

심포지움 I

미국의 약물사용 안전성 문제와 예방대책

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Medication Safety in the U. S. Evolving Policies and Supporting Technologies

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Medication Safety

- A systems issue as well as an individual responsibility
- Inadequate safety policies and practices lead to morbidity and mortality
- Inadequate attention to safety can lead to very expensive preventable adverse drug events

Why the Concern About Medication Safety?

- ~5% of hospital admissions in the United States are connected to drug morbidity and mortality (1)
- 7,000 drug related deaths annually (2)
- In 1995, direct cost of preventable drug morbidity and mortality = US\$76.6 Billion (3)
- In 2000, direct cost of preventable drug morbidity and mortality = US\$177.4 Billion (4)

Why the Concern About Medication Safety?

- As doctor reimbursement drops, visit volume increases, visit length decreases, and drugs are substituted for communication
- Aging population = poly-pharmacy
- Empowered consumers demand medications AND quality care
- Government and other payers want to ensure quality of care and guide cost of care

Where Do Problems Occur?⁽⁵⁾

Medication Use Step and Common Errors	Distribution of Errors by Step	Percentage of ADEs Intercepted
Prescribing Wrong choice or dose, known allergy	39%	48%
Transcribing Wrong dose or frequency, missed dose	12%	33%
Dispensing Wrong dose, drug, or time	11%	34%
Administering Wrong dose, choice, or drug	38%	2%

The Way Forward

- Faced with pervasive medication safety problems, organizations are establishing policies and procedures that:
 - Accept medication errors as a system problem, requiring attention to all steps of medication use
 - Use monitoring, education, and technology

Policy and Standards Evolve

- Drug Utilization Review
- OBRA
- IOM
- ISMP
- Leapfrog (www.leapfroggroup.org)
- California Healthcare Foundation (www.chcf.org)

An Intense Focus on Medication Safety

- We see policies in action:
 - Monitoring
 - DUR
 - Guidelines
 - Committees
 - Education
 - Public notices
 - confidential notification
 - Technology
 - Pharmacy, Nursing, and Prescriber software

Let's Focus on Technology Tools.....

Technology Supports Medication Safety

Drug Utilization Review:

- Retrospective DUR: A Very Practical Analysis
 - Shapes clinical and administrative policies supporting drug safety
 - Identifies clinician educational needs

- Concurrent DUR: Double Checking for Safety
 - Identifies potential medical errors, and avoids preventable ADEs
 - One medium of clinician education

Technology Supports Medication Safety

- #1 Cause of Error: **Lack of knowledge of the drug (5)**
- 22% of medication errors
- Technologies addressing this cause of error:
 - CPOE, Pharmacy, and Nursing systems using drug knowledge bases that support concurrent DUR

Technology Supports Medication Safety

- #2 Cause of Error: **Lack of information about patients (5)**
- 14% of medication errors
- Technologies addressing cause of this error:
 - CPOE, Pharmacy, and Nursing systems with access to critical patient information like lab test results, allergies, conditions, medications, which use drug knowledge bases that support concurrent DUR

Technology Supports Medication Safety

- **#3 Cause of Error: Rules Violations (5)**
- 10% of medication errors
- Technologies addressing this cause of error:
 - CPOE, Pharmacy, and Nursing systems using drug knowledge bases that standardize care processes with protocols, order sets, guidelines

Technology Supports Medication Safety

- **#4 Cause of Error: Slips and memory lapses (5)**
- 9% of medication errors
- Technologies addressing cause of error:
 - CPOE, Pharmacy, and Nursing systems using drug knowledge bases that:
 - Standardize care processes with protocols, order sets, guidelines
 - Screen for allergic cross sensitivity, duplicate therapy, etc.

Technology Trends in the U.S.

- Retail and hospital pharmacies, DUR services, and Pharmacy Benefit Managers currently use software which seeks to detect and prevent medication errors
 - Financially motivated in the beginning
 - Quality care is critical for payers and consumers
- CPOE is on the rise – slowly
 - Expensive to implement
 - Requires physician cooperation – always a challenge
 - Will offer concurrent DUR at point of prescribing

Medication Safety as a System Issue

- It is a good approach:
 - Stepping-stone to safer, more effective drug use
 - Culture of communication, not blame, encourages clinician support
 - Significant positive financial implications
 - Time tested
 - A solid foundation for the next generation of medication issues:
 - Appropriate compliance with drug therapy
 - Managing chronic disease
 - Raising healthy youth, and caring for our elders

Medication Safety Evolves....

- Medication safety is a systems issue
- Preventable medication errors cause morbidity and mortality, and cause great expense
- Policies supporting drug utilization review, system monitoring, communication, and education all help “error proof” drug therapy
- Technology can help “error proof” each step of the drug therapy process, from prescribing, through dispensing, to administration.

Thank you!

Footnotes

- 1. Einarson TR. "Drug-related hospital admissions." *Ann Pharmacother.* 1993 Jul-Aug;27(7-8):832-40.
- 2. Kohn, LT, Corrigan, JM, and Donaldson, MS, eds., *To Err Is Human: Building A Safer Health System* (Washington, D.C.: National Academy Press, 1999)
- 3. Johnson, JA, Bottman, JL. "Drug-related morbidity and mortality. A cost-of-illness model." *Archives of Internal Medicine* 1995; 155:
- 4. Ernst FR, Grizzle AJ. "Drug-related morbidity and mortality: updating the cost-of-illness model." *J Am Pharm Assoc (Wash).* 2001 Mar-Apr;41(2):192-9.
- 5. Leape, LL, Bates, DW, Cullen, DJ, et al. "Systems analysis of adverse drug events" *JAMA* 1995; 274: 35-43