

PEDIATRIC MEDICATION SAFETY *In the* EMERGENCY SETTING: PRACTICAL SOLUTIONS

Final Program

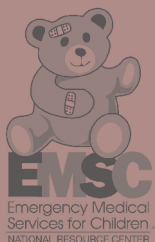
A Consensus Meeting of National Experts

2009

EMERGENCY

Champions for Change

February 23-24, 2009 | Washington Duke Inn & Golf Club | Durham, NC



American Academy
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™



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Sponsored by the Health Resources and Services Administration, Maternal and Child Health Bureau, EMSC Program, (EMSC National Resource Center-contract no 240-03-0011) and Children's National Medical Center in partnership with the American Academy of Pediatrics and the Duke University Health System.

Welcome Colleagues!

The purpose of this meeting is to convene a multidisciplinary group of emergency department (ED) health care professionals and representatives from the federal government, drug manufacturers, Information Technology, industry vendors, pharmacists, patient advocates, parents, and others to develop solutions to safely deliver pediatric medications with a focus on children in the ED.

Planning Group

Karen Frush, MD, BSN, FAAP, FACEP
Chairperson

Kathy Sanabria, MBA, PMP

Kathy Shaw, MD, MSCE, FAAP

Tasmeen Singh Weik, MPH, NREMT-P

Sue Tellez

Tina Turgel, RN, BSN

Advances in the medication process over the past decade in terms of medication dosing, processing, and preparation have focused primarily on safety and automation of pharmacy practices for the hospitalized adult population. While standardized dosing and dosage forms are primarily utilized in the treatment of adults, standardized unit doses are not available for children, and dosing of medications for pediatric patients continues to be patient-specific. Each dose of medicine must be calculated, using a dosing equation based on the child's weight, and the act of calculating these equations has been identified as a high error activity. Several factors compound the risk of error when medications are given emergently: the child's weight is often not known, medication calculations based on estimated weight are calculated on weight in pounds instead of kilograms, there are limited opportunities for prescription monitoring or double-checking, the calculations are performed in the clinical area, often without input from a pharmacist, and the stress of managing a life-or-death situation involving a child may further complicate treatment. Several studies have demonstrated that children are as much as three times more likely to experience harmful adverse drug events than adults.

With significant advances in pharmaceutical-related technology including unit dose packaging, robot filling unit dose carts, pre-mix antibiotics, commercially pre-filled fluids with electrolytes, and pre-filled syringes, adult processing of pharmaceuticals has become almost fully automated. Commonly, preparation of medication products in the hospital setting consists of labeling pre-mixed short and long term infusions in the pharmacy's IV room, since most dosage forms are pre-packaged unit dose. In contrast, children require tailored approaches to medication ordering, drug preparation and medication delivery. Many pediatric medications require specialized compounding and custom preparation of individual unit-dose oral syringe products from stock solutions and formulations in the pharmacy or on the clinical unit. Although the pediatric population represents a smaller number of beds than adults in many Academic Medical Centers, medications for pediatric patients often account for a significant portion of the products constituted in hospitals' IV rooms.



Call for Improvement

Reports from the Institute of Medicine (IOM) Committee on Medication Safety and Committee on the Future of Emergency Care both include recommendations for national agencies to review and address issues related to lack of standardization for pediatric medications. The IOM Report on the Future of Emergency Care also recommends that federal funding

be made available for the development of medication dosage guidelines, formulations, labeling, and administration techniques for the pediatric emergency care setting.

Further, national agencies and organizations such as the Institute of Safe Medication Practices and the The Joint Commission have recognized the importance of effective communication and teamwork among healthcare professionals in improving patient safety. The team of professionals involved in the medication process extends from manufacturers and vendors to pharmacists to care providers at the bedside, and includes parents and families who care for children on a daily basis. All these individuals, as well as experts in drug safety and pharmacovigilance must work collaboratively to improve pediatric medication safety across the continuum.

Meeting Objectives

1. Define current state related to pediatric medication safety in EMSC, focusing on ED setting.
 - a. Review national data regarding pediatric adverse drug events (ADE) (medication-related events resulting in patient harm or death)
2. Summarize IOM Committee on Medication Safety and IOM Committee on the Future of Emergency Care findings.
 - a. Summarize initiatives/activities that have been undertaken in response to recommendations
3. Share case studies from hospitals/health systems related to ED pediatric medication errors and ADE.
4. Discuss new technology and advances in Information Technology (IT) that could improve pediatric medication safety.
 - a. Computerized physician order entry (CPOE) and pediatric dosing support
 - i. Decision support for dosing and administering medications
5. Discuss challenges and solutions related to the development of standard pediatric dosing guidelines from the perspective of:
 - a. Pharmaceutical industry
 - b. Federal government regulating agencies
 - c. Drug safety
 - d. Clinical provider
 - e. Research
6. Discuss challenges and solutions related to standard formulations of pediatric medications and the need for pre-calculated doses.
7. Discuss challenges and solutions related to automated processing of pediatric pharmaceuticals.
 - a. Lack of unit dose packaging, robot filling unit dose carts, pre-mix antibiotics, commercially pre-mixed fluids and electrolytes and pre-filled syringes
 - b. Need for specialized compounding and individual patient unit dose oral syringe preparation
8. Discuss challenges and solutions for IT systems to be tailored to address the needs of pediatric ED patients with built in safety features.
9. Discuss challenges and solutions to make discharge prescriptions and instructions clear and accurate.

Achieve consensus on standardized drug doses for most commonly used high-risk ED medications, including those used for resuscitations. (Do not want a calculator; desired outcome is to develop pre-calculated doses in order to eliminate math calculations at the bedside.)

10. Develop solutions for IT systems to address the safety needs of pediatric patients in the ED.

11. Develop solutions to make ED discharge prescriptions and instructions clear, accurate, and family friendly.

Agenda: Monday, February 23

7:00 am – 8:00 am Registration/Breakfast Ambassador Gallery/Forest Room

8:00 am – 8:15 am Welcome Ambassador Duke

Meeting Director: Karen Frush, MD, BSN, FAAP, FACEP

8:15 am – 9:00 am Pediatric Medication Safety and the
Emergency Department Ambassador Duke

Featured Speaker: David Bates, MD, MSc

9:00 am – 10:15 am Expert Panel Interviews –
Roundtable Discussion Ambassador Duke

Moderator: Kathy Shaw, MD, MSCE, FAAP

Panel Members: David Bates, MD, MSc; Judith Cope, MD, MPH; Karen Frush, MD, BSN, FAAP, FACEP; Marianne Gausche-Hill, MD, FAAP, FACEP; Craig Joseph, MD, FAAP; Karl Kappeler, MS, RPh; Shannon Manzi, PharmD; Michael Murray, PharmD, MPH; Susan Paparella, RN, MSN; David Tayloe, Jr., MD, FAAP; Steve Ward, PharmD; and Sorrel King

Case Study 1 – Emergency Department Vignette and Video

10:15 am – 10:45 am BREAK

10:45 am – 12 noon Expert Panel Interviews –
Roundtable Discussion, Continued Ambassador Duke

Case Study 2 – Emergency Department Vignette

12 noon – 1:00 pm LUNCH Vista Restaurant

1:00 pm – 2:30 pm Concurrent Small Workgroup Breakouts – Part 1 (Pre-assigned):
Discussion of Problems & Suggested Strategies for Improvement

*Workgroup Facilitators: Richard Ruddy, MD, FAAP, FACEP
and Joan Shook, MD, MBA, FAAP, FACEP*

Group 1: Improving Pediatric Medication Safety in the ED
Group 2: Improving Pediatric Medication Safety in the ED

Ambassador Duke
Forest A

Workgroup Facilitators: Marianne Gausche-Hill, MD, FAAP, FACEP and Steve Krug, MD, FAAP

Group 3: Improving Pediatric Medication Safety from Time of Discharge
and Into the Home Setting
Group 4: Improving Pediatric Medication Safety from Time of Discharge
and Into the Home Setting

Forest B
Academy

2:30 pm – 2:45 pm BREAK

2:45 pm – 4:15 pm Concurrent Small Workgroup Breakouts – Part 2 (Pre-assigned):
Practical Solutions and Consensus

*Workgroup Facilitators: Richard Ruddy, MD, FAAP, FACEP
and Joan Shook, MD, MBA, FAAP, FACEP*

Group 1: Improving Pediatric Medication Safety in the ED
Group 2: Improving Pediatric Medication Safety in the ED

Ambassador Duke
Forest A

Workgroup Facilitators: Marianne Gausche-Hill, MD, FAAP, FACEP and Steve Krug, MD, FAAP

Group 3: Improving Pediatric Medication Safety from Time of Discharge
and Into the Home Setting
Group 4: Improving Pediatric Medication Safety from Time of Discharge
and Into the Home Setting

Forest B
Academy

4:15 pm – 4:30 pm BREAK

4:30 pm – 5:30 pm Meeting of the Minds – Part I Merging of Workgroups:
Groups 1 and 2 and Groups 3 and 4 Meet Together,
Share, and Summarize Findings

*Workgroup Facilitators: Richard Ruddy, MD, FAAP, FACEP
and Joan Shook, MD, MBA, FAAP, FACEP*

Group 1 and 2: Improving Pediatric Medication Safety in the ED

Ambassador Duke

Workgroup Facilitators: Marianne Gausche-Hill, MD, FAAP, FACEP and Steve Krug, MD, FAAP

Group 3 and 4: Improving Pediatric Medication Safety from Time of Discharge
and Into the Home Setting

Forest

5:30 pm – 7:00 pm Cocktail and Networking Reception Presidents I

7:00 am – 8:00 am	Breakfast	Forest Room
8:00 am – 8:30 am	Today's Agenda: Meeting Objectives & Anticipated Outcomes	Ambassador Duke
<i>Meeting Director: Karen Frush, MD, BSN, FAAP, FACEP</i>		
8:30 am – 9:30 am	Meeting of the Minds – Part II Merging of Workgroups: Groups 1 and 2 and Groups 3 and 4 Meet to Develop Consensus on Findings	
<i>Workgroup Facilitators: Richard Ruddy, MD, FAAP, FACEP and Joan Shook, MD, MBA, FAAP, FACEP</i>		
	Group 1 and 2: Improving Pediatric Medication Safety in the ED	Ambassador Duke
<i>Workgroup Facilitators: Marianne Gausche-Hill, MD, FAAP, FACEP and Steve Krug, MD, FAAP</i>		
	Group 3 and 4: Improving Pediatric Medication Safety from Discharge to Home Setting	Forest
9:30 am – 9:45 am	BREAK	
9:45 am – 10:45 am	Facilitators Report on Workgroup Findings	Ambassador Duke
10:45 am – 11:45 am	Open Discussion	Ambassador Duke
11:45 am – 12 noon	Meeting Summary/Next Steps	Ambassador Duke
12:00 noon	ADJOURN	

Invited Organizations

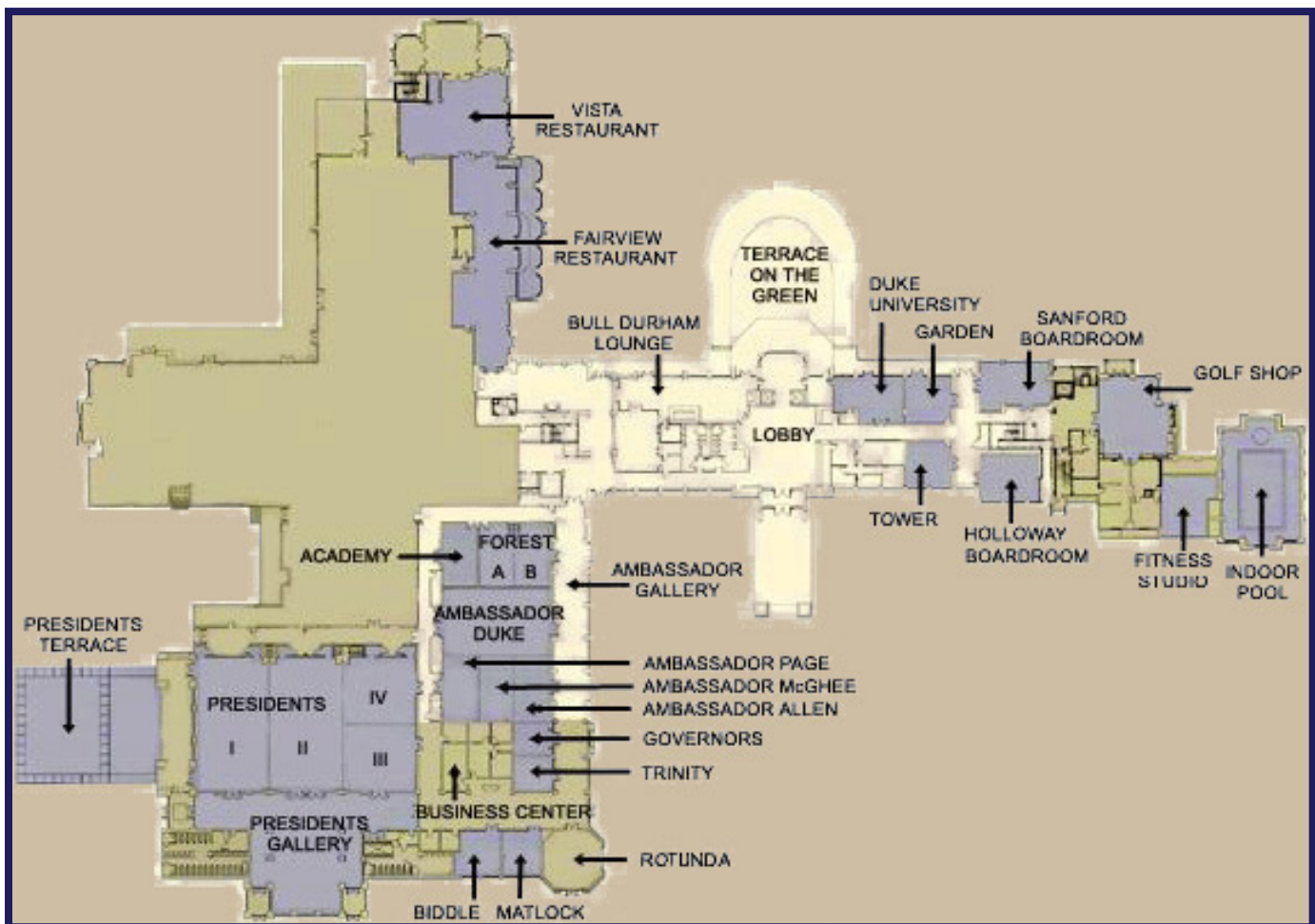
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 Cerner Corporation
 Child Health Corporation of America
 Children's National Medical Center
 Duke University Health System

Electronic Medical Record Super Users
 Electronic Medical Record Vendors
 EMSC National Resource Center
 Emergency Nurses Association
 Epic Systems Corporation
 Food and Drug Administration
 General Electric
 Institute for Safe Medication Practices

Institute of Medicine
Committee on Medication Safety
Committee on Future of Emergency Care
National Association of EMS Physicians
National Quality Forum
Office of the Assistant Secretary for
Preparedness and Response
Pediatric Emergency Care Applied Research Network
Pediatric Emergency Medicine, EMS, Physician, and
Nurse Providers
Pediatric Pharmacy Advocacy Group
Pharmaceutical Industry Representatives

The Joint Commission
U.S. Department of Health and Human Services,
Health Resources and Services Administration's
Maternal and Child Health Bureau
U.S. Department of Health and Human Services, National
Institutes of Health's
National Heart, Lung and Blood Institute
National Inst. of Child Health and Human Develop.
U.S. Department of Transportation's
National Highway Traffic Safety Administration
United States Pharmacopeia

Hotel Floor Plan

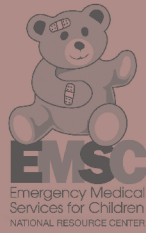


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