The benefits of data mining

I'm currently involved in a project examining several aspects of positioning for spine surgery. One piece of this project is to determine if there's any correlation between positioning and skin integrity. Although some data are available for OR practice, the data source is different for patients on the nursing unit. An additional search is needed to find skin integrity issues, which may or may not be occurring postoperatively. In this situation, data mining would help define any patterns or correlations throughout the patient experience.

Data mining

Data mining is a data processing approach that allows users to "analyze data from many different dimensions or angles, categorize it, and summarize the relationships identified."¹ We've seen data on the percentage of infections, cost control, room utilization, turnover times, and event reporting. Data mining takes this information gathering to the next level. Data mining was used in a hospital in Washington, D.C. as staff tried to identify why patients were becoming ill after discharge. Data mining revealed that these patients had the same type of infection and were all assigned to the same hospital room, indicating the environment was the contributing factor.²

Unfortunately, there are barriers that prevent wide use of data mining. The infrastructure supporting data mining must be built into the electronic medical record (EMR) program. Accessibility of data, data often occurring in separate systems, lack of a standardized vocabulary, and privacy issues related to the Health Insurance Portability and Accountability Act (HIPAA) are some reasons why data mining can be complicated.³ The perioperative setting seems ripe for this endeavor—it has established routines for a good reason. The standardization of processes decreases the potential for adverse events. Standardized documentation lends itself to an enhanced ability to collect or mine and analyze various data elements captured during the perioperative patient experience. The Association of periOperative Registered Nurses' Perioperative Nursing Data Set is a clear, standardized language for communication through documentation. A standardized documentation language is necessary to implement an EMR.⁴ Since standardized terminology is documented, key words used to begin a search are more easily collected or mined.

Data mining utilization

So how often is data mining used in healthcare centers? I conducted a literature review and found minimal information regarding how often and how widespread data mining is occurring. Information should be transparent so trends can be identified at the organizational and national level. Data mining has the potential to determine treatment effectiveness, identify best practices, and decrease costs, thereby promoting optimal patient outcomes. **OR**

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