

Paper 170-29

Throw Away the Paper Trail and Send it by E-Mail

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ABSTRACT

This paper describes the transition from a massive hard-copy mail-out of reports on sexually transmitted disease surveillance data quality to an electronic point-and-click system that sends these quarterly feedback reports by e-mail. Each quarter, the improved process utilizes a SAS[®] program to generate case count and data quality and completeness reports for each individual state, its associated cities, and the United States (total), and sends them as e-mail attachments to the appropriate persons in the state and local health departments. By using the SAS Output Delivery System (ODS) and the EMAIL device-type of the SAS FILENAME statement, we have both improved the look of the reports and have saved the taxpayers the cost of labor, envelopes, and postage and improved the timeliness of the data quality feedback.

INTRODUCTION

The Statistics and Data Management Branch of the Division of Sexually Transmitted Diseases Prevention, Centers for Disease Control and Prevention (CDC) receives reports of sexually transmitted disease (STD) cases from 126 reporting areas within the United States and outlying areas (50 states, selected U.S. cities, Guam, Puerto Rico and the U.S. Virgin Islands). In 2002, over 1,200,000 STD cases were reported to CDC.



Over the years, the transmission method for reporting these data has evolved from hardcopy forms (sent monthly, quarterly, and yearly) to more timely, weekly electronic data transmission. While the reporting method has evolved over time, data quality feedback continued to be provided by mailing hard-copy reports to the reporting jurisdictions. Quarterly, each reporting area is sent a report that shows any discrepancies between the case counts reported on the hardcopy forms compared to counts reported electronically. The report also shows the completeness and validity of their electronically-reported case data and compares their data to reported STD cases in the U.S. as a whole. These reports are sent to at least three different people per state or local health department and several staff members at the federal level receive the entire report. We estimated that over 9,800 pages were printed and processed four times a year (totaling approximately 40,000 printed report pages per year).



Since the SAS job was so large and took so long to print, it had to be printed at an off-site CDC facility. A staff member would travel off-site to pick up the reports which filled several boxes and return to the office to prepare the reports for distribution. Typically, each quarter, the sorting of the reports, the additional photocopying of selected reporting area and total U.S. reports, and the printing and affixing of labels on envelopes required two full person-days (i.e., two people a full day). The collated reports were then placed in envelopes and sealed. Approximately 200 envelopes were mailed to the local and state health departments each quarter. We recognized that generating and mailing these reports every three months was a very time-consuming job utilizing excessive amounts of paper, office supplies, and postage and was an ineffective use of staff resources.

SOLUTION

With the availability of the SAS ODS, we have improved the look of these data quality feedback reports. Since this process also resulted in an .RTF file being created, we decided that it was time to change the age-old paper system and send these reports as attachments via e-mail.

When we piloted the automatic e-mailing of SAS output reports, we ran into one problem with the system -- a Microsoft Outlook XP and Outlook 2000 security feature that pops up a verification box (see Microsoft Knowledge Base article 262631).



According to SAS, this additional prompt can be turned off by the system administrator. Since our agency's security policy requires that the feature be left in place, the person who submits the SAS job would have to sit at the computer and click on "Yes" for each state. This was not practical for the number of reports that we needed to send "automatically".

After some investigation, we recognized that if the e-mail is sent via an SMTP mail server, this verification box is eliminated. We did this by adding the "EMAILSYS=SMTP" option to our filename statement and also added an "-EMAILHOST=" statement to the SASV8.CFG file which referenced the IP address of our SMTP mail server. Now all the reports are sent out with one SAS job submission.

THE CODE

Macro Variables:

CURRYR

The 4-digit current processing year

QTR

The current processing quarter

STATE

Is the 2-digit geographic state code (i.e. AL for Alabama)

NAME

Is the full state name (i.e. Alabama)

FIPS

Is the 2-digit state Federal Information Processing Standards Publication (FIPS) code (i.e. 01 for Alabama)

SENDLIST

Is the list of e-mail addresses for recipients

NOTES:

The subject line in the example code would translate to "Alabama Quarter 4, 2002 Report"

The attachments are saved in the following formats:

ALQTR42002.DOC

The 4th quarter 2002 report for Alabama

ALUNK42002.DOC

The 4th quarter 2002 percent unknown report for Alabama

The following statement must be added to the SASV8.CFG file: -
emailhost=999.999.9.999

Where 999.999.9.999 is the IP address of the SMTP mail server

*****;

```
%let curryr = 2002;
```

```
%let qtr = 4;
```

```
%macro sendit(state,name,fips,sendlist);
```

```
  FILENAME MY150 EMAIL EMAILSYS=SMTP
```

```
    TO=&sendlist
```

```
    CC=("sdmb@cdc.gov")
```

```
    SUBJECT="&name Quarter &qtr., &curryr Report"
```

```
    ATTACH=( "i:\datamgr\&STATE.QTR&QTR.&CURRYR..DOC",  
            "i:\datamgr\&STATE.UNK&QTR.&CURRYR..DOC" );
```

```

DATA _NULL_;
  FILE MY150;
  PUT @1      "We are attaching the quarterly report for Quarter &qtr., &curryr.. "
              "Please notify us at sdmb@cdc.gov if you do not wish to receive "
              "this report, or if the report should go to another address. " //
              "The footnotes on the quarterly report show the population we use "
              "to calculate rates. Please be sure you look at these numbers and "
              "let us know if they are not correct." //
              "Sharon Clanton" /
              "CDC NCHSTP/DSTD/SDMB" /
              "stc1@cdc.gov" /
              "(404) 639-8350";

  RUN;
%mend sendit;

%sendit(AL,Alabama,01,("emailname1@domain.gov","emailname2@domain.gov"))

```

CONCLUSION

This new system has resulted in a savings in time, staff resources, office supplies (paper and envelopes) and postage. We estimate that this modified reporting process saves the government approximately \$1,000 per year in paper, postage and envelopes alone, not to mention the labor of two employees for a full day four times a year. Some of the individuals receiving the feedback reports may choose to print their reports, but many recognize the savings in time and paper and review the reports electronically.



Changing the code from the old system of SAS PUT statements to PROC REPORT using the SAS ODS was not a difficult task. These changes have greatly improved the entire process of sending out the quarterly STD surveillance data quality reports and also improved the look of the reports. It was then very simple to add code to allow the reports to be e-mailed as attachments. The most difficult part of this process was obtaining the correct e-mail addresses for all of the recipients and maintaining these addresses. Currently these addresses are stored in the SAS macro call, but a system is being developed to store all of the contact information and the addresses, which will then be automatically pulled from that database.

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