

## USERS GET IT THEIR WAY

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The SAS System<sup>®</sup> can be used to solve many differing types of business application problems. One such problem presented to a health insurance company IS department is described in this paper.

In this case, the IS customers were so wedded to an old procedure or reporting format that it was difficult to convince them that there is a better, more timely procedure - the SAS System<sup>®</sup> tool-kit.

For those of you who may not be familiar with the insurance business jargon, I have provided a glossary of terms as an attachment.

### THE PROBLEM

A health insurance company sold a new product that was a re-combination and change of a previous product. This product, called minimum premium or alternate funding, provided the best of the three health insurance coverage packages:

- Traditional or indemnity coverage - insurance pays 80%, insured pays 20%, choice of providers or doctors, reimbursement for prescriptions.
- PPO - insurance pays more for use of a selected network of providers, use of managed care, referrals, authorizations, copay for prescriptions.
- HMO - no paperwork, use of primary care physicians, copay for prescriptions, complete coverage of all costs at designated providers and facilities.

As a part of the billing process, the sales and marketing department offered timely reporting of claims utilization to the insured group broker. An old reporting system was in place for one part of the claims processing and utilization calculations. This represented the claims for the "private business" or traditional side of the product; this information was stored on the IBM and could only be obtained through the old reporting system using ancient COBOL programs that produced detail claims listings. These reports could be obtained only by filling out paper forms and submitting a request to the IS Production Control and then waiting patiently until Production Control scheduled the task and the reports were run. A cumbersome process at best.

The major problem encountered at this point was the fact that no comparable reporting procedures were in place for the HMO side of the business. To provide complete claims utilization, this information had to be merged with the private business or traditional coverage claims.

The customers wanted to retain the old private business, traditional claims reports and reporting formats. To complete the claims utilization report, the customers wanted to add the following:

- claims information from the HMO side of the business - this information was stored on the COMTEC and so existed in a completely different structure and processing environment than the private business information;
- claims information from the DPS (pharmacy claims which were provided on tape by an outside vendor);
- capitation calculations and allocations for the HMO side which did not exist anywhere in machine-readable form; and,
- accumulated year-to-date "*STOP-LOSS*" claims information in a summary form.

As is very often the case for IS departments, it is necessary to accommodate users requirements while adjusting to data requirements and constraints to solve data processing problems. Minimum premium report users and data requirements are listed below.

#### User Requirements:

- Incorporate the COBOL processed output, which was stored in the SAR system (an archiving repository for hard-copy report retrieval).
- Provide the ability to select a Group ID or a Range of Group IDS.
- Provide the ability to select a Date Range.
- Produce the final customized report.
- Require minimal computer experience or training -- a user-friendly system.
- Ensure availability at user's convenience.

#### **Data Requirements or Constraints:**

- Combine information from several different file and record layouts, and a variety of data environments (i.e., IBM VSAM files, DATACOM database files, physical sequential files from tape and up-loaded files from the COMTEC). This was accomplished with the "dem bones" method -- no two files had the same sets of keys and often a third file was used to select common keys for merging two other files.
- Translate and convert dates. The health insurance system stores dates in several different formats (e.g., IB2., MMDDYY8., DDMMYY6., MMDDYYYY10.,etc.). The IB2. dates have different bases: some are based on 01JAN1900 and some are based on 01JAN1940. Using ordinary methods, it would be difficult to select a date range given the diverse formats.
- Calculate capitations (which varied across HMO provider sources).
- Track claims and membership information.
- Accumulate year-to-date claims utilization.

The time period allowed to fulfill all these requirements was two months -- a formidable task for traditional methods; but this is an easy task using the SAS System<sup>®</sup> tool-kit!

## THE SAS System. SOLUTION

Using the SAS System., it is possible to meet the users requirements and circumvent the data constraints. Two programmers were able to satisfy the user through the use of the following SAS System. techniques and functions:

### SAS System. User Requirement Solutions

- A simple means of entering user-defined parameters

- %LET
- %INCLUDE
- MACRO

The user was given a screen that contained a series of %LET statements. She entered the desired user-defined parameters identifying the Group ID ranges and Data Ranges for the report. Once the parameters were entered, a program could be run that would create the report; this program could be submitted at the user's convenience.

These parameters were later %INCLUDEd to create control statements to create the COBOL generated report. This report was stored in SAR and later read as a physical sequential file by the SAS System. MACRO program modules. The %LET statements were also used in IF-THEN ELSE conditional statements to select desired HMO data files, DATACOM database files, and do conditional capitation calculations. The %LET parameters were also used to create customized TITLES, and SORT variables for page breaks for the customized report.

- Customized reports can be created using:

- DATA \_NULL\_;
- FILE REPORT;
- PUT @ etc., etc., etc.,;

## **SAS System. Data Requirement/Constraint Solutions**

- The SAS System. can read any data file, whether VSAM, IBM physical sequential, uploaded COMTEC files, physical sequential tape files, ASCII text files, or DATACOM database files.
- The SAS System. can MERGE files based on any field, or SUBSTR parts of a field, or fields of different length that have been TRIMed and concatenated.
- A SAS System. date is a date is a date. The variety of dates found in the different files present no problem when using the SAS System. Using INFORMATS to read the dates, they become SAS dates -- a number that can be added, subtracted, used to set a range, and then reFORMATted for the final report.
- The SUM, SUMBY, and PAGEBY options were used to provide summary information and separate reports for specific groups -- information not available in the original COBOL report. PROC TABULATE was used to provide an additional final summary report.

## APPLICATIONS DEVELOPMENT METHODS

Using the SAS System®, we created a user-friendly reporting system which was modular in structure (easy to de-bug), well-documented, and functionally correct. To accomplish this, we applied the following method.

- Negotiated with users to gently lead them into accepting an output from PROC TABULATE as well as the old format to which they still clung.
- Insisted on full, clear and concise specifications.
- Diagrammed the process.
- Provided full documentation, including a user manual that contained complete instructions with screens to display each step in the run process. This was used as a training guide, a tutorial, and later as a reference guide.
- Required sign-off on report mock-ups.
- Did not release full report until the programs had been fine-tuned, fully tested by the Quality Assurance team and the User Acceptance Team had signed-off on them.
- Provided follow-up evaluation and change control.

## **GLOSSARY OF TERMS**

**HMO** -- Health Maintenance Option - uses the managed care philosophy (primary care physician, referrals, authorizations, etc.) to control health care costs.

**PPO** -- Preferred Provider Option - uses a provider network to encourage customers to see specified physicians and facilities which promotes the control of health care costs.

**COMTEC** -- a computer with a health insurance software package designed specifically to collect, process, and store HMO data files.

**Capitation** -- an allocated fee that is charged for each member of an HMO, may be charged monthly or annually.

**Claims utilization** -- amount of claim dollars paid by health insurance coverage. Complicated formulas determine amounts based on type of coverage, demographic information, amount billed, type of service, provider used, etc. The insured group is underwriting this cost.

**STOP-LOSS** - a pre-determined amount of claim dollars paid. When this is reached, no more charges will be allowed.

**Private business** -- the non-government book of business for a health insurance company.