

GIS For Health Industry Mapping

By Midland GIS Solutions

Throughout the initial years, Midland GIS Solutions has primarily been involved with assisting entities build foundational GIS programs and develop data in preparation for more advanced applications. As these organizations are becoming more familiar with GIS, and with the vast power inherent within these mapping programs, demand is increasing for broader applications. One of the foremost of these advanced applications involves the vast field of health care management.

Russ Wetzel, a GIS analyst with Midland GIS, has numerous years of application experience directly applying medical data through a GIS. While a graduate student at the University of Nebraska in Omaha, Mr. Wetzel also worked as a health data analyst with the University of Nebraska Medical Center (UNMC) Department of Preventive and Societal Medicine. He also worked for the Primary Care Office in the Office of Rural Health at the Nebraska Department of Health & Human Services System (NHHSS).

“One of the things we were working on at UNMC, and at NHHSS, was designation of Health Professional Service Areas and the delineation of Medically Underserved Populations and Services based on proposed changes to the methodologies used for current determination,” Wetzel recalls. “We knew early on that GIS was the perfect tool for this kind of application.”

Health-related GIS applications are quickly becoming some of the fastest growing new applications for GIS technology. As numerous elements involved have direct geographic connotations, applications become limited only by the availability of quality data and the imagination. From coast to coast health care professionals are employing GIS to assist in their day-to-day health applications, whether related to health care management, access, research, or data analyses. In an era of health care reform, understanding the geographic elements involved, including their interactions with

other factors, is contributing to more effective health care services.

Geographic information systems have evolved into an empowering technology enabling health professionals to use, analyze and present health information within a geographic context in ways not previously possible with textual and numerical information systems. In comparison with other relevant technologies, GIS offers greater awareness and enhanced capabilities to officials to aid in enhanced response to health care, medical and research issues at numerous and varying scales. Emergency management officials are developing detailed data in support of accident response, both in preparation and execution stages.

The robustness of GIS is best illustrated by the diversity and variety of applications health care officials are finding for it. From disease mapping to conducting space/time cluster analyses, analyzing spatial trends, mapping facility data, optimizing delivery of goods and services, predicting risk, conducting exposure assessments, identifying at-risk populations, and defining corrective interventions, among many others, GIS is becoming a vital asset for these departments. What effects do regional geographic factors have on patients, health care professionals, facilities, or policies at varying levels? How can travel time be affected to enhance patient care? Where are specific demographics located within patient databases? What extents do socio-demographic, cultural, or health status characteristics have on patients, practitioners, facilities, or communities at large? How are facilities being used? Where are the region's health resources located? What health behavior trends can be illustrated? How can disease mapping enhance health care? These are only a few of the multitude of questions GIS can contribute answers to.

