Patient Safety: A Competitive Weapon in Hospital Management

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Medical error—the third leading cause of death in the US

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But it comes to patient safety, the numbers are startling.

1 in 10 patients will be harmed during a hospital stay

WHO, 2014
The risk of a hospital-associated infection is significant.

In the USA, if you are admitted to a hospital, you have a 5% chance of contracting an HAI.

- 2 million people per year get an HAI during a hospital stay.
- Of these, > 99,000 people die annually from HAIs.
- 30% of Intensive care Unit patients develop HAI.
- US$ 28 – 33 billion per year in healthcare costs.
Of 8.8 million Outpatient adverse drug events, more than 3 million are estimated to be preventable.

James 2013
- Half the global burden of patient harm originates in primary and ambulatory care, with as many as four out of 10 patients facing safety lapses (Slawomirski L et al 2018)

- It is estimated that up to 80% of harm in primary care settings can be avoided. (Slawomirski L et al 2018)

- Poor-quality care imposes costs of US$ 1.4 trillion to 1.6 trillion each year in lost productivity in low- and middle-income countries (National Academies of Sciences, Engineering, and Medicine, 2018) At the political level, the cost of safety failure includes loss of trust in health systems, in governments and in social institutions. (Slawomirski L et al 2017)
Patient Safety Definition

• The avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the processes of healthcare. These events include ‘errors’, deviations’, and ‘accidents.’
Patient Safety Systems

Emergency Room

Error

Barrier/Defense

Patient
Some holes due to active failures

Other holes due to latent conditions

SUCCESSIVE LAYERS OF DEFENSES
THE SWISS CHEESE MODEL

DEFENCES

- Procedures
- Physical barriers
- Information
- Decisions

THE HOLES

- Poor protocols
- Faulty equipment
- Missing information
- Inadequate supervision

Patient harmed

Adapted from Professor James Reason
Types of Errors

System Errors (Latent)
- Heavy workload/Fatigue
- Incomplete or unwritten policies
- Inadequate training or supervision
- Inadequate maintenance of equipment/buildings
- Communication

Human Mistakes (Active)
- Action slips or failures (e.g. picking up the wrong syringe)
- Cognitive failures (e.g. memory lapses, mistakes through misreading a situation)
- Violations (i.e. deviation from standard procedures; e.g. work-arounds)

Types of Medical Errors

**Medication errors:** Errors can occur at any point in the medication use chain ordering stage, transcribing stage, dispensing stage or administration stage. A study in US showed that of these errors ordering stage (56%) and administration stage (34%) constitutes the most.

**Surgical errors:** Patient safety issues in surgery include those common to other fields (e.g.,) medication errors, nosocomial infections, communication mishaps), but also several specific to surgery (e.g., wrong-site surgery, retained sponges and instruments).
**Diagnostic errors:** Despite advances in laboratory testing, clinical imaging, and information technology, diagnostic errors remain commonplace. Clinicians’ diagnostic and therapeutic actions are influenced by both patient-related and clinician-related (e.g., past experience) factors.

**Human factors and errors at the person-machine interface:** Human Factors Engineering (HFE) is the applied science of systems design. It is concerned with the interplay of humans, machines, and their work environment. Thoughtful applications of HFE principles can help prevent errors at the person-machine interface.
**Transition and Handoff Errors:** Errors at the time of transitions (also known as handoff errors) are among the most common errors in healthcare. Handoffs can be site-to-site (eg., transferring a patient from primary care hospital to a secondary care hospital or vice versa) or person-to-person (eg. One Nursing Officer signing out to another when changing over the shifts). Therefore it is vital to hand over the patients either to a site or to a person with all possible information.

**Teamwork work and communication errors:** The provision if high quality, safe healthcare is increasingly a team sport. Well functioning teams are characterized by appropriate authority gradients and hierarchies that don’t stifle the free flow of information. As long as effective teamwork and communication strategies are employed, the patient safety will not be compromised. High functioning teams use strategies such as effective introductions, debriefings and sharing their knowledge and experiences on patient care.
Hospital Acquired Infections – Recently infection control activities have been characterized by many as a subset of patient safety, implying that many healthcare associated infections are caused by medical errors (failure to adhere to evidence-based prevention strategies). The new field of patient safety can learn much from the older fields of hospital epidemiology and infection control – particularly, the use of standardized definitions, the importance of data collection and analysis, and the key role of professionals to monitor safety problems and implement safe practices.

Other complications of healthcare - There are several other complications of healthcare under the patient safety umbrella. These include pressure ulcers, patient falls and Venous Thromboembolism (VTE).
Culture – The Content for Team Success

Culture is the compass, team members use to guide their behaviors, attitudes, & perceptions on the job.

- What will I get praised for?
- What will I get reprimanded for?
- What is the “right” thing to do?
Culture is Complex

Safety Culture

- Resources allocation practices
- Error detection & Correction Systems
- Feedback, reward & Corrections Systems
- Communication Patterns & Languages
- Teamwork Processes
- Formal and informal Leadership

Schein, 2010
Informed Culture
Those who manage and operate the systems have current knowledge about the factors that determine the safety of the system

Reporting Culture
Prepared to report their errors and near misses

Just Culture
Encouraged and even rewarded for providing safety-related information, but must be clear about what is acceptable and unacceptable behavior

Learning Culture
Willingness and know-how to draw the right conclusion from a safety information system and to implement reforms

Open Culture
Staff feel comfortable discussing patient safety incidents and raising safety issues with both colleagues and senior managers
Just Culture – Where is the Balance?

Blame – Free
It’s the system’s fault. We cannot hold the provider accountable

Amnesty

Name
Shame
Blame

Punitive
It’s the provider’s fault
Types of behaviors and responses

- **Behaviour**
- **Intent**

**Human Error**
Product of our current system design

Manage through changes in:
- Processes
- Procedures
- Training
- Design
- Environment

**At Risk Behavior**
Unintentional risk – taking

Manage through:
- Removing incentives for at-risk behaviors
- Creating incentives for healthy behavior
- Increasing situational awareness

**Reckless Behavior**
Intentional risk taking

Manage through:
- Remedial Action
- Disciplinary action

Intentions matter and should drive our responses

Marx, 2007
Pathological
Who cares as long as we are not caught

Reactive
Org. Start to take safety seriously but there is only action after incidents

Calculative
Safety is driven by Mx systems with collection & analysis of data. Primarily driven by top Mx. rather than looked by the workforce

Proactive
Workforce involvement starts. We work on the problems that we still find

Generative
Safety is how we do business round here – safety is inherent part of the business

THE EVOLUTION OF SAFETY CULTURE
Leadership in Patient Safety

Desired Roles

Member of the patient safety & Quality Team

Supports Adaptive Efforts

Supports technical efforts

Willing to meet monthly (Minimum)

Participates in executive rounds

Reviews safety data summaries

Ensures team has resources to reduce risks

Collaborates with team on solutions
More Effective Communications

- Accuracy
- Structure
- Clarity
- Completeness
- Brevity
- Timeliness
Handoffs

On Average, last 35 seconds

- Over 1/5 include omissions or inaccurate information
- Most do not include questions from handoff recipients

Chang et al. 2010: Horwitz, et al 2009
Team Empowerment

Trust

Mutual Support

Effective conflict Management

Task Appropriateness Assertiveness
Teams drive success in safety work

Science of Safety

Proactively Seeking different views
Respecting the value we each bring
Continuously focusing on teamwork
Situation Awareness – STEP Approach

**Status of the patient**
- Patient history
- Vital Signs
- Medications
- Physical Exam
- Plan of care
- Psychosocial condition

**Team Members**

**Environment**

**Progress towards goal**
Situation Awareness — STEP Approach

- **Status** of the patient
- **Team Members**
- **Environment**
  - Fatigue
  - Workforce
  - Task performance
  - Skill level
  - Stress level
- Progress towards goal
Individual factors that predispose to error

- Limited memory capacity

- Further reduced by:
  - fatigue
  - stress
  - hunger
  - illness
  - language or cultural factors
  - hazardous attitudes
Don’t forget ....

If you’re
• H ungry
• A ngry
• L ate
  or
• T ired .....
A performance-shaping factors “checklist”

- I  Illness
- M  Medication
  - prescription, alcohol and others
- S  Stress
- A  Alcohol
- F  Fatigue
- E  Emotion

Am I safe to work today?  
Jensen, 1987
Situation Awareness – STEP Approach

- Status of the patient
- Team Members
- Environment

• Facility Information
• Administrative Information
• Human Resources
• Triage acuity
• Equipment

Progress towards goal
Situation Awareness – STEP Approach

**Status of the patient**

- Status of team’s patient(s)?
- Goal of Team?
- Actions completed?
- Actions that are needed?
- Plan still appropriate?

**Team Members**

**Environment**

**Progress towards goal**
How to use event reporting data

- Finding System Defects
- Monitoring New Processes
- Identifying good catches
- Monitoring policy compliance
- Monitoring policy effectiveness
- Conducting deep dives
- Trends after change
Root Cause Fishbone Diagram: Patient Fall

Communication factors:
- Not actively asking whether the patient had any symptoms or was at high risk of falls

Workload factors:
- Therapist responsible for too many patients at once
- Therapist too busy to wait for the patient to get out of bed

Education factors:
- Inadequate training on prevention of falls

The patient fell at transfer

Team factors:
- Although therapists have heavy workload, they should assist each other

Patient factors:
- 1. Recent dizziness
- 2. Old age (82 years of age)
- 3. Absence of family members to accompany patient

Personal factors:
- Heavy workload increases pressure
## Control Plan

<table>
<thead>
<tr>
<th>Y</th>
<th>X</th>
<th>Specification</th>
<th>Monitoring</th>
<th>Reaction Plan</th>
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<tbody>
<tr>
<td>Decrease Falls</td>
<td></td>
<td>Decrease falls by 50%</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Lack of protocol</td>
<td>100% protocol roll out in all units</td>
<td>Monthly</td>
<td>Process will reinforce Protocol roll out in all units if &lt; 100% for 2 consecutive months</td>
</tr>
<tr>
<td></td>
<td>Lack of training</td>
<td>90% of units trained in new protocols</td>
<td>Monthly</td>
<td>HEO will ensure all staff educated</td>
</tr>
<tr>
<td></td>
<td>Lack of routine assessment</td>
<td>100% compliance with routine assessment</td>
<td>Weekly</td>
<td></td>
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Implementation – 4 E’s

Engage
- Win the hearts & minds of your team(s)

Educate
- Teach your team(s) about your intervention

Execute
- Implement your plan with purposeful team participation

Evaluate
- Determine how well your effort has improved care processes & outcomes
Don't Give up!!!
the beginning is
the always hardest

Thank You