Objectives

- Identify examples of safety and reliability in a non-healthcare industry that can be compared to, and applied in, their own work environment
- Recognize and analyze key concepts of safety and reliability from various settings
- Develop ideas for change for improving safety in their own work environment
Plan for the Day

- 8:30 am  Overview: Reliability & Plan for the day
- 9:15 am  Depart for **UNIVERSAL ORLANDO® RESORT**
- 10:00 am Universal's approach to safety
- 11:30 am Stunt Demonstration
- 12:30 pm Lunch on site

Videos
- 1:30 pm Applying Concepts to Health Care
- 2:30 pm Special Tour
- 3:30 pm Debrief
- 4:00 pm Depart and return to Gaylord

Your Experience

Name a process or service you would describe as “reliable”

- How do you know it is reliable?
- What makes it reliable?
Defining “Reliability”

1. The measurable capability of an object to perform its intended function in the required time under specified conditions. 
   *(Handbook of Reliability Engineering, Igor Ushakov, editor)*

2. The probability of a product’s performing without failure a specified function under given conditions for a specified period of time.
   *(Quality Control Handbook, Joseph Juran, editor)*

3. **The extent of failure-free operation over time.**
   *(David Garvin)*

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High Reliability Organizations

- Organizations that operate under very trying conditions all the time and yet manage to have fewer than their fair share of accidents.
  - Power grid dispatching centers
  - Air traffic control systems
  - Nuclear aircraft carriers
  - Nuclear power generating plants
  - Hospital emergency departments
  - Hostage negotiation teams
Characteristics of High Reliability Organizations*

- Deferece to expertise
- Pre-occupation with failure
- Reluctance to simplify
- Sensitivity to operations
- Commitment to resilience

*From "Managing the Unexpected" by Karl Weick and Cathleen Sutcliffe

Lessons from Human Factors

- Reliance on memory
- Distractions / interruptions
- Fatigue / sleep deprivation
- Shift work
- Lack of training and experience
- Overload
- Psychosocial factors
Safety 1 to Safety 2

Safety 1
means that the manifestations of safety are the adverse outcomes

Safety 2
is the ability of a system to sustain required operations under both expected and unexpected conditions

Moving from Safety 1 to Safety 2

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<thead>
<tr>
<th></th>
<th>Safety 1</th>
<th>Safety 2</th>
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<tbody>
<tr>
<td>Definition</td>
<td>Few things as possible go wrong</td>
<td>As many as possible goes right</td>
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<tr>
<td>Management principle</td>
<td>Reactive respond to risk</td>
<td>Proactive and anticipate</td>
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<tr>
<td>Human factors</td>
<td>Humans add risk</td>
<td>Humans are a resource</td>
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<tr>
<td>Accident investigation</td>
<td>Identify cause</td>
<td>Understand what goes right to learn what can go wrong</td>
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<tr>
<td>Risk assessment</td>
<td>Failure effect mode</td>
<td>Understand conditions where variability cannot be controlled</td>
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Hollnagel E., Wears R.L., and Braithwaite J. From Safety-I to Safety-II: A White Paper. The Resilient Health Care Net. Published simultaneously by the University of Southern Denmark, University of Florida, USA, and Macquarie University, Australia.
Why Universal Studios?

WHAT HAS THIS GOT TO DO WITH PATIENT SAFETY IN HEALTH CARE?

Framing

- Some starting areas of inquiry
  - How does the team design stunts?
  - How are transitions & handoffs handled?
  - What systems monitor the status of the cast?
  - How is continuity ensured if cast changes?
  - How do they communicate issues such as changes in plan, errors or issues?
  - Do they have triggers? How do they escalate?
  - What is their process for handling hazardous equipment?
  - How do they insure safety of other staff and visitors?

- Think about your environment as you observe
Identifying Key Concepts

- Observe!
- Ask questions and take notes
- What are the challenges common to any industry? (communication, handoffs, turnover)
- How do they manage these?
- What strategies are used to address human factors?
- How is consistency ensured (or not)?
- What happens when something unexpected occurs?