

# COMPUTERIZED PHYSICIAN ORDER ENTRY (CPOE)

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# Outline

- Definition and context
- Why CPOE?
- Advantages of CPOE
- Disadvantages of CPOE
- Outcome measures and examples
- Same system other outcome



# What CPOE Does?

- Provides Decision Support
- Warns of Drug Interactions
  - Drug-Drug
  - Drug-Allergy
  - Drug-Food
- Checks Dosing
- Reduces Transcription Error
- Reduces number of lost orders
- Reduces duplicative diagnostic testing
- Recommends cost effective, therapeutic alternatives



- Computerized physician order entry (**CPOE**) is:
  - The process where a medical professional entering orders or instructions electronically
  - A process of electronic entry of medical practitioner instructions for the treatment of patients
  - Computerized Provider Order Entry or Computerized Provider Order Management (CPOM)
  - The process of capturing a physician's instructions for a patient's care electronically to improve the efficiency of care delivery.



# What is Computerized Physician Order Entry (CPOE)?

- Ordering of tests, medications, and treatments for patient care using computers
- Involves electronic communication of the orders
- Often use rules-based methods for checking appropriateness of care



# Definitions

- Information system is an arrangement and integration of:
  - Data
  - Processes
  - People
  - Technology

which interact to collect, process, store, and provide as output the information needed to support the organization.



# CPOE:

Computerized physician order entry (CPOE) is a solution to a current human system problem that focuses on achieving improved quality and safety for all patients



# Technical Infrastructure

- EHR
- Drug information database
- DSS
- Others





# CPOE, EHR and DSS

EHR	Documentation	D S S
	Medication	
	Test reports (EKG, PFT)	
	Radiology, lab results	
	<b>CPOE</b>	



## Example DSS in CPOE – medication prescription

- Allergy
- Age (check drug name and dose)
- Duplicate drugs on active orders, not one-time
- Severe drug interactions
  - Drug-drug, drug-food
- Dose maximum
- Drugs with opposite actions



# What Is It?

- CPOE is a computer application that accepts physician orders
  - Meds
  - Laboratory Tests
  - Diagnostic Studies
  - Ancillary Support
  - Nursing Orders
  - Consults



## Why Now?

- November 1999:

Report from the Institute of Medicine

*To Err is Human: Building a Safer Health System*

➤ 44,000-98,000 patient deaths/year in U.S. hospitals due to medical errors

- Increased focus on **patient safety** and on **quality of care**
- CPOE is viewed as an important tool to improve **patient safety** and **quality of care** delivered



# Patient Safety

- Institute of Medicine  
Report on medical errors  
released 1999  
Estimated that between 44,000  
and 98,000 hospital  
deaths/year are due to  
medical errors  
Some question the accuracy of  
the estimates but has raised  
public awareness and  
concern

## Top 10 Causes of Death 1998

1.	Heart Disease	724,269
2.	Cancer	538,947
3.	Stroke	158,060
4.	Lung Disease	114,381
5.	Medical Errors	98,000*
6.	Pneumonia	94,828
7.	Diabetes	64,574
8.	Motor Vehicle	41,826
9.	Suicide	29,264
10.	Kidney Disease	26,295

\* Estimated

