, is that it provides a method for grouping patients by discharge diagnosis to measure a hospital's output. Dr. Donald W. Simborg says, "These measurements are useful in analyzing and monitoring the hospital's resource utilization, performance, and costs. Today, the use of DRGs is virtually synonymous with case-mix measurement, and it has become the standard method to describe hospital outputs for any use."<sup>14</sup>

On the positive side, it is suggested that there are

several good uses for DRGs. In addition to determining cost reimbursement for hospitals, it is suggested that, "Other purported uses are for budgeting, planning, regional utilization review, and prospective reimbursement."<sup>15</sup> "The basis for DRG use in budgeting centers on the assumption that if a hospital can project the mix (classifications) of patients it will treat in the upcoming year and has historical profiles of the hospital resources that are necessary to treat various patient types (classifications), it can project total resource expenditures for the coming year."<sup>16</sup> Concerning planning, the author goes on to say, "The diagnosis related group concept has been recommended for use in planning at both institutional and regional levels. By tracking DRGs over time, an institution can develop changing case-mix profiles."<sup>17</sup> These profiles can be used for planning future resource needs.

The DRG system is suggested as a tool whereby the hospital engages in rationing of services that many people believe is desperately needed. Fifer says, "Mechanic has suggested the need for rationing and, along with other authors, has intimated that we are well past the question of whether to ration, leaving only the questions of who shall allocate resources and how it shall be done...."<sup>18</sup> He goes on to say, "It begins to appear as though the hospital will be asked to become the resource allocator, at least in certain circumstances."<sup>19</sup> He says, "This reimbursement method can be thought of as implicit rationing because a dollar limit is established for each DRG, leaving the hospital free to allocate whatever resources it



wishes, both qualitatively and quantitatively, to deploy in service to that patient group."<sup>20</sup>

Dr. Fifer acknowledges some positive gain from the DRG experiment. "Whether DRGs will survive as appropriate units for reimbursement or not, they have at least forced a long overdue discussion of case mix and the hospital as a multiproduct firm. Perhaps some of the baffling variation in health services use will be explained by better tools to adjust the data for case mix...."<sup>21</sup>

The experiment with the DRG system has been in effect long enough for controversy among the professional people involved to emerge. In an article by Gary D. Aden, "No Clear Direction for Financial Management and Survival", he quotes several authorities: "Haley simply argued that DRGs are a tax on hospital cash flow for the purpose of funding the cost of Medicare and Medicaid.... Bromberg questioned whether the DRG approach is not more than a payment method: 'The DRG approach raises the question of the proper role of government as a regulator.... Until we change the system, we can expect more DRG-type proposals designed to contain government budgets, reduce reimbursement and ration health services.'"<sup>22</sup>

Richard Foster defends the cost-based reimbursement system, and believes the only real difference is that the prospective payment system is just submission to external control. He says, "I will argue that cost-based reimbursement is not inherently cost-increasing, inequitable, or financially detrimental to providers...."<sup>23</sup> He also states, "The preceding discussion

shows that cost containment, profitability, and equity are not inherent effects of prospective payment...."<sup>24</sup> He is quite negative in his conclusion about prospective payment (the DRG system). "What then can be said of prospective payment itself? Is it no more than a relic, left over from a historical misperception of the nature of rising hospital costs? I maintain that the principal argument made in its favor, that it enhances operating efficiency, is theoretically correct but of little practical consequence...."<sup>25</sup>

Dr. Fifer questions the DRG approach. He says, "Supply-side economic theory argued that an equal culprit in health care cost inflation was unused capacity, and thus the federal government sought to control capital expenditures by mandatory health planning.... A recently published analysis of the planning guidelines, however, indicates that even if they were to be rigorously adhered to, little cost saving would result. The study concluded that 'only by reducing the demand for services will substantial savings be realized'."<sup>26</sup>

In a 1982 article, Dr. Paul Grimaldi warns about expecting too much from the DRG system. He is quoted as saying, "Many of the claims made about New Jersey's diagnosis-related group (DRG) reimbursement system are 'exercises in wishful thinking about exactly what it is and what it can do'."<sup>27</sup> The article also reported numerous hospital operational problems associated with the New Jersey DRG system.

Medical records personnel now have to work closely with physicians to make sure the necessary information is contained in the medical records. Accordingly, they must thoroughly familiarize themselves with DRG documentation.

In addition, finance departments have had to establish close ties with the clinical areas of the hospital. Each New Jersey hospital also has had to rely on "DRG coordinators" to integrate DRG-related activities. Finally, the data-processing capabilities this classification system necessitates have put an additional burden on hospitals that have had to revamp or install systems.<sup>28</sup>

Although the following is from a health policy report given in 1982, the conclusions are still valid. The system has grown in number of DRG classifications and administrative regulations, and therefore places an even greater burden upon the hospital. "Although claims are made, particularly by the state, of the cost effectiveness of DRG-based reimbursement and its potential for improving the quality of inpatient care, the New Jersey system is new and its long-term impact in these areas uncertain. A per-case payment system does reverse many of the traditional economic incentives of a hospital that are cost inflating, but it also encourages marginal admissions as a way to maximize reimbursement. So, the jury remains out on the cost effectiveness of DRGs."<sup>29</sup>

A recent study by Susan D. Horn et al. warns that the program may backfire and drive efficient institutions out of business. Some of the weaknesses of the system are identified. A standardized scale of reimbursement for all hospitals is unfair. "This is not a trivial issue. For example, it is widely recognized that the costs of patient care in teaching hospitals substantially exceed the costs in community hospitals."<sup>30</sup> There is reason to doubt whether the DRG system can provide "...equitable reimbursement... if unadjusted DRGs are the primary basis for prospective payment."<sup>31</sup>

In trying to address this problem, "HCFA originally attempted

to compensate for the higher costs of patient care in teaching hospitals by doubling the adjustment factor of the resident-to-bed ratio in the prospective payment formula".<sup>32</sup> This system failed because in practice, the hospital with the most severely ill patients did not have the highest resident-to-bed ratio.

The report concludes with one more negative conclusion. "An explicit assumption that HCFA has made in designing the present prospective payment system is that 'DRGs will account for the major differences in the costs of treatment among patients due to severity of illness.' To our knowledge, there is no published study that supports this assumption, and the findings reported here are in direct conflict with it."<sup>33</sup>

The DRG system is an attempt to slow down the rapid increase of health care costs by a pre-determination of the amount that will be paid to the hospital and to the physicians and surgeons by Medicare for their services. To evaluate the degree of success of the program the payment per case by Medicare prior to the introduction of the DRG system must be compared with the payment per case paid by Medicare since the introduction of the system. It is the purpose of this paper to gather enough data to study and compare the payments made, and to attempt then to draw some valid conclusions as to the success of the program.

## McLaren General Hospital (A Brief History)

A 10 bed hospital at 808 Harrison Street was established in 1914 by Lucy M. Elliot M.D. and Lillian Girard R.N.. This facility incorporated in 1919; No longer as a private hospital, but then as a community nonprofit hospital. Later that same year, the newly incorporated Women's Hospital Association acquired a site at 1900 Lapeer Street. The building at this site, once converted into a 29 patient bed hospital, was named the Women's Hospital. The bed capacity was increased to 40 patient beds in 1929 when a new wing was added.

In 1949 construction began at the present facility on Ballenger Highway. This new structure opened in 1951 as McLaren General Hospital. The Hospital was named after the Superintendent of the Women's Hospital of 28 years, Margaret E. McLaren R.N..

Today, McLaren General Hospital has grown to become a very reputable health care institution; serving the community of Flint, Michigan.

McLaren currently offers 436 beds with two suburban outpatient facilities and a suburban Wellness Center.

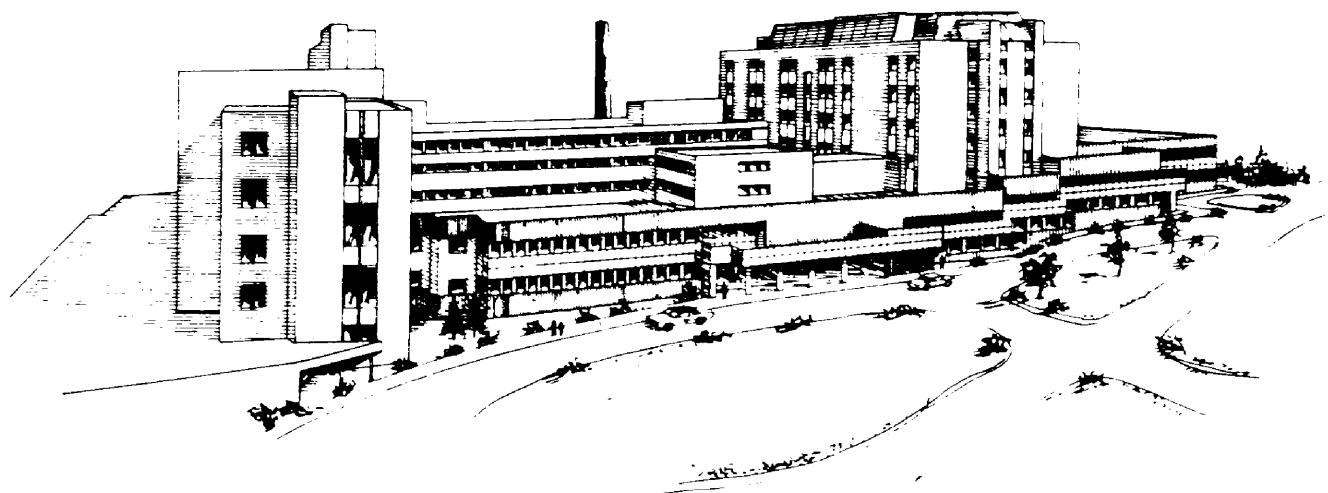
The Hospital has a medical staff of over 390 licensed physicians and is the employer of more than 1707 area residents....

McLaren General Hospital is fully accredited by the Joint Commission on Accreditation of Hospitals. This accreditation is evidence that the Hospital staff and facilities meet standards higher than those required by the Federal and State governments....

McLaren General Hospital offers its own residency programs in surgery, orthopedic surgery, internal medicine, and an affiliated residency program in diagnostic radiology.<sup>34</sup>

At McLaren General Hospital, orthopedic surgery has been a strong asset and an intrinsic part of the surgical procedures performed. Being an employee at McLaren General Hospital, in the operating room, for nine years, it was my decision to choose to

look at total hip replacement surgeries for a study of the impact of the DRGs. In my opinion the total hip replacement surgery, a major orthopedic procedure, would most effectively serve my purpose in determining the influence of the DRG system on health care costs. At McLaren General Hospital more than 80 total hip replacement surgeries are performed each year.



RESEARCH DESIGN

The DRG system was developed to hold down the cost to the government for services provided for Medicare patients. The purpose of this study will be to determine that the DRG system has been successful in holding down the cost of Medicare at McLaren General Hospital in Genesee County. In determining the degree of success of the DRG system, the hypothesis will be tested by comparing the cost of before and after cases; with the allowance made for inflation.

TIME SERIES

<u>1982</u>	<u>1983</u>	<u>1984</u>
00	XX	XX

HYPOTHESIS

The effect of the prospective payment system is to lower the cost of caring for hip replacement cases in 1983 and 1984, when compared to 1982.

H<sub>1</sub>: after PPS "Y" will go down.

H<sub>2</sub>: after PPS "Y" will go up.

H<sub>3</sub>: after PPS "Y" will remain unchanged.

"Y" = the cost to Medicare for total hip replacement cases.

LIMITATIONS AND ANTICIPATED PROBLEMS

Although permission has been given to use the hospital's data bank, the actual access to that information remains dependent upon the good will and cooperation of the hospital personnel with whom one must work. In view of the kindness already shown and the encouragement received from hospital personnel, no real problems are anticipated.

The length of stay and the cost to Medicare for the total hip replacement cases of 1982 will be retrieved from the hospital archives, through the Business Office. This same information for 1983 and 1984, along with DRG classifications and diagnosis, will be obtained through the Data Processing Department. The code number interpretations will be provided by the Medical Records Department.

Those cases in which the length of stay is higher than the "High Days", as set by Medicare, will be studied to determine if there is another diagnosis for that case in which the length of stay was extended. When such cases exist they will be considered out-liers. (Osteo-arthritis will be the primary diagnosis for all of the cases in this study.)



STUDY DESIGN

The effective date for the introduction of the DRG system for Medicare, at McLaren General Hospital, was October 1, 1983. Therefore, the periods for comparison must recognize that date as the dividing line between "before" and "after" the introduction of the system.

EXAMPLE: Instructions to the observer:

If you want to measure "X", count "Y".

Model (A)

Type of Surgery: Total Hip Replacement

Statistics for period Oct. 1, 1982 to Sept. 30, 1983: the Medicare payment to the hospital and the length of stay of the patient.

Case #1: Medicare Payment to Hospital \_\_\_\_\_  
Length of Stay \_\_\_\_\_

Case #2: Medicare Payment to Hospital \_\_\_\_\_  
Length of Stay \_\_\_\_\_

Case #3: etc.

After as much information as can be gained by reasonable means has been accumulated, charges can be tabulated in order to compute the average cost to Medicare under the system prior to DRGs.

Model (B)

Type of Surgery: Total Hip Replacement

Statistics for period Oct. 1, 1983 to Sept. 30, 1984: the Medicare

payment to the hospital, the length of stay of the patient, and the DRG classification.

Case #1: Medicare Payment to Hospital \_\_\_\_\_  
Length of Stay \_\_\_\_\_  
DRG Classification \_\_\_\_\_

Case #2: Medicare Payment to Hospital \_\_\_\_\_  
Length of Stay \_\_\_\_\_  
DRG Classification \_\_\_\_\_

Case #3: etc.

Model (C)

Type of Surgery: Total Hip Replacement

Statistics for period Oct. 1, 1984 to Sept. 30, 1985: the Medicare payment to the hospital, the length of stay of the patient, and the DRG classification.

Case #1: Medicare Payment to Hospital \_\_\_\_\_  
Length of Stay \_\_\_\_\_  
DRG Classification \_\_\_\_\_

Case #2: Medicare Payment to Hospital \_\_\_\_\_  
Length of Stay \_\_\_\_\_  
DRG Classification \_\_\_\_\_

Case #3: etc.

Statistics gathered for this period of time, fiscal years of 1983 and 1984, represent the controlled cost to Medicare under the DRG system. Comparison of individual cases, and then comparison of the average cost under each system may be easily determined.

### The Inflation Factor

Once the data is collected and an attempt is made to compare the cost figures for comparative years, the inflation factor must be taken into consideration. If Medicare payments to hospitals remain the same for two successive years the actual value of remuneration has declined because the buying power has been eroded by inflation. If the inflation rate was 5 percent, and Medicare allowed an 8 percent increase in payments to the hospitals, it would represent a failure on the part of the program. Use will be made of published statistics of the medical care component of the Consumer Price Index for this area.

DATA FROM 1982 (PRIOR TO DRGs)

Case #1:	Medicare Payment to Hospital	<u>\$2072.65</u>
	Length of Stay	<u>7 Days</u>
Case #2:	Medicare Payment to Hospital	<u>\$6386.45</u>
	Length of Stay	<u>8 Days</u>
Case #3:	Medicare Payment to Hospital	<u>\$4074.60</u>
	Length of Stay	<u>12 Days</u>
Case #4:	Medicare Payment to Hospital	<u>\$7211.19</u>
	Length of Stay	<u>13 Days</u>
Case #5:	Medicare Payment to Hospital	<u>\$8495.80</u>
	Length of Stay	<u>14 Days</u>
Case #6:	Medicare Payment to Hospital	<u>\$7388.30</u>
	Length of Stay	<u>15 Days</u>
Case #7:	Medicare Payment to Hospital	<u>\$9486.70</u>
	Length of Stay	<u>15 Days</u>
Case #8:	Medicare Payment to Hospital	<u>\$7805.10</u>
	Length of Stay	<u>15 Days</u>
Case #9:	Medicare Payment to Hospital	<u>\$9849.20</u>
	Length of Stay	<u>16 Days</u>
Case #10:	Medicare Payment to Hospital	<u>\$9531.70</u>
	Length of Stay	<u>17 Days</u>
Case #11:	Medicare Payment to Hospital	<u>\$8375.15</u>
	Length of Stay	<u>17 Days</u>

Case #12: Medicare Payment to Hospital	<u>\$8330.55</u>
Length of Stay	<u>17 Days</u>
Case #13: Medicare Payment to Hospital	<u>\$8927.20</u>
Length of Stay	<u>17 Days</u>
Case #14: Medicare Payment to Hospital	<u>\$10,195.50</u>
Length of Stay	<u>18 Days</u>
Case #15: Medicare Payment to Hospital	<u>\$9037.15</u>
Length of Stay	<u>18 Days</u>
Case #16: Medicare Payment to Hospital	<u>\$9211.10</u>
Length of Stay	<u>18 Days</u>
Case #17: Medicare Payment to Hospital	<u>\$11,005.30</u>
Length of Stay	<u>20 Days</u>
Case #18: Medicare Payment to Hospital	<u>\$13,282.05</u>
Length of Stay	<u>31 Days</u>
Case #19: Medicare Payment to Hospital	<u>\$14,673.35</u>
Length of Stay	<u>31 Days</u>
<u>Sample Size:</u>	<u>19 Cases</u>
<u>Total Cost:</u>	<u>\$165,339.04</u>
<u>Average Cost/Per Case:</u>	<u>\$8702.05</u>
<u>Average Cost/Per Day:</u>	<u>\$518.30</u>
<u>Total Length of Stay:</u>	<u>319 Days</u>
<u>Average Length of Stay:</u>	<u>16.79 Days</u>

DATA FROM 1983 (FIRST YEAR UNDER DRGs)

Case #1:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>7 Days</u>
	DRG Classification	<u>209</u>
Case #2:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>7 Days</u>
	DRG Classification	<u>209</u>
Case #3:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>8 Days</u>
	DRG Classification	<u>209</u>
Case #4:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>9 Days</u>
	DRG Classification	<u>209</u>
Case #5:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>9 Days</u>
	DRG Classification	<u>209</u>
Case #6:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>9 Days</u>
	DRG Classification	<u>209</u>
*Case #7:	Medicare Payment to Hospital	<u>\$3694.00</u>
	Length of Stay	<u>10 Days</u>
	DRG Classification	<u>308</u>
Case #8:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>10 Days</u>
	DRG Classification	<u>209</u>

Case #9:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>10 Days</u>
	DRG Classification	<u>209</u>
Case #10:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>10 Days</u>
	DRG Classification	<u>209</u>
Case #11:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>10 Days</u>
	DRG Classification	<u>209</u>
Case #12:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>10 Days</u>
	DRG Classification	<u>209</u>
Case #13:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>10 Days</u>
	DRG Classification	<u>209</u>
Case #14:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>11 Days</u>
	DRG Classification	<u>209</u>
Case #15:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>11 Days</u>
	DRG Classification	<u>209</u>
Case #16:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>11 Days</u>
	DRG Classification	<u>209</u>

Case #17: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>11 Days</u>
DRG Classification	<u>209</u>
Case #18: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>11 Days</u>
DRG Classification	<u>209</u>
Case #19: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>11 Days</u>
DRG Classification	<u>209</u>
Case #20: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #21: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #22: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #23: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #24: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>



Case #25: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #26: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #27: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #28: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #29: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #30: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #31: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #32: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>

Case #33: Medicare Payment to Hospital \$8106.00  
Length of Stay 13 Days  
DRG Classification 209

Case #34: Medicare Payment to Hospital \$8106.00  
Length of Stay 14 Days  
DRG Classification 209

Case #35: Medicare Payment to Hospital \$8106.00  
Length of Stay 14 Days  
DRG Classification 209

Case #36: Medicare Payment to Hospital \$8106.00  
Length of Stay 14 Days  
DRG Classification 209

Case #37: Medicare Payment to Hospital \$8106.00  
Length of Stay 15 Days  
DRG Classification 209

Case #38: Medicare Payment to Hospital \$8106.00  
Length of Stay 15 Days  
DRG Classification 209

Case #39: Medicare Payment to Hospital \$8106.00  
Length of Stay 15 Days  
DRG Classification 209

Case #40: Medicare Payment to Hospital \$8106.00  
Length of Stay 15 Days  
DRG Classification 209

Case #41: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #42: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #43: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #44: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #45: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #46: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #47: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>16 Days</u>
DRG Classification	<u>209</u>
Case #48: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>16 Days</u>
DRG Classification	<u>209</u>

Case #49: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>16 Days</u>
DRG Classification	<u>209</u>
Case #50: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>16 Days</u>
DRG Classification	<u>209</u>
Case #51: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>16 Days</u>
DRG Classification	<u>209</u>
Case #52: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>16 Days</u>
DRG Classification	<u>209</u>
Case #53: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>16 Days</u>
DRG Classification	<u>209</u>
Case #54: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>17 Days</u>
DRG Classification	<u>209</u>
Case #55: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>17 Days</u>
DRG Classification	<u>209</u>
Case #56: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>17 Days</u>
DRG Classification	<u>209</u>

Case #57: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>17 Days</u>
DRG Classification	<u>209</u>
Case #58: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>18 Days</u>
DRG Classification	<u>209</u>
Case #59: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>18 Days</u>
DRG Classification	<u>209</u>
Case #60: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>19 Days</u>
DRG Classification	<u>209</u>
Case #61: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>19 Days</u>
DRG Classification	<u>209</u>
Case #62: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>19 Days</u>
DRG Classification	<u>209</u>
Case #63: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>20 Days</u>
DRG Classification	<u>209</u>
Case #64: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>20 Days</u>
DRG Classification	<u>209</u>

Case #65: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>22 Days</u>
DRG Classification	<u>209</u>
Case #66: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>22 Days</u>
DRG Classification	<u>209</u>
Case #67: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>23 Days</u>
DRG Classification	<u>209</u>
Case #68: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>24 Days</u>
DRG Classification	<u>209</u>
Case #69: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>25 Days</u>
DRG Classification	<u>209</u>
Case #70: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>25 Days</u>
DRG Classification	<u>209</u>
Case #71: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>25 Days</u>
DRG Classification	<u>209</u>
Case #72: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>27 Days</u>
DRG Classification	<u>209</u>

Case #73:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>28 Days</u>
	DRG Classification	<u>209</u>
Case #74:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>29 Days</u>
	DRG Classification	<u>209</u>
Case #75:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>30 Days</u>
	DRG Classification	<u>209</u>
Case #76:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>32 Days</u>
	DRG Classification	<u>209</u>
**Case #77:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>40 Days</u>
	DRG Classification	<u>209</u>
**Case #78:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>40 Days</u>
	DRG Classification	<u>209</u>
**Case #79:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>41 Days</u>
	DRG Classification	<u>209</u>
***Case #80:	Medicare Payment to Hospital	<u>\$8106.00</u>
	Length of Stay	<u>48 Days</u>
	DRG Classification	<u>209</u>

**Case #81: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>50 Days</u>
DRG Classification	<u>209</u>
*Case #82: Medicare Payment to Hospital	<u>\$5840.00</u>
Length of Stay	<u>75 Days</u>
DRG Classification	<u>461</u>
**Case #83: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>100 Days</u>
DRG Classification	<u>209</u>
**Case #84: Medicare Payment to Hospital	<u>\$8106.00</u>
Length of Stay	<u>110 Days</u>
DRG Classification	<u>209</u>

\*These cases have been considered out-liers, as the DRG classification is other than the standard classification of #209.

DRG #209: Major Joint Procedures

DRG #308: Minor Bladder Procedures (Case #7)

DRG #461: O.R. procedures with diagnoses of other contact with health services (Case #82)

\*\*These cases have been omitted from the final evaluation of the Total Hip Replacement Surgeries; due to the fact that they consist of added surgeries and unrelated diagnoses, that are not relevant to this study.

Case #77: Diagnosis #4349, cerebral artery occlusion

Case #78: Diagnosis #4260, atrioventricular block

Case #79: Diagnosis #40210, hypertensive heart disease

Case #81: Diagnosis #7331, pathological fracture

Case #83: Diagnosis #V436, cerebrovascular accident

Case #84: Surgery #3995, hemodialysis



\*\*\*For the year 1983, Medicare determined that the length of stay for the Total Hip Replacement Patient should not exceed 37 days. Therefore, those patients exceeding the "High Days", as set by Medicare, were studied in more depth to determine the cause for the extended length of stay. This particular case, case #80, was not viewed as an out-lier. The additional diagnosis in this case was #83500, a dislocated hip. This problem should have been rectified with such surgery. Thus, this case was not deleted from the study.

<u>Sample Size:</u>	<u>76 Cases</u>
<u>Total Cost:</u>	<u>\$616,056.00</u>
<u>Average Cost/Per Case:</u>	<u>\$8106.00</u>
<u>Average Cost/Per Day:</u>	<u>\$507.88</u>
<u>Total Length of Stay:</u>	<u>1213 Days</u>
<u>Average Length of Stay:</u>	<u>15.96 Days</u>

DATA FROM 1984 (SECOND YEAR UNDER DRGs)

Case #1:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>7 Days</u>
	DRG Classification	<u>209</u>
Case #2:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>7 Days</u>
	DRG Classification	<u>209</u>
Case #3:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>9 Days</u>
	DRG Classification	<u>209</u>
Case #4:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>9 Days</u>
	DRG Classification	<u>209</u>

Case #5:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>9 Days</u>
	DRG Classification	<u>209</u>
Case #6:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>9 Days</u>
	DRG Classification	<u>209</u>
Case #7:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>9 Days</u>
	DRG Classification	<u>209</u>
Case #8:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>9 Days</u>
	DRG Classification	<u>209</u>
Case #9:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>10 Days</u>
	DRG Classification	<u>209</u>
Case #10:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>10 Days</u>
	DRG Classification	<u>209</u>
Case #11:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>10 Days</u>
	DRG Classification	<u>209</u>
Case #12:	Medicare Payment to Hospital	<u>\$8297.00</u>
	Length of Stay	<u>10 Days</u>
	DRG Classification	<u>209</u>

Case #13: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>10 Days</u>
DRG Classification	<u>209</u>
Case #14: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>10 Days</u>
DRG Classification	<u>209</u>
Case #15: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>11 Days</u>
DRG Classification	<u>209</u>
Case #16: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>11 Days</u>
DRG Classification	<u>209</u>
Case #17: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>11 Days</u>
DRG Classification	<u>209</u>
Case #18: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>11 Days</u>
DRG Classification	<u>209</u>
Case #19: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>11 Days</u>
DRG Classification	<u>209</u>
Case #20: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>11 Days</u>
DRG Classification	<u>209</u>

Case #21: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #22: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #23: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #24: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #25: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #26: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #27: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #28: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>

Case #29: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #30: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
Case #31: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>12 Days</u>
DRG Classification	<u>209</u>
*Case #32: Medicare Payment to Hospital	<u>\$14,176.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>115</u>
Case #33: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #34: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #35: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #36: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>

Case #37: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #38: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #39: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #40: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #41: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #42: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #43: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>
Case #44: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>13 Days</u>
DRG Classification	<u>209</u>

Case #45: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>14 Days</u>
DRG Classification	<u>209</u>
Case #46: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>14 Days</u>
DRG Classification	<u>209</u>
Case #47: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>14 Days</u>
DRG Classification	<u>209</u>
Case #48: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>14 Days</u>
DRG Classification	<u>209</u>
Case #49: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>14 Days</u>
DRG Classification	<u>209</u>
Case #50: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>14 Days</u>
DRG Classification	<u>209</u>
Case #51: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>14 Days</u>
DRG Classification	<u>209</u>
Case #52: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>14 Days</u>
DRG Classification	<u>209</u>

Case #53: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>14 Days</u>
DRG Classification	<u>209</u>
Case #54: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>14 Days</u>
DRG Classification	<u>209</u>
Case #55: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #56: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #57: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #58: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #59: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #60: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>



Case #61: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #62: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #63: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #64: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #65: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>15 Days</u>
DRG Classification	<u>209</u>
Case #66: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>16 Days</u>
DRG Classification	<u>209</u>
Case #67: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>16 Days</u>
DRG Classification	<u>209</u>
Case #68: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>16 Days</u>
DRG Classification	<u>209</u>

*Case #69: Medicare Payment to Hospital	<u>\$7944.00</u>
Length of Stay	<u>17 Days</u>
DRG Classification	<u>424</u>
Case #70: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>17 Days</u>
DRG Classification	<u>209</u>
Case #71: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>17 Days</u>
DRG Classification	<u>209</u>
Case #72: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>18 Days</u>
DRG Classification	<u>209</u>
Case #73: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>19 Days</u>
DRG Classification	<u>209</u>
Case #74: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>19 Days</u>
DRG Classification	<u>209</u>
Case #75: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>19 Days</u>
DRG Classification	<u>209</u>
Case #76: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>20 Days</u>
DRG Classification	<u>209</u>

Case #77: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>20 Days</u>
DRG Classification	<u>209</u>
Case #78: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>21 Days</u>
DRG Classification	<u>209</u>
Case #79: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>21 Days</u>
DRG Classification	<u>209</u>
Case #80: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>23 Days</u>
DRG Classification	<u>209</u>
Case #81: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>24 Days</u>
DRG Classification	<u>209</u>
Case #82: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>25 Days</u>
DRG Classification	<u>209</u>
Case #83: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>27 Days</u>
DRG Classification	<u>209</u>
Case #84: Medicare Payment to Hospital	<u>\$8297.00</u>
Length of Stay	<u>28 Days</u>
DRG Classification	<u>209</u>

Case #85: Medicare Payment to Hospital \$8297.00

Length of Stay 28 Days

DRG Classification 209

Case #86: Medicare Payment to Hospital \$8297.00

Length of Stay 28 Days

DRG Classification 209

Case #87: Medicare Payment to Hospital \$8297.00

Length of Stay 30 Days

DRG Classification 209

Case #88: Medicare Payment to Hospital \$8297.00

Length of Stay 36 Days

DRG Classification 209

Case #89: Medicare Payment to Hospital \$8297.00

Length of Stay 82 Days

DRG Classification 209

\*These cases have been considered out-liers, as the DRG classification is other than the standard classification of #209.

DRG #209: Major Joint Procedures

DRG #115: Permanent Cardiac Pacemaker Implant

DRG #424: O.R. Procedures with Principal Diagnosis of Mental Illness

\*\*This case has been omitted from the final evaluation of the Total Hip Replacement Surgeries; due to the fact that it consists of an additional diagnosis that is not relevant to this study.

Case #89: Diagnosis #3429, hemiplegia (stroke)

\*\*\*The "High Days", as set by Medicare, was determined to be 39 days for the year of 1984. There were some cases in which the length

of stay approached the "High Days"; However, these cases were not deleted from the study because a few additional minor surgeries, or diagnoses, are expected from a sample size of this magnitude. Therefore, these cases were included in this study to maintain the validity of such a study.

<u>Sample Size:</u>	<u>86 Cases</u>
<u>Total Cost:</u>	<u>\$713,542.00</u>
<u>Average Cost/Per Case:</u>	<u>\$8297.00</u>
<u>Average Cost/Per Day:</u>	<u>\$559.64</u>
<u>Total Length of Stay:</u>	<u>1275</u>
<u>Average Length of Stay:</u>	<u>14.83 Days</u>

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APPLICATION OF THE INFLATION FACTOR

According to the Consumer Price Index Annual Report for Medical Care, the following statistics are relevant:

<u>Year</u>	<u>Consumer Price Index</u>	<u>Percent Increase</u>
<u>1982</u>	<u>328.7</u>	<u>11.6% over 1981</u>
<u>1983</u>	<u>355.1</u>	<u>8.6% over 1982</u>
<u>1984</u>	<u>379.5</u>	<u>6.9% over 1983</u>

These inflation figures will be used to interpret the data in this study.

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CONCLUSIONS WHICH MAY BE DRAWN FROM THIS STUDY

As a result of this study it is necessary to go back and accept the primary hypothesis previously stated. That is, after the introduction of the prospective payment system the cost to the government for hospital services paid through Medicare would

go down. The data seems to support this conclusion. Also, the hospitals have responded to these government restraints by becoming more cost-efficient in their operation. This is reflected in the reduction of the average length of stay of the patients.

A lower patient population has caused the hospitals to sound an alarm of distress, but at the same time, they are cutting back on personnel, competing for patients through advertising and specialized programs. The DRG program has helped to control the spiral of public health costs, but most hospitals should adapt and survive.

A comparison of statistics indicates the average cost per case was:

<u>1982</u>	-----	<u>\$8702.05</u>
<u>1983</u>	-----	<u>\$8106.00</u>
<u>1984</u>	-----	<u>\$8297.00</u>

Application of the inflation factor for each year:

<u>1983</u> :	(\$8702.05 plus 8.6% of; \$748.38) =	
	Amount due, if adjusted for inflation:	<u>\$9450.43</u>
	Amount actually received:	<u>\$8106.00</u>
<u>1984</u> :	(\$9450.43 plus 6.9% of; \$652.08) =	
	Amount due, if adjusted for inflation:	<u>\$10,102.51</u>
	Amount actually received:	<u>\$8297.00</u>

The savings over this period of time have been substantial. This is a factor that may be interpreted as success from the perspective of the government.

Two remaining factors to be interpreted are average length of stay, and average cost per day. The length of stay period was reduced in successive years; from 16.79 days, to 15.96 days, to 14.83 days. This was goal achievement both for the Medicare Program and for the hospital. It is the desired response. As patient stay-time is reduced, it means a bonus for the hospital. Medicare agrees to pay for a certain number of days; if the patient is discharged early, the hospital receives pay for the full number of days just as if he/she was there for the full time. So the stimulus is to shorten the patient's hospital stay as much as possible.

The average cost per day went up considerably from 1982 to 1984. This does not mean that it cost Medicare more. It simply means that fewer days are computed for the same amount of Medicare payments. Therefore, the hospital is receiving more per day from Medicare, but fewer patient-use days are involved.

Hospitals have responded to these restrictions. They must continue to do so, and in addition they must implement innovative ideas to survive.

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Statistics for Medicare payments and length of stay were made available for the sample group of patients who had hip replacement surgery for the year of 1982. The 1982 sample group represents the service and cost prior to the application of the DRG system. The sample group consisted of 19 cases. Although a larger sample would have been desirable, this one represented special courtesy and extra work for the Business Office Personnel, and it was typical enough to be accepted as valid.

Statistics for Medicare payments, length of stay, DRG classifications, surgeries, and diagnoses were made available, for all of the total hip replacement patients for 1983 and 1984, by the Data Processing Department and the Medical Records Department. A comparative study was then made to determine the effects of the DRG system on varying costs to Medicare.



Footnotes

<sup>1</sup> Harvey D. Doremus, "DRGs may be raising false expectations". Hospitals, August 1, 1980, pg. 47.

<sup>2</sup> Ibid.

<sup>3</sup> Ibid., pg. 48.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid., pg. 47.

<sup>6</sup> Ibid., pgs. 47-48.

<sup>7</sup> Ibid., pg. 48.

<sup>8</sup> Diagnosis-related groups; "Veterans of New Jersey's system assess DRG-based reimbursement". Hospitals, December 1, 1982, pg. 35.

<sup>9</sup> Donald W. Simborg, "DRG Creep: A New Hospital-Acquired Disease". The New England Journal of Medicine, June 25, 1981, pg. 1602.

<sup>10</sup> Ibid.

<sup>11</sup> Ibid., pg. 1604.

<sup>12</sup> Paul L. Grimaldi and Julie A. Micheletti, DRGs: A Practitioner's Guide, Pluribus Press Inc., Chicago, Il., 1983, pg. IX.

<sup>13</sup> Federal Register, "Rules and Regulations", U.S. Government Printing Office, Washington D.C., Vol. 49, No. 1, Tuesday, January 3, 1984, pg. 234.

<sup>14</sup> Donald W. Simborg, op. cit., pg. 1602.

<sup>15</sup> Harvey D. Doremus, op. cit., pg. 49.

<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

<sup>18</sup> William R. Fifer, "Cost/quality tradeoffs will be the next medical care 'crisis'". Hospitals, June 1, 1981, pg. 57.

<sup>19</sup> Ibid., pg. 58.

<sup>20</sup> Ibid.

<sup>21</sup> Ibid.

<sup>22</sup> Gary D. Aden, "No Clear Direction for Financial Management and Survival". Hospitals, April 1, 1981, pg. 81.

Footnotes (cont.)

23 Richard W. Foster, "Cost-Based Reimbursement and Prospective Payment: Reassessing the Incentives". Journal of Health Politics, Policy and Law, Vol. 7, No. 2, Summer 1982, pg. 407.

24 Ibid., pg. 413.

25 Ibid., pg. 418.

26 William R. Fifer, op. cit., pg. 57.

27 "Veterans of New Jersey's system assess DRG-based reimbursement", Hospitals, December 1, 1982, pg. 35.

28 Ibid., pgs. 35-36.

29 John K. Iglehart, "Health Policy Report". The New England Journal of Medicine, December 23, 1982, pg. 1656.

30 Susan D. Horn, "Interhospital Differences in Severity of Illness: Problems for Prospective Payment Based on Diagnosis-Related Groups (DRGs)". The New England Journal of Medicine, July 4, 1985, pg. 20.

31 Ibid.

32 Ibid., pg. 23.

33 Ibid., pg. 24.

34 "McLaren Today", Facts, McLaren General Hospital, Flint, Michigan, MG 321, April, 1986.

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