



# 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

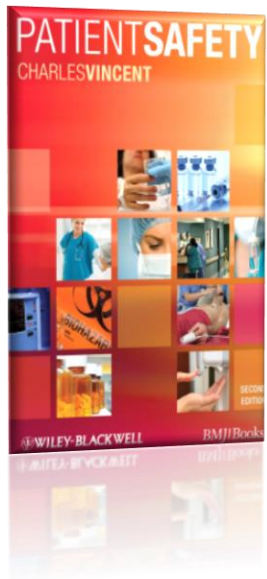


# Freedom from accidental injury due to medical care, or medical errors.

IOM, 2000



**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.



# 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).



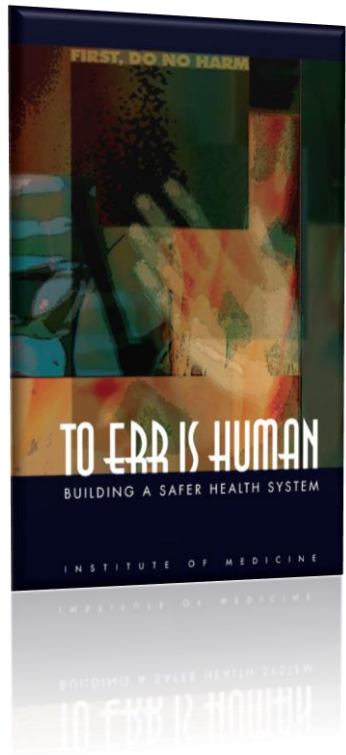


# Errors **vs.** Adverse Effects

- **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

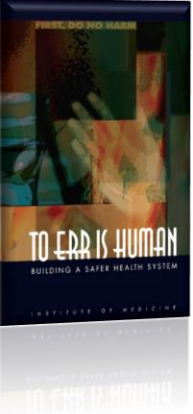


$$98,000 / 365 = 268.49$$

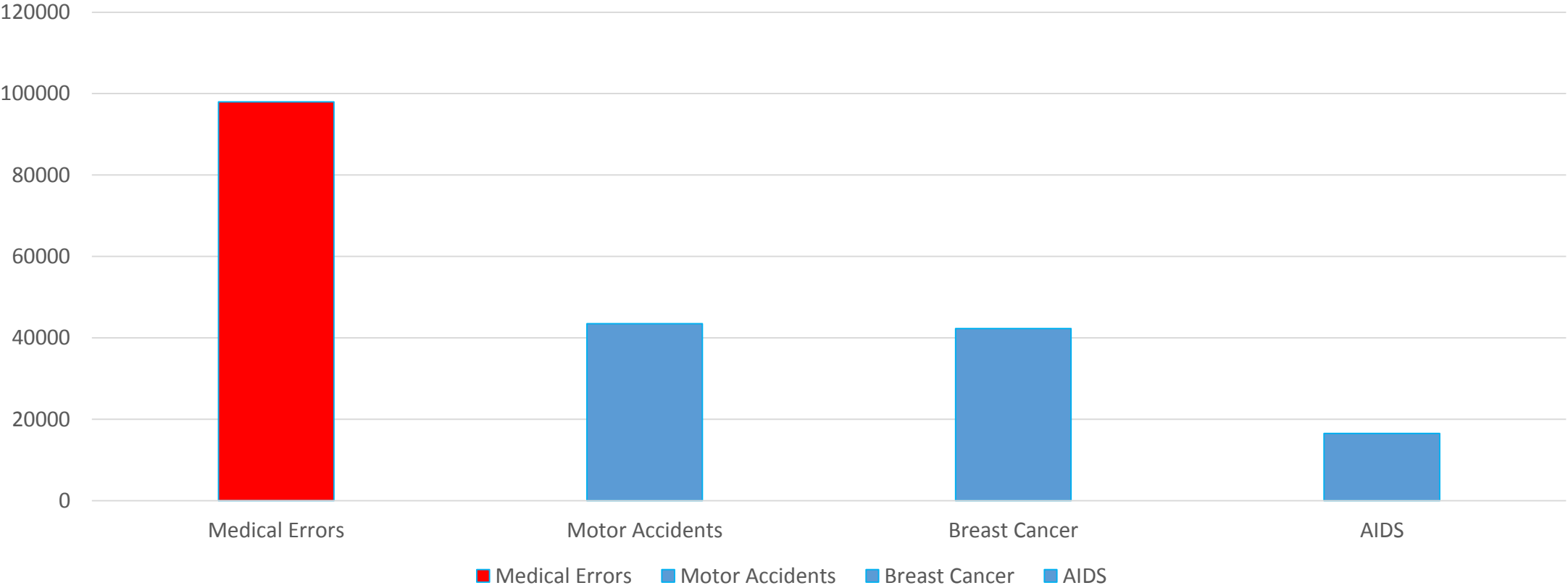


Equal to one plane crashes every day!

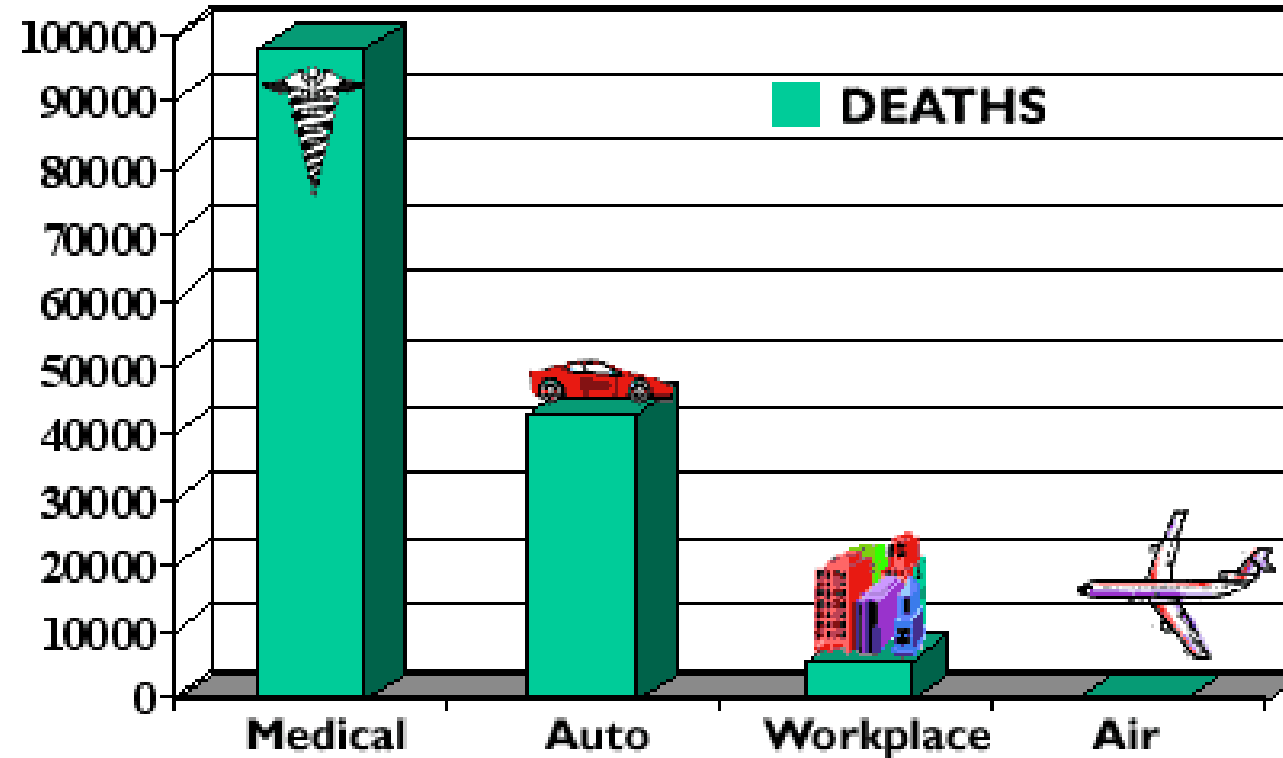




# Death Rate (US)



# Annual Accidental Deaths



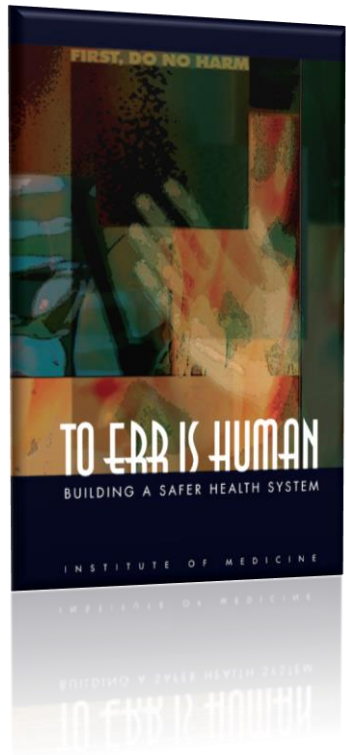
# Status quo

- 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

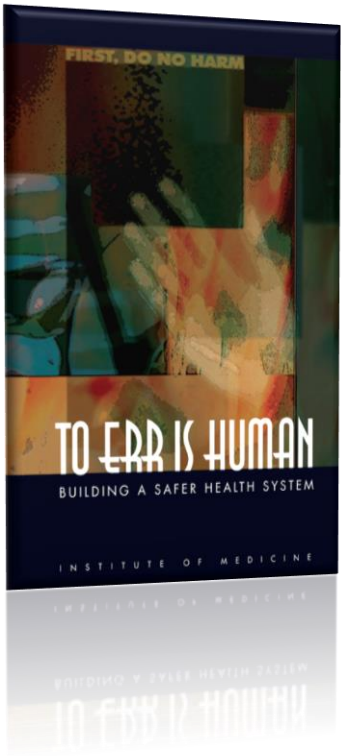


Over **7,000** deaths annually.

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



• Between **\$17B and \$29B**



Cost of errors estimated

