- "the science and technologies involved in healthcare -- the knowledge, skills, care interventions, devices and drugs – have advanced more rapidly than our ability to deliver them safely, effectively, and efficiently"
  - IOM. 2001. Crossing the Quality Chasm: A New Health System for the 21st Century.



"Modern healthcare is the most complex human activity there is, due to interpersonal relationships



between many different clinicians with different expertise and interests, and we haven't figured out how to make that work well.

We have come to a full stop against a <u>complex</u> environment that <u>resists accepting change</u> on the scale clearly required"

#### Lucian Leape, MD

Founder of the Modern Patient Safety Movement
Adjunct professor of health policy at Harvard University
"Error in Medicine," published in JAMA, 1994



#### **Informatics Limitations**

- Facilitate errors due to inappropriate / poor designing of systems customisations and automations of processes.
- Resistance to change.
- Under developed IT infrastructure
- Inadequate hardware logistics
- Limited funds.
- Lack of visionary leaders.
- Limited studies on the benefits of informatics on patient safety.



### Technology adds new concerns

- Poor designed systems due to lack of proper planning and early involvement of clinicians
- Inflexible processes
- Changes in workflows
- Ease of use and interface with the various technologies
- Power outage + no backups
- Risk adjustment
- Overload data and system slowness



#### Dr Watson the IBM's supercomputer

 The computer can analyze about 200 million pages of data in less than three seconds, which could allow physician to more accurately diagnose and treat complex cases. Physicians could, for example, use Watson to consult medical records and the latest research findings for recommendations on treatment.



FDA Approved?



#### Just a Culture Principles

- Values and expectations-what is important to the organization
- System design and continual redesign of system and address processes and systems so it does not happen to someone else
  - Coaching and open environment
- Peer to peer coaching where helping one another to stay safe and make sure things are being done correctly
  - Just culture algorithms can help
- Patient safety needs to be viewed as a strategic priority
- The entire hospital needs to be focused on patient safety if a culture of safety is to be established

Dekker S. Just Culture: Balancing Safety and Accountability. Burlington, VT: Ashgate Publishing;; 2008.

Marx D. Patient Safety and the Just Culture: A Primer for Health Care Executives. New York, NY: Trustees of Columbia University;; 2001.



#### Examples:

- Having a patient safety plan
- Doing an annual report card, use trigger tools
- Have a patient safety committee
- Many also have separate medication management committee from safety committee (more attention)
- Education for staff to make sure they know near misses must be included in definition of medical error
- Doing patient safety walkabout rounds by senior leaders



#### Key success of a Culture of Safety

- Acknowledgment of the high-risk nature of an hospital's activities and the determination to achieve consistently safe operations
- A blame-free environment where individuals are able to report errors or near misses without fear of reprimand or punishment
- Encouragement of collaboration across ranks and disciplines to seek solutions to patient safety problems
- Organizational commitment and resources to address safety concerns



#### Event 'Management'

- Prevent failure but if you can't,
- Make failure visible and
- Prevent adverse effects of failure or
- Mitigate the adverse effects
- Learn from all events



#### Errors Provide Useful Information

 We can learn more from our failures than from success

VALUABLE

TRENDS

NFORMATION

**HIDDEN** 

CAUSES

REDUCED RISK

 Our processes can be improved when studied

"Give me a fruitful error anytime, full of seeds, bursting with its own corrections. You can keep your sterile truth to yourself." Vilfred Pareto



# Which patients are most at risk of medication error?

- patients on **multiple** medications
- patients with another condition, e.g. renal impairment, pregnancy
- patients who cannot communicate well
- patients who have more than one doctor
- patients who do not take an active role in their own medication use
- children and babies (dose calculations required)



## Systems Process Changes Structure, Environment, and People

- Simplification
- Standardization
- Process design includes prompts
- Elimination of sound/look-alikes
- Environment/product improvements
- Training
- Teamwork
- Communication



# Select Resources for Patient Safety Information

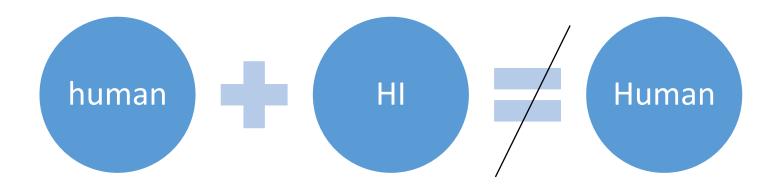
- Agency for Healthcare Research and Quality www.ahrq.gov
- Institute of Medicine of the National Academies www.iom.edu
- The Joint Commission <u>www.jointcommission.org</u>
- Institute for Safe Medication Practices www.ismp.org
- National Patient Safety Foundation <a href="http://npsf.org/">http://npsf.org/</a>
- JCAHO "Speak Up" program
  - http://www.jcaho.org/general+public/patient+safety/speak+up/index.htm



### **Take Home Messages**

- Safety is everyone's job!
- Learn from previous errors
- Report incidents to learn not to blame.
- Errors are not only human related but the majority are system failure!
- Technology has been designed by human factors!!









## Thank you

Professor Ahmed AlBarrak

