جامعة الملك سعود
King Saud University

# Patient Safety and Health Informatics

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# Content

- Medical informatics,
- Patient safety definitions, imperatives and current issues
- Medical errors and adverse events
- Error types
- Human errors
- The impact of health informatics on patient safety
- CPOE Benefits
- Take Home Messages



# Medical informatics

- *"Medical informatics is a rapidly developing scientific field that deals with the storage, retrieval, and optimal use of biomedical information, data, and knowledge for problem solving and decision making."*
  *Blois, M.S., and E.H. Shortliffe. in Medical Informatics: Computer Applications in Health Care, 1990, p. 20.*
- *"Medical informatics is the application of computers, communications and information technology and systems to all fields of medicine - medical care, medical education and medical research." definition by MF Collen (MEDINFO '80, Tokyo, later extended).*

# Define SAFETY in healthcare?

In 2-3 minutes, define patient safety, what does it mean to you? And how would you think we can enhance it? Write down your notes



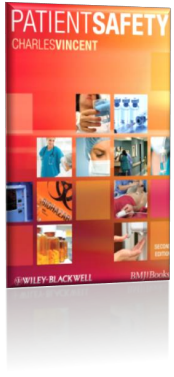
# Freedom from accidental injury due to medical care, or medical errors.

IOM, 2000

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES
Advising the nation • Improving health



# The avoidance, prevention and amelioration of adverse outcomes or injuries stemming from the process of healthcare.




Vincent, 2011

Patient Safety defined as;

# The prevention of errors and adverse effects to patients associated with health care.

World Health Organization

# Errors vs. Adverse Effects

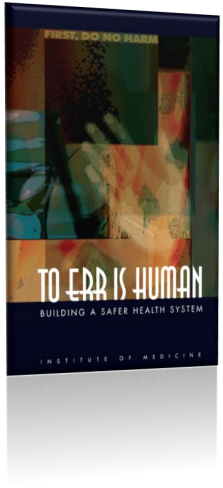
- A 67 year old patient is prescribed Nonsteroidal anti-inflammatory drugs – NSAID for osteoarthritis pain, and is admitted 4 weeks later with GI hemorrhage.
- This is an adverse event, even though the prescribing decision was not erroneous. Recording it as a patient safety issue is honest, as the patient was harmed by medical care.
- Being less tolerant of threats to patient safety such as this may lead to more recommendations to take precautionary action (such as guidance regarding co-prescription of proton pump inhibitors - **PPIs** for all older people given an NSAID).

# Errors vs. Adverse Effects

- **Errors:** prescribing Nonsteroidal anti-inflammatory drugs – NSAID without considering patient condition (age) which require co-prescription of proton pump inhibitors – PPIs.
- **Adverse Effects:** GI hemorrhage

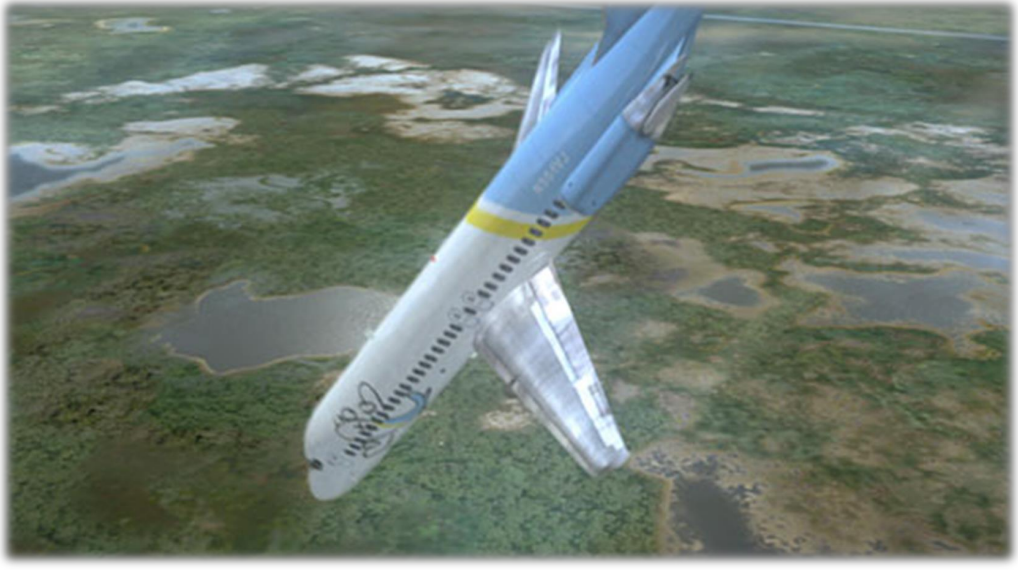


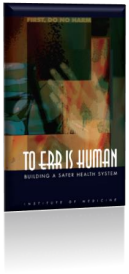
# The magnitude



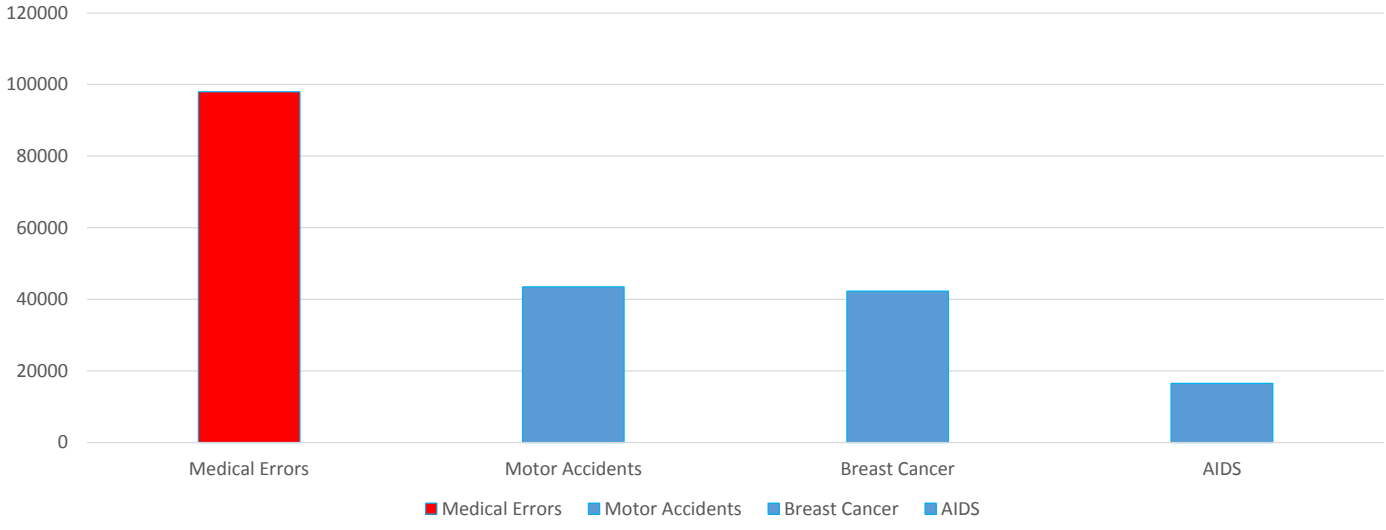

**98,000/365 = 268.49**

# Equal to one plane crashes every day!

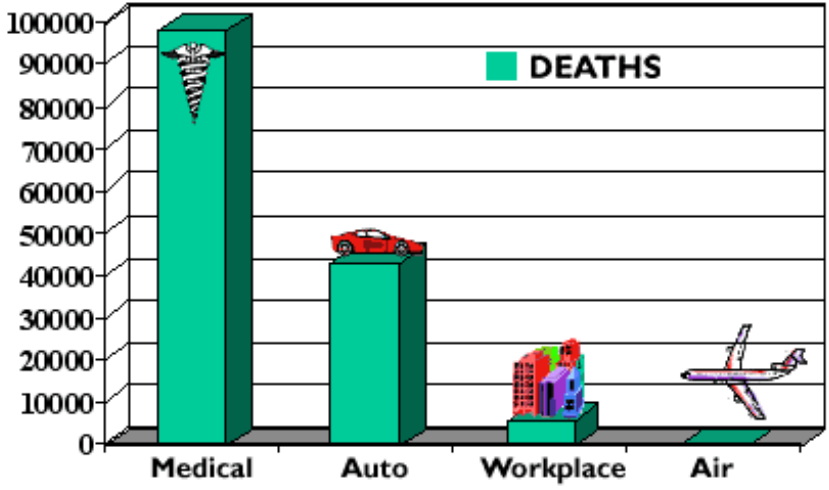





# Death Rate (US)



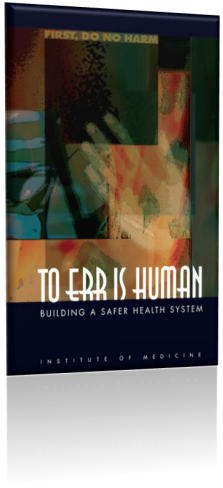
# Annual Accidental Deaths



# Status quo

- One in 5 patients discharged from hospitals end up sicker within 30 days and half are medication related
- One of 10 inpatients suffers as a result of a mistake with medications cause significant injury or death

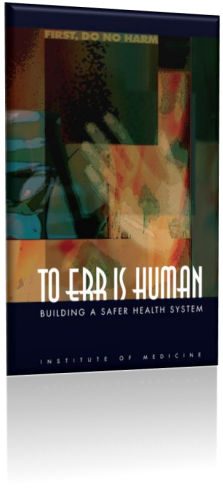
*Source: Safe Practices for Better Healthcare Why Implement Practices to Improve Safety at http://www.qualityforum.org/News_And_Resources/Press_Kits/Safe_Practices_for_Better_Healthcare.aspx*




Over **7,000** deaths annually.

Resulted by medication errors alone, occurring either in or out of the hospital.

- Between **$17B and $29B**




Cost of errors estimated