CASE STUDY
Information System as an Effective Force Against H1N1 Pandemic

Information systems are valuable to businesses for tracking business activities in real-time, as they occur. They are also valuable to the medical community for tracking the spread of viruses such as the H1N1 virus, also known as the swine flu. New Jersey-based Emergency Medical Associates (EMA) operates 21 emergency rooms in hospitals across New Jersey, New York, and Pennsylvania. With information mined from its diverse locations, EMA is in an ideal position to spot an outbreak of the flu in its early stages. All it requires is an information system to provide valuable information in a timely manner.

EMA's CIO and information systems specialists applied proven business information management techniques to their medical information needs. They understood that tracking medical statistics across their 21 emergency rooms was similar to tracking sales statistics across retail outlets. They required the same business intelligence (BI) and reporting tools used by successful businesses. Business intelligence or BI systems are designed to extract, or mine, useful information out of the data collected by businesses or organizations into databases. That data may consist of detailed sales information collected at the time of a sale or patient symptom information collected at the time of an examination.

EMA began by installing a database management system from Oracle. The database was shared by all of its 21 emergency rooms over a high-speed private network. EMA then contracted with SAP to install its BusinessObjects XI tool set to function as the company's BI platform. BusinessObjects can sort and sift through data in the database to find patterns and exceptions. Combining the BusinessObjects system with other software including Xcelsius and Crystal Reports (powerful reporting software), and Web Intelligence (providing a Web interface to the system), EMA created a system that generates insightful reports and visualizations about medical conditions on a regular schedule and on demand.

Today, EMA physicians and nurses, depending on their needs, can access 27 dashboards, which provide statistics displayed in charts and lists that are updated as information is entered into the database. They also have access to 30 daily reports from the system informing them of the current status in all of their emergency rooms and of any changes in the status quo. The system allows users to customize their view of the data to focus on the information that is most important to their work.

Using its new information system, EMA was the first to spot the outbreak of H1N1 in the Northeast. Doctors knew that about 6 percent of patients complain of flu-like symptoms on any given day. When the EMA BI system reported that 30 percent of patients were arriving with flu symptoms, the doctors warned the country that H1N1 was on the move. This alert provided medical professionals and citizens the time needed to take action.

Discussion Questions

1. What role did business intelligence software play in catching an H1N1 outbreak in the northeastern United States.?

2. How does a system such as EMA's BI system use human intelligence and machine intelligence to support decision making?

Critical Thinking Questions

1. How do the BI needs of business professionals and medical professionals differ? How are they alike?

2. How does this case study reflect the need for standardized digital medical records systems in the U.S.? How might such standards influence the country's ability to keep its population healthy?

SOURCES: Lai, Eric, "BI helps New York-area hospitals track, fight H1N1," Computerworld, October 8, 2009, www.computerworld.com/s/article/9139121/BI_helps_New_York_area_hospitals_track_fight_H1N1; EMA Web site, accessed November 12, 2009, www.ema-ed.com; SAP staff, "Emergency Medical Associates Stays Ahead of Swine Flu Outbreaks This Back-To-School Season with Sap® Software," SAP Press Release, September 14, 2009, www.sap.com/about/newsroom/topic-rooms/business-objects/press.epx?pressid=11826.