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Silas B. Hays U.S. Army Community Hospital, Fort Ord, California has the potential to lose over $900 thousand in the supply budget category starting in fiscal year 1991. This reduction will occur during the conversion from a workload measure based on admissions, births and beds occupied (Medical Care Composite Unite, MCCU) to a Diagnosis Related Group (DRG) based workload measurement system. Title 10, Chapter 55 of the U.S. Code, Section 1101 requires the Department of Defense to use DRGs as the primary criterion for allocation of medical resources.

The purpose of this study is to analyze the compensation of Silas B. Hays Hospital under DRGs. The approach includes determining compensation's functional relationship to a patient's gender, age, category, admitting service, length of stay, number of diagnoses, number of procedures, and transfer status, through stepwise multiple linear regression analysis. (continued on reverse)

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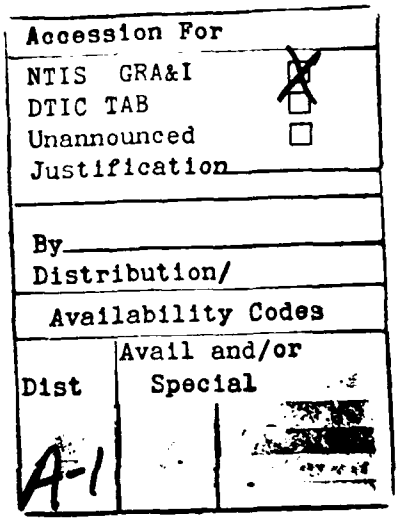
This study included the development of a software program to incorporate the predictive capabilities of the stepwise multiple linear regression formula and the principles of DoD DRG reimbursement. The program allows analysis of any single or multiple change to the case mix of not just Silas B. Hays, but any facility within Health Services Command. An import module allows the program to incorporate output from the Retrospective Case Mix Analysis System (RCMAS)

Implementing DRGs At Silas B. Hays Army Community Hospital: Enhancement of Utilization Review



A Graduate Management Project

Submitted to the Faculty of

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In Partial Fulfillment of the

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of

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by

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ABSTRACT

Silas B. Hays U.S. Army Community Hospital, Fort Ord, California has the potential to lose over $900 thousand in the supply budget category starting in fiscal year 1991. This reduction will occur during the conversion from a workload measure based on admissions, births and beds occupied (Medical Care Composite Unit, MCCU) to a Diagnosis Related Group (DRG) based workload measurement system. Title 10, Chapter 55 of the U.S. Code, Section 1101 requires the Department of Defense to use DRGs as the primary criterion for allocation of medical resources.

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CHAPTER I: INTRODUCTION

Conditions Prompting This Study

Silas B. Hays Army Community Hospital was scheduled to lose over $45 thousand during the fiscal 1989 midyear review according to J. Jensen (personal communication, April 21, 1989) representing the Resource Management Division of Health Services Command (HSC). This reallocation was based on five percent of the difference between supply dollar amounts calculated by the old Medical Care Composite Unit (MCCU) system and the supply dollar amount calculated by the new congressionally mandated Diagnosis Related Group (DRG) system (a complete listing of definitions and abbreviations are contained in appendix A). Jensen further expected HSC would allocate all supply dollars by the DRG system within two years with a potential loss to the Fort Ord hospital of over $900 thousand compared to current allocation methods.

Past compensation measurements for resource allocation were based on the MCCU. This system of workload measure provided a large emphasis on admissions and obstetrics while encouraging excessive lengths of stay. The MCCU is based on the following formula:

Admissions	**X**	**10**	**+**
Live Births	**X**	**10**	**+**
Beds Occupied	**X**	**1**	**+**
Outpatient Visits	**X**	**0.3**	

The population cared for and the physician practice patterns at Silas B. Hays results in a high level of compensation as measured by the old MCCU methodology. Unfortunately, Silas B. Hays had one of the lowest compensation correlations between the old MCCU method and the new Department of Defense (DoD) mandated DRG method (Jensen, personal communication, April 21, 1989). This low correlation explains one of the highest projected negative supply dollar shifts within HSC medical treatment facilities.

Statement of the Management Problem

What utilization review procedures can be implemented at Silas B. Hays Army Community Hospital in order to enhance compensation as measured by the Department of Defense Diagnosis Related Group System?

Literature Review

Healthcare costs in 1950 stood at only 4.6% of the gross national product (GNP) (Gibson, Waldo & Levit, 1983). This climbed steadily to 7.5% in 1970 causing President Nixon to state that the nation was facing a "health care crisis" (Ginzberg, 1987). In spite of this, the 1982 cost of all health services in the United States stood at 10.5% of GNP (Gibson et al., 1983) and has continued to escalate standing now in excess of 11% (Kimball, 1990).

The Military Health Services System (MHSS) has a cost containment concern which parallels and even exceeds that of the level

for the United States overall. Total health care costs for the military have seen a rise from $7.05 billion in 1983 to $11.5 Billion in 1987. This represents an annual growth in excess of 13% (Soule, 1988) compared to 9.6% in 1987 for the United States (Kimball, 1990).

Cost containment in healthcare has been seen as a priority by healthcare planners for many years. However, all attempts to control escalating healthcare costs on any wide scale basis before 1983 were considered a failure as there was no incentive to curb costs in a fee-for-service system (Dowd, Johnson, & Madson, 1986). The most important step in this process toward true cost containment was seen in 1983 through the promulgation of the prospective payment system for Medicare patients.

Utilization Review

Cost containment became a high priority in the face of fixed payments for cases, as measured by DRGs, in the civilian healthcare arena. According to Feldstein, Wickizer & Wheeler (1988), utilization review is an effective mechanism for cost containment. This technique was incorporated by insurance companies, health maintenance organizations, preferred-provider organizations and other forms of managed care organizations.

Utilization review can be traced back to the Allegheny County Medical Society. While their efforts resulted in the Pennsylvania Hospital Utilization Project, few other facilities saw the need to carry out utilization review. Title XVIII of the Social Security Act (Medicare, 1965)

mandated utilization review, but apathy continued (Test Your Resource Management I.Q., 1985).

The general lack of physician support for utilization review resulted in PL 92-603 in 1972 which expanded the utilization review process to include concurrent review of all Medicare, Medicaid, and Maternal and Child Health Program admissions. Professional Standards Review Organizations (PSROs) were also formed by this amendment to the Social Security Act. The Joint Commission on the Accreditation of Hospitals supported this emphasis on utilization review by separating the review requirements into its own standard (Test Your Resource Management I.Q., 1985).

Third party payers are economically tied to the behavior of civilian health care institutions. Therefore, third party payers are progressively influencing decision making by civilian health care institutions. A primary mechanism for controlling the decision making of these institutions is utilization review. According to Test Your Resource Management I.Q., (1985) various utilization review mechanisms are employed to control costs, these may include:

1. Pre-admission authorization for elective admissions.
2. Inpatient concurrent review by outside reviewing agencies.
3. Second opinion programs.
4. Mandatory use of outpatient settings for certain surgical procedures.

5. Capitation on costs. Insurance companies will not pay whatever price the hospital sets.
6. Bill audits--where the medical record documentation is compared to the patient's bill.
7. If a physician's order for the service is not documented, the item is not paid. (p.10,11)

The Department of Defense recognizes the merits found in the civilian sector for utilization review and has issued Directive Number 6025.13 which states utilization review will occur and have at a minimum the following elements:

1. Planned review of care received by hospitalized patients with excessive lengths of stay for diagnosis, diagnosis-related groups (DRG), or procedures as specified by MTF [military treatment facility] or higher headquarters.
2. Review and assessment of resource utilization statistics on accessibility of care, personnel and staffing, and volume of care actually delivered to patients.
3. Mechanisms to evaluate equipment maintenance and procurement policies.
4. Policies on discharge planning. (p. 4)

According to Test Your Resource Management I.Q., (1985) utilization review does not prevent needed health care services, rather it "enhances the delivery of those services in order to eliminate inefficiencies" (p. 15). This conception is not universally held. Robinson

(1988) reports utilization review can lead to the curtailment of needed services in the name of cost control alone. Robinson further reports patients can often be left with the impression the care was inappropriate or unnecessary when utilization review is widespread.

Utilization review can have many advantages in enhancing the efficiency of inpatient care. However, care must always be taken to be sure any changes in practice patterns or hospital function are in keeping with sound quality assurance standards.

Prospective rate setting is one of many forms of reimbursement control methods which have been tried in the past. This method works by the external payer determining what reimbursement will be paid for a specified unit of service before the service is performed (Abe, 1985).

Fixed payment rates for each diagnosis are based on the average patient. If hospitals can treat the average patient below the average fixed payment, then they will make money through a positive marginal return. If the hospital's average costs are above the average fixed payment their marginal return will be negative. Therefore, the incentive for hospitals is to reduce costs in order to have a positive marginal return or change behavior to maintain a higher reimbursement.

Diagnosis Related Groups

Original work on prospective payment was performed by Thompson, Fetter and Mross (1975). They erroneously believed hospitals would desire to become efficient in order to maximize output. When their work was rejected by hospitals, they focused attention towards reimbursement

as a means of increasing incentive (Fetter, Thompson, and Mills, 1976). New Jersey first used DRGs to replace a voluntary rate-setting program (Rosko & Broyles, 1987).

In 1979 the U.S. Government contracted with Yale University to create a usable system of DRGs. The 1981 study results became the foundation for determining prospective payments for Medicare through PL 98-21 by the Health Care Financing Administration (HCFA) of Health and Human Services (Vladeck, 1984). Once embraced by HCFA, the system was rapidly adopted by many third party payers including Blue Cross and Blue Shield.

The establishment of a particular DRG takes into account the diagnosis, procedures performed on the patient, the patient's gender, age and discharge status. According to Vladeck (1984) patients within a DRG are clinically similar and should have relatively uniform costs associated with their care. The relative weight assigned to each DRG influences the payment for the services provided by a hospital. This reimbursement is intended to cover all ancillary services provided by the hospital including radiology, laboratory and nursing services (Abe, 1985).

Department of Defense and DRGs

During the 1980s Congress felt the cost of military health care was rising excessively. They pursued a legislative solution to this problem by amendment to Title 10 Chapter 55 of the U.S. Code Section 1101. This amendment directed DoD to use DRGs as the primary criterion for allocation of resources to MTFs. Congress indicated their approval of a

phased approach to resource allocation through DRGs, but intended all resources, including personnel, shall eventually be controlled in this fashion (Soule, 1988).

Implementation guidance on prospective resource allocation in the MHSS was given in 1988 from then Assistant Secretary of Defense for Health Services, William Mayer (1988). The first phase of implementation would only include the analysis of money from the element of resources for supplies. This phase was expected to take several years to allow time for the services adapt.

A new productivity unit was developed for DoD in order to capture workload from both in and outpatient work centers--the Medical Work Unit (MWU). The MWU is composed of an Inpatient Work Unit (IWU) as well an Ambulatory Work Unit (AWU). A complete discussion of the mathematics for computation of the MWU are contained in Appendix B.

To manage the new system all military treatment facilities (MTFs) were first divided into Medical Centers, CONUS (located in the continental United Stated), and OCONUS (located overseas) hospitals. Peer groups within these categories based on size and RCMI further subdivided the hospitals. All hospitals started with a base allocation rate per MWU of $231.04. In order to more fully reflect true costs per MWU each hospital within a peer group was assigned a Resource Allocation Group (RAG) additive. Individual hospitals were further modified through additional additives to reflect individual pharmacy and laboratory costs not otherwise captured by the system. The total supply dollar

allocation for a facility would be the final supply allocation rate multiplied by the total MWUs for the period.

Dr. Mayer recognized that each service had unique requirements for the delivery of healthcare which made comparison between the services difficult. This difficulty led to additives which would prevent the flow of money between services as the result of productivity differences. Therefore, dollars would only flow between hospitals of the same service.

Purpose

The purpose of this study is to analyze the compensation of Silas B. Hays U.S. Army Community Hospital based on the DoD DRG system. The approach includes the analysis of compensation's functional relationship to a patient's gender, age, category, admitting service, length of stay, number of diagnoses, number of procedures, and transfer status. For the purpose of this study, compensation will be considered the case weight assigned to an inpatient disposition.

Healthcare managers must have available many sources of information in order to make wise decisions. Information must include all facts concerning resource consumption and compensation for every patient. The analysis of compensation by this project will assist in the development of an efficient utilization review system. The findings of this study, along with the principles of case mix management, may result in the enhancement of resource allocation from HSC to this facility.

CHAPTER II: METHODS AND PROCEDURES

Subjects

The subjects used in this study were all inpatients reported in the IPDS system during calendar year 1988 at Silas B. Hays Army Community Hospital, Fort Ord, California. Those patients reported as Carded For Record Only (i.e. dead on arrival, stillbirth, and medically retired) and those treated totally Absent Sick (i.e. active duty military members who have been admitted to civilian health care facilities, but are kept on the roles of an MTF) were excluded from the analysis.

Study Design

This study is an ex post facto intensive quantitative investigation of data for eligible inpatients treated at Silas B. Hays Hospital during calendar year 1988, the latest complete year of data available for investigation. The results of this large sample analysis are assumed to be representative of care given at Silas B. Hays Hospital in subsequent years.

Data Collection

PASBA, Fort Sam Houston, Texas collected the data used in this study. PASBA collects raw patient data from all Army MTFs and performs needed statistical calculation and analysis.

Statistical Analysis

This study is built upon a stepwise multiple linear regression analysis. Because of the size of the database the regression was

performed by PASBA using the Statistical Package for the Social Sciences (SPSS-X) Release 3.0 For IBM OS/MVS. The equation determines if the assigned case weight is a function of the gender, age, category, admitting service, length of stay, number of diagnoses, number of procedures, and transfer status for patients included in the study.

Dependent Variable (Y)

CASEWGT (Case Weight)

Independent Variables (X)

MALE

AGE

ACTDUTY (Active Duty)

DACTDUTY (Dependents Of Active Duty)

RETIREE (Retirees)

DRETIREE (Dependents Of Retirees)

AA (General Medicine)

BA (General Surgery)

BE (Oral Surgery)

BI (Urology)

CA (Gynecology)

CB (Obstetrics)

DA (Pediatrics)

DB (Newborn Nursery)

EA (Family Practice Medicine)

EC (Family Practice Obstetrics)

ED	(Family Practice Gynecology)
EF	(Family Practice Pediatrics)
FA	(Orthopedics)
FB	(Podiatry)
GA	(Psychiatry)
HA	(Ophthalmology)
HB	(Otorhinolaryngology)
BEDDAYS	(Length of Stay)
NODIAG	(Number Of Diagnoses Coded)
NOPROC	(Number Of Procedures Coded)
TRANSFIN	(Transferred In)
TRANSOUT	(Transferred Out)

Functional Relationship

CASEWGT = f(MALE, AGE, ACTDUTY, DACTDUTY, RETIREE, DRETIREE, AA, BA, BE, BI, CA, CB, DA, DB, EA, EC, ED, EF, FA, FB, GA, HA, HB, BEDDAYS, NODIAG, NOPROC, TRANSFIN, TRANSOUT).

Operational Definitions

CASEWGT. The weight of the DRG assigned to the individual case under consideration.

MALE. Patient gender. Males coded 1, females 0.

AGE. Defined as the age in years. The number 0 was assigned to all patients less than one year of age. According to R. Devore (personal

communication, February 2, 1990) this is the convention used by PASBA. Complete IPDS Age Codes are in Appendix C.

ACTDUTY. Coded 1 for patients on Active Duty (patient categories A10, F10, N10, M10, C10, O10, P10; all IPDS patient category explanations are found in Appendix D), otherwise 0.

DACTDUTY. Coded 1 for patients who are Dependents of Active Duty personnel (patient categories A50, F50, N50, M50, C50, O50, P50; all IPDS patient category explanations are found in Appendix D), otherwise 0.

RETIREE. Coded 1 for patients who are Permanently Retired (patient categories A30, F30, N30, M30, C30, O30, P30; all IPDS patient category explanations are found in Appendix D), otherwise 0.

DRETIREE. Coded 1 for patients who are Dependents of Retired or Deceased personnel (patient categories A60, F60, N60, M60, C60, O60, P60; all IPDS patient category explanations are found in Appendix D), otherwise 0.

AA. Coded 1 if the primary clinic service for the patient was General Medicine, otherwise 0.

BA. Coded 1 if the primary clinic service for the patient was General Surgery, otherwise 0.

BE. Coded 1 if the primary clinic service for the patient was Oral Surgery, otherwise 0.

BI. Coded 1 if the primary clinic service for the patient was Urology, otherwise 0.

CA. Coded 1 if the primary clinic service for the patient was Gynecology, otherwise 0.

CB. Coded 1 if the primary clinic service for the patient was Obstetrics, otherwise 0.

DA. Coded 1 if the primary clinic service for the patient was Pediatrics, otherwise 0.

DB. Coded 1 if the primary clinic service for the patient was Newborn Nursery, otherwise 0.

EA. Coded 1 if the primary clinic service for the patient was Family Practice Medicine, otherwise 0.

EC. Coded 1 if the primary clinic service for the patient was Family Practice Obstetrics, otherwise 0.

ED. Coded 1 if the primary clinic service for the patient was Family Practice Gynecology, otherwise 0.

EF. Coded 1 if the primary clinic service for the patient was Family Practice Pediatrics, otherwise 0.

FA. Coded 1 if the primary clinic service for the patient was Orthopedics, otherwise 0,

FB. Coded 1 if the primary clinic service for the patient was Podiatry, otherwise 0.

GA. Coded 1 if the primary clinic service for the patient was Psychiatry, otherwise 0.

HA. Coded 1 if the primary clinic service for the patient was Ophthalmology, otherwise 0.

HB. Coded 1 if the primary clinic service for the patient was Otorhinolaryngology, otherwise 0.

BEDDAYS. Total bed and bassinet days; henceforth referred to as Average Length of Stay (ALOS).

NODIAG. Number of diagnoses coded in the IPDS record (values 1 to 8). Actual patient medical record may have more than 8 diagnoses listed.

NOPROC. Number of procedures coded in the IPDS record (values 0 to 8). Actual patient medical record may have more than 8 procedures listed.

TRANSFIN. Coded 1 for those cases transferred into Fort Ord from another facility (admission source 5, 6, 7, 8, 9, or 0), otherwise 0. Appendix E lists IPDS admission source codes with definitions.

TRANSOUT. Coded 1 for those cases transferred out to another facility (disposition status S, T, or U), otherwise 0. Appendix F lists IPDS disposition status codes with definitions.

In order to allow for degrees of freedom, only those clinic services representing greater than 0.5% of the cases were included in the analysis. All clinics below the 0.5% threshold were all coded 0; therefore, only those clinics which reported admissions were included for consideration in this analysis. Those patients not belonging to the listed IPDS patient categories were considered "other" if all four listed patient categories were coded 0.

Validity

As the military has been mandated by Congress to comply with the distribution of resources based on Diagnosis Related Management, a special type of face validity can be presumed. About 50% of the variation in length of stay within a particular DRG has been explained, the other 50% is presumed to be due to disease severity variation (Coventry, 1988).

Reliability

There are three significant sources of error for the DRG system as found in the data base at PASBA: (a) physician errors in not following the definition for the principal diagnosis, secondary diagnosis or surgical procedure; (b) coding errors by patient administration staff transposing of code numbers, not following conventions or guidelines, or simply misinterpreting information; and lastly (c) keying of information into computer terminals (Ashcraft, 1986).

Null Hypothesis

No linear relationship exists between the dependent variable case weight and the independent variables for gender, age, IPDS patient category, clinic service, beddays, number of diagnoses, number of procedures, whether the patient was transferred in, or transferred out.

Alternate Hypothesis

Case weight is a function of gender, age, IPDS patient category, clinic service, beddays, number of diagnoses, number of procedures, whether the patient was transferred in, or transferred out.

Alpha Level

A confidence level of 0.05 was used to determine if the next independent variable would be in the stepwise multiple linear regression equation.

Ethical Considerations

All data in this study was provided by the PASBA services located at Fort Sam Houston, Texas. At no time was patient information reported which would allow disclosure of an individual patient's identity. Any reports obtained from PASBA containing information traceable to individual patients were shredded following analysis. Patient anonymity was preserved throughout all phases of this study. Therefore, no individual's ethical rights were violated.

Assumptions

DoD and HSC are in an unstable environment regarding resource allocation under the DRG based methodology. Full evaluation of the merits of the current implementation strategy are under evaluation by a contractor (Vector Research) according to J. Jensen (personal communication, January 3, 1990). The results of the analysis by the contractor are expected during the month of June or July 1990. Therefore, I made the assumption the implementation strategy for DRGs will follow the principles outlined in the August 5, 1988 memorandum from then Assistant Secretary of Defense for Health Affairs William Mayer (1988).

CHAPTER III: RESULTS

A total of 10,496 records were analyzed. Appendix G gives a complete listing of all steps of the stepwise multiple linear regression analysis. Table 1 displays descriptive statistics of all variables used in

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Insert Table 1 here

---

the regression equation. More females were treated than males. The average age of patients was approximately 27 years. Dependents of active duty comprised over 50% of the patient population treated followed by active duty with approximately 27%.

Table 2 gives more detail on the clinic service variables.

Insert Table 2 here

Obstetrics, Internal Medicine and Newborn Nursery together provided care to over 40% of the patients admitted to Silas B. Hays Hospital. The top producer of RWPS was Internal Medicine with General Surgery next. The service producing the highest average CMI was Psychiatry. Of interest is while the number of RWPS produced by General Medicine and Obstetrics was similar, Obstetrics required more than 500 additional patients to produce those RWPS, a reflection of the low average CMI for patients treated by the Obstetrical Service. The average patient treated

in the Newborn Nursery had a CMI of 0.2080, the lowest CMI of any service.

Table 3 presents the complete stepwise multiple linear regression

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Insert Table 3 here

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analysis formula prepared for this project. Seventeen variables met the 0.05 confidence level and were therefore included in the equation for predicting case weight. Twelve variables not meeting the criteria for inclusion are found on the last page of Appendix G.

CHAPTER IV: DISCUSSION

Nearly 73% of the variance in case weight between patient dispositions can be explained when using the variables having a significance of 0.05 or greater (Table 3). The majority of variance (62%) can be accounted for by length of stay. The importance of length of stay is not surprising when the formula for calculating the assigned case weight, or RWP is examined (Appendix B). The next four variables showing the most influence on case weight variance were (a) age, followed by the three clinic services of (b) Newborn Nursery, (c) Obstetrics, and (d) Family Practice Obstetrics.

When evaluating the influence of the significant variables, it is important to look not just at the magnitude of influence, but also the direction of influence. As expected, length of stay and age have a positive influence, although the magnitude of the influence of age was

surprisingly small. Of note is the negative influence of the first three services of the equation on case mix. The negative effect on case mix of a patient being newborn is only exceeded if a patient is a transfer into the facility.

The excellent predictive capabilities of regression analysis must be tempered with use of reasonable variable changes. For example, while transferring a patient into Silas B. Hays provides a strong negative influence on a predicted case mix, it can be expected to occur infrequently (only 0.4% of admissions in 1988, Table 1). On the other hand, three of the top four DRGs recorded during 1988: (a) 391, Normal Newborn; (b) 373, Vaginal Delivery Without Comorbidities or Complications; and (c) 383, Other Antepartum Diagnoses With Comorbidities and/or Complications represented 2,423 patient dispositions, or over 23% of the total for the year. Therefore, it would be more reasonable to make a large change in one of the top three volume variables than in the smaller variable.

Twelve variables failed to influence the case mix of a patient at the 0.05 level of confidence. Several of these variables deserve comment. Gynecology is an alternate emphasis for the obstetrician/gynecologist. However, an increase in volume could not be depended upon to produce a significant change in case mix. While Psychiatry had the highest mean for CMI, the predictive qualities for the service were poor. The four IPDS patient categories were expected to correlate with age and therefore show a higher level of significance, but did not.

A double swing in the volume of patients falling into the top three clinic services noted has occurred over the past ten years at Silas B. Hays Hospital. An active midwifery program phase out in the mid 1980s along with a nursing and obstetrician shortage resulted in a dramatic parallel drop in admissions to the obstetrical service and newborn nursery. While this drop vaulted the RCMI of the facility over 0.900 it had a violent affect on the distribution of funds from HSC. As previously discussed, the MCCU methodology of resource allocation richly rewards obstetrical care and ignores case mix. The current leadership of Silas B. Hays noted the trend in reimbursement and moved quickly to reverse the outflow of obstetrical care to the advance of reimbursement but the detriment of RCMI. The current RCMI for Silas B. Hays Hospital now hovers slightly over 0.8200.

The concept of case mix is important only when reimbursement is calculated by the DRG system. As explained in Appendix B, the IWU is calculated by multiplying MEPRS dispositions by the RCMI of the facility. Therefore, case mix strongly influences reimbursement under the DRG system.

Reimbursement depends not just on the number of MWUs, but also on the final supply allocation rate. Silas B. Hays falls into the general category of a CONUS, Non-teaching Hospital. This general category is further subdivided into eight peer groups, each determined by size and RCMI. With a size greater than 100 beds, Silas B. Hays can be in only

one of two peer groups. These two groups are separated into those facilities having an RCMI of over 0.900 and those having a lower RCMI.

The important difference between the two peer groups available for Silas B. Hays is the presence of a RAG additive of $43.64 for the higher RCMI peer group. The RAG additive alone represents over an eighteen percent difference between the two peer groups. During the period Silas B. Hays shunned obstetrical care, it would have occupied the higher peer group. Silas B. Hays currently qualifies for the lower group.

Sixty percent of the MWUs at Silas B. Hays are earned through AWUs. Therefore, 40% of the workload influences the reimbursement for all of the workload. While the composition of inpatient workload is expected to influence outpatient workload the significance is uncertain. Of note is that an ambulatory visit under the DRG system is weighted heavier for an obstetrical than a gynecological visit (0.0260 vs. 0.0236), a negative correlation between inpatient and outpatient reimbursement. Two facilities with identical outpatient populations and workload could be resourced differently for workload solely due to the reimbursement rate determined by inpatient care.

Prolog Computer Software Program

In order to operationalize the results of this study a software program entitled "The Diagnosis Related Group (DRG) Based Methodology Transition Impact Program" which incorporates the predictive capabilities of the multiple regression formula and the principles of DoD DRG reimbursement was developed. The programming language chosen for

the program was Borland International Turbo Prolog Version 2.0, the language of artificial intelligence. A complete listing of code for this program is contained in Appendix H. The software is in Appendix I for color and Appendix J for Laptop computers.

The incentive for producing this program was the need to understand the economic impact of making case mix changes in the facility. Computer modeling was the logical method, first with a simple spreadsheet showing how single DRG changes affected reimbursement. Later, as insight grew the need was apparent for a model which would make multiple simultaneous changes in case mix.

The Prolog software program allows analysis of any single or multiple change to the case mix of not just Silas B. Hays, but any facility within HSC. It incorporates database workload information from any HSC hospital and all 473 DoD DRGs. An import module enables the program to incorporate output from the Retrospective Case Mix Analysis System (RCMAS), thereby allowing analysis of actual workload data. Modeling of case mix change impact can be done either through analysis of individual or group DRG changes or through mass changes in the variables of the linear regression formula developed for this project. The regression formula is currently available only for Silas B. Hays workload but could be performed by PASBA for any other facility through minor program changes.

Case mix modeling with the software brought many expected, but some unexpected findings. As a general rule, every additional inpatient

disposition resulted in some reimbursement, though the effect on RCMI may be negative. Conversely, not admitting patients had a deleterious effect on reimbursement in almost all cases.

As previously noted, over 23% of patient dispositions from Silas B. Hays were handled by the services having the most significant negative effect on case weight for a disposition. The Diagnosis Related Group (DRG) Based Methodology Transition Impact Program indicates that eliminating care for these patients would result in an increased inpatient reimbursement for Silas B. Hays under the DRG system over the MCCU system of $143,797 in supply dollars alone! This quirk in reimbursement is the result of a dramatic rise in the RCMI to break the 0.9000 threshold, thus increasing reimbursement by over $43 per IWU.

CHAPTER V:

CONCLUSIONS AND RECOMMENDATIONS

The scope of this project was limited with the decision to deal strictly with variables as they relate to reimbursement and not as they relate to cost. This was not to devalue cost analysis. Dr. Finstein (personal communication, July 11, 1988) stated the use of statistics has four stages: (a) First you describe phenomena, then (b) you explain, (c) predict, and finally (d) control. My attempt with this research was to produce a foundation of information on those variables at Silas B. Hays Hospital which has a significant influence on case mix. Future research must deal with cost analysis in order to better evaluate efficiency of

healthcare delivery. A refinement of the MEPRS system is strongly recommended in order to track cost to individual patients and providers.

The military healthcare system functions essentially as a not-for-profit organization. However, not-for-profit organizations must be concerned with reimbursement or risk of not being able to provide care. Military healthcare managers have adapted their organizations to the old MCCU resourcing system, frequently shaping the case mix as did Silas B. Hays, to receive resources adequate for delivering healthcare the mission demands.

Costs must be balanced with reimbursements for survival, even in the military health care system. To radically reduce funding to Silas B. Hays or any other MTF is a mandate to the hospital to change its mission. Intention for change is a separate issue. A system which will give economic incentive to not take care of patients, as would be the case for obstetrical patients at Silas B. Hays, is a system fundamentally flawed.

Only two alternatives exist for an MTF in the presence of an underfunded medical mission: (a) Deliver the services by cost shifting from overfunded missions, or (b) provide an alternative means of delivering the services with funding external to the hospital budget. If a medical mission is essential for a military hospital then it should be funded accordingly. Ignoring the effects of economic incentive for military healthcare managers is to ignore reality.

Effective utilization review requires precise information on availability of resources for delivering healthcare. This study provides a foundation of information upon which a better understanding of healthcare delivery decisions can be made.

The software developed will be best used in making decisions on inpatient versus outpatient care for many categories of patients. Additionally, categories such as obstetrical patients will come under serious evaluation on the financial risk of providing direct care versus finding alternative means of healthcare deliver.

The recommendations of the Vector Research analysis and resultant implementing instructions will set the ultimate course for the behavior of Silas B. Hays. Weiner, Maxwell, Sapolsky, Dunn and Hsiao (1987) state decision making in health care normally lies in the hands of clinicians, not health care administrators. These authors state decision making power comes from the area of responsibility having the greater uncertainty associated with it, and issues in medicine are typically more uncertain than those in administration. However, the threat of a near one million dollar shift in supply dollars and the risk of future resource losses will create a temporary shift in power. A clinician-administrator coalition will form to make significant practice pattern changes at Silas B. Hays Hospital. These changes will occur under the realm of utilization review and will reestablish the balance in uncertainty away from fiscal issues back to clinical issues.

CHAPTER VI: REFERENCES

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Table 1

Descriptive Statistics: Variables

	Label	Mean	Std Dev	Cases	Variable Label
	MALE	0.462	0.499	4,850	
	AGE	27.242	21.556		
	ACTDUTY	0.269	0.444	2,827	ACTIVE DUTY
	DACTDUTY	0.5140	.500	5,392	DEP OF ACTIVE DUTY
	RETIREE	0.1110	.314	1,160	RETIREES
	DRETIREE	0.089	0.284	929	DEP OF RETIREES
*	OTPATCAT	0.018	0.133	188	OTHER PATIENT CATEGORIES
	AA	0.141	0.348	1,481	GENERAL MEDICINE
*	AB	0.000	0.017	3	CARDIOLOGY
*	AF	0.000	0.010	1	GASTROENTEROLOGY
*	AI	0.000	0.010	1	NEPHROLOGY
*	AJ	0.000	0.010	1	NEUROLOGY
	BA	0.105	0.307	1,105	GENERAL SURGERY
	BE	0.030	0.170	313	ORAL SURGERY
*	BF	0.002	0.039	16	PEDIATRIC SURGERY
	BI	0.049	0.215	510	UROLOGY
	CA	0.029	0.167	301	GYN
	CB	0.154	0.361	1,615	OB
	DA	0.068	0.251	712	PEDIATRICS
	DB	0.123	0.329	1,292	NEWBORN NURSERY
	EA	0.039	0.193	407	FP MEDICINE
*	EB	0.002	0.047	23	FP SURGERY
	EC	0.089	0.284	931	FP OB
	ED	0.006	0.075	60	FP GYN
	EF	0.019	0.135	195	FP PEDIATRICS
*	EG	0.001	0.029	9	FP ORTHOPEDICS
	FA	0.066	0.248	692	ORTHOPEDICS
	FB	0.010	0.101	108	PODIATRY
	GA	0.039	0.193	407	PSYCHIATRY
	HA	0.010	0.098	102	OPHTHALMOLOGY
	HB	0.020	0.140	211	ENT
	BEDDAYS	3.635	5.762		NUMBER OF BED DAYS
	NODIAG	2.109	1.537		NUMBER OF DIAGNOSIS CODED
	NOPROC	1.266	1.346		NUMBER OF PROCEDURES CODED
	CASEWGT	0.667	0.657		CASE WEIGHT
	TRANSFIN	0.004	0.062	41	TRANSFERRED IN
	TRANSOUT	0.029	0.168	305	TRANSFERRED OUT

* Note. Variable not used in the analysis as significance less than the 0.05 confidence level.

TABLE 2

Descriptive Statistics: Clinic Services

Clinic Service	Code	DISP	% of DISP	CMI	Total RWP	% of RWPS
Internal Medicine	AA	1481	14.11%	0.8897	1317.6457	18.81%
Cardiology	AB	3	0.03%	0.6402	1.9206	0.03%
Gastroenterology	AF	1	0.01%	0.5574	0.5574	0.01%
Nephrology	AI	1	0.01%	0.6032	0.6032	0.01%
Neurology	AJ	1	0.01%	0.7658	0.7658	0.01%
General Surgery	BA	1105	10.53%	0.9244	1021.4620	14.58%
Oral Surgery	BE	313	2.98%	0.5733	179.4429	2.56%
Pediatric Surgery	BF	16	0.15%	0.7572	12.1152	0.17%
Urology	BI	510	4.86%	0.6570	335.0700	4.78%
Gynecology	CA	301	2.87%	0.7592	228.5192	3.26%
Obstetrics	CB	1615	15.39%	0.5864	947.0360	13.52%
Pediatrics	DA	712	6.78%	0.5709	406.4808	5.80%
Newborn Nursery	DB	1292	12.31%	0.2080	268.7360	3.84%
FP-Medical	EA	407	3.88%	0.9053	368.4571	5.26%
FP-Surgical	EB	23	0.22%	0.6741	15.5043	0.22%
FP-Obstetrics	EC	931	8.87%	0.5353	498.3643	7.11%
FP-Gynecology	ED	60	0.57%	0.6576	39.4560	0.56%
FP-Pediatrics	EF	195	1.86%	0.4925	96.0375	1.37%
FP-Orthopedics	EG	9	0.09%	0.7819	7.0371	0.10%
Orthopedics	FA	692	6.59%	0.8490	587.5080	8.39%
Podiatry	FB	108	1.03%	0.8970	96.8976	1.38%
Psychiatry	GA	407	3.88%	1.0140	412.6980	5.89%
Ophthalmology	HA	102	0.97%	0.5730	58.4460	0.83%
Otorhinolaryngology	HB	211	2.01%	0.4915	103.7065	1.48%
Grand Total		10496	100.00%	0.6673	7004.4672	100.00%

Note.
DISP - Dispositions
CMI - Case Mix Index (Total RWP divided by No of Dspo)
RWPS - Relative Weighted Product (Weight of an individual case)
Total RWPS - Total of RWPs for all the cases for the given clinic

TABLE 3

Multiple Regression Analysis Formula

CASEWGT =	(.086193)	X	(number of Bed days)
+	(.003122)	X	(Age of Patient)
+	(-.323502)	X	(1 if Clinic Service is DB)
+	(-.134777)	X	(1 if Clinic Service is CB)
+	(-.155038)	X	(1 if Clinic Service is EC)
+	(.028401)	X	(Number of Procedures coded)
+	(-.558463)	X	(1 if Patient was transferred in)
+	(.179117)	X	(1 if Clinic Service is FA)
+	(.147480)	X	(1 if Clinic Service is BA)
+	(.020133)	X	(Number of Diagnoses coded)
+	(-.124597)	X	(1 if Patient was transferred out)
+	(.162995)	X	(1 if Clinic Service is FB)
+	(.070846)	X	(1 if Clinic Service is AA)
+	(.081358)	X	(1 if Clinic Service is EA)
+	(.086141)	X	(1 if Clinic Service is BE)
+	(.052370)	X	(1 if Clinic Service is DA)
+	(.015908)	X	(1 if Patient was male)
+	(.215037)		Constant

Appendix A

Abbreviations and Definitions

ALOS Average Length of Stay -- The average length of hospitalization of inpatients discharged during the period under consideration.

AWU Ambulatory Work Unit -- An outpatient workload credit measurement. AWU weights and methodology are published in Report HR 88-001 (April 1988), "Military Health Services System Ambulatory Work Unit".

CMI Case Mix Index -- Total RWPs for an MTF divided by the total of biometrics dispositions through the individualized Patient Data System (IPDS) for which the RWPs were determined. DRG 469 (Primary Diagnosis Invalid as a Discharge Diagnosis) and DRG 470 (Ungroupable) are excluded from the calculations since their relative weights are zero. The CMI gives the number of RWPs generated by the average dispositions from the MTF.

Disposition -- The termination of a period of inpatient hospitalization through the formal release of the inpatient by the hospital.

DRG Diagnosis Related Group -- classification of patients by demographic and diagnostic variables into clinically comparable groups with similar lengths of stay and intensity of resource

Appendix A (cont'd)

consumption. The DRG system has been adopted as the basis to credit workload and allocate resources within DoD MHSS.

DRG Assignment -- The five essential elements required before a DRG can be assigned are: 1) principal diagnosis (and complications/ comorbidities); 2) principal procedure; 3) patient's age; 4) patient's sex; and 5) discharge status.

DRG WEIGHT (Relative Weight) -- An index number which reflects the relative resource consumption associated with each DRG.

DoD CMI (FY 85) -- Average RWPs per disposition across DoD for FY 85. Total DoD RWPs for the base year (FY85) were 776,023. Total dispositions from biometrics data (less DRGs 469 and 470) were 957,901. The DoD CMI for the base year is then equal to 776,023/957,901 or 0.8101. This factor is used to adjust all subsequent case mix calculations to the DoD average for the base year.

IWU Inpatient Work Unit -- The workload credit given each MTF disposition. Total IWUs for a MTF are calculated by multiplying a MTF's total MEPRS dispositions by their RCMI. Since there is often a discrepancy between biometrics and MEPRS

Appendix A (cont'd)

dispositions, the official volume count from MEPRS is used. This process makes the assumption that any dispositions counted in MEPRS but not available through biometrics for DRG assignment follow the same case mix distribution as those dispositions which have been assigned to DRGs.

MHSS Military Health Services System -- This system contains biometrics data from the Army, Navy, and Air Force.

RCMI Relative Case Mix Index -- The military treatment facilities (MTF) CMI divided by the FY 85 DoD CMI. This calculation standardizes workload credit such that the average discharge across all of DoD receives a workload credit of 1.00. For a given MTF, an RCMI of 1.35 indicates that based on a case mix alone, the MTF's disposition should be 35% more resource intense than the DoD average, everything else being equal. Late records will impact on a hospital's CMI.

RWP Relative Weighted Products -- Dispositions from biometrics weighted by the MHSS relative cost weights. Each disposition from the Services' biometrics system is assigned to a DRG and weighted by the appropriate MHSS weight for that DRG in accordance with the rules for handling short and

Appendix A (cont'd)

long stay outliers and transfer cases. The sum of weighted dispositions for a Military Treatment Facility (MTF) is the total RWPs for that MTF.

Note.

Definitions and abbreviations are extracted from the multiple reports available from the U.S. Army, Health Services Command's Patient Administration Systems and Biostatistics Activity (PASBA) office and from Mayer (1988).

Appendix B

Calculation of the Medical Work Unit

Sample Calculation

DRG 198 TOTAL CHOLECYSTECTOMY W/O C.D.E. AGE < 70 W/O C.C.

CHAMPUS WEIGHT = 1.0987

GEOMETRIC MEAN LENGTH OF STAY (LOS) = 5.8 DAYS

SHORT STAY CUTOFF = 4 DAYS LONG STAY CUTOFF = 10 DAYS

Per Diem = CHAMPUS Weight/Geometric Mean LOS = 1.0987/5.8 = 0.1894

Calculating RWPS

1. If LOS < Short Stay Cutoff and patient transferred out:

   RWPS = Dispositions X LOS X Per Diem

   e.g. Two dispositions = 2 X 2 Days X 0.1894 = 0.3788 RWPS

2. If LOS < Short Stay Cutoff and patient not transferred:

   RWPS = Dispositions X LOS X Per Diem X 200%

   e.g. two dispositions = 2 X 2 Days X 0.1894 X 2 = 0.7576 RWPS

3. If LOS > Short Stay Cutoff and < Long Stay Cutoff:

   RWPS = Dispositions X CHAMPUS Weight

   e.g. 15 dispositions = 15 X 1.0987 = 16.4805 RWPS

4. If LOS > Long Stay Cutoff:

   RWPS = Dispositions X CHAMPUS Weight + Dispositions X 60% X CHAMPUS Weight

   e.g. one disposition with LOS of 12 days
   1 X 1.0987 + (0.6 X 1.0987 X 2) = 1.3259 RWPS

Appendix B (cont'd)

MTF WITH 20 PATIENTS IN DRG 198:

DAYS	CALCULATIONS	RWPS
2 (transferred to MEDCEN)	2 X 0.1894 =	0.3788
2	2 X 0.3788 =	0.7576
3	3 X 0.3788 =	1.1364
4, 4, 5, 6, 6, 6, 6, 6, 6, 7, 7, 7, 8, 9, 9	15 X 1.0987 =	16.4805
12	1.0987 + (2 X 0.1136)	1.3259
20	1.0987 + (10 X 0.1136)	2.2347
	RELATIVE WEIGHTED PRODUCTS (RWPS)	22.2762
	RWPS PER DISPOSITION (22.2762/20)	1.1138

Note:

1. The above illustration represents examples from all four rules set forth on the first page of this appendix.

2. RWPS per patient cannot exceed the CHAMPUS Weight for patients receiving 200% per diem accumulation of RWPS

** Example from Mayer (1988)

Appendix B (cont'd)

Incorporating RWPS of DRG 198 With Other Facility DRGs

DRG	BIOMETRICS DISPOSITIONS		RWPS	
015	10		7.2041	
021	21		12.2136	
039	47		32.7073	
062	74		29.6444	
069	215		101.3940	
090	124		116.6220	
134	81		55.8981	
155	40		84.2000	
160	124		101.8164	
186	94		39.3296	
198 (Cholecystectomy)	20		22.2762	
254	201		103.9974	
294	22		16.6232	
356	75		74.9925	
373	298		151.9800	
391	201		28.2204	
430	71		90.4966	
445	64		52.3264	
467	39		13.6539	
468	41		68.7898	
TOTAL	1,862	Dispositions	1,204.3859	RWPS

Case Mix Index (CMI or Mean RWPS) = TOTAL RWPS/TOTAL DISPOSITIONS = 0.6468

To compare to other DoD facilities, divide this MTF's CMI by the CMI of DoD during 1986 (0.8109) to obtain the Relative Case Mix Index (RCMI).

RCMI = MTF CMI / DoD CMI = 0.6469/0.8109 = 0.7976

Note. The RCMI is calculated by determining first the mean RWPS for dispositions from the MTF and then dividing by the DoD CMI. The result is now comparable to other DoD facilities, and direct comparison of average patients between facilities can be made.

Appendix B (cont'd)

CALCULATION OF INPATIENT WORK UNITS (IWU)

IWU = Medical Expense and Reporting Summary (MEPRS) Dispositions X RCMI

Normally the dispositions from an MTF's MEPRS system will indicate a larger number of dispositions than shown on the PASBA Biometric's Summary and will be used when calculating IWUs. The assumption is made that those dispositions which are not used in the RCMI calculations are similar to those used (Soule, 1988).

Thus, if the MEPRS dispositions = 1,987 then:

Total IWUs = 1,987 X 0.7976 = 1,584.8

CALCULATION OF AMBULATORY WORK UNITS (AWU)

The AWU was derived from analysis of 1985 MEPRS data and reflects relative cost for outpatient visits at the third subaccount level (Mayer, 1988). For example:

ORTHOPEDIC CLINIC SUBACCOUNTS

MEPRS CODE	SUBACCOUNT WORK CENTER	AWU WEIGHT
BEA	Orthopedic	0.0362
BEB	Cast	0.0200
BEC	Hand Surgery	0.0232
BED	Neuromusculoskeletal Screening	0.0133
BEE	Orthopedic Appliance	0.0326
BEF	Podiatry	0.0211

Total AWUs for the Orthopedic Clinic Subaccount is derived by multiplying the total clinic visits for each MEPRS code by the AWU Weight and then summing the products. One AWU reflects the same relative resource consumption as one IWU (Mayer, 1988). Thus AWUs and IWUs are able to be added together without conversion to produce the MWU.

Medical Work Unit (MWU)

Inpatient Work Unit (IWU) + Ambulatory Work Unit (AWU)

MWU = IWU + AWU

Appendix C

IPDS Age Codes

CODES	DEFINITION
T1	Newborn, Preterm (37 weeks or less gestation)
T2	Newborn, Term (38 through 41 weeks gestation)
T3	Newborn, Post-term (42 weeks or more gestation)
D0	0 DYS.....Less than one day
D1	1 DY.....One day, less than two
D2	2 DYS.....Two days, less than three
D3	3 DYS.....Three days, less than four
D4	4 DYS.....Four days, less than five
D5	5 DYS.....Five days, less than six
D6	6 DYS.....Six days, less than one week
W1	7 DYS-13 DYS....One week, less than two
W2	14 DYS-20 DYS...Two weeks, less than three
W3	21 DYS-27 DYS...Three weeks, less than four
W4	28 DYS-31 DYS...Four weeks to one month
M1	1 MO.....One month, less than two
M2	2 MOS.....Two months, less than three
M3	3 MOS.....Three months, less than four
M4	4 MOS.....Four months, less than five
M5	5 MOS.....Five months, less than six
M6	6 MOS.....Six months, less than seven
M7	7 MOS.....Seven months, less than eight
M8	8 MOS.....Eight months, less than nine
M9	9 MOS.....Nine months, less than ten
Y0	10 MOS-11 MOS...Ten months to one year
01	12 MOS-23 MOS...One year, less than two
02-98	2-98.....patient's age in years, 2 through 98 years
99	99 and older....patient's age in years, 99 or older

Appendix D

IPDS Patient Category Codes

CODES	TITLE
	Active Duty US Uniformed Services:
A10	Army
N10	Navy
M10	Marine Corps
F10	Air Force
C10	Coast Guard
P10	US Public Health Service
O10	National Oceanic and Atmospheric Administration
	Reserve/National Guard Personnel:
A20	Army
N20	Navy
M20	Marine Corps
F20	Air Force
C20	Coast Guard
P20	US Public Health Service
O20	National Oceanic and Atmospheric Administration
	Cadets of the Uniformed Services Academies:
A70	USMA, West Point, NY
N70	USNA, Annapolis, MD
F70	USAFA, Colorado Springs, CO
C70	USCGA, Cadet, New London, CT
	ROTC Cadets:
A80	Army ROTC Cadet
N80	Navy ROTC Cadet
F80	USAF ROTC Cadet
	US Uniformed Services Personnel Permanently Retired (Length of Service or PDRL):
A30	Army
N30	Navy
M30	Marine Corps
F30	Air Force
C30	Coast Guard
P30	US Public Health Service
O30	National Oceanic and Atmospheric Administration
	US Uniformed Services Personnel on TDRL:
A40	Army
N40	Navy
M40	Marine Corps
F40	Air Force
C40	Coast Guard
P40	US Public Health Service
O40	National Oceanic and Atmospheric Administration

Appendix D (cont'd)

CODES	TITLE
	Dependents of Active Duty Uniformed Services Personnel:
A50	Army
N50	Navy
M50	Marine Corps
F50	Air Force
C50	Coast Guard
P50	US Public Health Service
O50	National Oceanic and Atmospheric Administration
	Dependents of Retired/Deceased US Uniformed Services Personnel:
A60	Army
N60	Navy
M60	Marine Corps
F60	Air Force
C60	Coast Guard
P60	US Public Health Service
O60	National Oceanic and Atmospheric Administration
	Designees of the Secretaries of the Uniformed Services:
A90	Army
N90	Navy
F90	Air Force
	US Civilians Other Than Dependents of US Uniformed Services Personnel:
H10	Employees of Department of State and Associated Agencies
H20	Employees of Other Federal Departments
H30	Employees of Other Federal Agencies
H40	Nonmilitary Federal Beneficiaries With Special Status
H50	US Government Employee, NEC
J10	Dependents of Authorized Employees/Officers of US Federal
J20	Dependents and Preadoptive Children of DOD Employees at Remote Locations
J30	Dependents, employees of Federal Agency, NEC
K10	VA Beneficiary
K20	OWCP Beneficiary
K30	US Soldier's/Airmen's Home Beneficiary
K40	Beneficiary of Other Federal Agencies
K50	Seamen (Excl MSC/MSTS Vessels) and Employees of Contractors in Service to US Government
K60	Beneficiaries of Private Relief Acts of the US Congress
K70	Beneficiaries of Peace Corps/VISTA/Job Corps

Appendix D (cont'd)

CODES	TITLE
	Foreign Nationals:
S10	IMET/Foreign Military Sales Trainee Personnel
S20	Foreign Military Personnel
S30	Foreign National Civilian Personnel
S40	Dependents of Foreign Military Personnel
S50	Dependents of Foreign Civilian Personnel
S60	Other Foreign Nationals
	Prisoners:
Q10	Prisoners of War/Internees
R10	Other Prisoners
	Other Patient Categories, NEC
X10	Applicants/Registrants
X20	Designees, Secretary of Defense
X30	Civilian Claimants
X40	Other Authorized Patient Categories
X50	USO/Red Cross Dependent, NEC
X52	Former Spouse of AD/Retired (effective 1 Jun 83)
X60	Former Service Member - Maternity Care Only
X70	Other Patient Category, NEC

Appendix E

IPDS Source of Admission Codes

CODES	TITLE
0	Direct-Absent Sick
1	Direct
5	Transfer from USN-USAF dispensary
6	Transfer from US Army hospital
7	Transfer from US Navy hospital or hospital ship
8	Transfer from US Air Force hospital
9	Transfer from foreign military medical treatment facility
L	Live-born infants (newborn), delivered this MTF

Appendix F

IPDS Disposition Status Codes

CODES	TITLES
	US Uniform Service AD or ADT Patients Only:
A	To Duty
B	To Duty from TDRL
C	To PDRL from TDRL
D	AWOL (Dropped from Rolls)
	Separation/Retirement under the provision of AR 635-40:
E	PDRL
F	TDRL
G	Separation with Severance Pay
H	Separation without Severance Pay
I	Nondisability Separation of personnel identified in the Drug and Alcohol Abuse Prevention and Control Program at or after transfer or referral to VA or other nonmilitary MTF
	Separation under the provision of AR 635-200:
J	Failure to meet medical procurement standards
K	Unfitness or Unsuitability
L	Expiration Term or Service (ETS)
M	Separation under the provision of Other AR
	Patients other than AD or ADT US Uniform Service:
O	Discharged Home
P	Left Facility Against Medical Advice (AMA)
Q	Neonatal Death (Under 28 Days of Age)
	All Patients:
S	Transfer to Army MTF
T	Transfer to Navy MTF
U	Transfer to Air Force MTF
V	Maternal Death
W	Hospital Death, NEC

Appendix G

Multiple Regression Analysis

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Beginning Block Number 1. Method: Stepwise

Variable(s) Entered on Step Number 1: BEDDAYS

		Analysis of Variance	DF	Sum of Squares	Mean Square
Multiple R	.79057				
R Square	.62499				
Adjusted R Square	.62496	Regression	1	2833.74544	2833.74544
Standard Error	.40252	Residual	10494	1700.29602	.16203

F = 17489.49848 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.090184	6.8193E-04	.790565	132.248	.0000
(Constant)	.339501	.004646		73.079	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	SigT
MALE	.069127	.112882	.999993	11.637	.0000
AGE	.238174	.386599	.988033	42.940	.0000
ACTDUTY	.060024	.098017	.999989	10.089	.0000
DACTDUTY	-.184430	-.300509	.995611	-32.275	.0000
RETIREE	.135883	.221351	.995116	23.251	.0000
DRETIREE	.089974	.146799	.998273	15.202	.0000
AA	.106908	.174449	.998526	18.148	.0000
BA	.111743	.182401	.999191	19.003	.0000
BE	.023644	.038538	.996215	3.951	.0001
BI	.020968	.034224	.999039	3.508	.0005
CA	.008211	.013406	.999600	1.373	.1697
CB	-.058689	-.095835	.999939	-9.862	.0000
DA	-.008225	-.013421	.998426	-1.375	.1692
DB	-.232428	-.379282	.998583	-41.989	.0000
EA	.053964	.088097	.999435	9.059	.0000
EC	-.049407	-.080670	.999719	-8.290	.0000
ED	-.003703	-.006047	.999989	-.619	.5357
EF	-.016093	-.026270	.999327	-2.692	.0071
FA	.084239	.137548	.999814	14.225	.0000
FB	.030167	.049260	.999952	5.052	.0000
GA	-.011278	-.018214	.978108	-1.866	.0621
HA	.019776	.032264	.998155	3.307	.0009
HB	-.003017	-.004922	.998006	-.504	.6141
NODIAG	.097897	.154644	.935778	16.034	.0000
NOPROC	.087455	.139612	.955688	14.443	.0000
TRANSFIN	-.048313	-.078203	.982574	-8.035	.0000
TRANSOUT	-.024477	-.039949	.998911	-4.096	.0000

EXPLANATIONS: (Provided By PASBA)

B Sample unstandardized regression coefficient (to be used in final equation)

SE B Standard Error of B, tells how good B is. B - 1.96 (SE B) < B < B - 1.96 (SE B) where B is the population parameter of the unstandardized regression coefficient.

Beta Population standardized regression coefficient

T Computed B divided by SE B. This value used to compute Sig T

Sig T Significance of T, if less than .05 then null hypothesis is rejected at the .05 level of significance.

Beta In Value of Beta if variable would be in the equation.

Partial Partial Correlation coefficient.

Min Toler Minimum Tolerance of a variable is the smallest tolerance any variable already in the equation would have if this variable were included in the analysis. Tolerance of a variable is the proportion of its variance not accounted for by other independent variables in the equation.

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 2: AGE

Multiple R	.82525
R Square	.68104
Adjusted R Square	.68098
Standard Error	.37124

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	3087.86963	1543.93481
Residual	10493	1446.17183	.13782

F = 11202.33965 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.087212	6.3274E-04	.764511	137.833	.0000
AGE	.007262	1.6913E-04	.238174	42.940	.0000
(Constant)	.152468	.006110		24.954	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.058908	.104205	.986152	10.732	.0000
ACTDUTY	.072472	.128150	.985386	13.236	.0000
DACTDUTY	-.073470	-.106892	.670024	-11.012	.0000
RETIREE	-.019928	-.027510	.603501	-2.819	.0048
DRETIREE	-.008875	-.014314	.821255	-1.466	.1426
AA	.007848	.012575	.810346	1.288	.1977
BA	.064964	.112428	.944643	11.590	.0000
BE	.031247	.055195	.984743	5.662	.0000
BI	-.008136	-.014292	.973240	-1.464	.1432
CA	.004851	.008587	.987702	.880	.3791
CB	-.043511	-.076877	.983874	-7.898	.0000
DA	.066201	.112074	.904630	11.553	.0000
DB	-.155112	-.241876	.767393	-25.534	.0000
EA	.007195	.012482	.949027	1.279	.2010
EC	-.042540	-.075281	.987194	-7.733	.0000
ED	-.002284	-.004045	.987998	-.414	.6787
EF	.020312	.035537	.965282	3.642	.0003
FA	.081700	.144641	.987819	14.973	.0000
FB	.028451	.050375	.987982	5.166	.0000
GA	-.007393	-.012944	.966149	-1.326	.1849
HA	-.010680	-.018739	.971898	-1.920	.0549
HB	.006416	.011341	.986446	1.162	.2454
NODIAG	.026687	.043593	.851088	4.470	.0000
NOPROC	.046038	.078433	.925755	8.059	.0000
TRANSFIN	-.045832	-.080438	.970728	-8.266	.0000
TRANSOUT	-.042901	-.075697	.982219	-7.776	.0000

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 3: DB NEWBORN NURSERY

Multiple R	.83648
R Square	.69970
Adjusted R Square	.69962
Standard Error	.36024

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	3	3172.47622	1057.49207
Residual	10492	1361.56523	.12977

F = 8148.86174 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.087466	6.1406E-04	.766734	142.438	.0000
AGE	.005015	1.8622E-04	.164484	26.933	.0000
DB	-.310298	.012153	-.155112	-25.534	.0000
(Constant)	.250952	.007073		35.481	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.069730	.126755	.763133	13.089	.0000
ACTDUTY	.036284	.063355	.712015	6.502	.0000
DACTDUTY	-.060879	-.091006	.578186	-9.360	.0000
RETIREE	.023377	.032290	.449423	3.309	.0009
DRETIREE	.007834	.012942	.637073	1.326	.1850
AA	.017328	.028560	.641494	2.926	.0034
BA	.060398	.107666	.745015	11.092	.0000
BE	.018469	.033471	.763310	3.430	.0006
BI	-.012576	-.022753	.760741	-2.331	.0198
CA	-.004000	-.007283	.767142	-.746	.4557
CB	-.076717	-.136388	.739288	-14.101	.0000
DA	.027787	.046477	.652582	4.766	.0000
EA	.010342	.018486	.740827	1.894	.0583
EC	-.064359	-.116065	.758331	-11.969	.0000
ED	-.007120	-.012984	.767022	-1.330	.1835
EF	5.986E-04	.001068	.736496	.109	.9129
FA	.067753	.122898	.766059	12.684	.0000
FB	.023132	.042178	.767280	4.324	.0000
GA	-.019805	-.035598	.764954	-3.648	.0003
HA	-.007279	-.013158	.755537	-1.348	.1777
HB	-.005156	-.009358	.763081	-.959	.3378
NODIAG	.028429	.047856	.710278	4.907	.0000
NOPROC	.027177	.047271	.760544	4.847	.0000
TRANSFIN	-.049557	-.089604	.767028	-9.215	.0000
TRANSOUT	-.043131	-.078432	.763963	-8.058	.0000

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 4: CB OB

Multiple R	.83981
R Square	.70529
Adjusted R Square	.70518
Standard Error	.35689

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	4	3197.80379	799.45095
Residual	10491	1336.23766	.12737

F = 6276.60791 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.087627	6.0846E-04	.768149	144.015	.0000
AGE	.004590	1.8693E-04	.150543	24.556	.0000
DB	-.347918	.012332	-.173917	-28.214	.0000
CB	-.139743	.009910	-.076717	-14.101	.0000
(Constant)	.288078	.007485		38.485	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.047845	.080937	.739214	8.317	.0000
ACTDUTY	.017126	.029146	.654299	2.986	.0028
DACTDUTY	-.032200	-.045329	.577280	-4.647	.0000
RETIREE	.014219	.019738	.447542	2.022	.0432
DRETIREE	.002953	.004916	.627320	.504	.6146
AA	.004889	.008040	.636453	.823	.4103
BA	.050236	.089414	.731211	9.195	.0000
BE	.011057	.020126	.729654	2.062	.0393
BI	-.020191	-.036697	.737221	-3.761	.0002
CA	-.010750	-.019677	.734250	-2.016	.0439
DA	.010723	.017680	.617149	1.811	.0702
EA	.004916	.008847	.725024	.906	.3649
EC	-.079879	-.143208	.714143	-14.820	.0000
ED	-.010239	-.018832	.737890	-1.929	.0537
EF	-.007402	-.013262	.712918	-1.358	.1744
FA	.058359	.105801	.725549	10.897	.0000
FB	.019227	.035338	.737457	3.622	.0003
GA	-.028604	-.051575	.730172	-5.289	.0000
HA	-.009503	-.017333	.737009	-1.775	.0758
HB	-.011555	-.021097	.731802	-2.161	.0307
NODIAG	.041141	.069160	.683170	7.100	.0000
NOPROC	.056128	.093905	.731069	9.661	.0000
TRANSFIN	-.051943	-.094759	.738490	-9.749	.0000
TRANSOUT	-.041589	-.076326	.739282	-7.840	.0000

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 5: EC FP OB

Multiple R	.84340
R Square	.71133
Adjusted R Square	.71119
Standard Error	.35323

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	5	3225.20825	645.04165
Residual	10490	1308.83320	.12477

F = 5169.86190 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.087555	6.0224E-04	.767518	145.383	.0000
AGE	.004245	1.8648E-04	.139222	22.765	.0000
DB	-.381859	.012418	-.190883	-30.750	.0000
CB	-.165342	.009959	-.090771	-16.602	.0000
EC	-.184658	.012460	-.079879	-14.820	.0000
(Constant)	.322239	.007759		41.531	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.018036	.028472	.708755	2.917	.0035
ACTDUTY	.003607	.006121	.620203	.627	.5307
DACTDUTY	-.004664	-.006380	.540158	-.653	.5135
RETIREE	.003706	.005171	.447061	.530	.5964
DRETIREE	-.003145	-.005277	.622586	-.540	.5889
AA	-.008171	-.013427	.634183	-1.375	.1691
BA	.039885	.071043	.708392	7.294	.0000
BE	.003913	.007166	.702222	.734	.4630
BI	-.027726	-.050699	.710718	-5.199	.0000
CA	-.017148	-.031611	.707549	-3.239	.0012
DA	-.006228	-.010181	.593760	-1.043	.2971
EA	-5.408E-04	-.000981	.714116	-.100	.9200
ED	-.013153	-.024427	.712386	-2.502	.0123
EF	-.014799	-.026682	.692029	-2.734	.0063
FA	.049040	.089092	.696273	9.161	.0000
FB	.015540	.028827	.711762	2.954	.0031
GA	-.036662	-.066478	.702572	-6.823	.0000
HA	-.011896	-.021914	.714043	-2.245	.0248
HB	-.017632	-.032431	.705016	-3.323	.0009
NODIAG	.054710	.091936	.665103	9.456	.0000
NOPROC	.089029	.143836	.709144	14.886	.0000
TRANSFIN	-.053717	-.098993	.713198	-10.188	.0000
TRANSOUT	-.040950	-.075933	.714130	-7.799	.0000

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 6: NOPROC NUMBER OF PROCEDURES CODED

Multiple R	.84694
R Square	.71730
Adjusted R Square	.71714
Standard Error	.34957

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	6	3252.28649	542.04775
Residual	10489	1281.75497	.12220

F = 4435.74549 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.085622	6.0998E-04	.750576	140.370	.0000
AGE	.003713	1.8798E-04	.121763	19.751	.0000
DB	-.378662	.012291	-.189285	-30.807	.0000
CB	-.221307	.010549	-.121495	-20.980	.0000
EC	-.241180	.012902	-.104329	-18.693	.0000
NOPROC	.043487	.002921	.089029	14.886	.0000
(Constant)	.301961	.007799		38.720	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.013636	.021727	.640919	2.226	.0261
ACTDUTY	.004771	.008181	.619923	.838	.4022
DACTDUTY	-.006336	-.008758	.540022	-.897	.3698
RETIREE	.003426	.004830	.437306	.495	.6208
DRETIREE	-.002274	-.003855	.602569	-.395	.6930
AA	5.893E-04	.000974	.605368	.100	.9206
BA	.031392	.056161	.700794	5.761	.0000
BE	.001108	.002050	.701425	.210	.8337
BI	-.029944	-.055308	.706731	-5.673	.0000
CA	-.019519	-.036344	.707400	-3.724	.0002
DA	-.001140	-.001881	.580879	-.193	.8473
EA	.002783	.005097	.688917	.522	.6017
ED	-.014571	-.027341	.708239	-2.801	.0051
EF	-.013282	-.024193	.675595	-2.478	.0132
FA	.041092	.075010	.696273	7.704	.0000
FB	.012412	.023247	.708341	2.381	.0173
GA	-.022556	-.040594	.701336	-4.161	.0000
HA	-.014142	-.026314	.701148	-2.696	.0070
HB	-.021039	-.039069	.701601	-4.004	.0001
NODIAG	.034036	.055638	.657951	5.707	.0000
TRANSFIN	-.052006	-.096821	.708723	-9.962	.0000
TRANSOUT	-.034167	-.063754	.703889	-6.542	.0000

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 7: TRANSFIN

Multiple R	.84850
R Square	.71995
Adjusted R Square	.71977
Standard Error	.34795

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	7	3264.30209	466.32887
Residual	10488	1269.73936	.12107

F = 3851.85915 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.086446	6.1274E-04	.757795	141.080	.0000
AGE	.003667	1.8716E-04	.120273	19.595	.0000
DB	-.383148	.0[illegible]243	-.191528	-31.296	.0000
CB	-.223839	.0[illegible]0503	-.122885	-21.312	.0000
EC	-.243066	.012844	-.105144	-18.925	.0000
NOPROC	.042842	.002908	.087708	14.730	.0000
TRANSFIN	-.547963	.055003	-.052006	-9.962	.0000
(Constant)	.304270	.007766		39.181	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.015622	.024995	.640888	2.560	.0105
ACTDUTY	.006548	.011275	.619597	1.155	.2482
DACTDUTY	-.008106	-.011253	.539679	-1.152	.2491
RETIREE	.003932	.005569	.437061	.570	.5684
DRETIREE	-.003642	-.006202	.602464	-.635	.5253
AA	.001279	.002123	.604926	.217	.8279
BA	.032311	.058069	.700318	5.957	.0000
BE	5.736E-04	.001066	.700976	.109	.9131
BI	-.030320	-.056266	.706327	-5.771	.0000
CA	-.020524	-.038388	.706355	-3.934	.0001
DA	-8.973E-04	-.001487	.580640	-.152	.8790
EA	.003119	.005740	.688484	.588	.5567
ED	-.014983	-.028246	.707809	-2.894	.0038
EF	-.014171	-.025931	.675088	-2.656	.0079
FA	.041560	.076219	.695423	7.828	.0000
FB	.011887	.022367	.707909	2.291	.0220
GA	-.023268	-.042068	.700312	-4.312	.0000
HA	-.014116	-.026388	.700735	-2.703	.0069
HB	-.021522	-.040152	.701156	-4.115	.0000
NODIAG	.035473	.058244	.657363	5.975	.0000
TRANSOUT	-.030809	-.057628	.703249	-5.911	.0000

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 8: FA ORTHOPEDICS

Multiple R	.84946
R Square	.72158
Adjusted R Square	.72137
Standard Error	.34695

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	8	3271.67848	408.95981
Residual	10487	1262.36298	.12037

F = 3397.40756 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.086614	6.1136E-04	.759265	141.673	.0000
AGE	.003813	1.8755E-04	.125048	20.330	.0000
DB	-.367972	.012360	-.183942	-29.770	.0000
CB	-.208180	.010662	-.114288	-19.525	.0000
EC	-.227475	.012961	-.098400	-17.551	.0000
NOPROC	.040412	.002917	.082734	13.855	.0000
TRANSFIN	-.551723	.054848	-.052363	-10.059	.0000
FA	.110071	.014061	.041560	7.828	.0000
(Constant)	.289867	.007959		36.419	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.010316	.016446	.631778	1.684	.0922
ACTDUTY	-.002849	-.004811	.616234	-.493	.6223
DACTDUTY	.001166	.001601	.524395	.164	.8698
RETIREE	.007309	.010363	.436369	1.061	.2886
DRETIREE	-.001660	-.002832	.599114	-.290	.7718
AA	.008612	.014164	.604265	1.451	.1469
BA	.039921	.071070	.686674	7.296	.0000
BE	.004305	.007990	.681461	.818	.4132
BI	-.026561	-.049196	.690546	-5.044	.0000
CA	-.017334	-.032410	.687320	-3.321	.0009
DA	.006998	.011465	.565492	1.174	.2404
EA	.006077	.011189	.683371	1.146	.2519
ED	-.013493	-.025493	.693333	-2.611	.0090
EF	-.010971	-.020073	.666320	-2.056	.0398
FB	.013967	.026325	.692515	2.697	.0070
GA	-.020255	-.036627	.681152	-3.753	.0002
HA	-.012587	-.023582	.694449	-2.416	.0157
HB	-.018524	-.034560	.684848	-3.541	.0004
NODIAG	.040123	.065787	.654036	6.751	.0000
TRANSOUT	-.030161	-.056573	.695418	-5.802	.0000

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 9: BA GENERAL SURGERY

Multiple R	.85029
R Square	.72299
Adjusted R Square	.72275
Standard Error	.34609

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	9	3278.05453	364.22828
Residual	10486	1255.98692	.11978

F = 3040.87383 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.086719	6.1002E-04	.760190	142.158	.0000
AGE	.003684	1.8792E-04	.120811	19.603	.0000
DB	-.357819	.012408	-.178866	-28.838	.0000
CB	-.190393	.010911	-.104524	-17.449	.0000
EC	-.209480	.013162	-.090616	-15.916	.0000
NOPROC	.037684	.002933	.077150	12.847	.0000
TRANSFIN	-.559069	.054721	-.053060	-10.217	.0000
FA	.126278	.014201	.047679	8.892	.0000
BA	.085491	.011717	.039921	7.296	.0000
(Constant)	.280833	.008035		34.950	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.011242	.017964	.603641	1.840	.0658
ACTDUTY	-.004999	-.008451	.611366	-.865	.3868
DACTDUTY	.002647	.003640	.523968	.373	.7094
RETIREE	.010145	.014398	.431225	1.474	.1404
DRETIREE	-.002271	-.003884	.595125	-.398	.6909
AA	.026212	.040676	.574607	4.168	.0000
BE	.008470	.015672	.670557	1.605	.1085
BI	-.020970	-.038441	.679503	-3.939	.0001
CA	-.013283	-.024745	.676754	-2.535	.0113
DA	.012956	.021093	.565080	2.160	.0308
EA	.012076	.022042	.673866	2.258	.0240
ED	-.011743	-.022218	.684218	-2.276	.0229
EF	-.008659	-.015853	.661219	-1.624	.1045
FB	.016607	.031306	.683115	3.207	.0013
GA	-.016389	-.029554	.670323	-3.028	.0025
HA	-.009568	-.017911	.686669	-1.834	.0666
HB	-.015349	-.028603	.674622	-2.930	.0034
NODIAG	.049643	.080244	.641262	8.243	.0000
TRANSOUT	-.028782	-.054087	.686672	-5.546	.0000

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 10: NODIAG NUMBER OF DIAGNOSIS CODED

Multiple R	.85133
R Square	.72477
Adjusted R Square	.72451
Standard Error	.34499

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	10	3286.14190	328.61419
Residual	10485	1247.89955	.11902

F = 2761.05538 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.085833	6.1751E-04	.752423	139.000	.0000
AGE	.003235	1.9509E-04	.106080	16.580	.0000
DB	-.362260	.012380	-.181086	-29.261	.0000
CB	-.191082	.010877	-.104902	-17.567	.0000
EC	-.211025	.013121	-.091284	-16.083	.0000
NOPROC	.030036	.003068	.061492	9.791	.0000
TRANSFIN	-.571956	.054570	-.054283	-10.481	.0000
FA	.140569	.014262	.053075	9.856	.0000
BA	.103291	.011878	.048233	8.696	.0000
NODIAG	.021223	.002575	.049643	8.243	.0000
(Constant)	.259238	.008427		30.761	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.013559	.021713	.603549	2.224	.0262
ACTDUTY	8.607E-04	.001449	.611366	.148	.8821
DACTDUTY	-6.349E-04	-.000875	.500289	-.090	.9286
RETIREE	.007530	.010711	.414547	1.097	.2728
DRETIREE	-.005480	-.009382	.561724	-.961	.3367
AA	.018977	.029218	.551442	2.993	.0028
BE	.013565	.025017	.638250	2.562	.0104
BI	-.013418	-.024261	.632954	-2.485	.0130
CA	-.011666	-.021787	.640569	-2.231	.0257
DA	.007988	.012979	.516062	1.329	.1839
EA	.008526	.015559	.627204	1.593	.1111
ED	-.011250	-.021353	.640676	-2.187	.0288
EF	-.011105	-.020366	.608753	-2.086	.0370
FB	.020146	.037978	.641214	3.891	.0001
GA	-.018061	-.032651	.639255	-3.345	.0008
HA	-.004773	-.008906	.629231	-.912	.3618
HB	-.012513	-.023340	.637153	-2.390	.0168
TRANSOUT	-.030303	-.057094	.637561	-5.856	.0000

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 11: TRANSOUT

Multiple R	.85186
R Square	.72567
Adjusted R Square	.72538
Standard Error	.34444

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	11	3290.20973	299.10998
Residual	10484	1243.83172	.11864

F = 2521.13604 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.085926	6.1673E-04	.753241	139.325	.0000
AGE	.003321	1.9534E-04	.108930	17.003	.0000
DB	-.362483	.012361	-.181198	-29.325	.0000
CB	-.188472	.010869	-.103469	-17.340	.0000
EC	-.209112	.013105	-.090457	-15.957	.0000
NOPROC	.028436	.003075	.058216	9.247	.0000
TRANSFIN	-.550434	.054607	-.052240	-10.080	.0000
FA	.139119	.014241	.052527	9.769	.0000
BA	.101170	.011865	.047243	8.527	.0000
NODIAG	.021747	.002572	.050868	8.455	.0000
TRANSOUT	-.118573	.020250	-.030303	-5.856	.0000
(Constant)	.260589	.008417		30.959	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.015177	.024319	.601654	2.491	.0128
ACTDUTY	.001694	.002855	.611350	.292	.7701
DACTDUTY	-.001883	-.002598	.498876	-.266	.7903
RETIREE	.009014	.012834	.413902	1.314	.1888
DRETIREE	-.006261	-.010733	.558193	-1.099	.2718
AA	.019960	.030772	.549406	3.152	.0016
BE	.013216	.024412	.634658	2.500	.0124
BI	-.014346	-.025970	.629026	-2.660	.0078
CA	-.012598	-.023555	.636968	-2.412	.0159
DA	.007575	.012326	.514013	1.262	.2069
EA	.009994	.018249	.624269	1.869	.0617
ED	-.011369	-.021614	.636993	-2.213	.0269
EF	-.011582	-.021274	.605716	-2.179	.0294
FB	.019740	.037270	.637524	3.819	.0001
GA	-.017230	-.031189	.635430	-3.195	.0014
HA	-.005281	-.009869	.625450	-1.011	.3123
HB	-.012883	-.024067	.633590	-2.465	.0137

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 12: FB PODIATRY

Multiple R	.85209
R Square	.72605
Adjusted R Square	.72574
Standard Error	.34422

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	12	3291.93748	274.32812
Residual	10483	1242.10397	.11849

F = 2315.25040 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.085901	6.1637E-04	.753015	139.365	.0000
AGE	.003327	1.9522E-04	.109116	17.043	.0000
DB	-.359233	.012382	-.179573	-29.012	.0000
CB	-.184652	.010908	-.101372	-16.928	.0000
EC	-.205337	.013133	-.088824	-15.635	.0000
NOPROC	.027562	.003082	.056427	8.944	.0000
TRANSFIN	-.549323	.054573	-.052135	-10.066	.0000
FA	.142947	.014267	.053973	10.019	.0000
BA	.104892	.011897	.048981	8.817	.0000
NODIAG	.022530	.002579	.052701	8.737	.0000
TRANSOUT	-.117527	.020239	-.030036	-5.807	.0000
FB	.128562	.033667	.019740	3.819	.0001
(Constant)	.256657	.008475		30.286	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.013859	.022184	.599608	2.272	.0231
ACTDUTY	-.001554	-.002594	.611163	-.266	.7906
DACTDUTY	8.412E-04	.001155	.497432	.118	.9059
RETIREE	.010247	.014583	.413715	1.493	.1354
DRETIREE	-.005532	-.009484	.558180	-.971	.3316
AA	.022219	.034149	.549056	3.498	.0005
BE	.014364	.026511	.634577	2.715	.0066
BI	-.012973	-.023444	.629025	-2.401	.0164
CA	-.011698	-.021864	.636916	-2.239	.0252
DA	.009269	.015055	.513249	1.542	.1232
EA	.010714	.019565	.624265	2.004	.0451
ED	-.010978	-.020879	.636950	-2.138	.0325
EF	-.010933	-.020084	.605585	-2.057	.0397
GA	-.016485	-.029842	.635370	-3.057	.0022
HA	-.004662	-.008714	.625444	-.892	.3723
HB	-.012038	-.022484	.633513	-2.303	.0213

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 13: AA GENERAL MEDICINE

Multiple R	.85227
R Square	.72637
Adjusted R Square	.72603
Standard Error	.34404

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	13	3293.38598	253.33738
Residual	10482	1240.65548	.11836

F = 2140.38667 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.085961	6.1628E-04	.753546	139.483	.0000
AGE	.003053	2.1025E-04	.100130	14.521	.0000
DB	-.355766	.012415	-.177840	-28.656	.0000
CB	-.174771	.011262	-.095947	-15.519	.0000
EC	-.195084	.013450	-.084389	-14.505	.0000
NOPROC	.028398	.003089	.058139	9.193	.0000
TRANSFIN	-.552081	.054549	-.052397	-10.121	.0000
FA	.153403	.014570	.057921	10.529	.0000
BA	.118880	.012545	.055513	9.476	.0000
NODIAG	.021252	.002603	.049710	8.164	.0000
TRANSOUT	-.119302	.020234	-.030490	-5.896	.0000
FB	.138788	.033776	.021310	4.109	.0000
AA	.041949	.011991	.022219	3.498	.0005
(Constant)	.254558	.008491		29.979	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.012955	.020730	.548318	2.123	.0338
ACTDUTY	-.003210	-.005343	.525082	-.547	.5844
DACTDUTY	.003259	.004457	.453564	.456	.6482
RETIREE	.010430	.014851	.373556	1.521	.1284
DRETIREE	-.005632	-.009662	.489741	-.989	.3226
BE	.017175	.031427	.548962	3.219	.0013
BI	-.008499	-.014800	.524536	-1.515	.1297
CA	-.008848	-.016307	.548379	-1.670	.0950
DA	.012319	.019839	.469945	2.031	.0422
EA	.018975	.032720	.510747	3.352	.0008
ED	-.009811	-.018629	.549052	-1.908	.0565
EF	-.009878	-.018126	.529607	-1.856	.0635
GA	-.013018	-.023023	.548655	-2.358	.0184
HA	-.002003	-.003704	.530671	-.379	.7045
HB	-.010238	-.019028	.548382	-1.948	.0514

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 14: EA FP MEDICINE

Multiple R	.85244	Analysis of Variance			
R Square	.72666		DF	Sum of Squares	Mean Square
Adjusted R Square	.72630	Regression	14	3294.71418	235.33673
Standard Error	.34387	Residual	10481	1239.32727	.11825

F = 1990.24446 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.086005	6.1613E-04	.753933	139.591	.0000
AGE	.002860	2.1789E-04	.093804	13.127	.0000
DB	-.352820	.012440	-.176367	-28.361	.0000
CB	-.167095	.011487	-.091733	-14.546	.0000
EC	-.187148	.013650	-.080956	-13.710	.0000
NOPROC	.029033	.003094	.059439	9.385	.0000
TRANSFIN	-.553820	.054525	-.052562	-10.157	.0000
FA	.161237	.014749	.060878	10.932	.0000
BA	.129245	.012915	.060352	10.008	.0000
NODIAG	.020111	.002624	.047042	7.664	.0000
TRANSOUT	-.123190	.020257	-.031483	-6.081	.0000
FB	.146359	.033835	.022472	4.326	.0000
AA	.056027	.012700	.029676	4.412	.0000
EA	.064596	.019274	.018975	3.352	.0008
(Constant)	.252950	.008501		29.757	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.013394	.021440	.510293	2.195	.0282
ACTDUTY	-.004777	-.007930	.485626	-.812	.4169
DACTDUTY	.004959	.006769	.432578	.693	.4884
RETIREE	.011524	.016400	.351171	1.679	.0932
DRETIREE	-.005918	-.010157	.460108	-1.040	.2985
BE	.019293	.035121	.510623	3.598	.0003
BI	-.004673	-.007952	.475631	-.814	.4156
CA	-.006565	-.011994	.508235	-1.228	.2195
DA	.014879	.023812	.449965	2.438	.0148
ED	-.008912	-.016906	.510678	-1.731	.0835
EF	-.009006	-.016513	.496106	-1.691	.0909
GA	-.010036	-.017473	.507933	-1.789	.0736
HA	5.791E-06	.000011	.489001	.001	.9991
HB	-.008843	-.016387	.510673	-1.678	.0934

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 15: BE ORAL SURGERY

Multiple R	.85264
R Square	.72700
Adjusted R Square	.72661
Standard Error	.34367

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	15	3296.24286	219.74952
Residual	10480	1237.79859	.11811

F = 1860.54099 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.086121	6.1661E-04	.754944	139.668	.0000
AGE	.002848	2.1779E-04	.093405	13.077	.0000
DB	-.345015	.012621	-.172466	-27.337	.0000
CB	-.158407	.011732	-.086963	-13.502	.0000
EC	-.178430	.013856	-.077185	-12.878	.0000
NOPROC	.028175	.003101	.057682	9.086	.0000
TRANSFIN	-.553640	.054494	-.052544	-10.160	.0000
FA	.170072	.014944	.064214	11.381	.0000
BA	.138088	.013139	.064482	10.510	.0000
NODIAG	.020909	.002632	.048907	7.945	.0000
TRANSOUT	-.122995	.020246	-.031433	-6.075	.0000
FB	.155399	.033909	.023860	4.583	.0000
AA	.063546	.012864	.033658	4.940	.0000
EA	.072001	.019372	.021150	3.717	.0002
BE	.074548	.020722	.019293	3.598	.0003
(Constant)	.244012	.008852		27.567	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.012253	.019597	.510143	2.006	.0448
ACTDUTY	-.009723	-.015782	.483654	-1.616	.1062
DACTDUTY	.009886	.013284	.431191	1.360	.1739
RETIREE	.012928	.018382	.350497	1.882	.0599
DRETIREE	-.005489	-.009423	.459897	-.965	.3347
BI	-7.817E-04	-.001307	.473569	-.134	.8936
CA	-.004260	-.007728	.507935	-.791	.4289
DA	.020153	.031603	.448534	3.237	.0012
ED	-.007962	-.015092	.510545	-1.545	.1224
EF	-.007336	-.013404	.496106	-1.372	.1700
GA	-.007689	-.013295	.507622	-1.361	.1735
HA	.001605	.002943	.488486	.301	.7632
HB	-.006860	-.012645	.510568	-1.295	.1955

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 16: DA PEDIATRICS

Multiple R	.85280
R Square	.72727
Adjusted R Square	.72686
Standard Error	.34352

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	16	3297.47908	206.09244
Residual	10479	1236.56237	.11800

F = 1746.48910 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.086186	6.1666E-04	.755520	139.762	.0000
AGE	.003110	2.3227E-04	.102002	13.391	.0000
DB	-.324636	.014099	-.162279	-23.025	.0000
CB	-.144304	.012510	-.079221	-11.535	.0000
EC	-.164539	.014499	-.071176	-11.348	.0000
NOPROC	.028702	.003104	.058761	9.247	.0000
TRANSFIN	-.555204	.054471	-.052693	-10.193	.0000
FA	.182685	.015437	.068977	11.834	.0000
BA	.147481	.013450	.068868	10.965	.0000
NODIAG	.019917	.002648	.046589	7.521	.0000
TRANSOUT	-.122766	.020237	-.031375	-6.066	.0000
FB	.167405	.034096	.025703	4.910	.0000
AA	.071973	.013119	.038122	5.486	.0000
EA	.080819	.019554	.023740	4.133	.0000
BE	.088420	.021151	.022883	4.180	.0000
DA	.052674	.016274	.020153	3.237	.0012
(Constant)	.224681	.010675		21.048	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
MALE	.012067	.019308	.448243	1.977	.0481
ACTDUTY	-.003537	-.005404	.396903	-.553	.5802
DACTDUTY	.005131	.006741	.403039	.690	.4902
RETIREE	.010040	.014145	.304297	1.448	.1476
DRETIREE	-.007103	-.012157	.401538	-1.244	.2134
BI	.003828	.006227	.433522	.637	.5239
CA	-5.960E-04	-.001057	.448518	-.108	.9138
ED	-.006416	-.012112	.448315	-1.240	.2150
EF	-.002966	-.005229	.419730	-.535	.5925
GA	-.002745	-.004556	.448193	-.466	.6410
HA	.002534	.004641	.434283	.475	.6347
HB	-.003586	-.006480	.445620	-.663	.5071

Appendix G (cont'd)

Equation Number 1 Dependent Variable: CASEWGT (CASE WEIGHT)

Variable(s) Entered on Step Number 17: MALE

		Analysis of Variance	DF	Sum of Squares	Mean Square
Multiple R	.85286				
R Square	.72737				
Adjusted R Square	.72693	Regression	17	3297.94009	193.99648
Standard Error	.34347	Residual	10478	1236.10136	.11797

F = 1644.44045 Signif F = .0000

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
BEDDAYS	.086193	6.1659E-04	.755582	139.791	.0000
AGE	.003122	2.3231E-04	.102385	13.438	.0000
DB	-.323502	.014109	-.161712	-22.929	.0000
CB	-.134777	.013405	-.073991	-10.055	.0000
EC	-.155038	.015273	-.067066	-10.151	.0000
NOPROC	.028401	.003107	.058145	9.141	.0000
TRANSFIN	-.558463	.054489	-.053002	-10.249	.0000
FA	.179117	.015540	.067629	11.526	.0000
BA	.147480	.013448	.068868	10.966	.0000
NODIAG	.020133	.002650	.047094	7.597	.0000
TRANSOUT	-.124597	.020255	-.031843	-6.151	.0000
FB	.162995	.034164	.025026	4.771	.0000
AA	.070846	.013130	.037525	5.396	.0000
EA	.081358	.019554	.023898	4.161	.0000
BE	.086141	.021179	.022293	4.067	.0000
DA	.052370	.016273	.020037	3.218	.0013
MALE	.015908	.008047	.012067	1.977	.0481
(Constant)	.215037	.011735		18.324	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
ACTDUTY	-.008239	-.011973	.394036	-1.226	.2204
DACTDUTY	.011044	.013732	.395883	1.406	.1599
RETIREE	.004844	.006092	.277605	.624	.5329
DRETIREE	-.002936	-.004576	.395770	-.468	.6395
BI	.001498	.002387	.431799	.244	.8070
CA	.002368	.004059	.418282	.415	.6778
ED	-.005376	-.010090	.447964	-1.033	.3017
EF	-.002859	-.005041	.419422	-.516	.6059
GA	-.003248	-.005386	.447929	-.551	.5815
HA	.002508	.004596	.434002	.470	.6381
HB	-.003895	-.007038	.445383	-.720	.4713

Appendix H

The Diagnosis Related Group (DRG) Based Methodology Transition Impact Program

MAIN MODULE

```
code = 1500
project "drgcolor"
include "glob_drg.pro"


PREDICATES

  start
  main_menu
  process_main_menu(integer)
  data_status
  rcmas_file
  load_databases1
  load_databases2
  change_hospitals(SELECTION)
  error


CLAUSES

start:-  % Call from goal
         makewindow(9,31,0,"",1,0,9,80),
         makewindow(30,31,0,"",10,0,9,6),
         makewindow(31,31,0,"",10,6,9,4),
         makewindow(32,31,0,"",10,12,9,8),
         makewindow(33,31,0,"",10,20,9,60),
         makewindow(16,31,0,"",2,28,6,16),
         makewindow(20,31,0,"",2,45,6,13),
         makewindow(17,31,0,"",2,62,6,13),
         makewindow(1,31,145,"",0,0,24,80),

         load_databases1, load_databases2,

         cursorform(0,8), data_status,
         main_menu,

           /******* exit from program *********/

         shiftwindow(1), clearwindow,
         makewindow(3,110,110,"",10,23,7,35), shiftwindow(3),nl,
         write("        Thank You For Using"),nl,nl,
         write("The DRG Impact Prediction Program"),pause,
```

Appendix H (cont'd)

```
/*****************************************************************************
        Loads all databases up front
*****************************************************************************/
load_databases1:- makewindow(2,31,0,"",0,0,25,80),
        file_str("main0.txt",Text0),write(Text0),
        makewindow(5,110,110,"",21,25,3,29),
        write("        LOADING PROGRAM"),
        rcmas_file, shiftwindow(5),clearwindow,attribute(111),
        write(" PRESS ANY KEY TO CONTINUE"),readchar(_),attribute(110),
        removewindow(5,1),
        shiftwindow(1),clearwindow,
        file_str("main1.txt",Text1),write(Text1),patience,
        cursor(20,3),write("Loading Databases"),
        cursor(20,69),write("   "),
        consult("mdc1.db1",mdc1),cursor(20,21),write("    "),
        consult("mdc2.db1",mdc2),cursor(20,23),write("    "),
        consult("mdc3.db1",mdc3),cursor(20,25),write("    "),
        consult("mdc4.db1",mdc4),cursor(20,27),write("    "),
        consult("mdc5.db1",mdc5),cursor(20,29),write("    "),
        consult("mdc6.db1",mdc6),cursor(20,31),write("    "),
        consult("mdc7.db1",mdc7),cursor(20,33),write("    "),
        consult("mdc8.db1",mdc8),cursor(20,35),write("    "),
        consult("mdc9.db1",mdc9),cursor(20,37),write("   "),
        consult("mdc10.db1",mdc10),cursor(20,39),write("   "),
        consult("mdc11.db1",mdc11),cursor(20,41),write("   "),
        consult("mdc12.db1",mdc12),cursor(20,43),write("   "),!.

load_databases2:-
        consult("mdc13.db1",mdc13),cursor(20,45),write("   "),
        consult("mdc14.db1",mdc14),cursor(20,47),write("   "),
        consult("mdc15.db1",mdc15),cursor(20,49),write("   "),
        consult("mdc16.db1",mdc16),cursor(20,51),write("   "),
        consult("mdc17.db1",mdc17),cursor(20,53),write("   "),
        consult("mdc18.db1",mdc18),cursor(20,55),write("   "),
        consult("mdc19.db1",mdc19),cursor(20,57),write("   "),
        consult("mdc20.db1",mdc20),cursor(20,59),write("   "),
        consult("mdc21.db1",mdc21),cursor(20,61),write("   "),
        consult("mdc22.db1",mdc22),cursor(20,63),write("   "),
        consult("mdc23.db1",mdc23),cursor(20,65),write("   "),
        consult("mdc24.db1",mdc24),cursor(20,67),write("   "),
        consult("mdclist.db1",mdclist),cursor(20,68),write("   "),
        removewindow(22,0),pause,!.
/*****************************************************************************
        Searches for the RCMAS processed file.  If it exists it is
        imported.  If it does not exist the predicate succeeds.  If
        an error is found in the consultation process the "error"
        predicate is called from a trap.
        A longmenu should eventually be used to assist in locating
        the RCMAS file.
*****************************************************************************/
rcmas_file:-not(existfile("rcmas.out")),!.
rcmas_file:-trap(consult("rcmas.out",top_drgs),_,error),!.
```

Appendix H (cont'd)

```
rcmas_file:-existfile("c:\\rcmas\\rcmas.out"),
        trap(consult("c:\\rcmas\\rcmas.out",top_drgs),_,error),!.
rcmas_file:-!.

error:-makewindow(2,110,238," ERROR ",18,26,5,30),
       file_str("error.txt",TEXT),write(TEXT), pause, removewindow(2,1),!.


/*****************************************************************************
        data_status breaks up what would be too large a predicate.
*****************************************************************************/
data_status:- current,data_1_status, data_2_status,!.


/*****************************************************************************
        If a hospital has been selected during another session it
        is saved in the "current.db1" database file.  At the start
        of each session the user is given the option of changing this
        hospital.  If no prior hospital has been selected, the current
        allows predicate displays a longmenu of all 37 HSC facilities
        to chose from.  The chosen hospital then becomes the "current"
        hospital for future sessions.
*****************************************************************************/
current:-existfile("current.db1"),consult("current.db1",current_hospital),
        current_hospital(_,NAME,_,_,_,_),
        shiftwindow(1),clearwindow,file_str("main2.txt",Text),
        write(Text),str_len(Name,Space), Space1=(80-Space)/2-1,
        Space2 = round(Space1),cursor(11,Space2),attribute(30),write(Name),
        attribute(31),
        longmenu(16,21,2,111,110,
        ["   YES, Keep The Current Hospital",
         " NO, Provide A List of Alternatives "],"",1,CHOICE),
        change_hospitals(CHOICE),!.

current:-consult("mtf.db1",all_hospitals),
        findall(Name,mtf(_,Name,_,_,_,_),L),
        repeat,shiftwindow(1), clearwindow,
        makewindow(22,113,0,"",23,0,1,80),
write("     There Are 37 Facilities to Choose From, Use PgUp,PgDown, Home, End or"),
        longmenu(3,16,15,111,110,L,"Select A Hospital",1,Choice),
        mtf(Choice,NAME,CATEGORY,RATE,DISP,RWPS),removewindow(22,1),
        openwrite(this_hospital,"current.db1"),writedevice(this_hospital),
        write("current_hospital(",Choice, ',' ,'"', NAME,'"', ',' ,
        '"', CATEGORY, '"',',' ,  RATE, ',' , DISP, ',' ,RWPS,  ')'),
        closefile(this_hospital), consult("current.db1",current_hospital),
        shiftwindow(1),clearwindow,retractall(mtf(_,_,_,_,_,_)),!.
```

Appendix H (cont'd)

```
/*****************************************************************************
        longmenu predicate calls from "current"
*****************************************************************************/
change_hospitals(1).

change_hospitals(2):-deletefile("current.db1"),
        retractall(current_hospital(_,_,_,_,_,_)),
        trap(deletefile("rcmas.out"),_,true),
        retractall(top_drgs(_,_,_,_,_,_)),current,!.

/*****************************************************************************
        Writes into a window the DRG Allocation Rate, MEPRS Dispositions,
        Total RWPS and the MCCU Allocation Rate for the current hospital.
*****************************************************************************/
data_1_status:-
        shiftwindow(1), clearwindow, cursor(0,14),
        write("All Calculations Are Based on FY 1988 Data For:"),
        current_hospital(_,NAME,_,RATE,DISP,RWPS),
        retract(money(_)),pay_for_mccu(MCCU_MONEY),
        retract(originalMoney(_)),assert(originalMoney(RATE)),
        str_len(Name,Space), Space1=(80-Space)/2-2,
        Space2 = round(Space1),cursor(1,Space2),attribute(30),
        write(Name), attribute(31),
        assert(money(RATE)),retract(old(_,_,_,_,_,_)),
        assert(old(DISP,RWPS,0,0,0,0)),
        makewindow(2,110,110,"",4,2,11,37),

        makewindow(3,110,0,"",6,4,1,33),
        writef("DRG Allocation Rate =  $%0.2",RATE),

        makewindow(4,110,0,"",8,4,1,33),
        write("MEPRS Dispositions =  ",DISP),

        makewindow(5,110,0,"",10,4,1,33),
        writef("Total RWPS =  %0.2",RWPS),

        makewindow(7,110,0,"",12,4,1,33),
        writef("MCCU Allocation Rate = $%0.2",MCCU_MONEY),

        makewindow(6,110,110,"",4,41,11,37),!.

/*****************************************************************************
        Writes into a window the CMI, RCMI, IWU and IP Reimbursement
        for the current hospital.  Longmenu selection allows the user
        to change the information in data_1_status predicate call.
*****************************************************************************/
data_2_status:- repeat, calculate(CMI,RCMI,IWU,MONEY),
        shiftwindow(6),clearwindow, nl,
        writef(" CMI = %0.4",CMI),nl, nl,
        writef(" RCMI = %0.4",RCMI),nl, nl,
        writef(" IWU = %0.2",IWU),nl, nl,
        writef(" IP Reimbursement = $%0.2",MONEY),
```

Appendix H (cont'd)

```
        longmenu(16,24,6,111,110,
        ["            ACCEPT",
         "  Change DRG Allocation Rate",
         "   Change MEPRS Dispositions  ",
         "      Change Total RWPS",
         "  Change MCCU Allocation Rate",
         "     Definition of Terms"],"",1,CHOICE), data(CHOICE), CHOICE=1,
        shiftwindow(1),clearwindow,removewindow(7,1),
        removewindow(6,1), removewindow(5,1), removewindow(4,1),
        removewindow(3,1), removewindow(2,1),!.

/*****************************************************************************
        data_2_status longmenu choices.
*****************************************************************************/
data(1):- !.

data(2):- %% CHANGE DRG ALLOCATION RATE
        shiftwindow(3),clearwindow,
        write("DRG Allocation Rate =  "),readreal(RATE2),
        retract(money(_)), assert(money(RATE2)),
        current_hospital(Choice,NAME,CATEGORY,_,DISP,RWPS),
        retract(current_hospital(_,_,_,_,_,_)),
        assert(current_hospital(Choice,NAME,CATEGORY,RATE2,DISP,RWPS)),
        nl,writef("DRG Allocation Rate =  $%0.2",RATE2),!.

data(3):- %% CHANGE MEPRS DISPOSITIONS
        shiftwindow(4),clearwindow,
        write("MEPRS Dispositions =  "), readreal(DISP2),
        old(_,RWPS,CMI,RCMI,IWU,MONEY),
        retract(old(_,_,_,_,_,_)),
        assert(old(DISP2,RWPS,CMI,RCMI,IWU,MONEY)),
        retract(last(_,_,_,_,_,_)),
        assert(last(DISP2,RWPS,CMI,RCMI,IWU,MONEY)),
        current_hospital(CHOICE,NAME,CATEGORY,RATE,_,_),
        retract(current_hospital(_,_,_,_,_,_)),
        assert(current_hospital(CHOICE,NAME,CATEGORY,RATE,DISP2,RWPS)),
        nl,write("MEPRS Dispositions =  ",DISP2),!.

data(4):- %% CHANGE TOTAL RWPS
        shiftwindow(5),clearwindow,
        write("Total RWPS =  "), readreal(RWPS2),
        old(DISP,_,CMI,RCMI,IWU,MONEY),
        retract(old(_,_,_,_,_,_)),
        assert(old(DISP,RWPS2,CMI,RCMI,IWU,MONEY)),
        retract(last(_,_,_,_,_,_)),
        assert(last(DISP,RWPS2,CMI,RCMI,IWU,MONEY)),
        current_hospital(Choice,NAME,CATEGORY,RATE,_,_),
        retract(current_hospital(_,_,_,_,_,_)),
        assert(current_hospital(Choice,NAME,CATEGORY,RATE,DISP,RWPS2)),
        nl,write("Total RWPS =  ",RWPS2),!.
```

Appendix H (cont'd)

```
data(5):- %% CHANGE MCCU ALLOCATION RATE
        shiftwindow(7),clearwindow,
        write("MCCU Allocation Rate =  "),readreal(MCCU_MONEY),
        retract(pay_for_mccu(_)),assert(pay_for_mccu(MCCU_MONEY)),
        nl,writef("MCCU Allocation Rate =  $%0.2",MCCU_MONEY),!.

data(6):-define,!.  %% CALLS DEFINITIONS MODULE

/*****************************************************************************
        Performs all the calculations and database corrections
        for data_2_status.   Declutters the predicate.
*****************************************************************************/
calculate(CMI,RCMI,IWU,MONEY):-   old(DISP,RWPS,_,_,_,_),money(RATE),
        CMI=RWPS/DISP, RCMI=CMI/0.8109, IWU=DISP*RCMI,
        MONEY=RATE*IWU,
        retract(old(_,_,_,_,_,_)),
        assert(old(DISP,RWPS,CMI,RCMI,IWU,MONEY)),
        retract(last(_,_,_,_,_,_)),
        assert(last(DISP,RWPS,CMI,RCMI,IWU,MONEY)),!.

/*****************************************************************************
                                    MAIN MENU
*****************************************************************************/
main_menu:- repeat,clearwindow,
        longmenu(7,23,6,111,110,
        [ "  Change Case Mix Of Facility  ",
          "       Examine Data Status",
          "    Change Current Hospital ",
          "       Import RCMAS Data",
          "           DOS Shell        " ,
          "             QUIT"],"Main Menu", 1, CHOICE),
        shiftwindow(1),clearwindow,
        trap(process_main_menu(CHOICE),_,true),
        shiftwindow(1),clearwindow,CHOICE=6,!.

/*****************************************************************************
        Main Menu longmenu calls
*****************************************************************************/
process_main_menu(1) :-   %% CHANGE CASE MIX OF FACILITY
        changeCaseMix,!.

process_main_menu(2) :-   %%  EXAMINE DATA STATUS FOR CURRENT HOSPITAL
        data_1_status, data_2_status,
        shiftwindow(1),clearwindow,!.

process_main_menu(3) :-   %%  CHANGE THE CURRENT HOSPITAL
                          %%  Eliminate the RCMAS output file so as not
                          %%  to make a RCMAS comparison with the wrong
                          %%  facility
        existfile("rcmas.out"),deletefile("rcmas.out"),
```

Appendix H (cont'd)

```
        deletefile("current.db1"),retract(top_drgs(_,_,_,_,_,_)),
        retract(current_hospital(_,_,_,_,_,_)),
        current, data_1_status, data_2_status,
        shiftwindow(1),clearwindow,!.

process_main_menu(3):-    %% CHANGE THE CURRENT HOSPITAL
        deletefile("current.db1"),
        retract(current_hospital(_,_,_,_,_,_)),
        current, data_1_status, data_2_status,
        shiftwindow(1),clearwindow,!.

process_main_menu(4) :-   %% GO TO THE RCMAS IMPORTING MODULE
        rcmas_top,!.

process_main_menu(5):-    %% DOS SHELL SELECTION
        system(""),!.

process_main_menu(6).     %% QUIT PROGRAM


/*****************************************************************************
        Allows a delay in execution of program at any point
        predicate is called with a number.  The delay is only
        through recursion processing.
*****************************************************************************/
delay(0):-!.
delay(N):-N1=N-1,delay(N1).

/*****************************************************************************
        Allows a stop point for backtracking
*****************************************************************************/
repeat.
repeat :- repeat.

/*****************************************************************************
                    "Longmenu Statusline"
*****************************************************************************/
arrowkey_statusline:- makewindow(21,113,0,"",24,0,1,80),
 write("    Make Selection With Arrow Keys, Then Press <RETURN> or F10 To Continue"),!.
/*****************************************************************************
                    "Please Be Patient Statusline"
                  window 22 must be removed afterwards
*****************************************************************************/
patience:-  makewindow(WINDOW,_,_,_,_,_,_,_),makewindow(22,113,0,"",24,0,1,80),
        write("                    Please Be Patient While Processing Occurs"),
        shiftwindow(WINDOW),!.
/*****************************************************************************
                        "PAUSE  Statusline"
*****************************************************************************/
pause:- makewindow(23,113,0,"",24,0,1,80),
        write("                              Press Any Key To Continue"),
        readchar(_),removewindow(23,1),!.
```

Appendix H (cont'd)

```
/*************************************************************************
                    Initial Database Assertions
*************************************************************************/

old(0,0,0,0,0,0).
last(0,0,0,0,0,0).
new(0,0,0,0,0,0).
change(0,0,0,0,0,0).
money(0).
originalMoney(0).
total_disp(0).
pay_for_mccu(22.23).
top_drgs(0,0,"",0,0,0).
scenarioDb(0,0,0,0).
scenarioWindowDb(0,0).

Goal start.
```

Appendix H (cont'd)

POPUP MENU MODULE

```
/*****************************************************************************
        This Popup menu is adapted from TURBO PROLOG's Toolbox.
        The code in raw form is copyrighted and may not be used
        without ownership of the original software or permission
        from BORLAND International Inc., Scotts Valley, CA 95066.
        It is provided for educational purposes only.  The executable
        program using this code is not copyright protected and
        may be copied without violating copyright law.
*****************************************************************************/

project "drgcolor"
include "glob_drg.pro"


PREDICATES

  longmenuinit(ROW,COL,integer,integer,integer,STRINGLIST,STRING,ROW,COL,ROW,COL,ROW)
  longmenu1(SYMBOL,ROW,COL,ROW,COL,WATTR,STRINGLIST,ROW,ROW,ROW,ROW,ROW,
      ROW)
  longmenu2(SYMBOL,ROW,ROW,ROW,ROW,ROW,ROW,KEY)
  longmenu3(ROW,ROW,ROW,ROW,ROW,ROW)
  wr_part_if_changed(ROW,ROW,ROW,COL,STRINGLIST)
  write_part_list(ROW,ROW,ROW,ROW,COL,STRINGLIST)
  max(ROW,ROW,ROW)
  max(COL,COL,COL)
  max(LEN,LEN,LEN)
  max(INTEGER,INTEGER,INTEGER)
  min(ROW,ROW,ROW)
  min(COL,COL,COL)
  min(LEN,LEN,LEN)
  min(INTEGER,INTEGER,INTEGER)
  adjustwindow(ROW,COL,ROW,COL,ROW,COL)
  adjframe(FATTR,ROW,COL,ROW,COL)
  reverseattr(integer,ATTR)              /* Returns the reversed attribute   */
  readkey2(KEY,INTEGER)
  writelist(ROW,COL,STRINGLIST)          /* used in the menu predicates      */

CLAUSES
 longmenu(ROW,COL,MAXH,WATTR,FATTR,STRINGLIST,HEADER,STCHOICE,CHOICE):-
        arrowkey_statusline,
        longmenuinit(ROW,COL,MAXH,WATTR,FATTR,STRINGLIST,HEADER,AROW,ACOL,
        HEIGHT,LEN,NOOFROW),
        STOFFSET=STCHOICE-1,
        longmenu3(NOOFROW,HEIGHT,0,STOFFSET,BASE,OFFSET),
        longmenu1(cont,AROW,ACOL,HEIGHT,LEN,WATTR,STRINGLIST,NOOFROW,-1,BASE,
        OFFSET,BASE1,OFFS1),
        CHOICE = BASE1 + OFFS1+1,
        removewindow,removewindow(21,1).
```

Appendix H (cont'd)

```
longmenuinit(ROW,COL,MAXH,WATTR,FATTR,STRINGLIST,HEADER,AROW,ACOL,
        HEIGHT,NOOFCOL,NOOFROW):-
        maxlen(STRINGLIST,0,MAXNOOFCOL),
        str_len(HEADER,HEADLEN),
        HEADL1=HEADLEN+4,
        max(HEADL1,MAXNOOFCOL,NOOFCOL),
        listlen(STRINGLIST,N), N > 0 , NOOFROW=N,
        min(NOOFROW,MAXH,HEIGHT),
        adjframe(FATTR,HEIGHT,NOOFCOL,HH1,HH2),
        adjustwindow(ROW,COL,HH1,HH2,AROW,ACOL),
        makewindow(81,WATTR,FATTR,HEADER,AROW,ACOL,HH1,HH2).

longmenu1(cont,ROW,COL,H,W,ATTR,STRINGLIST,NOOFROW,OLDBASE,BASE,OFFS,
        BASE2,OFFS2) :-!,
        wr_part_if_changed(OLDBASE,BASE,H,W,STRINGLIST),
        reverseattr(ATTR,REV),
        field_attr(OFFS,0,W,REV),
        cursor(OFFS,0),
        readkey(KEY),
        longmenu2(STOP,H,NOOFROW,BASE,OFFS,BASE1,OFFS1,KEY),
        field_attr(OFFS,0,W,ATTR),
        longmenu1(STOP,ROW,COL,H,W,ATTR,STRINGLIST,NOOFROW,BASE,BASE1,OFFS1,
        BASE2,OFFS2).
longmenu1(esc,_,_,_,_,_,_,_,_,OB,OF,OB,OF):-!.
longmenu1(_,_,_,_,W,ATTR,_,_,_,OB,OF,OB,OF):-
        reverseattr(ATTR,REV),
        field_attr(OF,0,W,REV).


longmenu2(esc,_,_,_,_,0,-1,esc)          :-!.
longmenu2(stop,_,_,B,O,B,O,fkey(10))     :-!.
longmenu2(selection,_,_,B,O,B,O,cr)      :-!.
longmenu2(cont,_,_,_,_,0,0,home)                 :-!.
longmenu2(cont,H,LEN,_,_,B1,O1,end)      :-!, O1=H-1, B1 = LEN-H.
longmenu2(cont,H,LEN,B,O,B1,O1,up)       :-!, OO=O-1,longmenu3(LEN,H,B,OO,B1,O1).
longmenu2(cont,H,LEN,B,O,B1,O1,down)     :-!, OO=O+1,longmenu3(LEN,H,B,OO,B1,O1).
longmenu2(cont,H,LEN,B,O,B1,O1,pgup)     :-!, OO=O-H+1,longmenu3(LEN,H,B,OO,B1,O1).
longmenu2(cont,H,LEN,B,O,B1,O1,pgdn)     :-!, OO=O+H-1,longmenu3(LEN,H,B,OO,B1,O1).
longmenu2(cont,_,_,B,O,B,O,_).

longmenu3(_,H,B,O,B,O)           :-O>=0, O<H, !.
longmenu3(LEN,H,B1,O1,B2,O2)     :-O1+B1>=LEN,!, O2=H-1, B2=LEN-H.
longmenu3(_,_,B1,O1,0,0)                 :-O1+B1<0,!.
longmenu3(_,_,B1,O1,B2,0)        :-O1<0, !, B2=B1+O1.
longmenu3(_,H,B1,O1,B2,O2)       :-O1>=H, O2=H-1, B2=B1+O1-O2.

wr_part_if_changed(B,B,_,_,_)  :- !.
wr_part_if_changed(OLDB,B,H,W,CL) :-
        SCROLL=B-OLDB, scroll(SCROLL,0),
        write_part_list(0,B,0,H,W,CL).

write_part_list(_,_,H,H,_,_) :- !.
write_part_list(I,B,R,H,W,[_|T]) :- I<B,!, I1=I+1,write_part_list(I1,B,R,H,W,T).
```

Appendix H (cont'd)

```
write_part_list(I,B,R,H,W,[STR|T]) :- field_str(R,0,W,STR), R1=R+1,write_part_list(I,B,R1,H,W,T).
/*****************************************************************/
/* adjustwindow takes a windowstart and a windowsize and adjusts */
/* the windowstart so the window can be placed on the screen.    */
/* adjframe looks at the frameattribute: if it is different from */
/* zero, two is added to the size of the window                  */
/*****************************************************************/
adjustwindow(LI,KOL,DLI,DKOL,ALI,AKOL):-
        LI<25-DLI,KOL<80-DKOL,!,ALI=LI,AKOL=KOL.
adjustwindow(LI,_,DLI,DKOL,ALI,AKOL):-
        LI<25-DLI,!,ALI=LI,AKOL=80-DKOL.
adjustwindow(_,KOL,DLI,DKOL,ALI,AKOL):-
        KOL<80-DKOL,!,ALI=25-DLI, AKOL=KOL.
adjustwindow(_,_,DLI,DKOL,ALI,AKOL):-
        ALI=25-DLI, AKOL=80-DKOL.

adjframe(0,R,C,R,C):-!.
adjframe(_,R1,C1,R2,C2):-R2=R1+2, C2=C1+2.

/*****************************************************************/
/*                          Readkey                              */
/* Returns a symbolic key from the KEY domain                    */
/*****************************************************************/
readkey(KEY):-readchar(T),char_int(T,VAL),readkey1(KEY,T,VAL).

readkey1(KEY,_,0):-!,readchar(T),char_int(T,VAL),readkey2(KEY,VAL).
readkey1(cr,_,13):-!.
readkey1(esc,_,27):-!.
readkey1(break,_,3):-!.
readkey1(tab,_,9):-!.
readkey1(bdel,_,8):-!.
readkey1(ctrlbdel,_,127):-!.
readkey1(char(T),T,_) .

readkey2(btab,15):-!.
readkey2(del,83):-!.
readkey2(ins,82):-!.
readkey2(up,72):-!.
readkey2(down,80):-!.
readkey2(left,75):-!.
readkey2(right,77):-!.
readkey2(pgup,73):-!.
readkey2(pgdn,81):-!.
readkey2(end,79):-!.
readkey2(home,71):-!.
readkey2(ctrlleft,115):-!.
readkey2(ctrlright,116):-!.
readkey2(ctrlend,117):-!.
readkey2(ctrlpgdn,118):-!.
readkey2(ctrlhome,119):-!.
readkey2(ctrlpgup,132):-!.
readkey2(ques,63):-!.
readkey2(fkey(N),VAL):- VAL>58, VAL<70, N=VAL-58, !.
```

Appendix H (cont'd)

```
readkey2(fkey(N),VAL):- VAL>=84, VAL<104, N=11+VAL-84, !.
readkey2(otherspec,_).
maxlen([H|T],MAX,MAX1) :- str_len(H,LENGTH), LENGTH>MAX,!,
        maxlen(T,LENGTH,MAX1).
maxlen([_|T],MAX,MAX1) :- maxlen(T,MAX,MAX1).
maxlen([],LENGTH,LENGTH).
listlen([],0).
listlen([_|T],N):-
        listlen(T,X),
        N=X+1.

writelist(_,_,[]).
writelist(LI,ANTKOL,[H|T]):-
        field_str(LI,0,ANTKOL,H),
        LI1=LI+1,
        writelist(LI1,ANTKOL,T).

min(X,Y,X):-X<=Y,!.
min(_,X,X).

max(X,Y,X):-X>=Y,!.
max(_,X,X).

/*****************************************************************************
        Makes visible the bar of the menu
*****************************************************************************/
reverseattr(A1,A2):-
        bitand(A1,$07,H11),
        bitleft(H11,4,H12),
        bitand(A1,$70,H21),
        bitright(H21,4,H22),
        bitand(A1,$08,H31),
        A2=H12+H22+H31.
```

Appendix H (cont'd)

DEFINITIONS MODULE

```
project "drgcolor"
include "lob_drg.pro"

PREDICATES

definition(integer)


CLAUSES

define:- repeat,
        longmenu(16,29,6,111,110,
        [ "        RWPS ",
          "        CMI ",
          "        RCMI",
          "       DoD CMI",
          "        IWU",
          "  Return To Menu "],"Define",6,CHOICE),
        definition(CHOICE), CHOICE=6,!.

definition(1):-makewindow(90,111,110,"",16,0,8,80),
        file_str("rwps.txt",Text),write(Text),pause,removewindow(90,1),!.
definition(2):-makewindow(90,111,110,"",16,0,8,80),
        file_str("cmi.txt",Text),write(Text),pause,removewindow(90,1),!.
definition(3):-makewindow(90,111,110,"",16,0,8,80),
        file_str("rcmi.txt",Text),write(Text),pause,removewindow(90,1),!.
definition(4):-makewindow(90,111,110,"",16,0,8,80),
        file_str("dod_cmi.txt",Text),write(Text),pause,removewindow(90,1),!.
definition(5):-makewindow(90,111,110,"",16,0,8,80),
        file_str("iwu.txt",Text),write(Text),pause,removewindow(90,1),!.
definition(6):-!.
```

Appendix H (cont'd)

CMI MANIPULATION MODULE

```
code = 2500
project "drgcolor"
include "glob_drg.pro"


DOMAINS

RWPS, AGE, SERVICE, GeoMean, MTF_ALOS, DoD_ALOS, DRG_PAYMENT = real
OLD_DISP, New_ALOS, MTF_MCCU_PAYMENT_EACH, ALOS = real
DIAGNOSES, PROCEDURES, CHANGE_RWPS, RCMI2, RATE, NewRate= real
ScenarioDisp,CURRENT_DISP,DRG, ChangeInDisp = integer
ServiceName, MdcName = string


PREDICATES

delete(string,stringlist,stringlist)
more
background
update1(ChangeInDisp,PICK,MDC,ALOS)
update2(ChangeInDisp,PICK,MDC)
update3(ChangeInDisp,CHANGE_RWPS)
totalChange
processMore(SELECTION)
oldPlus
bonus(RCMI2,RATE,NewRate)
change_alos(SELECTION,ALOS,New_ALOS)
rwps(GeoMean,WT,ST,LT,integer,real,real)
ranges(real,real,real,real,real)
ask(SELECTION,PICK,MDC)
write_ask(PICK,MDC,ChangeInDisp,ALOS)
howmany(integer,real,MdcName,GeoMean,ST,LT,integer,real)
benefit(DRG_PAYMENT,MTF_MCCU_PAYMENT_EACH,OLD_DISP)
grammer(ChangeInDisp,STRING,COL)
noRCMAS
noRCMAS(SELECTION)
delete_any_blanks(stringlist,stringlist)
howmanymore(SELECTION,OLD_DISP,ChangeInDisp)
nowhowmanymore(SELECTION,ChangeInDisp)
heart
scenario(DRG,OLD_DISP,MTF_ALOS,DoD_ALOS)
changeDRGs(DRG,OLD_DISP,CURRENT_DISP,MTF_ALOS,DoD_ALOS)
plusMinus(integer,OLD_DISP,ChangeInDisp)
showScenarioChange(DRG)
removeScenarioWindow
service(integer,SERVICE)
age(SELECTION,AGE)
procedures(integer,PROCEDURES)
diagnoses(integer,DIAGNOSES)
```

Appendix H (cont'd)

```
again(integer)
serviceList(stringlist)
window34
extract(SELECTION,stringlist,ServiceName,stringlist)

CLAUSES

changeCaseMix:- shiftwindow(1),clearwindow, noRCMAS, background,repeat,
        shiftwindow(12),
        resizewindow(19,51,5,26),
        longmenu(19,3,4,111,110,
        ["      Mass Changes In Hospital Workload  ",
         "    Changes to Specific Diagnostic Groups ",
         "              Return To Main Menu          "],
         " Make Changes To Facility CMI Through: ",2,PICK),
        shiftwindow(12), resizewindow(19,49,5,26),
        changeCaseMix(PICK),PICK = 3,removewindow(12,1),!.


/*****************************************************************************
        Prior to entering this module, a check is made for a processed
        RCMAS output file.  If none is present, the user is prompted to
        receive information on importing the RCMAS data.
*****************************************************************************/
noRCMAS:- not(existfile("rcmas.out")),file_str("change.txt",Text1),
        write(Text1), repeat,
        longmenu(17,20,2,111,110,
        [" Information On Importing RCMAS Data ",
         "      Continue Without RCMAS Data "],
         "",1,PICK),
        noRCMAS(PICK),!.
noRCMAS:-!.

noRCMAS(1):- rcmas_top,existfile("rcmas.out"),!.  % noRCMAS longmenu selections
noRCMAS(2):-!.

/*****************************************************************************
        Writes the background to the screen and initial
        database information in the current window
*****************************************************************************/
background:-shiftwindow(1),clearwindow,
        attribute(27),
        file_str("backgrnd.txt",Text1),write(Text1),
        attribute(31),
        old(DISP,RWPS,CMI,RCMI,IWU,MONEY),
        cursor(1,14),write(DISP),
        cursor(2,14),writef("%0.2",RWPS),
        cursor(3,14),writef("%0.4",CMI),
        cursor(4,14),writef("%0.4",RCMI),
        cursor(5,14),writef("%0.2",IWU),
        cursor(6,14),writef("$%0.2" ,MONEY),
        ranges(_,_,OldRate,_,_),
```

Appendix H (cont'd)

```
        makewindow(12,110,110,"",19,49,5,26),
        write(" Supply Allocation Rate"),nl,
        write("          Per IWU         "),nl,
        writef("          $%0.2",OldRate      ),!.


changeCaseMix(1):-%% Option Only Available For Fort Ord
        current_hospital(15,_,_,_,_,_), % Fails If Not Fort Ord
        repeat,serviceList(LIST),shiftwindow(12),
        resizewindow(19,5,5,26),
        longmenu(9,48,13,111,110,LIST,
        " Select A Change To: ",12,PICK),service(PICK,SERVICE),
        shiftwindow(12),resizewindow(19,49,5,26),
        last(OLD_DISP,_,_,_,_,_),
        howmanymore(2,OLD_DISP,ChangeInDisp),
        extract(PICK,LIST,ServiceName,_),
        window34,writef("%7.0     %30",ChangeInDisp,ServiceName),nl,
        longmenu(20,5,2,111,110,
        ["  Using 1988 Mean of 27.24 Years ",
         "         Using Another Mean         "],
         " Select A Mean Age For Additions ",1,CHOICE),
        age(CHOICE,AGE),
        longmenu(20,5,2,111,110,
        ["          Using 1988 Mean of 1.27 ",
         "             Using Another Mean     "],
         " Select A Mean Number of Procedures ",1,SELECT),
        procedures(SELECT,PROCEDURES),
        longmenu(20,5,2,111,110,
        ["         Using 1988 Mean of 2.109   ",
         "            Using Another Mean      "],
         "  Select A Mean Number of Diagnoses ",1,GOTIT),
        diagnoses(GOTIT,DIAGNOSES),
        makewindow(60,110,110,"1988 Average",19,27,5,52),
        write("        Do You Wish To Accept 3.635 Days As"),nl,
        write("  Representative of the Average Length of Stay?"),nl,
        grammer(ChangeInDisp,STR,COL),cursor(2,COL),write(STR),
        longmenu(19,1,3,111,110,
        [ "  NO: Select Another    " ,
          "  NO: SAME DAY SURGERY ",
          " YES: Accept As Is    " ],"",3,ALOS_CHOICE),
        removewindow(60,1),
        change_alos(ALOS_CHOICE,3.635,New_ALOS),

/*************************** Regression Formula ****************************/
        CHANGE_RWPS = ChangeInDisp*  % Total Change in RWPS
        ((New_ALOS*0.086186) +
        (AGE*0.003110) +
        SERVICE +
        (DIAGNOSES*0.019917) +
        (PROCEDURES*0.028702) -
        0.0056191 +                  % Adjustment for Transfered In/Outs
        0.224681),                 % Regression Equation Constant
/***************************************************************************/
```

Appendix H (cont'd)

```
        update3(ChangeInDisp,CHANGE_RWPS), shiftwindow(12),
        resizewindow(19,51,5,26),
        longmenu(19,2,3,111,110,
        [" Clear All Entries and Make New Mass Change ",
         "          Reselect Change Option              ",
         "        Make Another Mass Change               "],
         "",2,ANOTHER), shiftwindow(12),
        resizewindow(19,49,5,26),
        again(ANOTHER),ANOTHER = 2,!.


changeCaseMix(1):- %% Notice That Only Fort Ord Is Allowed This Option
        makewindow(60,110,238,"NOTICE",10,24,8,32),
        file_str("ord.txt",TEXT),write(TEXT),
        pause,removewindow,fail,!.

changeCaseMix(2):-repeat,
        longmenu(17,5,5,111,110,
        ["    From Those DRGs Seen By This MTF    ",
         "          From A List of MDCs            ",
         "      By Typing a Known DRG Number       ",
         "",
         "            Import RCMAS Data            "],
         " Select A DRG To View And/Or Change ",1,WHICH),
        ask(WHICH,PICK,MDC), % Returns Pick & MDC which = a DRG

        write_ask(PICK,MDC,ChangeInDisp,ALOS),
                        % Returns Disposition Change and either
                        % geometric mean (if never seen)
                        % or current Average Length of Stay (if seen)

        update1(ChangeInDisp,PICK,MDC,ALOS),
                        % Allows change in Average Length of Stay
                        % Calculates relative weighted product change
                        % Calls Update3 predicate which
                        % delineates changes from update

        removeScenarioWindow,removewindow(2,1),
        update2(ChangeInDisp,PICK,MDC), more,!.

changeCaseMix(3):-!.


/*****************************************************************************
              Provides a stringlist of all services
*****************************************************************************/
serviceList([" General Surgery ",
             " General Medicine ",
             " Pediatrics ",
             " Obstetrics ",
             " Newborn Nursery ",
             " Orthopedics ",
```

Appendix H (cont'd)

```
        " Podiatry ",
        " Oral Surgery",
        " Family Practice: Medicine ",
        " Family Practice: Obstetrics ",
        " Other Single Service  ",
        " Hospital Globally "]).

/*****************************************************************************
        Blinking indication on window that DRG has been changed
                        during the scenario
*****************************************************************************/
window34:-existwindow(34),shiftwindow(34),!.
window34:-makewindow(34,110,110," Mass Changes Made ",9,1,9,44),
        write("Dispositions              Service"),nl,!.


/*****************************************************************************
                    Predicates For ChangeCaseMix(1)
                            Service Choice
*****************************************************************************/
service(1,SERVICE):- SERVICE = 0.147481,!.    % BA General Surgery
service(2,SERVICE):- SERVICE = 0.071973,!.    % AA General Medicine
service(3,SERVICE):- SERVICE = 0.052674,!.    % DA Pediatrics
service(4,SERVICE):- SERVICE = -0.144304,!.   % CB Obstetrics
service(5,SERVICE):- SERVICE = -0.324636,!.   % DB Newborn Nursery
service(6,SERVICE):- SERVICE = 0.182685,!.    % FA Orthopedics
service(7,SERVICE):- SERVICE = 0.167405,!.    % FB Podiatry
service(8,SERVICE):- SERVICE = 0.08842,!.     % BE Oral Surgery
service(9,SERVICE):- SERVICE = 0.080819,!.    % EA Family Practice: Medicine
service(10,SERVICE):- SERVICE = -0.164539,!.  % EC Family Practice: Obstetrics
service(11,SERVICE):- SERVICE = 0,!.          % Other Single Service
service(12,SERVICE):- SERVICE = -0.0280458,!./* All Services Increased      *
                                              * VIA Multiplying Above by
                                              * service Contribution then
                                              * Summing Totals             */
/*****************************************************************************
                    Predicates For ChangeCaseMix(1)
                            Age Choice
*****************************************************************************/
age(1,AGE):- AGE = 27.242,!.
age(2,AGE):- makewindow(61,110,110,"1988 Mean Was 27.242 Years ",20,0,3,48),
        write(" The New Mean Age In Years Is = "),repeat,
        readreal(AGE), removewindow,!.

/*****************************************************************************
                    Predicates For ChangeCaseMix(1)
                            Procedures Choice
*****************************************************************************/
procedures(1,PROCEDURES):- PROCEDURES = 1.266,!.
```

Appendix H (cont'd)

```
procedures(2,PROCEDURES):-
        makewindow(61,110,110,"1988 Mean Was 1.266 ",20,0,3,48),
        write(" The New Mean Number Of Procedures Is = "),repeat,
        readreal(PROCEDURES), removewindow,!.

/*****************************************************************************
                    Predicates For ChangeCaseMix(1)
                          Diagnoses Choice
*****************************************************************************/
diagnoses(1,DIAGNOSES):- DIAGNOSES = 2.109,!.
diagnoses(2,DIAGNOSES):-
        makewindow(61,110,110,"1988 Mean Was 2.109 ",20,0,3,48),
        write(" The New Mean Number Of Diagnoses Is = "),repeat,
        readreal(DIAGNOSES), removewindow,!.
again(3):-!.                                    %% Make Another Mass Change
again(_):-removewindow(34,1),processMore(1),!.  %% Clear Screen and do again
                                                %%  Or return to main menu


/*****************************************************************************
        ask(1  is for selecting a DRG from the actual DRGs seen
         by the facility as found in the processed RCMAS file,
                              RCMAS.OUT
*****************************************************************************/
                        /***********************
                          no RCMAS DRGs exist
                         ***********************/
ask(1,_,_):- not(existfile("rcmas.out")),    /* Ensures That MTF DRG db */
                                             /* Database Is Not Present */
        makewindow(11,110,110,"",19,2,5,30),
        write("       MTF DRGs Have Not "),nl,
        write("        Been Processed"),nl,
        write(" STRIKE ANY KEY TO CONTINUE"),pause,
        removewindow(11,1),!,fail.
ask(1,PICK,MDC):-findall(Name,top_drgs(_,_,Name,_,_,_),TOPONES1),
        delete_any_blanks(TOPONES1,TOPONES),
        listlen(TOPONES,LENGTH),makewindow(10,110,110,"",16,1,8,34),
        file_str("drgbox.txt",Text1),write(Text1),cursor(3,24),
        writef("%-4.0",LENGTH),
        longmenu(16,37,6,111,110,TOPONES,
        "MTF DRGs                Dispositions",1,SELECTION),
        top_drgs(SELECTION,DRG,_,_,_,_),listem(DRG,PICK,MDC),
        removewindow(10,1),!.
```

Appendix H (cont'd)

```
/*****************************************************************************
        ask(2  is for selecting a DRG from first a Major Diagnostic
        Category (MDC) and then a listing of DRGs within the selected MDC.
*****************************************************************************/
ask(2,PICK,MDC):- patience,findall(Name,mdclist(_,Name),L),removewindow(22,1),
        makewindow(10,110,110,"",14,3,10,34),
        file_str("mdcbox.txt",Text1),write(Text1), /* description MDCs */
        longmenu(14,38,8,111,110,L,"Major Diagnostic Categories",
        1,SELECTION),
        MDC=SELECTION,removewindow(10,1),
        mdclist(MDC,Name), mdc(MDC,List), /* returns DRGs for a MDC */
        concat("MDC",Name,HEADER),
        longmenu(14,0,8,111,110,List,HEADER,1,PICK1), PICK1 = PICK,
        removewindow(10,1),!.

/*****************************************************************************
        ask(3  is for selecting a DRG by typing the number of
        a known DRG.
*****************************************************************************/
ask(3,PICK,MDC):- makewindow(11,110,110,"",19,5,5,26),
        file_str("drgnumbr.txt",Text1),write(Text1),
        makewindow(15,110,110,"",20,36,3,8),      % Entry Window
        repeat,readint(Choice), Choice<474,Choice>0,
        listem(Choice,PICK,MDC),not(Choice = 500),
        removewindow(15,1),removewindow(11,1),!.

/*****************************************************************************
        ask(5  enters the RCMAS import module for processing
        RCMAS output.
*****************************************************************************/
ask(5,PICK,MDC):-rcmas_top, PICK = 0,MDC = 0,!.

/*****************************************************************************
        write_ask first determines the user has not requested
        information about Heart Transplants (DRG 103) or DRG 438
        which is not used.  Thereafter the predicate coordinates
        the return of the change in dispositions for the scenario
        and what the average length of stay will be for the change.
        If there is no change in dispositions, then the "0" for
        change in dispositions causes all predicates to succeed
        without writing a change to the windows.
*****************************************************************************/
write_ask(PICK,MDC,ChangeInDisp,ALOS):-
        PICK = 6,MDC = 20,heart,ChangeInDisp=0,ALOS=0,!.
write_ask(PICK,MDC,ChangeInDisp,ALOS):-
        PICK = 1,MDC = 5,heart,ChangeInDisp=0,ALOS=0,!.

write_ask(PICK,MDC,ChangeInDisp,ALOS):-
        mdclist(MDC,MdcName),
        which(PICK,MDC,DRG,Name,WT,GeoMean,ST,LT),
        makewindow(2,111,111,Name,0,10,19,60),
        howmany(DRG,WT,MdcName,GeoMean,ST,LT,ChangeInDisp,ALOS),!.
```

Appendix H (cont'd)

```
heart:-makewindow(60,110,238,"ERROR",6,20,13,40),
        file_str("heart.txt",TEXT),write(TEXT),pause,removewindow(60,1),!.


/*****************************************************************************
        This predicate succeeds if the facility has treated
        patients with the called DRG
*****************************************************************************/
howmany(DRG,WT,MdcName,GeoMean,ST,LT,ChangeInDisp,MTF_ALOS):-

        scenario(DRG,OLD_DISP,MTF_ALOS,DoD_ALOS), not(OLD_DISP=0),
        cursor(0,26),write("DRG ",DRG),
        file_str("margin.txt",TEXT),write(TEXT),
        str_len(MdcName,MDC_Length),(58- (22 +MDC_Length))/2=MDC_COL1,
        MDC_COL = round(MDC_COL1),
        frontstr(2,MdcName,_,MdcNameShorter),
        cursor(1,MDC_COL),attribute(110),
        writef("Weight %0.4  MDC %0.40",WT,MdcNameShorter),
        attribute(111),
        cursor(2,35),writef("%3.1 Days",ST),
        cursor(3,35),writef("%3.1 Days",LT),
        current_hospital(_,NAME,_,_,_,_),
        str_len(NAME,NAME_LENGTH),
        str_int(Str_OLD_DISP,OLD_DISP), str_len(Str_OLD_DISP,Str_OLD_DISP_Len),
        str_int(Str_DRG,DRG), str_len(Str_DRG,Str_DRG_Len),
        COL1 = (50-NAME_LENGTH)/2, COL = round(COL1),
        cursor(13,COL), writef("In 1988 %0.56",NAME),
        31 + Str_OLD_DISP_Len+Str_DRG_Len=TOTAL,
        Space1=(58-TOTAL)/2, Space2 = round(Space1),
        cursor(14,Space2),
        write("Saw ",OLD_DISP," Patient(s) Coded With DRG ",DRG),
        cursor(4,35),writef("%3.1 Days",DoD_ALOS),
        cursor(5,35),writef("%3.1 Days",MTF_ALOS),
        pay_for_mccu(MCCU_RATE),

        /**************      Calculates DRG PAYMENTS    ************************/
        rwps(GeoMean,WT,ST,LT,OLD_DISP,MTF_ALOS,RWPS),  % Calculates RWPS

        money(RATE), CMI=RWPS/OLD_DISP, RCMI=CMI/0.8109,IWU=OLD_DISP*RCMI,

                        /** Total **/
        DRG_PAYMENT =       RATE*IWU,

                        /** Each **/
        MarginDRGPay = RCMI*RATE,


        /**************      Calculates MCCU Payments  ************************/

                    /****   MTF ALOS  *******/

                        /** Total **/
        MTF_MCCUPayTotal = (( (10*OLD_DISP) + OLD_DISP*MTF_ALOS )* MCCU_RATE),
```

Appendix H (cont'd)

```
                        /** Each **/
        MCCUPayForMTF = MTF_MCCUPayTotal/OLD_DISP,

                    /****   DoD ALOS  *******/

                        /** Total **/
        DoD_MCCUPayTotal = (( (10*OLD_DISP) + OLD_DISP*DoD_ALOS )* MCCU_RATE),

                        /** Each **/
        DoD_MCCUPayEach = DoD_MCCUPayTotal/OLD_DISP,


        benefit(MarginDRGPay,MCCUPayForMTF,OLD_DISP),
        attribute(110),
        cursor(9,40),writef("$%7.2",DRG_PAYMENT),
        cursor(9,26),writef("$%6.2",MarginDRGPay),
        cursor(10,40),writef("$%7.2",DoD_MCCUPayTotal),
        cursor(10,26),writef("$%6.2",DoD_MCCUPayEach),
        cursor(11,40),writef("$%7.2",MTF_MCCUPayTotal),
        cursor(11,26),writef("$%6.2",MCCUPayForMTF),attribute(111),
        showScenarioChange(DRG),
        longmenu(19,5,3,111,110,
        [" Eliminate This Category Of Care   ",
         "       Add/Subtract Patients        ",
         "   Continue Current Level of Care   "],
         "",2,CHOICE),
         howmanymore(CHOICE,OLD_DISP,ChangeInDisp),
         changeDRGs(DRG,OLD_DISP,ChangeInDisp,MTF_ALOS,DoD_ALOS),!.
/*************************************************************************
        This second predicate succeeds if the facility has not
        treated patients with the called DRG
*************************************************************************/
howmany(DRG,_,MdcName,_,ST,LT,ChangeInDisp,ALOS):-listem(DRG,PICK,MDC),
        cursor(0,26),write("DRG ",DRG),
        which(PICK,MDC,_,_,WT,ALOS,_,_),
        pay_for_mccu(MCCU_RATE),money(RATE),
        file_str("margin2.txt",TEXT),write(TEXT),
        str_len(MdcName,MDC_Length),(58- (22 +MDC_Length))/2=MDC_COL1,
        MDC_COL = round(MDC_COL1),
        frontstr(2,MdcName,_,MdcNameShorter),
        cursor(1,MDC_COL),attribute(110),
        writef("Weight %0.4 From MDC %0.40",WT,MdcNameShorter),
        cursor(3,36),writef("%4.1 Days",ST),
        cursor(4,36),writef("%4.1 Days",LT),
        cursor(5,36),writef("%4.1 Days",ALOS),

        MCCUPayForMTF
                = (10 + ALOS)*MCCU_RATE,

        MarginDRGPay
                = (WT/0.8109) * RATE,
```

Appendix H (cont'd)

```
        cursor(10,35),writef("$%6.2",MarginDRGPay),
        cursor(11,35),writef("$%6.2",MCCUPayForMTF),attribute(111),
        benefit(MarginDRGPay,MCCUPayForMTF,0),
        showScenarioChange(DRG),
        longmenu(20,5,2,111,110,
        [" Add Patients In This Category ",
         "       Make No Changes"],
         "",1,CHOICE),
        nowhowmanymore(CHOICE,ChangeInDisp),

        changeDRGs(DRG,0,ChangeInDisp,ALOS,ALOS),!.
/*****************************************************************************
        Calculates the difference in reimbursement between the
        MCCU system and DRG system in this order:
        1. If no patients were seen with this DRG and the marginal
           reimbursement under the DRG system is positive.
        2. If patients were seen with this drg and the marginal
           reimbursement under the DRG system is positive
        3. if no patients were seen with this DRG and the marginal
           reimbursement under the DRG system is negative
        4. If patients were seen with this DRG and the marginal
           reimbursement under the DRG system is negative
*****************************************************************************/
benefit(MarginDRGPay,MCCUPayForMTF,OLD_DISP):-OLD_DISP = 0,

        MarginDRGPay - MCCUPayForMTF = MARGIN, MARGIN >= 0, cursor(15,4),
        writef("For A Marginal Gain Under the DRG System of $%0.2",MARGIN),!.

benefit(MarginDRGPay,MCCUPayForMTF,OLD_DISP):-
        MarginDRGPay - MCCUPayForMTF = MARGIN, MARGIN >= 0,
        cursor(15,4),TotalPay = MARGIN * OLD_DISP,
        writef("For A Marginal Gain Under the DRG System of $%0.2",MARGIN),
        str_real(StrTotalPay,TotalPay),str_len(StrTotalPay,LENGTH),
        (58-(37+LENGTH))/2=COL1,round(COL1)=COL,cursor(16,COL),
        writef("And A Total Gain With the DRG System of $%0.2",TotalPay),!.


benefit(MarginDRGPay,MCCUPayForMTF,OLD_DISP):-OLD_DISP = 0,
        MarginDRGPay - MCCUPayForMTF = MARGIN1, MARGIN1 < 0,
        MARGIN = MARGIN1*-1, cursor(15,4),
        writef("For A Marginal Loss Under the DRG System of $%0.2",MARGIN),!.


benefit(MarginDRGPay,MCCUPayForMTF,OLD_DISP):-
        MarginDRGPay - MCCUPayForMTF = MARGIN1, MARGIN1 < 0,
        MARGIN =MARGIN1*-1, TotalPay = MARGIN * OLD_DISP, cursor(15,4),
        writef("For A Marginal Loss Under the DRG System of $%0.2",MARGIN),
        str_real(StrTotalPay,TotalPay),str_len(StrTotalPay,LENGTH),
        (58-(37+LENGTH))/2=COL1,round(COL1)=COL,cursor(16,COL),
        writef("And A Total Loss With the DRG System of $%0.2",TotalPay),!.
```

Appendix H (cont'd)

```
/*************************************************************************
                    Returns the change in dispositions
                    to the howmany predicate used when
                    there are already dispositions
                    being seen
*************************************************************************/
howmanymore(1,OLD_DISP,ChangeInDisp):- ChangeInDisp = OLD_DISP * -1 ,!.

howmanymore(2,OLD_DISP,ChangeInDisp):-

        longmenu(19,5,3,111,110,
        ["          Add Patients              ",
         "       Subtract Patients            ",
         "  Continue Current Level of Care    "],"",1,CHOICE),
        makewindow(15,110,110,"",20,36,3,8),
        makewindow(60,110,110,"",18,3,6,28),
        plusMinus(CHOICE,OLD_DISP,ChangeInDisp),
        removewindow(60,1),removewindow(15,1),!.

howmanymore(3,_,ChangeInDisp):- ChangeInDisp = 0,!.


/*************************************************************************
            Predicates For howmanymore(2)  longmenu
 *************************************************************************/

plusMinus(0,_,ChangeInDisp):-  %% escape pressed
         ChangeInDisp = 0,!.

plusMinus(1,OLD_DISP,ChangeInDisp):-  %% Add Patients
        file_str("drgPlus.txt",TEXT),write(TEXT),
        shiftwindow(15),repeat, readint(ChangeInDisp),
        ChangeInDisp>=OLD_DISP*-1,!. % Can't take away more than you had!!!

plusMinus(2,OLD_DISP,ChangeInDisp):-  %% Subtract Patients
         str_int(StrOLD_DISP,OLD_DISP),str_len(StrOLD_DISP,LENGTH),
         (26-(15+LENGTH))/2=COL1, round(COL1)=COL,
         file_str("drgMinus.txt",TEXT),write(TEXT), cursor(1,COL),
         writef("Up To %0.0 Patients.",OLD_DISP),
         shiftwindow(15),repeat, readint(Positive),
         ChangeInDisp = Positive * -1,
         ChangeInDisp < 9999,!. %%%% Only because window won't hold more

plusMinus(3,_,ChangeInDisp):-  %% Continue Current Level of Care
         ChangeInDisp = 0,!.
```

Appendix H (cont'd)

```
/*****************************************************************************
        Predicates for howmany predicate used when no patients
        have been seen with this DRG.  Returns the change in dispositions.
*****************************************************************************/
nowhowmanymore(1,ChangeInDisp):- makewindow(11,110,110,"",19,5,5,26), clearwindow,
        file_str("drgamnt2.txt",TEXT),write(TEXT),
        makewindow(15,110,110,"",20,36,3,8),
        repeat, readint(ChangeInDisp), ChangeInDisp >= 0,
        removewindow(15,1),removewindow(11,1),!.

nowhowmanymore(2,ChangeInDisp):-ChangeInDisp = 0,!.



update1(ChangeInDisp,PICK,MDC,ALOS):-ChangeInDisp < 0,
         which(PICK,MDC,_,_,WT,GeoMean,ST,LT),
         rwps(GeoMean,WT,ST,LT,ChangeInDisp,ALOS,CHANGE_RWPS),
         update3(ChangeInDisp,CHANGE_RWPS),!.


/*****************************************************************************
*       If There Is No Change In Dispositions, No ALOS Determination Needs      *
*                              To Be Made.                                      *
*****************************************************************************/
update1(ChangeInDisp,_,_,_):-ChangeInDisp=0, update3(ChangeInDisp,0),!.

update1(ChangeInDisp,PICK,MDC,ALOS):- which(PICK,MDC,_,_,WT,GeoMean,ST,LT),
        makewindow(60,110,110,"",19,27,5,52),
        str_real(StrALOS,ALOS),str_len(StrALOS,LENGTH),
        (50-(LENGTH + 30))/2=Column1,round(Column1)=Column,
        cursor(0,Column),
        writef("Do You Wish To Accept %0.1 Days As",ALOS),
        nl,cursor(1,3),write("Representative Of The Average Length of Stay"),
        grammer(ChangeInDisp,STR,COL),cursor(2,COL),write(STR),
        delay(100),
        longmenu(19,1,3,111,110,
        [ "  NO: Select Another    " ,
          "  NO: SAME DAY SURGERY ",
          " YES: Accept As Is    " ],"",3,ALOS_CHOICE),
        removewindow(60,1),
        change_alos(ALOS_CHOICE,ALOS,New_ALOS),
        rwps(GeoMean,WT,ST,LT,ChangeInDisp,New_ALOS,CHANGE_RWPS),
        update3(ChangeInDisp,CHANGE_RWPS),!.


/*****************************************************************************
*       If There Is No Change In Dispositions, This Predicate Call Allows       *
*            For The Predicate To Succeed Without Making Any Entries            *
*****************************************************************************/

update2(ChangeInDisp,_,_):-ChangeInDisp = 0,!.
```

Appendix H (cont'd)

```
/*****************************************************************************
*      If There Is A Decrease In Dispositions, No ALOS Determination Needs     *
*           To Be Made As The Lost Dispositions Will Use the Old ALOS.         *
*****************************************************************************/

update2(ChangeInDisp,PICK,MDC):-
        which(PICK,MDC,DRG,Name,WT,_,_,_),
        shiftwindow(31), writef("%3.0",DRG),nl,
        shiftwindow(32), writef("%0.4",WT),nl,
        shiftwindow(33), write(Name),nl,
        shiftwindow(30), writef("%5.0",ChangeInDisp),nl,!.

/*****************************************************************************
          This Section Allows Changes In Average Length Of Stay
*****************************************************************************/

change_alos(1,_,New_ALOS):-makewindow(61,110,110,"",20,0,3,48),
        write(" The New Average Length Of Stay in days = "),repeat,
        readreal(New_ALOS), removewindow,!.
change_alos(2,_,New_ALOS):-New_ALOS=1,!.
change_alos(3,ALOS,New_ALOS):-New_ALOS = ALOS,!.


/*****************************************************************************
*      If There Is No Change In Dispositions, This Predicate Call Allows      *
*           For The Predicate To Succeed Without Making Any Entries           *
*****************************************************************************/
update3(ChangeInDisp,_):- ChangeInDisp = 0,!.

update3(ChangeInDisp,_):- last(DISP,_,_,_,_,_), DISP+ChangeInDisp=0,
        makewindow(60,110,238,"WARNING",6,20,13,40),
        file_str("NoCensus.txt",TEXT),write(TEXT),pause,removewindow(60,1),!.

update3(ChangeInDisp,CHANGE_RWPS):- last(DISP,RWPS,_,_,_,_), money(RATE),
        DISP2=DISP+ChangeInDisp, RWPS2=RWPS+(CHANGE_RWPS), CMI2=RWPS2/DISP2,
        RCMI2=CMI2/0.8109,
        bonus(RCMI2,RATE,NewRate),shiftwindow(12),clearwindow,
        write(" Supply Allocation Rate"),nl,
        write("          Per IWU        "),nl,
        writef("          $%0.2",NewRate),
        IWU2=DISP2*RCMI2,
        MONEY2=NewRate*IWU2,

        retract(money(_)), assert(money(NewRate)),
        retract(new(_,_,_,_,_,_,_)),
        assert(new(DISP2,RWPS2,CMI2,RCMI2,IWU2,MONEY2)),

        /*  New Window  */
        shiftwindow(16),clearwindow,
        write(DISP2),nl,
        writef("%0.2",RWPS2),nl,
```

Appendix H (cont'd)

```
        writef("%0.4",CMI2),nl,
        writef("%0.4",RCMI2),nl,
        writef("%0.2",IWU2),nl,
        writef("$%0.2",MONEY2), oldPlus, totalChange,!.

grammer(ChangeInDisp,STRING,COL):-ChangeInDisp=1, str_int(Num,ChangeInDisp),
        concat("For This ",Num,One),
        concat(One," Patient?",STRING),str_len(STRING,LENGTH),
        Space=(50-LENGTH)/2,COL = round(Space),!.

grammer(ChangeInDisp,STRING,COL):- str_int(Num,ChangeInDisp),
        concat("For These ",Num,Many),
        concat(Many," Patients?",STRING),str_len(STRING,LENGTH),
        Space=(50-LENGTH)/2,COL = round(Space),!.


/***  MTF ch6 is in the next lower peer group, and the RCMI has
      not changed ********************************************************/

bonus(RCMI,RATE,NewRate):- current_hospital(_,_,PEER,_,_,_),PEER = "CH6",
        ranges(_,LowerRCMI,OldRate,_,_),
        RATE>OldRate, RCMI < LowerRCMI,RATE = NewRate,!.

/***  MTF CH6 is in the next lower peer group, and the RCMI has
       changed back to its normal level  ***********************************/
bonus(RCMI,RATE,NewRate):- current_hospital(_,_,PEER,_,_,_),
        PEER = "CH6",
        ranges(_,LowerRCMI,OldRate,_,ChangeDown),
        RATE>OldRate, RCMI > LowerRCMI,NewRate = OldRate + ChangeDown,
        makewindow(50,110,110,"",17,46,7,34),
        file_str("ch56up.txt",Text),write(Text),
        cursor(1,13),writef("%0.2",LowerRCMI),
        cursor(4,13),writef("$%0.2",ChangeDown),
        retract(money(_)),assert(money(NewRate)),
        pause,removewindow(50,1),
        shiftwindow(16),attribute(31),!.

/***  MTF CH6 RCMI has dropped and the MTF is in the next lower
        peer group, however, the rate increases for MTFs in peer group CH6 ***/

bonus(RCMI,RATE,NewRate):- current_hospital(_,_,PEER,_,_,_),
        PEER = "CH6",
        ranges(_,LowerRCMI,OldRate,_,ChangeDown),
        RCMI<LowerRCMI,RATE=OldRate,
        NewRate=OldRate - ChangeDown,
        makewindow(50,110,110,"",17,46,7,34),
        file_str("ch56down.txt",Text),write(Text),
        cursor(1,13),writef("%0.2",LowerRCMI),
        cursor(4,13),writef("$%0.2",ChangeDown),
        retract(money(_)),
        assert(money(NewRate)),
        pause,removewindow(50,1),
        shiftwindow(16),attribute(30),!.
```

Appendix H (cont'd)

```
/***  RCMI has increased and the the MTF is in the next higher peer group,
        however, the rate decreases for MTFs in peer group CH5 ***/

bonus(RCMI,RATE,NewRate):- current_hospital(_,_,PEER,_,_,_),
        PEER = "CH5",
        ranges(UpperRCMI,_,OldRate,ChangeUp,_),
        RCMI<UpperRCMI,RATE=OldRate,
        NewRate=OldRate + ChangeUp,
        makewindow(50,110,110,"",17,46,7,34),
        file_str("ch56up.txt",Text),write(Text),
        cursor(1,13),writef("%0.2",UpperRCMI),
        cursor(4,13),writef("$%0.2",ChangeUp),
        retract(money(_)),
        assert(money(NewRate)),
        pause,removewindow(50,1),
        shiftwindow(16),attribute(31),!.

/****    MTF CH5 has increased to the next higher peer group, but there
        has been no changes                                    ******************/

bonus(RCMI,RATE,NewRate):- current_hospital(_,_,PEER,_,_,_),
        PEER = "CH5",
        ranges(_,LowerRCMI,OldRate,_,_),
        RATE<OldRate, RCMI > LowerRCMI,RATE = NewRate,!.

/*****   MTF ch5 is in the next higher peer group and has now fallen
        to its original position                               ******************/
bonus(RCMI,RATE,NewRate):- current_hospital(_,_,PEER,_,_,_),
        PEER = "CH5",
        ranges(_,LowerRCMI,OldRate,ChangeUp,_),
        RATE<OldRate, RCMI > LowerRCMI,NewRate = OldRate - Changeup,
        file_str("ch56down.txt",Text),write(Text),
        retract(money(_)),assert(money(NewRate)),
        shiftwindow(16),attribute(31),!.

/***** RCMI is within the range for the same peer group, no changes **********/

bonus(RCMI,RATE,NewRate):- ranges(UpperRCMI,LowerRCMI,OldRate,_,_),
        RCMI<UpperRCMI, RCMI>LowerRCMI,RATE=OldRate,NewRate=OldRate,!.

/**** RCMI has just exceeded the Upper Limit, therefore the rate increases ***/

bonus(RCMI,RATE,NewRate):- ranges(UpperRCMI,_,OldRate,ChangeUp,_),
        RCMI>UpperRCMI,RATE=OldRate,NewRate=OldRate + ChangeUp,
        makewindow(50,110,110,"",17,46,7,34),
        file_str("above.txt",Text),write(Text),
        cursor(1,13),writef("%0.2",UpperRCMI),
        cursor(4,13),writef("$%0.2",ChangeUp),
        retract(money(_)),
        assert(money(NewRate)),
        pause,removewindow(50,1),shiftwindow(16),attribute(30),!.
```

Appendix H (cont'd)

```
/****** RCMI has exceeded the Upper Limit, but there is no change
       as the MTF has already increased to the next peer group *******/

bonus(RCMI,RATE,NewRate):- ranges(UpperRCMI,_,OldRate,ChangeUp,_),
       RCMI>UpperRCMI,RATE>OldRate,NewRate=OldRate + ChangeUp,
       shiftwindow(16),attribute(30),!.

/******  RCMI has dropped but the MTF cannot lower its peer group ********/

bonus(RCMI,RATE,NewRate):- ranges(UpperRCMI,LowerRCMI,OldRate,_,ChangeDown),
       RCMI<LowerRCMI,RCMI < UpperRCMI,RATE=OldRate, ChangeDown = 0,
       NewRate=OldRate,!.


/***  RCMI has dropped and the MTF which had entered the next higher
     peer group has now returned to its original group ***/

bonus(RCMI,RATE,NewRate):- ranges(UpperRCMI,_,OldRate,ChangeUp,_),
       RCMI<UpperRCMI,RATE>OldRate,
       NewRate=OldRate,
       makewindow(50,110,110,"",17,46,7,34),
       file_str("below.txt",Text),write(Text),
       cursor(1,13),writef("%0.2",UpperRCMI),
       cursor(4,13),writef("$%0.2",ChangeUp),
       retract(money(_)),
       assert(money(NewRate)),
       pause,removewindow(50,1),
       shiftwindow(16),attribute(31),!.

bonus(RCMI,RATE,NewRate):- RCMI>0,RATE=NewRate,!.
/*************** ***********************************************************
     Calculates the increase/decrease in RWPS depending upon:
               1. Number of Dispositions (ChangeInDisp)
               2. New Average Length of Stay (New_ALOS)
               3. Weight (WT); Short (ST) and Long Term (LT) Cutoff Days

     In order, these predicates are used for the following:
               1. Average Length of Stay is Less than the Short term cutoff
                  and the average rwps is less than the CHAMPUS weight.
                  Calculaton of weight is based on the average length of stay
                  times twice the perdiem weight.
               2. As in 1 but the Calculation is based on the weight rather
                  than twice perdiem as the total weight cannot exceed the
                  CHAMPUS Mean.
               3. Average Length of stay falls within the ST and LT.
               4. Average Length of Stay exceeds the LT.
*****************************************************************************/

rwps(GeoMean,WT,ST,_,ChangeInDisp,New_ALOS,CHANGE_RWPS):- New_ALOS<ST,
       PER_DIEM=WT/GeoMean, AMOUNT=PER_DIEM*2*New_ALOS, AMOUNT<=WT,
       CHANGE_RWPS=AMOUNT*ChangeInDisp,!.
```

Appendix H (cont'd)

```
rwps(GeoMean,WT,ST,_,ChangeInDisp,New_ALOS,CHANGE_RWPS):- New_ALOS<ST,
        PER_DIEM=WT/GeoMean, AMOUNT=PER_DIEM*2*New_ALOS, AMOUNT>WT,
        CHANGE_RWPS=WT*ChangeInDisp,!.

rwps(_,WT,ST,LT,ChangeInDisp,New_ALOS,CHANGE_RWPS):- New_ALOS>=ST, New_ALOS<LT,
        CHANGE_RWPS=WT*ChangeInDisp,!.

rwps(GeoMean,WT,ST,LT,ChangeInDisp,New_ALOS,CHANGE_RWPS):- New_ALOS>ST,
                P E R _ D I E M = W T / G e o M e a n ,
CHANGE_RWPS=((WT*ChangeInDisp)+(WT*0.6*PER_DIEM*((New_ALOS-LT)*ChangeInDisp))),!.

oldPlus:- shiftwindow(20),clearwindow,
        new(DISP,RWPS,CMI,RCMI,IWU,MONEY),
        last(DISP2,RWPS2,CMI2,RCMI2,IWU2,MONEY2),

        CHG_DISP=DISP-DISP2,
        CHG_RWPS=RWPS-RWPS2, CHG_CMI=CMI-CMI2,
        CHG_RCMI=RCMI-RCMI2, CHG_IWU=IWU-IWU2,
        CHG_MONEY=MONEY-MONEY2,

        write(CHG_DISP),nl,
        writef("%0.2",CHG_RWPS),nl,
        writef("%0.4",CHG_CMI),nl,
        writef("%0.4",CHG_RCMI),nl,
        writef("%0.2",CHG_IWU),nl,
        writef("$%0.2",CHG_MONEY),

        retract(last(_,_,_,_,_,_)),
        assert(last(DISP,RWPS,CMI,RCMI,IWU,MONEY)),

        change(OLD_DISP,OLD_RWPS,OLD_CMI,OLD_RCMI,OLD_IWU,OLD_MONEY),


        TOT_CHG_DISP=CHG_DISP+OLD_DISP, TOT_CHG_RWPS=CHG_RWPS+OLD_RWPS,
        TOT_CHG_CMI=CHG_CMI+OLD_CMI, TOT_CHG_RCMI=CHG_RCMI+OLD_RCMI,
            T O T _ C H G _ I W U = C H G _ I W U + O L D _ I W U ,
TOT_CHG_MONEY=CHG_MONEY+OLD_MONEY,

        retract(change(_,_,_,_,_,_)),
        assert(change(TOT_CHG_DISP,TOT_CHG_RWPS,TOT_CHG_CMI,TOT_CHG_RCMI,
              TOT_CHG_IWU,TOT_CHG_MONEY)),!.

/*****************************************************************************
        Writes entries to total change window
*****************************************************************************/
totalChange:-   change(DISP,RWPS,CMI,RCMI,IWU,MONEY),
        shiftwindow(17), clearwindow,
        write(DISP),nl,
        writef("%0.2",RWPS),nl,
        writef("%0.4",CMI),nl,
```

Appendix H (cont'd)

```
        writef("%0.4",RCMI),nl,
        writef("%0.2",IWU),nl,
        writef("$%0.2",MONEY),!.

/*****************************************************************************
        Allows options after a single DRG has been manipulated
*****************************************************************************/
more:-  longmenu(19,5,3,111,110,
        [ "     Clear All Entries   " ,
          " Reselect Change Option ",
          " Make Another DRG Change "],"",3,CHOICE),
        processMore(CHOICE),CHOICE=2,
        shiftwindow(30), clearwindow,
        shiftwindow(31), clearwindow,
        shiftwindow(32), clearwindow,
        shiftwindow(33), clearwindow,!.

processMore(3):-!.
processMore(_):-    shiftwindow(30),clearwindow,shiftwindow(31),clearwindow,
        shiftwindow(32),clearwindow,shiftwindow(33),clearwindow,
        shiftwindow(20),clearwindow,shiftwindow(16),clearwindow,
        shiftwindow(17),clearwindow,
        ranges(_,_,OldRate,_,_),
        shiftwindow(12),clearwindow,
        write(" Supply Allocation Rate"),nl,
        write("           Per IWU         "),nl,
        writef("           $%0.2",OldRate),old(A,B,C,D,E,F),
        retract(last(_,_,_,_,_,_)),
        assert(last(A,B,C,D,E,F)),
        retract(change(_,_,_,_,_,_)),
        assert(change(0,0,0,0,0,0)),
        retractall(scenarioDb(_,_,_,_)),
        retractall(scenarioWindowDb(_,_)),
        current_hospital(_,_,_,OldRate,_,_),
        retract(money(_)),assert(money(OldRate)),
        shiftwindow(16),attribute(31),!.
/*****************************************************************************
        Common predicate call for database information on the current hospital
*****************************************************************************/
ranges(UpperRCMI,LowerRCMI,OldRate,ChangeUp,ChangeDown):-
        current_hospital(_,_,PEER,OldRate,_,_),
        peer(PEER,ChangeUp,ChangeDown,_,_,LowerRCMI,UpperRCMI),!.

/*****************************************************************************
        This Section Eliminates any blanks in a list, blanks ruin
        a good longmenu!
*****************************************************************************/

CLAUSES

delete(Element,[Element|Tail],Tail).
delete(Element,[Head|Tail],[Head|List]) :- !, delete(Element,Tail,List).
```

Appendix H (cont'd)

```
delete_any_blanks(TOPONES1,TOPONES):-delete("",TOPONES1,TOPONES),!.
delete_any_blanks(TOPONES1,TOPONES):-TOPONES1=TOPONES,!.
/*****************************************************************************
      If The DRG has been manipulated during this session, this predicate
      succeeds and the data used will be from the scenario database.
      Will succeed even if the DRG was not originally in the RCMAS Data
*****************************************************************************/
scenario(DRG,OldDisp,MTF_ALOS,DoD_ALOS):-
        scenarioDb(DRG,OldDisp,MTF_ALOS,DoD_ALOS),!. % scenario database

/*****************************************************************************
      If The DRG has not been manipulated during this session, the current
      data used will be from the RCMAS database.
      Will succeed only if the DRG is in the original RCMAS Data.  If both
      the above and this predicate fails, then the scenario will show that
      no patients have been treated at the facility.
*****************************************************************************/
scenario(DRG,OldDisp,MTF_ALOS,DoD_ALOS):-
        top_drgs(_,DRG,_,OldDisp,MTF_ALOS,DoD_ALOS),!.  % RCMAS database


/*****************************************************************************
      This section manages assertions to the internal database on the status
                  of DRGs currently changed by the scenario
*****************************************************************************/
                  /* No Changes */
changeDRGs(_,_,ChangeInDisp,_,_):-ChangeInDisp = 0,!.

changeDRGs(DRG,_,ChangeInDisp,MTF_ALOS,DoD_ALOS):-  % Adding If Changed Before
        ChangeInDisp>0,
        scenarioDb(DRG,ScenarioDisp,MTF_ALOS,DoD_ALOS), % scenario database
        NewScenarioDisp=ScenarioDisp+ChangeInDisp,
        retractall(scenarioDb(DRG,_,_,_)),
        assert(scenarioDb(DRG,NewScenarioDisp,MTF_ALOS,DoD_ALOS)), !.

changeDRGs(DRG,_,ChangeInDisp,MTF_ALOS,DoD_ALOS):- % Subtract If Changed Before
        ChangeInDisp<0,  % i.e. subtracting dispositions
        scenarioDb(DRG,ScenarioDisp,MTF_ALOS,DoD_ALOS), % scenario database
        NewScenarioDisp=ScenarioDisp + ChangeInDisp,
        retractall(scenarioDb(DRG,_,_,_)),
        assert(scenarioDb(DRG,NewScenarioDisp,MTF_ALOS,DoD_ALOS)),!.

changeDRGs(DRG,OldDisp,ChangeInDisp,MTF_ALOS,DoD_ALOS):-  % First Change
        ScenarioDisp = OldDisp + ChangeInDisp,retractall(scenarioDb(DRG,_,_,_)),
        assert(scenarioDb(DRG,ScenarioDisp,MTF_ALOS,DoD_ALOS)),
        retractall(scenarioWindowDb(DRG,_)), % To Notify If DRG has Been Changed
        assert(scenarioWindowDb(DRG,OldDisp)),!.  % By Scenario
```

Appendix H (cont'd)

```
/*****************************************************************************
        If the DRG has been changed by the scenario a blinking
        indication is given to the summary box for the DRG.
*****************************************************************************/
showScenarioChange(DRG):- scenarioWindowDb(DRG,_),
        makewindow(61,238,0,"",18,29,1,23),
        write(" Scenario Changes Made"),!.
showScenarioChange(_):-!.

removeScenarioWindow:-existwindow(61),removewindow(61,1),!.
removeScenarioWindow:-!.

/*****************************************************************************
            Allows one to extract the Nth element from a list
                        and return that element
*****************************************************************************/
extract(1,[Head|T],Head,T):- !.
extract(PICK,[Head|Tail],ServiceName,[Head|Back]):-
        PICK1 = PICK-1, !, extract(PICK1,Tail,ServiceName,Back).
```

Appendix H (cont'd)

SELECTION MODULE

```
code=1500

project "drgcolor"
include "glob_drg.pro"


CLAUSES

/**  mdc(MDC,LIST)  (i,o)  returns a list of all DRGs in the MDC asked for ***/

mdc(MDC,List):-MDC=1,findall(DRG,mdc1(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=2,findall(DRG,mdc2(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=3,findall(DRG,mdc3(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=4,findall(DRG,mdc4(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=5,findall(DRG,mdc5(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=6,findall(DRG,mdc6(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=7,findall(DRG,mdc7(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=8,findall(DRG,mdc8(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=9,findall(DRG,mdc9(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=10,findall(DRG,mdc10(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=11,findall(DRG,mdc11(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=12,findall(DRG,mdc12(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=13,findall(DRG,mdc13(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=14,findall(DRG,mdc14(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=15,findall(DRG,mdc15(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=16,findall(DRG,mdc16(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=17,findall(DRG,mdc17(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=18,findall(DRG,mdc18(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=19,findall(DRG,mdc19(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=20,findall(DRG,mdc20(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=21,findall(DRG,mdc21(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=22,findall(DRG,mdc22(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=23,findall(DRG,mdc23(_,_,DRG,_,_,_,_),List),!.
mdc(MDC,List):-MDC=24,findall(DRG,mdc24(_,_,DRG,_,_,_,_),List),!.

/*****************************************************************************
        Given an MDC and the PICK, or order for a DRG within the
        MDC, this predicate returns essential information
        concerning the DRG.
*****************************************************************************/
which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut ):-
        MDC = 1,PICK = DRG,
        mdc1(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 2,PICK + 35 = DRG,
        mdc2(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 3,PICK <27,PICK + 48 = DRG,mdc3(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.
```

Appendix H (cont'd)

```
which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 3,PICK <29,PICK + 141 = DRG,
        mdc3(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.
/*****************************************************************************
        If DRG 186 "Dental and Oral Disorders Except Extractions"
        or or DRG 187  "Dental Extractions and Restoration"  is
        selected a window pops up to notify that:
        these drgs can be coded under two separate major
        Diagnostic Categories: MDC 3:  Ear, Nose and Throat, or
        MDC 6:  Digestive system
*****************************************************************************/
which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 3,PICK <31,PICK + 157 = DRG,
        mdc3(_,DRG,Name,WT,ALOS,SSCut,LSCut),
        makewindow(60,110,238,"NOTICE",6,20,16,40),
        file_str("drg186-7.txt",TEXT),write(TEXT),pause,removewindow(60,1),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 4,PICK + 74 = DRG,
        mdc4(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 5,PICK + 102 = DRG,
        mdc5(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 6,PICK + 145 = DRG,
        mdc6(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 7,PICK + 190 = DRG,
        mdc7(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 8,PICK < 49,PICK + 208 = DRG,
        mdc8(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 8,PICK = 49,PICK + 422 = DRG,
        mdc8(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 9,PICK + 256 = DRG,
        mdc9(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 10,PICK + 284 = DRG,
        mdc10(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 11,PICK + 301 = DRG,
        mdc11(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.
```

Appendix H (cont'd)

```
which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 12,PICK + 333 = DRG,
        mdc12(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 13,PICK + 352 = DRG,
        mdc13(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 14,PICK + 369 = DRG,
        mdc14(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.
which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 15,PICK + 384 = DRG,
        mdc15(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 16,PICK + 391 = DRG,
        mdc16(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 17,PICK < 16,PICK + 399 = DRG,
        mdc17(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 17,PICK = 16,PICK + 457 = DRG,
        mdc17(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 18,PICK + 414 = DRG,
        mdc18(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 19,PICK + 423 = DRG,
        mdc19(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 20,PICK + 432 = DRG,
        mdc20(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 21,PICK + 438 = DRG,
        mdc21(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 22,PICK < 6,PICK + 455 = DRG,
        mdc22(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 22,PICK = 6,PICK + 466 = DRG,
        mdc22(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.
```

Appendix H (cont'd)

```
which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 23,PICK + 460 = DRG,
        mdc23(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.
/*****************************************************************************
        If DRG 472 "Extensive Burns With OR Procedure" is selected
        a window pops up stating: This DRG Can Be Coded Under Two
        Separate Major Diagnostic Categories:  MDC 22 "Burns" or
        MDC 24 "DRGs Associated With All MDCs".
*****************************************************************************/
which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 24,PICK = 5,PICK + 467 = DRG,
        mdc22(_,DRG,Name,WT,ALOS,SSCut,LSCut),
        makewindow(60,110,238,"NOTICE",6,20,12,40),
        file_str("drg472.txt",TEXT),write(TEXT),pause,removewindow(60,1),!.

which(PICK,MDC,DRG,Name,WT,ALOS,SSCut,LSCut):-
        MDC = 24,PICK < 7,PICK + 467 = DRG,
        mdc24(_,DRG,Name,WT,ALOS,SSCut,LSCut),!.

/*****************************************************************************
        Provides essential information for CMI module scenario
        for determining when a hospital has changed peer groups
        and what the effect on RAG reimbursement will be
*****************************************************************************

                RAG Change      BedSize         RCMI
   Peer,        Up      Down    Lower   upper   lower   upper   */

peer("CH1",     61.06,  0,      1,      29,     0,      0.7499  ).
peer("CH2",     0,      61.06,  1,      29,     0.75,   10      ).
peer("CH3",     30.35,  0,      30,     49,     0,      0.7999  ).
peer("CH4",     0,      30.35,  30,     49,     0.8,    10      ).
peer("CH5",     -13.95, 0,      50,     99,     0,      0.8499  ).
peer("CH6",     0,      13.95,  50,     99,     0.85,   10      ).
peer("CH7",     43.64,  0,      100,    1000,   0,      0.8999  ).
peer("CH8",     0,      43.64,  100,    1000,   0.9,    10      ).
peer("MC1",     28.17,  0,      0,      1000,   0,      1.1999  ).
peer("MC2",     23.73,  28.17,  0,      1000,   1.2,    1.4999  ).
peer("MC3",     0,      23.73,  0,      1000,   1.5,    10      ).


/*****************************************************************************
    Given a DRG, this predicate returns the MDC and order of
    the DRG or "PICK" within the MDC.
*****************************************************************************/
listem(Choice,PICK,MDC):- Choice > 473, %% LARGEST DRG IS 473
        makewindow(33,110,110,"Notice",15,24,5,31),nl,
        write("  DRGs are Numbered 1 - 473"),
        pause,
        removewindow(33,1),removewindow(23,1),PICK=500,MDC=0,!.

listem(Choice,PICK,MDC):- Choice < 36,PICK=Choice,MDC=1,!.
```

Appendix H (cont'd)

```
listem(Choice,PICK,MDC):- Choice < 49,PICK=Choice-35,MDC=2,!.
listem(Choice,PICK,MDC):- Choice < 75,PICK=Choice-48,MDC=3,!.
listem(Choice,PICK,MDC):- Choice = 168,PICK=Choice-141,MDC =3,!.
listem(Choice,PICK,MDC):- Choice = 169,PICK=Choice-141,MDC =3,!.
listem(Choice,PICK,MDC):- Choice = 186,PICK=Choice-157,MDC =3,!.
listem(Choice,PICK,MDC):- Choice = 187,PICK=Choice-157,MDC =3,!.
listem(Choice,PICK,MDC):- Choice < 103,PICK=Choice-74,MDC=4,!.
listem(Choice,PICK,MDC):- Choice < 146,PICK=Choice-102,MDC=5,!.
listem(Choice,PICK,MDC):- Choice < 191,PICK=Choice-145,MDC=6,!.
listem(Choice,PICK,MDC):- Choice < 209,PICK=Choice-190,MDC=7,!.
listem(Choice,PICK,MDC):- Choice < 257,PICK=Choice-208,MDC=8,!.
listem(Choice,PICK,MDC):- Choice = 471,PICK=Choice-422,MDC=8,!.
listem(Choice,PICK,MDC):- Choice < 285,PICK=Choice-256,MDC=9,!.
listem(Choice,PICK,MDC):- Choice < 302,PICK=Choice-284,MDC=10,!.
listem(Choice,PICK,MDC):- Choice < 334,PICK=Choice-301,MDC=11,!.
listem(Choice,PICK,MDC):- Choice < 353,PICK=Choice-333,MDC=12,!.
listem(Choice,PICK,MDC):- Choice < 370,PICK=Choice-352,MDC=13,!.
listem(Choice,PICK,MDC):- Choice < 385,PICK=Choice-369,MDC=14,!.
listem(Choice,PICK,MDC):- Choice < 392,PICK=Choice-384,MDC=15,!.
listem(Choice,PICK,MDC):- Choice < 400,PICK=Choice-391,MDC=16,!.
listem(Choice,PICK,MDC):- Choice < 415,PICK=Choice-399,MDC=17,!.
listem(Choice,PICK,MDC):- Choice = 473,PICK=Choice-457,MDC=17,!.
listem(Choice,PICK,MDC):- Choice < 424,PICK=Choice-414,MDC=18,!.
listem(Choice,PICK,MDC):- Choice < 433,PICK=Choice-423,MDC=19,!.
listem(Choice,PICK,MDC):- Choice < 439,PICK=Choice-432,MDC=20,!.
listem(Choice,PICK,MDC):- Choice < 456,PICK=Choice-438,MDC=21,!.
listem(Choice,PICK,MDC):- Choice < 461,PICK=Choice-455,MDC=22,!.
listem(Choice,PICK,MDC):- Choice = 472,PICK=Choice-466,MDC=22,!.
listem(Choice,PICK,MDC):- Choice < 468,PICK=Choice-460,MDC=23,!.
listem(Choice,PICK,MDC):- Choice < 474,PICK=Choice-467,MDC=24,!.
```

Appendix H (cont'd)

RCMAS IMPORTING MODULE

```
project "drgcolor"
include "glob_drg.pro"


DOMAINS

TEXT,REST1,REST2,REST4,Input = string
TOTAL,DRG,DISP,Count = integer
MTF_ALOS,DOD_ALOS = real
Select = char


PREDICATES

rcmas(integer)
rcmas_one
readtext(Count,TEXT)
readtexttop
readfile
writefile
exist(Select)
del_comma(Input,DISP)
strip_drg(TEXT,DRG,REST1)
strip_name(REST1,DRG_NAME,REST2)
strip_disp(REST2,DISP,REST4)
strip_alos(REST4,MTF_ALOS,DOD_ALOS)
change_disp(DISP,TOTAL)
del_rcmas
printer(SELECTION)
rcmasHelp(SELECTION)

CLAUSES

rcmas_top:- repeat,arrowkey_statusline,
        longmenu(11,21,4,111,110,
        [ "       Import all Facility DRGs        ",
          "              Cancel Request           ",
          " Information On Importing RCMAS DATA ",
          "       View RCMAS File of DRGs  "],
          "RCMAS Import Module",1,CHOICE), rcmas(CHOICE),
        clearwindow,removewindow(21,1),
              removewindow(60,1),!.
rcmas(1):-  %% NO FILE EXISTS TO IMPORT
        not(existfile("rmcas.out")),not(existfile("drg.tab")),
        makewindow(63,110,110,"",10,26,5,28),
        write("\nNo file exists to import"),
        makewindow(77,31,0,"",24,0,1,30),
        write("                              Press Any Key To Continue  "),
        readchar(_),removewindow(63,1),removewindow(77,1),!.
```

Appendix H (cont'd)

```
rcmas(1):-  %% IMORT ALL FACILITY DRGs AGAIN
        existfile("rcmas.out"),
        clearwindow,
        makewindow(21,113,0,"",24,0,1,80),
write("       Press 'Y' for Yes or 'N' For No You Do Not Wish To Delete The file"),
        makewindow(61,110,110,"",10,15,7,50),
        write("       You have already processed your data\n\n"),
        write("  Do you wish to delete the file and reprocess?\n\n"),
        write("                    (Y/N)"),repeat,readchar(Select),
        exist(Select),!.

rcmas(1):-  %% IMPORT ALL FACILITY DRGs
        rcmas_one,!.
rcmas(2):-!. %% CANCEL REQUEST

/*****************************************************************************
                        RCMAS Instruction Section,
              one can view and/or print the instructions
*****************************************************************************/
rcmas(3):-makewindow(22,113,0,"",24,0,1,80),
      write("              Use Arrowkeys, PgUp, or PgDn       Press <Esc> When Done"),
        makewindow(12,110,110," RCMAS Help File ",2,5,18,70),
        file_str("rcmas.txt",Text),display(Text),
        longmenu(9,25,2,112,112,
        ["  Print These Instruction  ",
         "      Return To Main Menu     "],"",2,CHOICE),
        rcmasHelp(CHOICE),removewindow(12,1),removewindow(22,1),!.

rcmas(4):- existfile("drg.tab"),makewindow(22,113,0,"",24,0,1,80),
        write("              Use Arrowkeys, PgUp, or PgDn       Press <Esc> When Done"),
        makewindow(2,31,145,"",0,0,24,80),file_str("drg.tab",Text),display(Text),
        removewindow(2,1),removewindow(22,1),!.

rcmas(4):-existfile("\\rcmas\\drg.tab"),makewindow(22,113,0,"",24,0,1,80),
        write("              Use Arrowkeys, PgUp, or PgDn       Press <Esc> When Done"),
        makewindow(2,31,145,"",0,0,24,80),file_str("drg.tab",Text),display(Text),
        removewindow(2,1),removewindow(22,1),!.

rcmas(4):- makewindow(60,111,238,"NOTICE",10,13,4,54),
        write("              No DRG.TAB file was found "),nl,
        write(" Strike Any Key and Reselect Importing Information "),pause,!.

rcmasHelp(1):-  makewindow(23,110,110,"",6,22,9,35),
        file_str("printer.txt",TEXT),write(TEXT),
        longmenu(16,27,2,111,110,
        ["        Continue          ",
         "  Cancel Print Request  "],"",1,CHOICE), printer(CHOICE),
        removewindow(23,1),!.
rcmasHelp(2):-!.

printer(1):- trap(system("rcmas.bat"),_,true),!.
printer(2):-!.
```

Appendix H (cont'd)

```
/*****************************************************************************
        ReadKey section for reading keyboard input on
        whether to reprocess RCMAS files
*****************************************************************************/

exist(Select):-Select='Y',removewindow,
        closefile(rcmas_input),retractall(top_drgs(_,_,_,_,_,_)),
        rcmas_one, removewindow(22,1),!.
exist(Select):-Select='y',removewindow,
        closefile(rcmas_input),retractall(top_drgs(_,_,_,_,_,_)),
        rcmas_one, removewindow(22,1),!.
exist(Select):-Select='N',removewindow,!.
exist(Select):-Select='n',removewindow,!.
exist(_):- beep,fail,!.


/*****************************************************************************
        Controls import of RCMAS Data
*****************************************************************************/
rcmas_one:- makewindow(2,31,145,"",0,0,24,80),
        patience,
        retract(total_disp(_)),
        assert(total_disp(0)),
        shiftwindow(2),cursor(8,65),attribute(30),
        write("Total"),
        cursor(13,65),write("Total"),attribute(31),
        makewindow(60,110,110,"",1,14,3,34),
        write(" Importing The Following DRGs: "),
        makewindow(61,110,110,"DRGs                    Dispositions",5,5,19,50),
        makewindow(62,110,110,"Number of DRGs",10,60,3,18),
        makewindow(63,110,110," Dispositions ",15,60,3,18),
        readfile,
        writefile,
        readtexttop,retractall(top_drgs(_,_,_,_,_,_)),
        readtext(0,"DUMMY"),
        closefile(rcmas_input),
        closefile(output),
        retract(top_drgs(_,0,_,_,_,_)),
        shiftwindow(60),nl,nl,attribute(238),
        write("      Writing DRGs to Disk "),
        del_rcmas,
        save("rcmas.out",top_drgs),
        removewindow(22,1),
        removewindow(63,1),
        removewindow(62,1),
        removewindow(61,1),
        removewindow(60,1),
        removewindow(2,1),!.

del_rcmas:- existfile("rcmas.out"),deletefile("rcmas.out"),!.
del_rcmas:-!.

readfile:- openread(rcmas_input,"drg.tab"),readdevice(rcmas_input),!.
```

Appendix H (cont'd)

```
writefile:- openwrite(output,"rcmas.out"), writedevice(output),!.

/*****************************************************************************
        Strips off the top of the RCMAS output file up to the first"="
*****************************************************************************/
readtexttop:-repeat,readln(Text), frontchar(Text,Char,_),Char = "=",!.

/*****************************************************************************
        Recursion loop for reading each line of text and
        asserting to the internal database the appropriate
        information.  Also writes the information to the
        screen for viewing.
*****************************************************************************/
readtext(_,TEXT):-str_len(TEXT,LENGTH),LENGTH<1.
readtext(Count,_):- readln(TEXT),Count1=Count+1,
        strip_drg(TEXT,DRG,REST1),
        strip_name(REST1,DRG_NAME,REST3),
        strip_disp(REST3,DISP,REST4),
        strip_alos(REST4,MTF_ALOS,DOD_ALOS),
        change_disp(DISP,TOTAL),
        writedevice(screen),
        gotowindow(61),nl,write("    ",DRG_NAME),
        gotowindow(62),nl,write("      ",Count),
        gotowindow(63),nl,write("     ",TOTAL),
        writedevice(output),
        assertz(top_drgs(Count1,DRG,DRG_NAME,DISP,MTF_ALOS,DOD_ALOS)),
        readtext(Count1,TEXT).

/*****************************************************************************
        Strips off the DRG from the line of text
*****************************************************************************/
strip_drg(TEXT,DRG,REST1):- frontstr(3,TEXT,STR_DRG,REST1),
        str_int(STR_DRG,DRG),!.
strip_drg(_,DRG,REST1):-DRG=0,REST1="",!.

/*****************************************************************************
        Strips off the name of the DRG from the line of text
*****************************************************************************/
strip_name(REST1,DRG_NAME,REST2):-frontstr(25,REST1,NAME1,REST2),
        frontstr(10,REST2,REST3,_),
        concat(NAME1,REST3,NAME2), concat(NAME2,"      ",DRG_NAME),!.
strip_name(_,DRG_NAME,REST2):- DRG_NAME="",REST2="",!.

/*****************************************************************************
        Strips off the number of dispositions from the line of text
*****************************************************************************/
strip_disp(REST2,DISP,DISP4):- frontstr(10,REST2,INPUT,DISP4),
        del_comma(INPUT,DISP),!.
strip_disp(_,DISP,DISP4):-DISP=0,DISP4="",!.
```

Appendix H (cont'd)

```
/*****************************************************************************
        Strips off the average length of stay from the line of text
*****************************************************************************/
strip_alos(REST4,MTF_ALOS,DOD_ALOS):-

        /***** strip off unneeded spaces ******/
        frontstr(16,REST4,_,REST5),

        /***** strip off LOS Actual **********/
        frontstr(5,REST5,STR_MTF_ALOS,REST6),str_real(STR_MTF_ALOS,MTF_ALOS),

        /***** strip off LOS Expected, i.e. DoD LOS *******/
        frontstr(10,REST6,STR_DOD_ALOS,_),str_real(STR_DOD_ALOS,DOD_ALOS),!.

strip_alos(_,MTF_ALOS,DOD_ALOS):- MTF_ALOS=0,DOD_ALOS=0,!.
/*****************************************************************************
        Asserts to an internal database the total dispositions
*****************************************************************************/
change_disp(DISP,TOTAL):-total_disp(OLD),TOTAL = OLD + DISP,
        retract(total_disp(_)),assert(total_disp(TOTAL)),!.

/*****************************************************************************
    Unfortunately, RCMAS output places commas within integers, this section
    strips the comma out and returns an integer as Output from String Input
*****************************************************************************/
DOMAINS

   charlist = char*


PREDICATES

   string_chlist(string, charlist)
   delete(char,charlist,charlist)
   group(charlist,string,string)


CLAUSES

string_chlist("", []).
string_chlist(S, [H|T]) :- frontchar(S, H, S1), string_chlist(S1, T).

delete(Element,[Element|Tail],Tail).
delete(Element,[Head|Tail],[Head|List]) if!,
        delete(Element,Tail,List).

group([],New,New) if!.
group([H|T],String,New) if str_char(HS,H),
        concat(String,HS,Temp),
        concat(Temp,"",Str),!,
        group(T,Str,New).

del_comma(Input,DISP):-str_int(Input,DISP),!.
```

Appendix H (cont'd)

```
del_comma(Input,DISP):-  string_chlist(Input,X),delete(',',X,Y),
        group(Y,"",Z), str_int(Z,DISP),!.
del_comma(_,DISP):- DISP = 0,!.
```

Appendix H (cont'd)

GLOBAL DEFINITIONS MODULE

GLOBAL DATABASE - current_hospital
current_hospital(integer,string,symbol,real,integer,real)

GLOBAL DATABASE - mdclist
mdclist(integer,string)

GLOBAL DATABASE - mdc1
mdc1(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc2
mdc2(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc3
mdc3(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc4
mdc4(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc5
mdc5(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc6
mdc6(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc7
mdc7(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc8
mdc8(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc9
mdc9(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc10
mdc10(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc11
mdc11(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc12
mdc12(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc13
mdc13(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc14
mdc14(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc15
mdc15(integer,integer,string,real,real,real,real)

Appendix H (cont'd)

```
GLOBAL DATABASE - mdc16
mdc16(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc17
mdc17(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc18
mdc18(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc19
mdc19(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc20
mdc20(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc21
mdc21(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc22
mdc22(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc23
mdc23(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - mdc24
mdc24(integer,integer,string,real,real,real,real)

GLOBAL DATABASE - top_drgs
top_drgs(integer,integer,string,integer,real,real)

GLOBAL DATABASE - all_hospitals
mtf(integer,string,symbol,real,integer,real)

GLOBAL DATABASE
old(integer,real,real,real,real,real)
new(integer,real,real,real,real,real)
last(integer,real,real,real,real,real)
change(integer,real,real,real,real,real)
money(real)
originalMoney(real)
total_disp(integer)
pay_for_mccu(real)
scenarioDb(integer,integer,real,real)
scenarioWindowDb(integer,integer)

GLOBAL DOMAINS
  WATTR,FATTR, ATTR, LOS, SSCut, LSCut, Num, ROW, COL, LEN,SCR,FR  = INTEGER
  MDC,PICK,STARTCHOICE,SELECTION,POPF,POPW,MAINF,MAINW = integer
  MAXH,INTEGERLIST = INTEGER*
  Name,LIST,STRINGLIST = STRING*
  ST,LT,WT = REAL
  file=input;output;rcmas_input;this_hospital
```

Appendix H (cont'd)

```
  Hosp,DRG_NAME,HEADER = string
  KEY     = cr; esc; break; tab; btab; del; bdel; ctrlbdel; ins;
            end ; home ; fkey(INTEGER) ; up ; down ; left ; right ;
            ctrlleft; ctrlright; ctrlend; ctrlhome; pgup; pgdn;
            ctrlpgup; ctrlpgdn; ques; char(CHAR) ; otherspec

GLOBAL PREDICATES
    display_logo
    changeCaseMix
    changeCaseMix(integer)-(i)
    delay(real)-(i),(o)
    nondeterm repeat              /* Provides a repeat loop for main menu */
    arrowkey_statusline
    exp_window(integer)-(i),(o)
    data_read(real)-(i),(o)
    ask_cmi(MDC,PICK)-(i,i)
    define
    patience                      /* Provides status window for loading data*/

longmenu(ROW,COL,integer,WATTR,FATTR,STRINGLIST,HEADER,STARTCHOICE,SELECTION)
        -(i,i,i,i,i,i,i,i,o)
    which(integer,integer,integer,string,real,real,real,real)-
    (i,i,o,o,o,o,o,o),
    nondeterm rcmas_top
    readkey(KEY) - (o)
    readkey1(KEY,CHAR,INTEGER) - (o,i,i)
    listem(integer,integer,integer) - (i,o,o)
    calculate(real,real,real,real) - (o,o,o,o)
    data(integer)-(i)
    utilities_module
    current
    mdc(integer,stringlist)-(i,o)
    peer(symbol,real,real,integer,integer,real,real)-(i,o,o,o,o,o,o)
    length(real,real)-(i,o)
    iwu_length(real,real)-(i,o)
    money_length(real,real)-(i,o)
    maxlen(STRINGLIST,COL,COL)-(i,i,o) /* The length of the longest string */
    pause
    data_1_status
    data_2_status
    listlen(stringlist,integer) - (i,o)
```

Appendix I

Prolog Software Program (Color)

A Complete Program Can Be Obtained
By Sending Your Name, Address and
A 5 1/4" Diskette To:

Commander
U.S. Army MEDDAC
HSXT-AR (Attn: MAJ Howard C. May)
Fort Ord, CA, 93941-5800

Appendix J

Prolog Software Program (Laptop)

A Complete Program Can Be Obtained
By Sending Your Name, Address and
A 3 1/2" Diskette To:

Commander
U.S. Army MEDDAC
HSXT-AR (Attn: MAJ Howard C. May)
Fort Ord, CA, 93941-5800