

Using SAS/Graph® with any dBase® compatible product with Microsofts'® ODBC.
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Introduction

I am using Open Database Connectivity (ODBC) as middle ware to read many PC/PAT® databases. PC/PAT software uses "Patterns of Treatment", a medical review criteria database. I use PC/PAT software to clinically review BCBS of Ne. Physician claims. I am using Structured Query Language (SQL) to select the data from these databases. These databases are in FoxPro® format. I am analyzing Physicians claims by merging and summarizing most of the PC/PAT databases in SAS®. There is a good pass through of information between the databases, enabled by ODBC, and SAS. SAS has the ability of producing presentation level graphics and using statistics to validate the results for the analysis. I am using SAS to determine which physicians to profile and graph.

SETUP

SQL is embedded within my SAS programs. SQL selects what

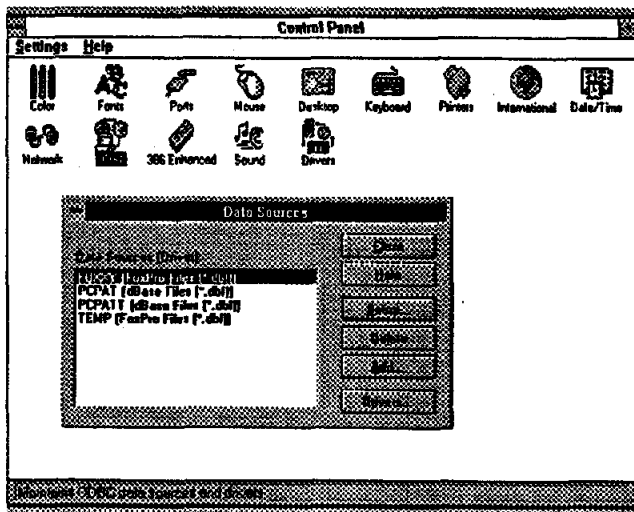
data to pass on to SAS. SQL uses tables, indexes, keys, rows, and columns to identify observations or variables. The SQL procedure works in conjunction with SAS/ACCESS® software. I am using SQL Views to extract the data. Views should be thought of as virtual tables. PROC SQL views do NOT actually contain data.

SQL, SAS, EDP Terminology

SQL Term	SAS Term	E. D. P. Term
table	SAS data file	file
row	observation	record
column	variable	field

I am using ODBC as middle ware to connect SAS to PC/PAT tables in FoxPro® format. ODBC standards provide a common interface to a variety of tables. ODBC defines the interfaces that enable SAS to access FoxPro tables. ODBC is told the data source (i.e. FoxPro tables) in the ODBC administrator in the Windows™

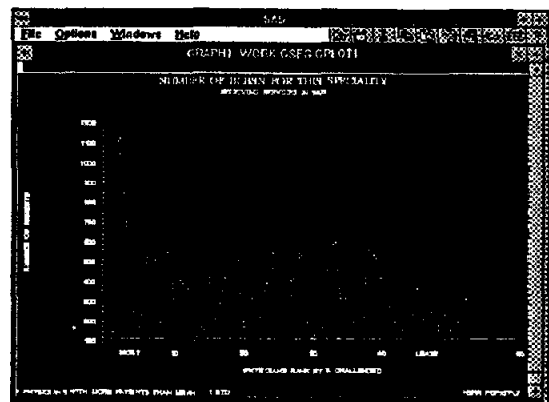
Windows Control Panel



Profiling by Graphics

normal distribution profiles will be used to educate "outlier" physicians (i.e., physicians on the tail ends of the normal curve).

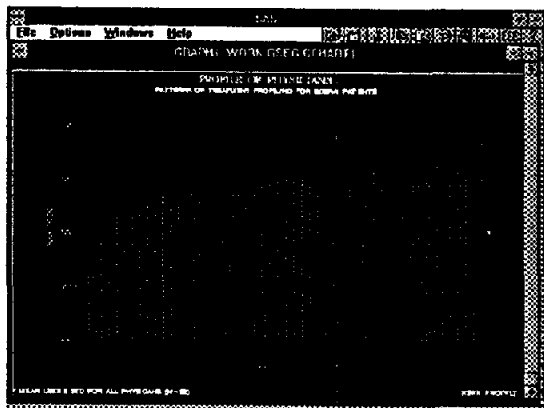
SAS "patient" Graph on the
number of Physician Patients



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using the medical review criteria from "Patterns of Treatment." The Physicians with a pass less than approximately 95 % of their peers will be looked at in greater detail. I increased the level of significance in the "pass" graph because I wanted to minimize the level of Type II error (i.e., I tried to minimize the number of Physicians I would have to look at in greater detail). I placed a reference line at the 95% mark.

SAS "Pass" Graph on the number of Passes



Reports

I used the PC/PAT tables to provide the information for the "outlier" reports. I decided to include these variables: number of professional services, number of members served, office

visits, and average costs. I produced this report for both ends of normal distribution tail.

Profiling "outlier" Physician report

PHYSICIAN	PROF. SVCS.	MEMBERS SERVED	OFFICE VISITS	AVERAGE COSTS
1	100	100	100	100
2	100	100	100	100
3	100	100	100	100
4	100	100	100	100
5	100	100	100	100
6	100	100	100	100
7	100	100	100	100
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93	100	100	100	100
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100	100	100	100	100

Conclusions

I use ODBC to read medical review databases to profile physicians at BCBS of Ne. ODBC enables SAS to read this information effortlessly. SAS with its statistics, identifies the outlier physicians automatically. After identification, SAS produced presentation level graphics on these physicians that the average user could conceptualize or understand. The key concluding points of this paper are: the flexibility of ODBC to work with a variety of databases; and SAS can automatically produce presentation level graphics using those databases.

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