



# Nebraska Health and Human Services

GIS Helps Nebraska Tackle Flu Vaccine Shortage

## Software Used

ArcView

ArcIMS

## Data Used

ESRI 2003 Demographic Data  
population estimates

## The Solution

Nebraska chose ESRI's ArcGIS® desktop geographic information system (GIS) software ArcView® for viewing and analyzing population data from the ESRI 2003 population estimates for Nebraska to ascertain how much vaccine was needed in various locations.

ESRI's ArcIMS® Internet mapping software was used to give public health officials and others access to maps of the data for easy visual representation. Within days after the Chiron announcement, Nebraska had a snapshot of the current vaccine supply across the state and anticipated need. That data, integrated into the GIS, showed the number of flu vaccine doses available compared to the entire population per health district.

By viewing this information on a map, Nebraska HHSS identified where gaps in coverage existed, which made it easier for state employees to redistribute the vaccine and ensure that it reached those who needed it most. Local health departments kept the information up to date by entering and accessing vaccine information on a secure Web site.

During the shortage, HHSS moved quickly to develop a vaccine survey that collected field data concerning influenza vaccine supply and demand. Data for that initial effort was taken from faxes sent in by health care providers. David Lawton, Nebraska HAN coordinator, says that one of the standards the network follows is to have every data point in the database geocoded. He says, "The key is that, whenever we collect data, it gets geocoded before we deposit it into our database. It's fully integrated with the GIS."

The results were automatically tabulated into a comma separated value file for sorting or printing, whichever was required. Lawton attributes having this automated system already in place to Nebraska's success in quickly getting the flu vaccine to everyone who qualified and wanted it in 2004. "We have a very complete picture," he says.

## Results

HAN proved its value in December 2004. The Nebraska HHSS worked in collaboration with local health departments. Using the network, within one day HHSS determined there were 17,000 doses of flu vaccine in the state. The survey results enabled local health departments to provide the public with information about the availability and location of the vaccine, and HHSS used the data to formulate public health policy regarding priorities for vaccination.

The weekly snapshots of the influenza vaccine status for Nebraska helped reallocate supplies and vaccinate all citizens who were on the priority list and wanted the vaccine. Lawton says HHSS has become a facilitator, making good use of the local and district public health departments to verify need, set up clinics, and deliver vaccine supplies.

The HAN surveys continued through the flu season. More than 400,000 flu shots were distributed throughout Nebraska, covering 100 percent of all those in the high-risk category who wanted them. Nebraska HHSS was also able to ship 6,000 doses to Missouri's high-risk patients.

Chris Chalmers, GIS coordinator, Nebraska HHSS, says his agency has embraced GIS technology. In less than two years, the department has positioned Nebraska at the forefront of other states in addressing health-related issues.

## For More Information



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