

4-17-2011

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Tejada, M. B. (2011, April). Structured algorithm for error reduction in chemotherapy administration.

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Structured Algorithm for Error Reduction in Chemotherapy Administration

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Introduction

- Chemotherapy errors remain the major cause of iatrogenic patient morbidity in hospitals (Gilbar, 2001; Heidt et al., 2001)
- Major risk factor for errors - unstandardized administration in the following areas:
Ordering
Dispensing
Administration
Monitoring
- Another risk factor: failure to identify necessary staff skills/aptitude required to prevent errors



Ordering



Dispensing



Administration



Monitoring

Purpose

To develop a structured algorithm based upon good evidence that might be used by nurses at a cancer center along with efforts to decrease chemotherapy medication errors

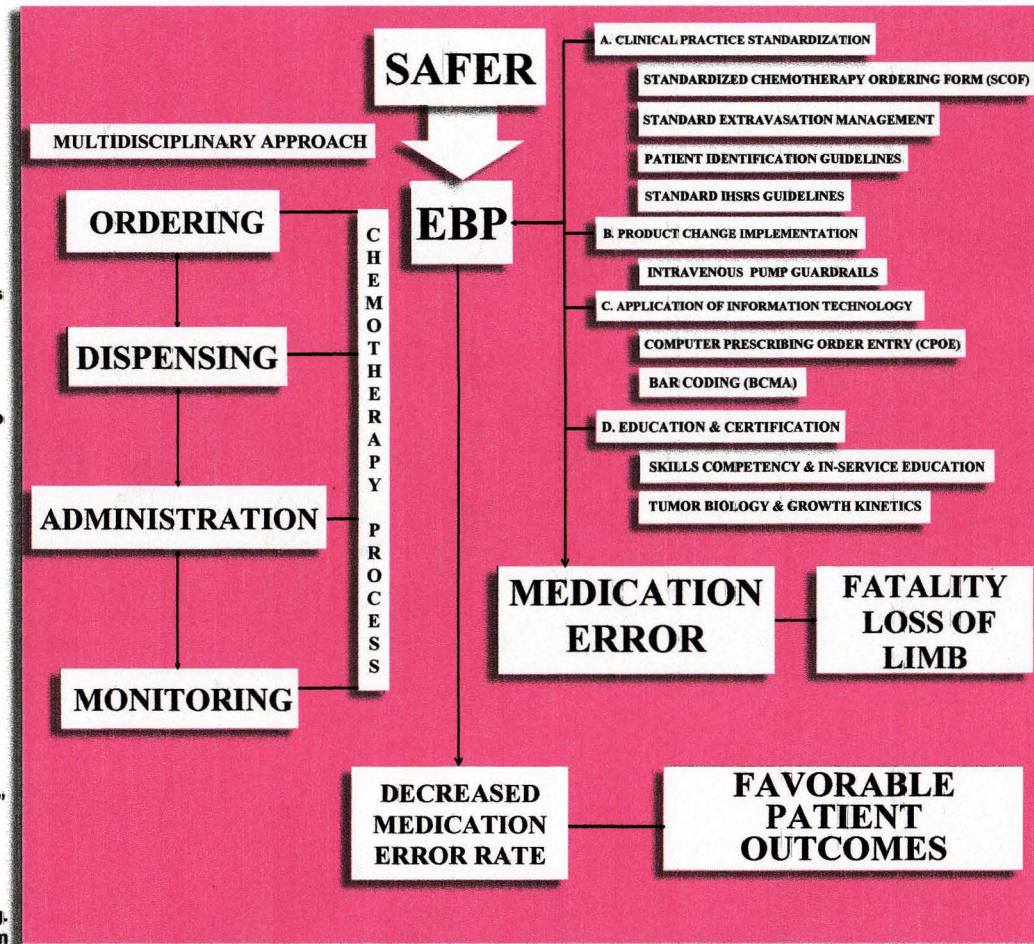
Significance

Use of the developed algorithm may lead to development of evidence-based strategies to decrease errors in chemotherapy administration in cancer patients

Methods

- Comprehensive review of literature
- Data bases: Science Direct, CINAHL, Pub Med, MEDLINE, Expanded Academics.
- Search limits: publication last 10 years, peer reviewed journals, English.
- Primary key words: "chemotherapy process," "medication error," "error prevention," "error rate," "protocol violation."
- Secondary search terms: "Medication Use Process," "tumor biology and kinetics," "protocol guidelines," "risk management," "prevention strategies," utilization of "information technology systems."

Final articles addressed error reduction and standardized verification of treatment/dosing. Data sources: books, articles, abstracts from scientific conferences.



Findings

Chemotherapy error reduction may be achievable through use of evidence based strategies such as:

- Standardizing medication delivery through procedures/protocols
- Integration of information systems elements such as
 - Computer Prescribing Order Entry,
 - Bar-coded medication administration,
 - Electronic medication administration records,
 - Automated dispensing machines
 - IV Pump Guardrails
- Standardized Ordering Forms
- Infusion-related Hypersensitivity Reaction information
- Adverse Reaction guidelines
- Extravasation Management Protocols
- Verification Grids
- Standardized Patient Identifiers

Implications for practice

Standardized protocols for medication administration, information systems strategies, and a variety of other techniques aimed at specific points in the error process may reduce error rates and assist in improved outcomes related to medication safety, in particular, chemotherapy administration.

Recommendations

The utilization of this algorithm should be tested in clinical practice to determine the effect on chemotherapy error rates.

Acknowledgments

My sincere gratitude to Dr. Dana Rutledge, for her wisdom and encouragement. A special thanks to my family: Alex, TJ, Aaron, Manny and Levy for their endless support and love.

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Structured Algorithm For Error Reduction (SAFER) Algorithm