



**Fabio Perina**, Director of Health Information Systems

## SAS® Helps Italy's Regione del Veneto Plan and Improve Health Services

### Industry

Health Care Providers

### Business Issue

Planning and improving health care services for 4.5 million people while meeting statutory requirements in a complex environment.

### Solution

SAS Strategic Performance Management helps the region plan, control and report on the health care needs of its population.

### Benefits

Improved quality of life; more efficient and effective delivery of health care services.

Like most industrialized nations, Italy faces a dilemma in health care: an aging population means rising demand for services while tight budgets and rising costs, most notably with pharmaceuticals, place a massive burden on resources. Regione del Veneto, the region around Venice and home to 4.5 million people, is no stranger to this dilemma. However, with SAS, the regional administration responsible for health and social care has a better understanding of how services are provided and the resulting costs; as a result, it is meeting its statutory requirements and identifying ways to improve service provision.

"We have around 900,000 hospital admissions and perform 70 million clinical evaluations each year," says Fabio Perina, Director of Health Information Systems, Department for Health Resources, Social Services and Information Systems for Regione del Veneto. The region's health system, which has around 90 hospitals and an annual budget of €7 billion (US\$8.35 billion), is organized into 23 local health units, each with their own information system. Perina continues, "The health care model we use is somewhat different than other regions, in that we place the emphasis on integrating the health care system with the wider public health system and policies. We see this integration as a way of reinforcing our regional presence and improving services." In recent years, managers have relied on SAS to plan, control and report on health care activities and costs.

### A changing environment

Italy's health system is striving to develop strategies that reflect increases in citizens' "quality of life" expectations with the services available. "To achieve this, our work must be supported by analytical and monitoring tools that are flexible and effective," says Perina. Since Italian law now places a statutory responsibility on all regions to develop information systems to verify that the provision of local health care services meets national standards, there has been rising demand for "health care intelligence" solutions.

"We need to constantly 'polish' our information tools, in terms of data quality and timeliness, and the effectiveness of analytics," Perina explains. "It's critical for us to verify service efficiency. For example, certain services could no longer be offered through hospitals; some might be better provided through specialized outpatient clinics." He says such developments provide distinct advantages to patients and, consequently, to the entire system, thanks to the costs associated with different options. To enable the planning of such changes, Perina says the region uses SAS analyses and reporting to target hospitals, outpatient services and prescription records.

### Developing the system

"We wanted to provide regional management offices and health agencies with a powerful analysis and reporting solution by accessing the regional data warehouse," he says.

“Our SAS solution has clearly had an impact on health care provision. One important change is how information is now used at a local level, to see if the right organization is being used to deliver the right health care services, since each organization has a different scheme of costs, to meet our targets. Once you know what you want to achieve, you can get the results very quickly using SAS.”

**Fabio Perina**

Director of Health Information Systems, Department for Health Resources, Social Services and Information Systems

“The first step – once we’d activated a secure, private network to share information and established quality standards – was to identify the right indicators for the system, to create common ground with the 23 local units. We wanted to provide an immediate response to the local units that supply our data as well as enable real-time analysis,” explains Perina. The system would also have to be flexible enough to adapt to the evolving concepts that underpin the analyses required and their outputs. “We also had to address the heterogeneity of our data in organizational terms, as well as in our local health units and functional terms, given we had so many different data types. We chose an approach based on strategic performance management.”

The essential indicators were developed in cooperation with the University of Venice, while a multidimensional navigation system was created so users could format their own reports. “A key aspect of the system is the data warehouse that covers hospital-based activities and pharmaceutical costs,” says Perina. “We are also developing functionality to cover home health services, outpatient services, and births and deaths data.” Moreover, the region is working on a solution that, says Perina, “will allow us to ‘fuse together’ the types of services we provide to individuals, in order to produce more detailed analyses of how resources are being used to respond to different problems.”

### **Performance management in health care**

SAS Strategic Performance Management helps organizations focus on key metrics, align corporate goals and respond quickly to changing circumstances. “Our system’s home page provides people with a clear representation of our indicators, along with their geographical position,” says Perina, “covering the entire region and 23 local units. People can interact with the system in two ways, through benchmarking or by using a visual representation of a territory.” For example, users can see a visual representation of the number of hospital admissions divided by local health unit, showing the extent to which citizens use different hospitals in different places. Graphics show how the metrics change over time, enabling users to see trends and patterns. At the same time, territorial visualizations provide details of each local health unit, enabling users to gain greater insights into their activities and, once again, obtain a graphical view of key details or patterns of change. “It’s important that we can, wherever possible, see if certain indicators are linked together, to infer reasons behind patterns in the data,” adds Perina. Reports are provided to users via the Web.

Perina gives another example of how SAS is used. “Our Hospital Activity Analysis System includes data from 2000 to 2004 and supports the planning

and management activities we use to verify the effectiveness of hospital services.” The easy-to-use system enables users, centrally or locally, to choose the indicators and variables to analyze, and to clearly define the scope of their inquiries. Indicators include cardiology, geriatrics, neurology and general medicine. Each indicator has a complete specification available online at any time. “Our data warehouse covers important and sometimes highly complex indicators, such as case mix and comparative performance index,” continues Perina. “These measures contribute toward our ability to benchmark effectively.” Users can browse through the details and, if required, zoom in to explore the smaller units that make up a hospital’s overall activity. Similar capabilities are provided to analyze pharmaceutical expenses and to track activity in the region’s nursing homes.

With any performance management system, it’s critical that action follow analysis. “Our SAS solution has clearly had an impact on health care provision,” Perina states. “One important change is how information is now used at a local level, to see if the right organization is being used to deliver the right health care services, since each organization has a different scheme of costs, to meet our targets. Once you know what you want to achieve, you can get the results very quickly using SAS.”



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