

## 3.9 INFORMATION MANAGEMENT

Information management refers to the acquisition and use of patient data for key hospital activities that include but are not limited to direct patient care. Optimal care of hospitalized patients and optimal workflow require basic clinical information systems. Advanced clinical information systems also provide decision support, which may include computerized provider order entry (CPOE), event monitoring, electronic charting, and bar coding. Successful information management may have positive effects on quality of care, including patient safety, effectiveness, and efficiency. For example, CPOE has been shown to reduce prescribing errors by 48%, and an electronic health record combined with clinical decision support tools reduces the ordering of redundant tests.<sup>1-4</sup> Hospitalists use local systems to acquire data and information that support optimal medical decision-making at the point of care. Hospitalists can lead or coordinate efforts within their institution to develop, use, and update clinical information systems to improve patient outcomes, reduce costs, and increase satisfaction among providers.

**KNOWLEDGE**

*Hospitalists should be able to:*

- Describe the use of hospital information systems by different departments to manage patient registration and financial data, process clinical results, and schedule appointments and tests.
- Identify and describe the process to access available sources of reference information, which may include literature search engines, online textbooks, electronic calculators, and practice guidelines to support optimal patient care.
- Describe information systems that can facilitate the practice of evidence-based medical decision-making.
- Explain the impact of CPOE with decision support on patient safety in the hospital setting.
- Explain potential pitfalls of the use of CPOE.
- Recognize the influence of individual patient factors in the interpretation of available information.
- Describe potential advantages and disadvantages of written and electronic patient records.
- Explain the limitations of different forms of data and data systems available to clinicians and how information systems can facilitate timely and accurate clinician submissions of bills.
- Explain Health Insurance Portability and Accountability Act (HIPAA) regulations and their impact on management of patient information.

**SKILLS**

*Hospitalists should be able to:*

- Efficiently retrieve and interpret data, images, and other information from available clinical information systems.
- Interpret data from digital devices, which may include cardiac or bedside monitors, glucometers, and pulse oximeters.
- Access and interpret information from internet-based clinical information systems when available.
- Interpret results incorporating statistical principles of probability and uncertainty.
- Recognize the limitations of acquisition devices or equipment and use clinical judgment to interpret results that fall either within or outside the expected ranges.
- Lead, coordinate, and/or participate in multidisciplinary initiatives to adopt hospital information systems that improve efficiency and optimize patient care.
- Lead, coordinate, and/or participate in multidisciplinary initiatives to continuously improve hospital information systems and physician practice patterns by providing constructive feedback and advice in system development.
- Advocate for order entry systems that promote patient safety and ease of use.
- Identify issues, provide feedback, and resolve conflicts within an information systems framework.

**ATTITUDES**

*Hospitalists should be able to:*

- Adhere to principles of data integrity, security, and confidentiality.
- Adhere to principles of professionalism and avoid “cut and paste” plagiarism within one’s own electronic medical documentation.
- Advocate for information decision support to facilitate efficient and optimal medical management.

**References**

1. Bates DW, Kuperman GJ, Rittenberg E, Teich JM, Fiskio J, Ma'luf N, et al. A randomized trial of a computer-based intervention to reduce utilization of redundant laboratory tests. *Am J Med.* 1999;106(2):144-150.
2. Nies J, Colombet I, Zapletal E, Gillaizeau F, Chevalier P, Durieux P. Effects of automated alerts on unnecessarily repeated serology tests in a cardiovascular surgery department: a time series analysis. *BMC Health Serv Res.* 2010;10:70.
3. Radley DC, Wasserman MR, Olsho LE, Shoemaker SJ, Spranca MD, Bradshaw B. Reduction in medication errors in hospitals due to adoption of computerized provider order entry systems. *J Am Med Inform Assoc.* 2013;20:470-476.
4. Wilson GA, McDonald CJ, McCabe GP Jr. The effect of immediate access to a computerized medical record on physician test ordering: a controlled clinical trial in the emergency room. *Am J Public Health.* 1982;72(7):698-702.