BACKGROUND
• Medication errors occur despite education, remediation, variance reporting, PI initiatives, and disciplinary action
• Barcoding technology is on the rise
• What we don’t know is how significantly the technology impacts incidence or severity of reported errors over time

PURPOSE
• Examine the impact of Barcode Medication Administration (BCMA) Technology on reported medication errors
• Determine whether decreases in error rates or levels of severity were statistically significant after implementation of the technology

METHODS
• Descriptive, longitudinal study
• Number and severity of med errors were examined at yearly intervals before, during, and after BCMA implementation
• No variable manipulation
• All ex post facto data

DATA
• All medication incidents between 2007 and 2010 (random sampling not utilized)
• Annual measurements of number and severity of errors (per 100,000 doses dispensed)
• 4 distinct time periods:
  - Pre-Implementation (2007)
  - Implementation (Jan 2008-Aug 2008)
  - Post-Implementation
    - Year 1 Checkpoint – Sept 2008-Aug 2009

RESULTS

Total Overall Error Rates – no statistically significant difference*

Prescribing and Ordering– Decreased immediately after implementation, but increased in Year 1 and in Year 2 (p=0.012)*

Transcribing– Decreased significantly in Year 1 (p=0.024), but rose significantly in Year 2 (p=0.049)*

Dispensing – Erratic, no statistically significant difference*

Administration – Decreased steadily every year and reached significance in Year 2 (p=0.021)*

Other Findings:
• Near Miss Errors – Statistically significant increase noted by Year 2
• Errors That Reached Patient; Caused No Harm - no SS difference
• Errors That Reached Patient; Caused Harm - no SS difference

*Inferential analyses performed using paired-samples t-test for dependent means

CONCLUSIONS
• BCMA appears to help with the incidence of medication errors but did not have an effect on overall error rates or severity

STUDY LIMITATIONS
• Only one perspective / angle
• Did not correlate to system-generated warnings
• Did not manipulate any variables, no observation, no surveys or interviews

FUTURE RESEARCH
• Body of research in evaluating patient care technology such as BCMA is still in its infancy
• Need more standardization within the industry regarding categorizing errors, to provide benchmarking data
• Need replication studies and studies that are more inclusive of quantitative and qualitative data

REFERENCES
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