Medical Errors

David Renton, MD, MPH, FACS
Associate Professor
Associate Chief Quality Officer for Perioperative Services
Department of Surgery
The Ohio State University Wexner Medical Center

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Center for Continuing Medical Education

The Ohio State University Wexner Medical Center

Medical Errors

- Definition: Preventable adverse effect of care, whether or not it is evident or harmful to the patient.
- Important to understand the types and pervasiveness of medical errors in our hospitals and clinics
- With this knowledge, we can then find ways to create a culture that prevents errors before they occur

Medical Errors

- In 1999/2000 the Institute of Medicine published their report *To Err is Human: Building a Safer Health System*.
- This groundbreaking report estimated that between 49,000 and 98,000 deaths were attributable to medical errors in America per year
- This made medical errors the nations 3rd leading cause of death
- Estimated 1 million people harmed by medical errors per year

Medical Errors

- There are 48 million surgical procedures performed in America each year
- These are done in one of 6146 Hospitals in America, or 9280 ambulatory surgery centers
- There were 4.38 billion prescriptions filled in the United States in 2019

Types of Medical Errors

- Medical Errors can be categorized into different types
- These can occur anywhere along the patient care journey
- These are the 4 types of medical errors

Diagnostic Errors

- Error or delay in diagnosis
- Failure to employ indicated test
- Use of outmoded tests or therapy
- Failure to act on results of monitoring or testing

Treatment Errors

- Error in performance of an operation, procedure or test
- Error in administering treatment
- Error in the dose or method of using a drug
- Avoidable delay in treatment or in responding to an abnormal test
- Inappropriate care

Preventive Errors

- Failure to provide prophylactic treatment
- Inadequate monitoring or follow-up treatment

Other Errors

- Failure of communication
- Equipment failure
- Other system failures

Most Common Medical Errors

- Medication Errors
  - Includes prescribing errors
  - Administration errors
  - Filling errors by pharmacy

Most Common Medical Errors

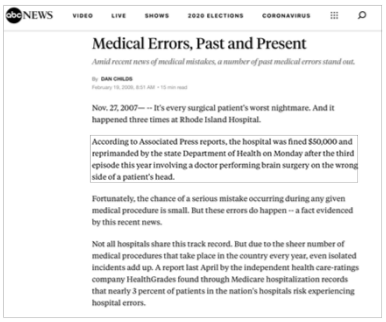
- Healthcare Associated Infections
  - Includes Ventilator Associate Pneumonias (VAP)
  - Surgical Site Infections (SSI)
  - Central line Associated Bloodstream Infections (CLABSI)
  - Catheter Associated Urinary Tract Infection (CAUTI)

Most Common Medical Errors

- Diagnosis Errors
  - Missed diagnosis
  - Delayed diagnosis

Most Common Medical Errors

- Surgical Errors
  - Wrong site surgery
  - Wrong procedure
  - Error in performance of the procedure



Cost of Medical Errors

- When taken just as a financial burden to the health care system, the cost of these errors is estimated to be around $20 billion per year
- When the financial burden to the families, employers, and overall economy are taken into account, aggressive estimated put the burden at $1 trillion annually

How Do We Prevent Medical Errors?

- Change the goal from errors to safety
- Create a culture that recognizes that errors can occur
- This culture will recognize when errors occur, and not seek to lay blame, but look at the systems that allowed the error to happen
- Change the system and put in place safeguards that prevent the error from occurring again

How Do We Prevent Medication Errors?

- Example
  - Medication administration in a hospital setting
  - Can be very confusing with many patients requiring multiple medications throughout the day
  - Medication administration was the most common medical error sited in the Institute of Medicine report
  - How can you create a system that helps prevent incorrect medical administration?
  - How can you create a culture that helps prevent incorrect medical administration?

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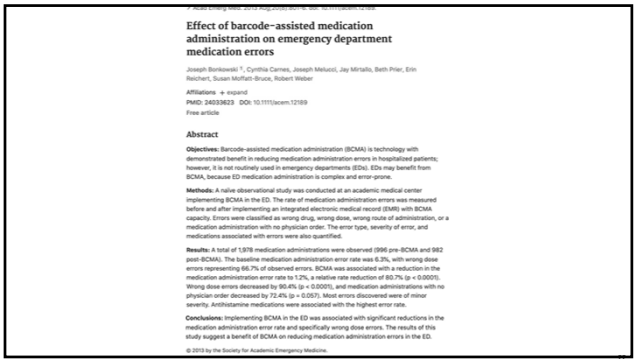
Bar Code Medication Administration

- Each drug to be administered is checked against the patient wristband
- Two patient identifiers will be used to make sure the correct patient is getting their medication.
- This will be done for all medications given



Effect of barcode-assisted medication administration on emergency department medication errors

Joseph Borkowski †, Cynthia Carnes, Joseph Melucci, Jay Mirtallo, Beth Prier, Erin Reichert, Susan Moffatt-Bruce, Robert Weber

Affiliations + expand
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Free article

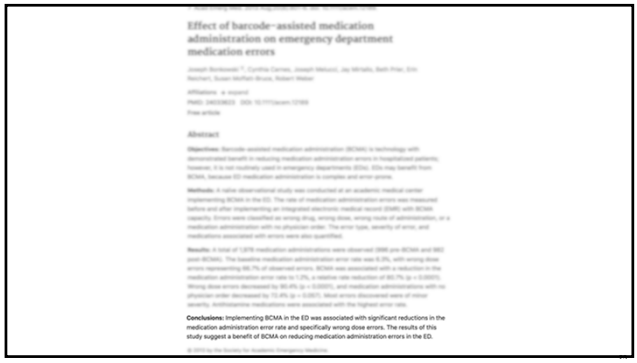
Abstract

Objectives: Barcode-assisted medication administration (BCMA) is technology with demonstrated benefit in reducing medication administration errors in hospitalized patients; however, it is not routinely used in emergency departments (EDs). EDs may benefit from BCMA, because ED medication administration is complex and error-prone.

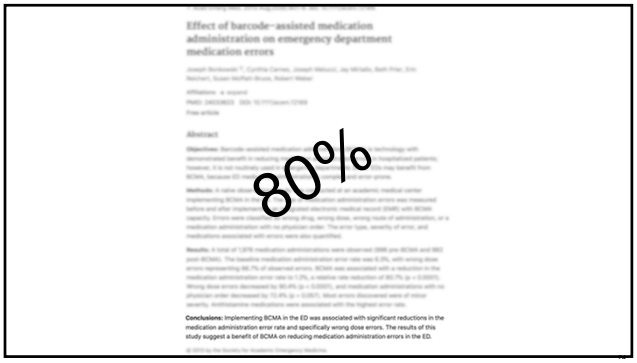
Methods: A naïve observational study was conducted at an academic medical center implementing BCMA in the ED. The rate of medication administration errors was measured before and after implementing an integrated electronic medical record (EMR) with BCMA capacity. Errors were classified as wrong drug, wrong dose, wrong route of administration, or a medication administration with no physician order. The error type, severity of error, and medications associated with errors were also quantified.

Results: A total of 1,978 medication administrations were observed (996 pre-BCMA and 982 post-BCMA). The baseline medication administration error rate was 6.3%, with wrong dose errors representing 66.7% of observed errors. BCMA was associated with a reduction in the medication administration error rate to 1.2%, a relative rate reduction of 80.7% ($p < 0.0001$). Wrong dose errors decreased by 90.4% ($p < 0.0001$), and medication administrations with no physician order decreased by 72.4% ($p = 0.057$). Most errors discovered were of minor severity. Antihistamine medications were associated with the highest error rate.

Conclusions: Implementing BCMA in the ED was associated with significant reductions in the medication administration error rate and specifically wrong dose errors. The results of this study suggest a benefit of BCMA on reducing medication administration errors in the ED.



Effect of barcode-assisted medication administration on emergency department medication errors



Effect of barcode-assisted medication administration on emergency department medication errors

80%

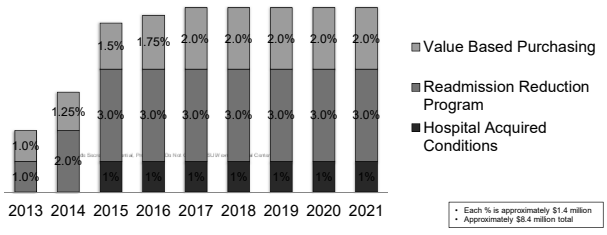
Culture Change in Medication Administration

- Five rights of nursing drug administration
- 1. Right medicine
- 2. Right patient
- 3. Right dosage
- 4. Right Route
- 5. Right Time

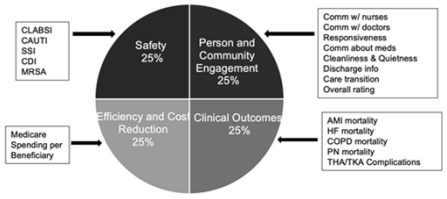
HealthCare Associated Infections

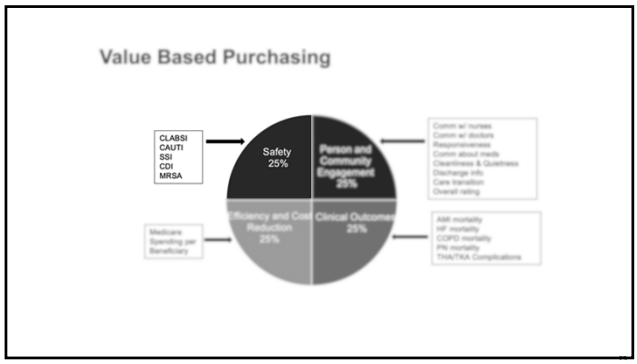
- CMS has devised a system to hold hospitals accountable for quality outcomes
- They withhold a certain percentage of payments at the beginning of the year
- If you reach certain benchmarks, you can earn back this money
- If you exceed these benchmarks, you can earn more money than was at risk

Total Percentage of Medicare Revenue at Risk



Value Based Purchasing



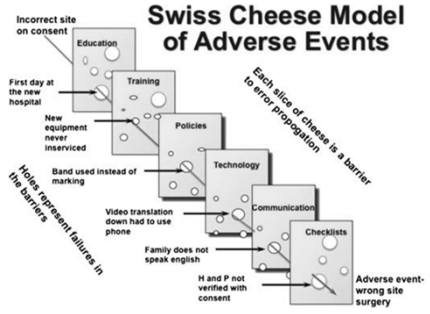


HealthCare Associated Infections

- Hospitals found, that by reducing these HAI, they would get more money from CMS
- They also found, they could make more money overall, with decreased length of stays for patients, decreased complications, and overall better outcomes
- A win-win for everyone at the table

Surgical Errors

- This group includes what we call “Never Events”
- A wrong site surgery or a wrong procedure events are things we think should never occur.
- How can something like this happen?



Surgical Errors

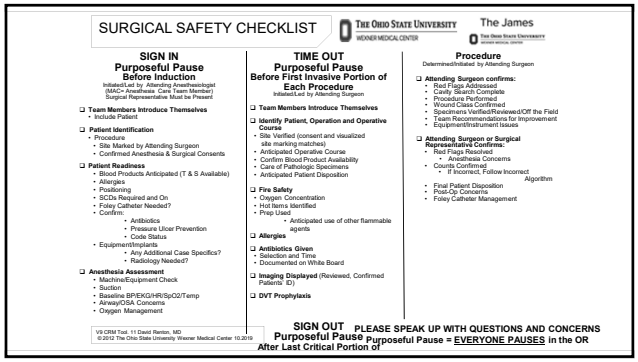
- How do we close these holes in the system surrounding surgery?
- We look to our colleagues in the aviation industry
- 1972 was the worst year in aviation safety history.
- 460 deaths that year
- Realized that a lack of communication in the cockpit was leading to a majority of the problems

Surgical Errors

- Instituted CRM – Crew Resource Management
- At any time in the process of aviation, anyone on the team can speak up and ”stop the line”
- Meaning all concerns are heard
- This leads to investment from the whole team, and a common goal, which is error free flying

Surgical Errors

- Operating rooms around the country have taken idea of Crew Resource Management to heart
- We now run through the same checklists, like a pre-flight check
- All voices are heard. Anyone in the OR can ”stop the line” and voice concerns, and these will be addressed and remedied.



SURGICAL SAFETY CHECKLIST

THE OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER — The James

SIGN IN
Purposeful Pause
Before Induction
Initiated/Led by Attending Anesthesiologist (MAC= Anesthesia Care Team Member) Surgical Representative Must be Present

- ❑ **Team Members Introduce Themselves**
  - Include Patient
- ❑ **Patient Identification**
  - Procedure
  - Site Marked by Attending Surgeon
  - Confirmed Anesthesia & Surgical Consents
- ❑ **Patient Readiness**
  - Blood Products Anticipated (T & S Available)
  - Allergies
  - Positioning
  - SCDs Required and On
  - Foley Catheter Needed?
  - Confirm:
    - Antibiotics
    - Pressure Ulcer Prevention
    - Code Status
  - Equipment/Implants
    - Any Additional Case Specifics?
    - Radiology Needed?
- ❑ **Anesthesia Assessment**
  - Machine/Equipment Check
  - Suction
  - Baseline BP/EKG/HR/SpO2/Temp
  - Airway/OSA Concerns
  - Oxygen Management

TIME OUT
Purposeful Pause
Before First Invasive Portion of Each Procedure
Initiated/Led by Attending Surgeon

- ❑ **Team Members Introduce Themselves**
- ❑ **Identify Patient, Operation and Operative Course**
  - Site Verified (consent and visualized site marking matches)
  - Anticipated Operative Course
  - Confirm Blood Product Availability
  - Care of Pathologic Specimens
  - Anticipated Patient Disposition
- ❑ **Fire Safety**
  - Oxygen Concentration
  - Hot Items Identified
  - Prep Used
    - Anticipated use of other flammable agents
- ❑ **Allergies**
- ❑ **Antibiotics Given**
  - Selection and Time
  - Documented on White Board
- ❑ **Imaging Displayed** (Reviewed, Confirmed Patient's ID)
- ❑ **DVT Prophylaxis**

Procedure
Determined/Initiated by Attending Surgeon

- ❑ **Attending Surgeon confirms:**
  - Red Flags Addressed
  - Cavity Search Complete
  - Procedure Performed
  - Wound Class Confirmed
  - Specimens Verified/Reviewed/Off the Field
  - Team Recommendations for Improvement
  - Equipment/Instrument Issues
- ❑ **Attending Surgeon or Surgical Representative Confirms:**
  - Red Flags Resolved
    - Anesthesia Concerns
  - Counts Confirmed
    - If Incorrect, Follow Incorrect Algorithm
  - Final Patient Disposition
  - Post-Op Concerns
  - Foley Catheter Management

SIGN OUT
Purposeful Pause
After Last Critical Portion of

PLEASE SPEAK UP WITH QUESTIONS AND CONCERNS
Purposeful Pause = EVERYONE PAUSES in the OR

V9 CRM Tool. 11 David Renton, MD

Conclusion

- Medical errors are preventable
- We need to look at how to fix the system, not who is to blame
- It takes a focus from everyone on the same goal:
  - Patient Safety