



Breathing life into government reporting

NIOSH uses SAS® to provide occupational health data to state agencies

Industry

Government

Business Issue

Supply occupation-related data about respiratory ailments to various agencies.

Solution

SAS® extends the power of analytics and reporting to users via the Web.

Benefits

Access to data helps identify, reverse negative trends in work-related illnesses.

While many states are rich in certain natural resources that fuel the American standard of living, workers responsible for digging these resources from the earth have often paid the price by breathing harmful dust and other byproducts of their mining.

The situation is similar for many factory workers who operate in the presence of dangerous chemical agents, as well as farm workers who may be exposed to a number of hazardous materials.

State agencies in charge of monitoring the well-being of workers once faced the daunting challenge of manually sifting through US Census data and county death certificates to determine if, for example, coal miners were indeed at greater risk for respiratory ailments than, say, office workers. Such associations and determinations enable states to establish policies to protect workers while ensuring that they can continue to go about their jobs.

Using SAS, however, the National Institute for Occupational Safety and Health (NIOSH) has created a Web-based, automated reporting system to assist the states in monitoring the health and well-being of their citizens.

Unearthing health trends

Known as National Occupational Respiratory Mortality System (NORMS), the reporting system is a data storage and interactive data-retrieval system developed and maintained by NIOSH. With SAS, NIOSH has now extended the power of NORMS to end users via the Web.

State agencies concerned with determining the number of deaths or looking at trends related to occupational respiratory disease over time are the typical end users. Approximately 18 percent of the 2.3 million deaths recorded in the United States in 2001 included some mention of respiratory disease on the death certificate – up from 10 percent in 1968 – according to NIOSH.

The system combines national mortality data obtained annually since 1968 with multiple-cause-of-death records for asthma, chronic obstructive pulmonary disease (COPD), lung cancer, malignant mesothelioma, pneumoconiosis, tuberculosis, and other respiratory diseases and conditions. The system generates summary mortality statistics – including number of deaths, crude mortality rates, age-adjusted mortality rates, years of potential life lost, and proportionate mortality ratios – at the national, state or county level for all US residents or by age, race and sex subcategories.

“Our query system is fast, and it offers a wide range of options for tabulation and presentation, which provides our customers with a powerful tool for research and decision making,” says John Wood, a statistician in NIOSH’s Division of Respiratory Disease Studies.

Improving mortality patterns

NORMS began as a SAS/AF® application pieced together from a collection of SAS programs that Wood and other statisticians had written to generate reports relating to respiratory ailments.

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John Wood
Statistician
NIOSH

Wood and other NIOSH staff completed the application as it now exists. Wood has controlled others’ access to the databases and data warehouses all along, but only recently has the interactive querying application become available.

“It started out with someone asking me for something specific about a disease. I’d write a SAS program to give them the answer,” Wood says. “I developed the query system to give people direct access to the data. That way they wouldn’t have to come to me every time they needed information.”

Wood and IT specialists Norma McKee and John Barnett say NIOSH has broadened its scope with SAS, adding that they now do things they couldn’t do five years ago. “What we’re doing is impressive because we’re able to bring all this information together so that anyone, with the click of a mouse, can have access to all this knowledge,” Wood says.

Wood credits McKee and Barnett for providing critical technical assistance that makes the project successful. And they say SAS Technical Support has proven useful. “Technical support has been excellent,” McKee says.

“They can always resolve the problem quickly, without a lot of back and forth.”

Wood judges the success of the application by its potential to improve lives by making workers, employers and government agencies aware of occupational relationships with respiratory mortality. “I like to think that the information they obtain from our system helps them make decisions that will improve trends,” Wood says. “The best thing I can do is give people access to data that might make a difference in someone’s life.”



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