

4-17-2011

## Structured algorithm for error reduction in chemotherapy administration

Marianne Bundalian Tejada  
*University of Nevada, Las Vegas, Marianne.tejada@unlv.edu*

Follow this and additional works at: [https://digitalscholarship.unlv.edu/nursing\\_presentations](https://digitalscholarship.unlv.edu/nursing_presentations)



Part of the [Nursing Commons](#), and the [Oncology Commons](#)

---

### Repository Citation

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

Available at: [https://digitalscholarship.unlv.edu/nursing\\_presentations/3](https://digitalscholarship.unlv.edu/nursing_presentations/3)

This Poster is protected by copyright and/or related rights. It has been brought to you by Digital Scholarship@UNLV with permission from the rights-holder(s). You are free to use this Poster in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/or on the work itself.

This Poster has been accepted for inclusion in Nursing Faculty Presentations by an authorized administrator of Digital Scholarship@UNLV. For more information, please contact [digitalscholarship@unlv.edu](mailto:digitalscholarship@unlv.edu).

# Structured Algorithm for Error Reduction in Chemotherapy Administration

Marianne Bundalian Tejada RN MSN & Dana N. Rutledge PhD RN  
Department of Nursing, California State University, Fullerton

## 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

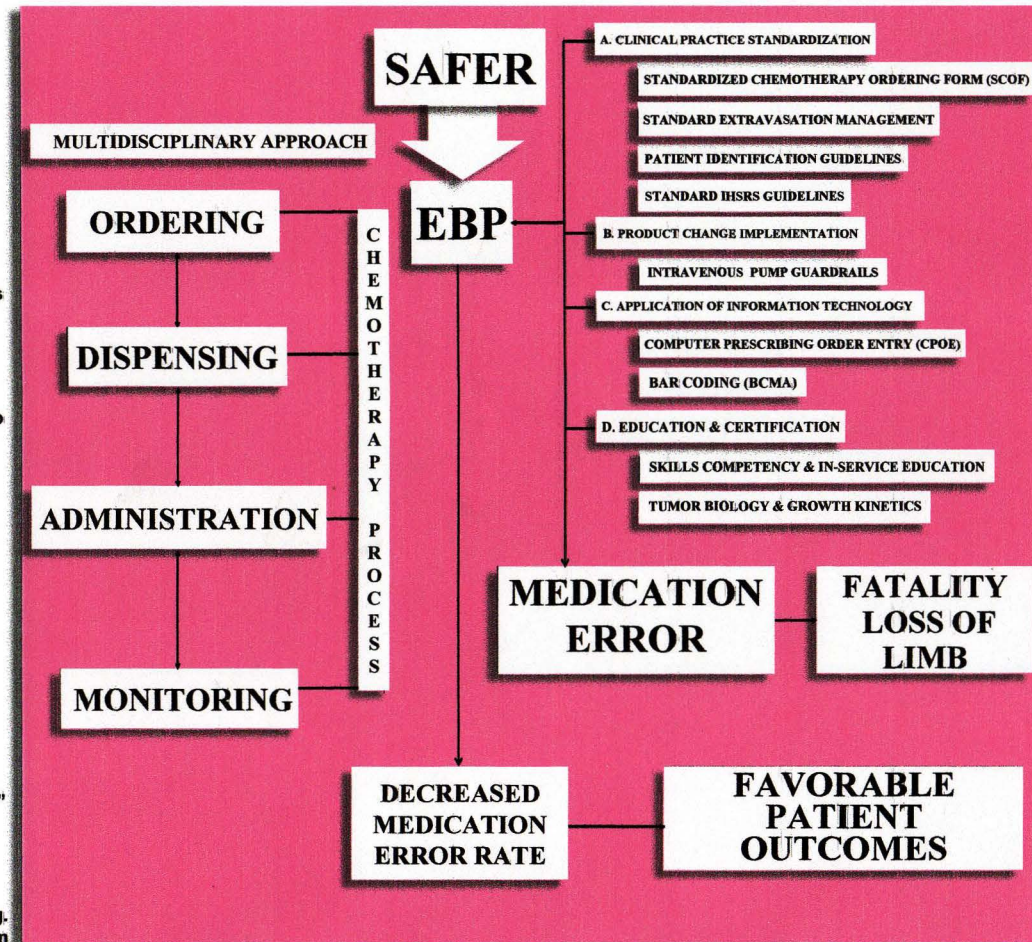
## Significance

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.



Structured Algorithm For Error Reduction (SAFER) Algorithm

## 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.

## For further information

Please contact [mbundalian@aol.com](mailto:mbundalian@aol.com).  
[MarianneBundalian@unlv.edu](mailto:MarianneBundalian@unlv.edu)