



## ***Hospital Pharmacy Journal Club***

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*“Electronic Inventory Systems and Barcode Technology:  
Impact on Pharmacy Technical Accuracy and Error Liability”*

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1. Newer technologies were implemented in the hospital’s drug distribution system with what goals?
  - To improve patient safety
  - To improve efficiency
2. How might the costs of the interventions in this study be determined?
  - Barcode scanning systems and automated dispensing cabinets adapted to use within the pharmacy are associated with substantial capital outlay.
  - Personnel training requires additional paid employee time.
  - Drug-related adverse events associated with incorrect administration vary widely in severity and cost.
  - Implementation necessitates a culture of safety.
3. What limitations are present in the study design?
  - The study design was fundamentally observational and uncontrolled.
  - Data collection was performed by staff pharmacists at their discretion without automated error detection methods.
  - Multiple changes in personnel and workflows occurred during the study that were not controlled or adjusted in the data analysis.
  - This was a 7-year “business as usual” project.
4. What are some of the reasons why benefits in terms of diminished error rates were not observed until re-training was implemented?
  - New technology can result in error from disuse.
  - Technology is not foolproof.
  - Further discussion point: How would you plan for this as a manager implementing such projects?

5. What questions/issues could be addressed if this study were to evaluate further follow-up?
  - Are certain technologies better or more effective than others?
  - Should employees go through a refresher course or competency testing?
  - Does increased familiarity with use of technology result in a sustained decrease in rates of error?
  - What is the true impact on patient safety outcomes?
  
6. Why is it important to evaluate different types of medication errors in this type of study?
  - Adverse events can happen for a variety of reasons.
  - Wrong fluid amounts may lead to incorrect drug concentrations.
  - Wrong strength errors may lead to nursing administration of incorrect dose.
  - Medication errors may be associated with serious adverse consequences.
  - As demonstrated in this study, the incidence of errors shifted with the implementation of new technology and internal monitoring is needed to respond to changes in the safety environment.
  
7. How might the information in this study be applied to other areas of pharmacy practice?
  - Community pharmacies often have similar practices, with technicians setting-up and pharmacists verifying prescriptions.
  - Practice similarities suggest that technology may improve rates of technical error in other pharmacy environments.