

To Save a Life? To Risk a Life?



Medication Management Processes

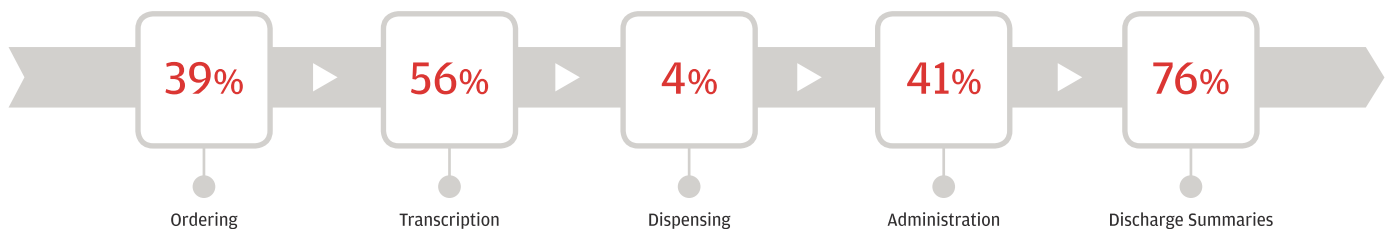
Medication Management Processes are divided into two processes which are inventory management and clinical processes.



Where do Medication Errors Occur?

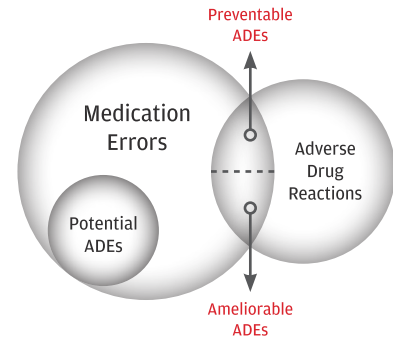
There is a possibility for error in each stage of the medication management process.

In each stage the frequency of medication errors were– Ordering: 167/433 (39%), Transcription: 310/558 (56%), Dispensing: 22/538 (4%), Administration: 166/412 (41%), and finally discharge summaries: 401/526 (76%). The most common types of error throughout the medication process were: lack of drug form, unordered drug, omission of drug/dose, and lack of identity control. (Lisby, Nielse &, Mainz, 2005)



What is the Relation between Medication Errors and ADEs?

Being able to explain the relation between medication errors and ADEs is important to prevent from the effects of these. All potential ADEs are in the scope of medication errors. Preventable and ameliorable ADEs are also in the scope of medication errors. Only adverse drug reactions or in other words non-preventable reactions due to side effects or allergic reactions are not in the scope of medication errors. (Morimoto, Gandhi & Seger, 2004)



All healthcare authorities spend significant time, effort and money to prevent drug errors.

How Many People are Affected by Medical Errors?

Medication errors are the most common medical errors. A recent Institute of Medicine report estimated that 44 000 to 98 000 people die each year in the United States as a result at least in part of medical errors. (Fortescue, Kaushal, Landrigan, McKenna, Clapp, Federico, Goldmann, Bates, 2013)

How Much Could We Save by Preventing Medication Errors?

In a study conducted in the U.S. there were 247 ADEs among 207 admissions. The additional length of stay associated with an ADE was 2.2 days (P=.04), and the increase in cost associated with an ADE was USD 3 244 (P=.04). Based on these costs and data about the incidence of ADEs, the annual costs attributable to all ADEs and preventable ADEs for a 700-bed teaching hospital are estimated USD 5.6 million and USD 2.8 million, respectively. (Bates, Spell, Cullen, Burdick, Laird, Petersen, Small, Sweitzer & Leape, 1997)

THE COST OF ERRORS		
	Additional hospital cost per preventable adverse drug event	Estimate of the national annual cost
United States	USD 885 - 7 857	USD 1,56 - 4 billion
Spain	€ 3 000	
Germany	€ 3 700	€ 400 million
United-Kingdom		€ 706 million (72% preventable)
France		€ 636 million (38% preventable)

(Expert Group on Safe Medication Practices, 2006)

What Can be Done to Prevent Medication Errors?

When the 10 strategies below are applied to prevent medication errors and potential medication errors they have been shown to be effective at varying degrees in reducing errors. (Fortescue, Kaushal, Landrigan, McKenna, Clapp, Federico, Goldmann, Bates, 2013)

<p>1</p> <p>Basic CPOE</p>	<p>2</p> <p>CPOE with clinical decision support systems (CDSSs)</p>	<p>3</p> <p>A clinical pharmacist on physician rounds or monitoring medication ordering, transcribing, and delivery</p>	<p>4</p> <p>Changes in communication between health care providers (*)</p>	<p>5</p> <p>Computerized MARS</p>
<p>6</p> <p>Robots in drug dispensing</p>	<p>7</p> <p>Smart intravenous devices for performing dilutions</p>	<p>8</p> <p>Bar coding of drugs and patients</p>	<p>9</p> <p>Automated dispensing devices</p>	<p>10</p> <p>Unit-based dosing</p>

(*) such as increasing nursing involvement during physician work rounds

References

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