Medication Errors, Patient Falls, and Pressure Ulcers: Improving Outcomes Over Time

Patricia A. Patrician, PhD, RN, FAAN
Colonel, US Army, Retired
Associate Professor and Donna Brown Banton Endowed Professor
University of Alabama at Birmingham

Lori Loan, PhD, RNC
Chief, Nursing Research Service
Madigan Army Medical Center
Tacoma, WA

Mary McCarthy, PhD, RN
Nurse Researcher
Madigan Army Medical Center
Tacoma, WA

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Disclaimer

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National Databases

ANA Nursing Indicators

NDNQI
NATIONAL DATABASE OF NURSING QUALITY INDICATORS

CALNOC

Military Nursing Outcomes Database

VANOD

MilNOD Purposes

Military Nursing Outcomes Database

- Collect data to support evidence-based clinical and administrative decisions.
- Create a valid and reliable database consisting of nurse staffing and patient safety data collected at the shift.
- Provide a basis for comparison among similar military hospitals and CalNOC.
- Analyze relationships between staffing and outcomes.
- Analyze outcomes over time.

MilNOD Participants

Elmendorf Air Force Base Hospital, AK
Malcolm Grow Medical Center, MD
Wilford Hall Medical Center, TX

National Naval Medical Center Bethesda, MD
Naval Hospital Bremerton, WA
Naval Hospital Oak Harbor, WA
Naval Medical Center San Diego, CA

Bassett Army Community Hospital, AK
Brooke Army Medical Center, TX
DeWitt Army Community Hospital, VA
Madigan Army Medical Center, WA
Walter Reed Army Medical Center , Wash DC
Womack Army Medical Center, NC

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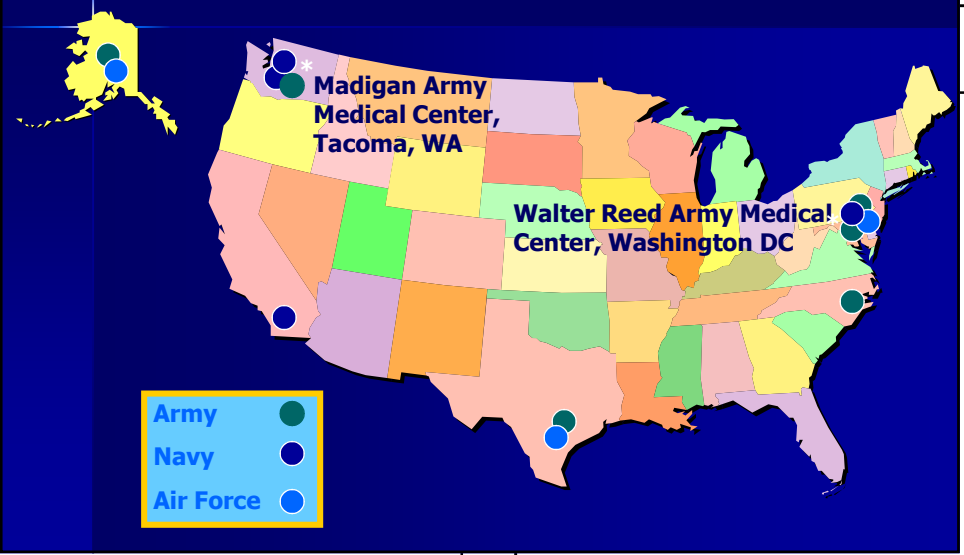
MilNOD Sites



MilNOD Indicators
National Quality Forum Indicators

- Nursing Structural Indicators
  - RN, LPN, NA
  - Active Duty, GS Civilian, Contract, Reservist
    - Nursing care hours
    - Nursing skill mix
    - Nursing education & experience
- Explanatory Variables
  - Patient acuity
  - Patient turnover
- Contextual Features: Work environment
  - Practice Environment Scale – Nursing Work Index
- Patient Outcomes
  - Pressure ulcer prevalence
  - Restraint use prevalence
  - Falls and falls with injury
  - Medication administration errors
  - Satisfaction with
    - Care in general
    - Nursing care
    - Pain management
    - Education
- Nurse Outcomes
  - Job satisfaction
  - Needlestick injuries

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Data Acquisition & Dissemination

Nurses enter daily staffing & census data into the unit-level MilNOD database.

Every month trained on-site staff collect fall, medication error & needlestick injury data from incident reports.

Once each year patient & staff surveys are conducted by the MilNOD team.

On-site trained staff conduct pressure ulcer & restraint use prevalence data on a semiannual basis.

MilNOD team checks and improves data quality.

MilNOD team prepares reports & investigates best practices.

Reports are disseminated to hospitals quarterly.

MilNOD team works with hospitals to understand & use reports.

Hospital leaders use data to identify problems & evaluate solutions.

Best practices, evidence-based practice policies, and effective solutions are shared across hospitals via conference calls and newsletters.

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Key MilNOD Education and Technical Support

- Orientation sessions for new sites & refreshers for existing sites
- Open forum conference calls to discuss issues
- Access to project staff for questions & individualized coaching
- Email updates and quarterly newsletters
- Web-based materials: Codebooks, data reports and graphs, tutorials, patient safety posters, and Powerpoint presentations
- Best practice managers disseminate policies and standards across sites and help sites use data to improve practice

Significance of MilNOD

- Shift level, prospective data collection
- Standardized data definitions
- Significant effort to establish reliability, validity, and usefulness of data
- Separate analysis for critical care, med-surg, step-down units
- Military data

Research question:

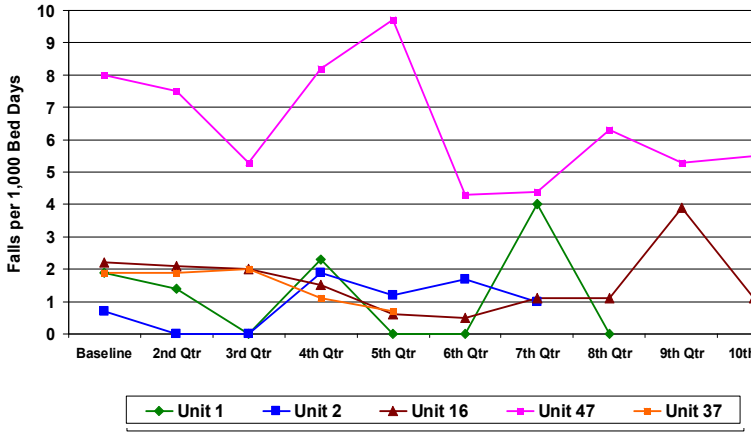
Over time, have MilNOD facilities decreased adverse patient outcomes?

MilNOD Sample

- 13 hospitals
  - 6 small = ≤50 beds
  - 7 large = ≥100 beds
- 47 units had enough quarters of data to examine outcomes (adverse events) over time
- Study conducted from 2003 to 2006

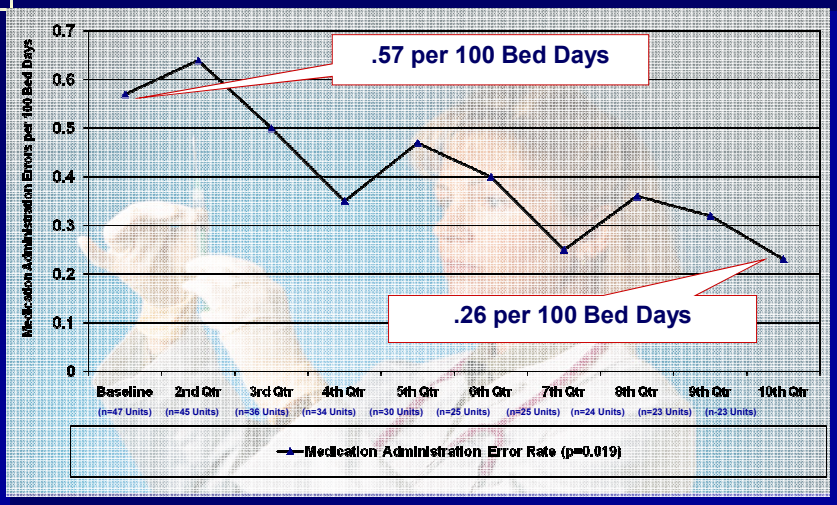
Data Analyses:
Repeated Measures ANOVA

Analysis



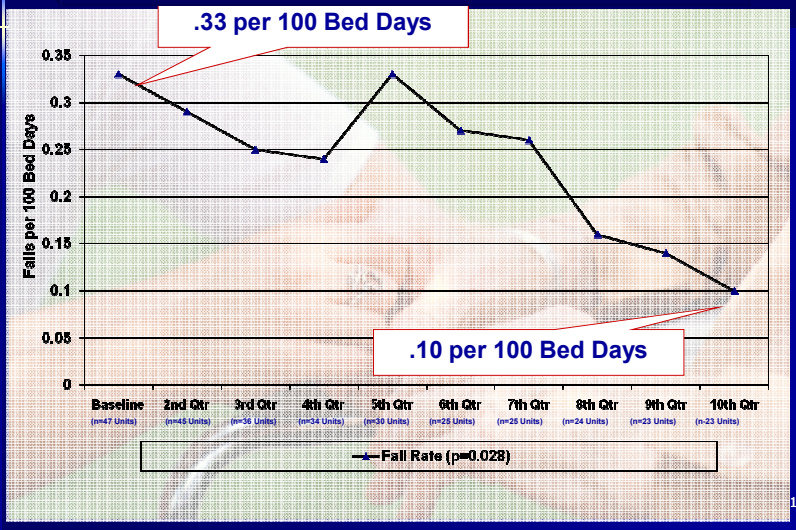
Patient Outcomes Significantly Improved

Medication Administration Error Rates ↓ by 50% (p=0.019)



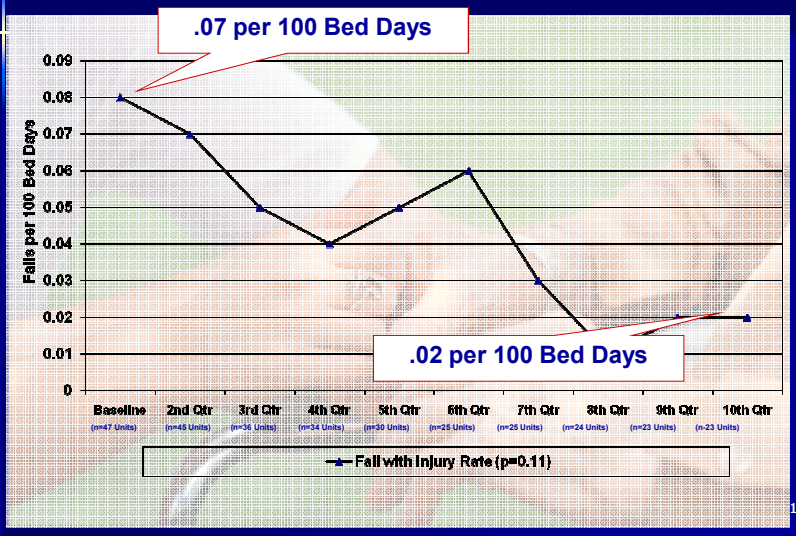
Patient Outcomes Significantly Improved

Patient Fall Rates ↓ by 69% (p=0.028)



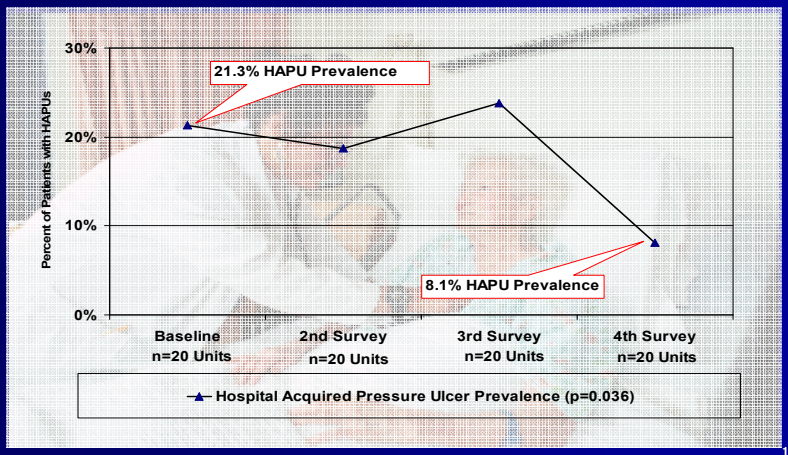
Patient Outcomes Significantly Improved

Patient Fall with Injury Rates ↓ by 30% (*p*=0.11)



Patient Outcomes Significantly Improved

Hospital Acquired Pressure Ulcer Prevalence ↓ by 62% (*p*=0.036)



Why does the MilNOD have an impact on outcomes?

Implementing Database Processes Increases Evidence Based (EB) Practice

- Example: MilNOD Pressure Ulcer (PU) Practice Enhancements

	Before MilNOD	After MilNOD
Regular HAPU data collection	36%	100%
EB PU risk assessment tool used	27%	100%
PU prevalence study	36%	100%
PU EB & current staging criteria used	25%	100%

Conclusion and Implications

- The MilNOD is an efficient, replicable, and sustainable initiative for inpatient care units.
- The database methodolgy appears to contribute to patient care improvements over time.
- MilNOD units significantly decreased adverse events over the study duration.
  - Cost avoidance for falls and med errors $1,130,000/year
  - Cost avoidance for pressure ulcers $450,000/year

Questions?

Pat Patrician
ppatrici@uab.edu
205-996-5211