CENTER FOR MEDICO-ACTUARIAL STATISTICS (CMAS) of MIB, Inc.

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Introduction

MEDICAL Directors are all very familiar with the purpose and operations of the MIB Medical Impairment Search and Retrieval System, which is utilized by virtually every major company issuing life, health, and disability insurance in the United States and Canada. However, not as much is known about the MIB Center for Medico-Actuarial Statistics, commonly known as CMAS, where most of the insurance industry’s intercompany experience studies are currently produced. The objective of this paper is to expand the Medical Director’s knowledge about CMAS operations and capabilities, while increasing his awareness of the sources and types of study information that are currently available.

Historical Background

On March 27, 1970 the Liaison Committee of the Association of Life Insurance Medical Directors of America (ALIMDA)* and the Society of Actuaries (SOA) recommended in a memorandum to Mr. Joseph C. Wilberding, Executive Director of the Medical Information Bureau (MIB), that a study be commissioned to evaluate the feasibility of establishing a joint Center for Medico-Actuarial Statistics (CMAS), affiliated with the MIB. The memorandum suggested that "the MIB system might be well utilized for statistical information, not only of value to the life insurance industry, but also (in the area of epidemiological studies for example) of substantial benefit to the medical profession, and thus to the general public." It suggested specifically that "a relatively small permanent organization, subsidiary to the MIB, should be created" whose function would be to study impairments on a continuing basis.1

The consulting firm of Arthur D. Little, Inc. (ADL) was retained to conduct the feasibility study. ADL recommended that MIB should amend its constitution to allow the creation of CMAS, and that CMAS should serve as a central bureau for the processing of traditional intercompany medical impairment and build and blood pressure studies. They also recommended that CMAS operations should be financed through a 3% surcharge on the MIB Basic Charge ($100,000 annual funding in 1971), and that the first project to be under-

In early 1972, the MIB Board of Directors voted to establish the MIB Center for Medico-Actuarial Statistics as a Central Bureau for the computer processing of mortality and morbidity studies for the life insurance industry.

Later in 1972, the ALIMDA/SOA Liaison Committee decided that a new Build and Blood Pressure Study to update the 1959 Build and Blood Pressure Study was more urgently needed than a medical impairment study. Thus the first project undertaken by CMAS was to later become the 1979 Build Study and the 1979 Blood Pressure Study. The processing and publishing of these two studies was the primary effort for CMAS from 1972 to 1980. During most of this period, CMAS had only two full-time staff members and depended on MIB staff for additional technical and clerical support.

During the period 1976-79, CMAS also participated in a joint ALIMDA/SOA Study of Atrial Fibrillation. In addition, in 1978 CMAS staff participated in the early development stages of what was to later become the 1983 Medical Impairment Study.

However, in late 1976 an event occurred that would dramatically expand future CMAS activities. MIB was approached by the Society of Actuaries and asked to submit a proposal to have CMAS take over the processing of all the SOA Experience Studies.

At that time, these studies were being processed by individual insurance companies, with a different company acting as the Central Bureau for each study. Typically a company would act as the Central Bureau for a specific study for a period of 3-5 years, and then the study would be transferred to another company. During 1976 several of the companies informed the SOA that they would no longer compile the studies because of diminished computer resources and personnel. The SOA was unsuccessful in trying to convince other companies to assume the compiling duties, and thus turned to MIB as a possible solution.

* In October, 1991 ALIMDA officially changed its name to the American Academy of Insurance Medicine (AAIM).
CMAS staff's first task was to assemble copies of the computer programs and processing documentation for each of the studies. It soon became apparent that the documentation for many studies was either out of date, incomplete, or unavailable, and that putting together a proposal encompassing all studies would not be possible. It was then agreed that CMAS should assume the compiling responsibilities one study at a time, phased in over a lengthy time period as companies ceased their study processing activities. It was also decided that the SOA 1972-73 Individual Disability Loss-of-Time Study should be the pilot study. The number of SOA Experience Studies processed by CMAS has grown steadily throughout the 1980s, with the staff currently working on the different aspects of approximately 20 studies. This number continues to grow as the scope of the SOA Research Activities continues to expand.

Project Organization

As indicated, CMAS projects can be separated into two major categories:

1. Major Intercompany Mortality Studies involving joint Committees of the Association of Life Insurance Medical Directors of America and the Society of Actuaries.

2. Society of Actuaries Mortality and Financial Experience Studies involving the SOA Committee on Experience and the SOA Research Management Committee.

CMAS staff also participates in several internal MIB projects.

A. Intercompany Studies

Major Intercompany Mortality Study projects where CMAS staff played or is currently playing a significant role include the following:

- "1979 Build Study"

The 1979 Build Study was initiated in April, 1972 and the results published (255 page book) in March, 1980. This study dealt with the mortality experience between 1954 and 1972 on nearly 4,200,000 policies from 25 contributing companies issued at standard or substandard premium rates to men and women aged 15-69. The total experience included some 106,000 deaths, about 95,000 among men and about 11,000 among women. The computer processing and publishing role of CMAS staff was the same as for the 1979 Build Study.

- "1979 Blood Pressure Study"

The 1979 Blood Pressure Study was also initiated in April, 1972 and the results published (359 page book) in November, 1980. This study dealt with the mortality experience between 1954 and 1972 on about 4,350,000 policies from 25 contributing companies issued at standard or substandard premium rates to men and women aged 15-69. The total experience included some 106,000 deaths, over 95,000 among men and about 11,000 among women. The computer processing and publishing role of CMAS staff was the same as for the 1979 Build Study.

- "Atrial Fibrillation Study"

The Atrial Fibrillation Study was initiated in early 1976 and the results published in the Journal of the American Medical Association in 1981. The purpose of this study was to test the feasibility of and to develop the methodology for conducting a mortality study of a relatively rare medical impairment using the MIB Data Base as a means of identifying potential entrants. This study, which involved 393 participating companies, was the first intercompany mortality study to utilize the MIB Data Base. A series of 3,099 applicants issued life insurance during the period Nov. 1, 1968 through June 30, 1976 with a history or findings of atrial fibrillation was selected for study from 18,483 questionnaires submitted by the companies.

CMAS staff was involved in the design of the Set of Instructions and questionnaire; responsible for keyboarding the questionnaires and creating the study data base; and responsible for the systems analysis, design, computer programming, and processing of the entire study.

- "1983 Medical Impairment Study - Volume I"

The 1983 Medical Impairment Study was initiated in June, 1978 and the results of the "Single Impairment Study" published (Volume I - 154 page book) in March, 1986. This study dealt with the mortality experience between 1962 and 1977 anniversaries on nearly 2,400,000 policies from 24 contributing companies issued at standard or substandard premium rates to men and women aged 15-69. The study included 152 single medical impairments of both a
minor and a major nature other than overweight or elevated blood pressure, which were included in the 1979 Build and 1979 Blood Pressure Studies. The total experience included some 72,400 deaths, 63,000 among men and 9,400 among women.

CMAS staff was involved in the design of the Set of Instructions; responsible for the systems analysis, design, computer programming, and processing of the entire study; and responsible for the design and automated phototypesetting of the published volume, including the preparation and editing of text and tables for phototypesetting. CMAS staff was also responsible for creating the Subject Index using PC-based spreadsheet technology.

- "1983 Medical Impairment Study - Volume II"

After the completion of the "Single Impairment Study" (Volume I), CMAS staff began the processing of the "Multiple Impairment Study" which is expected to be published in late 1992 as Volume II. The reasons for the significant delay in producing this study are primarily due to CMAS staff resource limitations; and the decision by MIB Board and Management in 1987 to give higher priority to completing the publication of Medical Risks: Trends in Mortality by Age and Time Elapsed and the processing of selected Society of Actuaries' studies.

The Multiple Impairment Study deals with the mortality experience between 1962 and 1977 anniversaries on a 600,000 policy subset of the 2,400,000 policies contributed by 24 companies to the Single Impairment Study. It studies the same 152 single medical impairments in impairment combinations, and examines the relationships between impairment combinations and broad impairment groups. The total experience includes 23,000 deaths, 20,200 among men and 2,800 among women. In addition, the published study will provide analysis by amount of insurance for both single and multiple impairments. The computer processing and publishing role of the CMAS staff has been the same for both impairment studies.

- "Medical Risks: Trends in Mortality by Age and Time Elapsed"

The Medical Risks Project was initiated in 1978, and the results were published (2-volumes, 1,600 pages, 377 abstracts) by Praeger Publishers of New York City in October, 1990. These 2 volumes were the fruit of 10 years' research by Medical Directors and Actuaries into mortality patterns by age and time elapsed for a wide variety of medical conditions. They update and expand data presented in Medical Risks: Patterns of Mortality and Survival (758 page book, 198 abstracts) published in 1976. The editors and contributors reviewed and evaluated over 1,000 articles published in medical literature since 1976, abstracting 377 mortality investigations. The findings were summarized in 13 overview chapters, supported by the 377 abstracts of mortality studies among hospital patients, patients of individual or group physicians, persons included in special surveys, insured lives, and other selected populations. The abstracts evaluate and analyze the mortality experience by age, sex, time elapsed, and other factors using a uniform life table format that facilitates relative mortality experience comparisons with healthy lives or the general population. Medical conditions covered include: Cancer, Cardiovascular diseases, Hypertension, Respiratory diseases, Gastrointestinal diseases, Genitourinary disorders, Endocrine and Metabolic disorders, Neurological and Psychiatric disorders, Overweight and Underweight problems, and Occupational and Lifestyle hazards.

CMAS staff first became involved in this project in 1980, with its initial responsibility being only to provide some computer programming and processing resources needed to produce tables for a relatively few abstracts. Ultimately CMAS staff was to be responsible for the systems analysis, design, computer programming, and processing that produced life tables containing life expectancies for 82 abstracts. CMAS staff also helped develop the text for these abstracts. In February, 1984 CMAS staff provided some preliminary word processing assistance to the Committee, which would later expand the CMAS role and lead to CMAS staff becoming responsible for all phases of the preparation, printing, and publishing of the final volumes. They keyboarded all of the text and tables using PC-based word processing software, provided editing expertise, designed and set the page-format and volume-organization standards using PC-based Desktop Publishing technology, and were responsible for coordinating the final phototypesetting and printing with Praeger. CMAS staff was totally responsible for compiling the Author Index, and worked very closely with the Editor and a professional indexer in compiling the Subject Index.

- "Medical Risks: 1991 Compend of Mortality and Morbidity"

In October, 1990 a Subcommittee of the ALIMDA Mortality and Morbidity Committee was organized to investigate the feasibility of producing a Supple-
ment Volume to the recently published Medical Risks: Trends in Mortality by Age and Time Elapsed. The CMAS Director is a member of this Subcommittee. In April, 1991 the Subcommittee proposed that a Supplement be produced (estimated to be approximately 260 pages) picking up where the previous volume left off in mid-1986, and basically containing abstracts and articles from the period 1986-90. Since all components of the Supplement have already been formally published elsewhere, particularly in the ALIMDA Journal of Insurance Medicine, it is really a repackaging, reprinting, and most importantly a combining of information scattered throughout many different limited circulation documents into one publication for easy reference. The Subcommittee felt that it was important to extend the abstracting methodology used in Medical Risks, that the abstracting expertise developed over the last few years not be lost, and that the publishing momentum be continued.

The Subcommittee is currently preparing the Supplement for publication, which should be completed at the end of 1992. The abstracts and articles for the Supplement have been selected and organized, and CMAS staff is currently preparing this material for phototypesetting on the CMAS Desktop Publishing Systems and eventual printing. CMAS staff will also be working very closely with the Editors in compiling the Subject and Author Indexes.

- Impairment Study Capture System (ISCS)

In 1987 CMAS staff developed the Impairment Study Capture System (ISCS) to assist companies in the preparation of contributions to future intercompany impairment studies. The ISCS capabilities provide for: (1) the creation of a separate Impairment Data Base by capturing impairment reports submitted by MIB member companies through the MIB Search and Retrieval System; (2) assistance to participating companies in the identification and retrieval of their specific impairments from the ISCS Data Base when the decision is made to conduct a study of them; and (3) the creation of a magnetic tape cartridge and computer report for each participating company which will contain its captured impairments to be updated for the study.

The ISCS is currently being utilized by 22 companies encompassing 54 MIB company codes. The Record Format on the magnetic tape cartridge is the Supplemental Impairment Record Format currently used by the Society of Actuaries’ Individual Life Studies. Using the same format should make it easier for companies who contribute to SOA Studies to also contribute to future intercompany impairment studies.

- Future Intercompany Impairment Studies

Future intercompany impairment studies will be conducted on an ongoing basis for selected impairments, rather than conducting a study of all impairments every 25-30 years as has been past industry practice. It is no longer practical to request companies to retrieve policy record information that is more than 5 years old. The future methodology will be to periodically select several impairments of major underwriting importance for detailed study and analysis. At that time companies will be requested to prepare a study contribution for those impairments.

All contributions will be submitted in the Supplemental Impairment Record Format currently used by the Society of Actuaries’ Individual Life Studies. Companies will have several methods by which they can submit individual policy records for study:

1. Companies that maintain their own medical impairment mortality statistical records will submit individual policy records in the Supplemental Impairment Record Format currently used by the Society of Actuaries’ Individual Life Studies. Companies will have several methods by which they can submit individual policy records for study:  

   1. Companies that maintain their own medical impairment mortality statistical records will submit individual policy records in the Supplemental Impairment Record Format currently used by the Society of Actuaries’ Individual Life Studies. Companies will have several methods by which they can submit individual policy records for study:  

   2. Companies that participate in the SOA Annual Ordinary Individual Life Study can include Supplemental Impairment Records as part of their annual contribution. CMAS will take responsibility for selecting the records for the study from the company’s total contribution, and for the summation of the individual exposure years submitted in previous years.

   3. Companies participating in the Impairment Study Capture System (ISCS) will receive a magnetic tape file in Supplemental Impairment Record Format from CMAS identifying potential policy records for study. It will then be the responsibility of the company to complete and update each record where a policy was issued and paid for with the additional data necessary to conduct the study (policy issue date, sex, rating, amount of insurance, smoking status, termination status and date, cause of death, etc.). The result of this processing will be a policy record file to be submitted to CMAS for inclusion in the study.
4. Some companies may actually use a combination of the above methods to assemble their contributions.

- **Laboratory Test Results Study**

In November, 1990 the ALIMDA/ SOA Liaison Committee invited companies to participate in an intercompany individual life insurance mortality study of blood tests and urinalyses. The purpose of the study is to determine the blood and urine test readings that are associated with the lowest mortality, and also the extent to which mortality increases as reading levels increase or decrease. Although meaningful results will not be available until at least 5 experience years have been observed, the study will be of great value to anyone interested in the effect of blood cholesterol, sugar, liver enzymes, etc.

CMAS staff worked with the Liaison Committee in designing the Set of Instructions for the study. Fields to accommodate the coding of 17 blood tests and 8 urine tests were added to the Standard Master Record Format used for contributing to SOA Individual Life Studies. Participating companies will submit records in this expanded Standard Master Record Format either as a separate file or as part of their contribution to the SOA Annual Ordinary Individual Life Study. Companies will need a computer interface with the laboratory(ies) used, and the capability of automatically translating test results from the lab reports to the Standard Master Record Format. Eight companies have indicated that they will participate; several other companies have expressed interest, but currently lack the necessary automated lab interface.

- **B. Society Of Actuaries Studies**

CMAS is the compiler for most of the Society of Actuaries’ Experience Studies. CMAS staff is responsible for interfacing with the 97 companies that currently contribute to approximately 20 SOA Studies. This responsibility, which includes the initial processing, validity checking, editing, and correction of each contribution, is accomplished by working very closely with a representative of each participating company. For each of the studies, CMAS staff is also responsible to an SOA Committee for the systems analysis, program design, computer programming, and processing required to produce the results requested by the Committee for that study. In addition, they also work with the SOA printer (Imperial Press) in the editing and preparation of files for the automated phototypesetting of study text and tables.

CMAS processes life, disability, and health insurance studies for both individual and group insurance as well as financial studies for the Society of Actuaries. Each participating company receives a preliminary copy of the ‘all companies combined’ results from CMAS, as well as a copy of their own results for comparison purposes. The final results of these studies are published in the *Transactions, Society of Actuaries, Reports of Mortality, Morbidity, and Other Experience*. Studies where CMAS staff played or is currently playing a significant role include the following:

1. **Individual Insurance Studies**

- **1986-87 Annual Ordinary Study**

18 contributing companies, with 14 companies contributing Smoker/Non-Smoker information. Contributions are submitted annually in Standard Master Record and Supplemental Impairment Record Format. CMAS staff are typically working on several processing and publishing phases of 3 Annual Ordinary Studies concurrently (eg. 1986-87, 1987-88, and 1988-89 studies). The 1986-87 Study is the sixth Annual Ordinary Study processed by CMAS staff.

- **1982-87 Cause of Death Study**

18 contributing companies. Study is tabulated annually from the death files of the 5 most recent Annual Ordinary Studies.

- **1978-83 Large Amounts Study**

12 contributing companies. The 1978-83 Study was processed by CMAS staff during 1987-89 and published in 1990. Five companies have submitted 1983-88 data for the next study as part of their annual contribution in Standard Master Record Format to the Annual Ordinary Study.

- **Waiver of Premium Study**

12 contributing companies. Companies are submitting data for the next study as part of their annual contribution in Standard Master Record Format to the Annual Ordinary Study.

- **Accidental Death Benefit Study**

6 contributing companies. Companies are submitting data for the next study as part of their annual contribution in Standard Master Record Format to the Annual Ordinary Study.
1. Loss of Time Studies

- **1986-88 Loss-of-Time Study**
  14 contributing companies. The 1986-88 Study is the eleventh Loss-of-Time Study processed by the CMAS staff, starting with the 1972-73 Study.

- **1981-82 Medical Expense Study**
  8 contributing companies. The production of this study, which was last processed by CMAS staff in 1985, has been suspended due to recent changes in individual medical expense products and changes in the company mix that write these products. The SOA is currently investigating the feasibility of conducting periodic studies of either individual or small group medical expense coverage.

- **1984-88 Long-Term Care Study**
  7 contributing companies. This pilot study was initiated in 1989 with CMAS staff being responsible for the preliminary processing, validation, and analysis of contributions. This study is currently awaiting further contributions and determination of tabular processing requirements.

- **1976-86 Individual Annuity Study**
  8 contributing companies. This study was processed by CMAS staff during 1990.

- **1985-89 Structured Settlements Study**
  33 contributing companies. This pilot study was initiated in April, 1990, and processed by CMAS staff during 1991 with individual company and 'all companies combined' results sent to all contributors for review in November, 1991.

2. Group Insurance Studies

- **1977-81 Group Long Term Disability Study**
  14 contributing companies. The 1977-1981 Study was processed by CMAS staff during 1985-87 and published in 1988. This study is currently undergoing revision and modernization, with this revitalization hopefully attracting more contributors in the future.

- **1980-89 Group Life Study**
  18 contributing companies. This study was revised and revitalized in 1990 (prior study 1975-79) and is currently being processed by CMAS staff. Study results will be available in 1992.

- **1987-88 Group Annuity Study**
  12 contributing companies. The 1987-88 Study is the fifth Group Annuity Study to be processed by CMAS staff.

3. Financial Studies

- **1986-89 Credit Risk - Commercial Mortgages Study**
  13 contributing companies. This pilot Historical Study was initiated in April, 1990, for the purpose of investigating the year-by-year credit risk experience of insurance company commercial mortgage investments. Other purposes were to study commercial mortgage cashflows and restructures; to develop a benchmark of reliable information for making investment portfolio management decisions and establishing credit ratings; and to examine issues such as liquidity, solvency, reserve standards, and surplus adequacy. CMAS staff assisted the Committee in developing the Set of Instructions and is currently processing the Historical (1986-89) Study. The results of this study will be available in mid-1992. CMAS staff is also processing 1990 contributions for the annual Ongoing Experience Study. The SOA expects to collect and report on commercial mortgage credit risk data annually in the future.

- **1986-89 Credit Risk - Private Placement Bonds Study**
  11 contributing companies. This pilot Historical Study was also initiated in April, 1990, for the purpose of investigating the year-by-year credit risk experience of insurance company private placement bond investments. CMAS staff activities for this study have paralleled those for the Commercial Mortgages Study. The Private Placement Bonds Study results will be available in mid-1992.

C. Other Activities

CMAS staff coordinates the annual publishing of the MIB, Inc. Handbook and Directory. CMAS staff was also involved in the page design and recent publishing
of the *Consumer's Guide to The Medical Information Bureau*.

**CMAS/AAIM/SOA Industry Interface**

CMAS interfaces with the insurance industry through committees of Medical Directors, Actuaries, Underwriters, and Investment Professionals, and the representatives of the 97 companies who contribute to the studies managed by these committees. CMAS staff is represented at all committee meetings. The establishment of a close professional and working relationship with both committee members and company representatives has over the years proven to be an important factor in the successful production of quality studies by CMAS.

Many industry committee meetings are held at MIB, Inc. facilities in Westwood, Massachusetts. This has allowed committee members to personally become better acquainted with MIB and CMAS facilities, operations, and staff. It has also allowed CMAS staff to have online interactive terminal capabilities and access to study data files and reports during meetings. Questions that arise can be researched and answered almost immediately.

Most of the work involved in interfacing with the 97 contributing companies is accomplished by telephone. All CMAS staff members have online terminals (PCs) at their work stations and are able to resolve most contribution problems while communicating with company representatives by phone. CMAS staff philosophy is to try to minimize the amount of work that a contributor might have to do to correct a problem, and to only request that a revised contribution be generated when the problem is so severe that it cannot be fixed by CMAS staff. Contributions are received on magnetic tapes or cartridges. However, several of the contributors to the newer studies, such as the Credit Risk Studies and the Structured Settlements Study, have submitted their contributions on 3.5" floppy disks.

**Staff Organization**

CMAS currently has ten full-time staff members organized into two groups - an Applications Systems Group and a Graphics Systems Group. The Applications Systems Group (6 members) managed by William McDonald is responsible for the computerized production of the studies including systems analysis, design, and programming utilizing FORTRAN, PL/I, COBOL, and the Statistical Analysis System (SAS). The Graphics Systems Group (3 members) managed by Joseph Hilton is responsible for the keyboarding, proofreading, editing, computerized phototypesetting, printing, and publishing of books containing the studies produced by the Applications Systems Group. This group utilizes word processing, desktop publishing, and photocomposition language systems.

The experience, continuity, and longevity of the CMAS staff have been important factors in the success of CMAS. Becoming an effective producer of studies requires a substantial learning curve and a knowledge of several diverse technical areas - mainframe and PC computing, actuarial, medical, underwriting, insurance products, investments, mathematics and statistics, desktop publishing, and book printing and publishing. The ten current CMAS staff members average 16.4 years of service with MIB and 10.5 years with CMAS.

**Computer Hardware And Software Tools**

CMAS staff use both mainframe and PC-based hardware and software systems to accomplish their tasks.

**A. Mainframe**

- **Hardware** - The current MIB mainframe configuration features two processors. Each processor has 11 MIPS ( Millions of Instructions Per Second) of processing power, 32 megabytes of central storage, and 24 input/output channels. MIB has 70 gigabytes of Direct Access Storage. The configuration also has Magnetic Tape Systems capable of handling both round-tapes and cartridges of several densities, and two Printers.

CMAS staff uses the MIB mainframe configuration in both interactive and batch processing modes. Each staff member has a PC with Terminal Emulation Mode capabilities for interfacing interactively with the mainframe computers. Terminal Emulation Mode also provides file transfer capabilities between the mainframe and the PC, which is a crucial capability to CMAS operations.

- **Software** - The primary higher level language system currently being used by CMAS for mainframe applications development is the Statistical Analysis System (SAS). SAS is an all-purpose data management system that provides tools and procedures for information storage and retrieval, data modification and programming, report writing and graphics, statistical analysis, and file handling. CMAS staff also uses FORTRAN, PL/I, and COBOL for several of the older processing systems. However, plans are to rewrite these systems in SAS as older studies are modernized and upgraded.
B. PC-Based

Hardware - Each CMAS staff member has a Personal Computer at their work station, either a 25-MHz 386 or a 16-MHz 386. Each system has 6-8 Mb (Megabytes) of RAM (Random Access Memory), Hard Drive ranging from 30Mb to 160Mb, 3.5" 1.44Mb Floppy Drive, Tape Backup System, 132-column Printer, and a Mouse. Each system also has a Terminal Emulation Board installed to allow the PC to be used as a mainframe Terminal with file transfer capabilities.

The Graphics Systems Group uses two 16-MHz 386 Personal Computers for desktop publishing. Each system is equipped with a 19" Monochrome Monitor (1600 by 1244 resolution) which is ideal for facing-page design and layout for books. One system has 8Mb of RAM, while the other has 3Mb; one system has an 80Mb Hard Drive, while the other has a 40Mb Hard Drive. Both systems have a 3.5" 1.44Mb Floppy Drive, a 5.25" 1.2Mb Floppy Drive, Tape Backup System, and a Mouse. This Group also uses an older 286 Personal Computer for word processing. All three systems use a 'share-spool' system to share a LASER Printer. A Page Scanner with Optical Character Recognition (OCR) software is also available.

In addition to the mainframe and PC platforms, later this year CMAS will be utilizing a Local Area Network (LAN). The LAN will provide CMAS with file sharing, printer sharing, relational data base management, and file storage capabilities not currently available on the other platforms.

Software - CMAS is currently running the DOS Operating System on the its PCs. WORDPERFECT is used for word processing and LOTUS 1-2-3 and QUATTROP-RO for spreadsheet applications. Plans are to install WINDOWS later this year for its graphical user interface capabilities.

All Applications Systems Group members have PC/SAS and PC/SAS/GRAPH installed on their PCs. The Graphics Systems Group uses VENTURA PUBLISHER with Professional Extension for desktop publishing, in conjunction with several Font Generation Systems.

Financial

For MIB's Fiscal Year 1992 (FY92 = 10/1/91 to 9/30/92), CMAS revenues are projected at $854,620. CMAS expenses for FY92 are projected at $879,706 for an operating deficit of $25,086. This small operating deficit will be covered from other MIB revenue sources.

CMAS revenues come primarily from two sources - the 6% Surcharge on the MIB Basic Charge assessed to each MIB member company specifically to support CMAS, and quarterly billings to the Society of Actuaries for the processing of Experience Studies. For FY92 revenue from the 6% Surcharge is projected to be $420,000 (49%), while revenue for the processing of SOA Studies is projected to be $434,620 (51%).

As discussed earlier, ADL recommended in the CMAS Feasibility Study that the Surcharge be used to support the production of traditional major intercompany mortality study projects. CMAS still uses this same revenue allocation philosophy today, with the staff activity percentage on traditional study projects (50%) closely paralleling the Surcharge revenue percentage (49%).

From 1972 to 1987 the Surcharge remained at the original 3% recommended by ADL in 1971. However, in 1987 the MIB Board of Directors set the policy that charges for MIB services should be set at levels which more closely reflect the actual cost of such services. For this reason, the Surcharge was increased in 1988 to the current 6%. This increase has reduced recent CMAS deficits and provides a level of revenue more in line with the actual level of CMAS activity. CMAS deficits are covered from other MIB revenue sources.

Conclusion

It is important that insurance companies continue to support organizations such as CMAS and contribute to intercompany studies. Regulators, government agencies, and the insurance industry itself look to these studies as a major source of information about levels and trends of experience, and for experience tables which provide the basis for valuation tables. New and updated studies are continually needed to support and justify the existing risk classification system. Additional contributing companies are needed for all of the studies discussed in this paper. You are encouraged to review your own companies participation in these studies and are invited to contribute. Additional information and Sets of Instructions are available from CMAS by writing or telephoning:

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No paper about CMAS would be complete without acknowledging the long-term support and significant
contributions to the success of CMAS by Edward A. Lew, FSA, Richard B. Singer, MD, and Harry A. Woodman, FSA. Ed Lew was Chairman of the 1979 Build and Blood Pressure Committee, and was the Project Director and Co-Editor of Medical Risks: Trends in Mortality by Age and Time Elapsed. Dr. Singer proposed in the late 1960s the concept of having an insurance industry Center for Medico-Actuarial Statistics, and was responsible for giving CMAS its name. He was also responsible for pioneering the life-table abstracting methodology used in the Medical Risks Books, and the methodology used in the Atrial Fibrillation Study. Harry Woodman is Chairman of the Medical Impairment Study Committee, and was responsible for revitalizing the Society of Actuaries' Individual Life Studies. He is also personally responsible for the recent reactivation of the AAIM/SOA Liaison Committee and the participation of Underwriters on this Committee. They are all still very active participants in mortality research, and their advice and expertise over many years is greatly appreciated by CMAS staff.

The members of the CMAS staff must be acknowledged for their accomplishments and expertise. They are William McDonald, Joseph Hilton, Keith Hoffman, Stacy Gill, Nancy Blood, Nancy Morse, Gareth Kinkead, Kathleen McGrath, and Lauretta Ray.

Reference


General References


