



## Working with the NCPS Action Hierarchy

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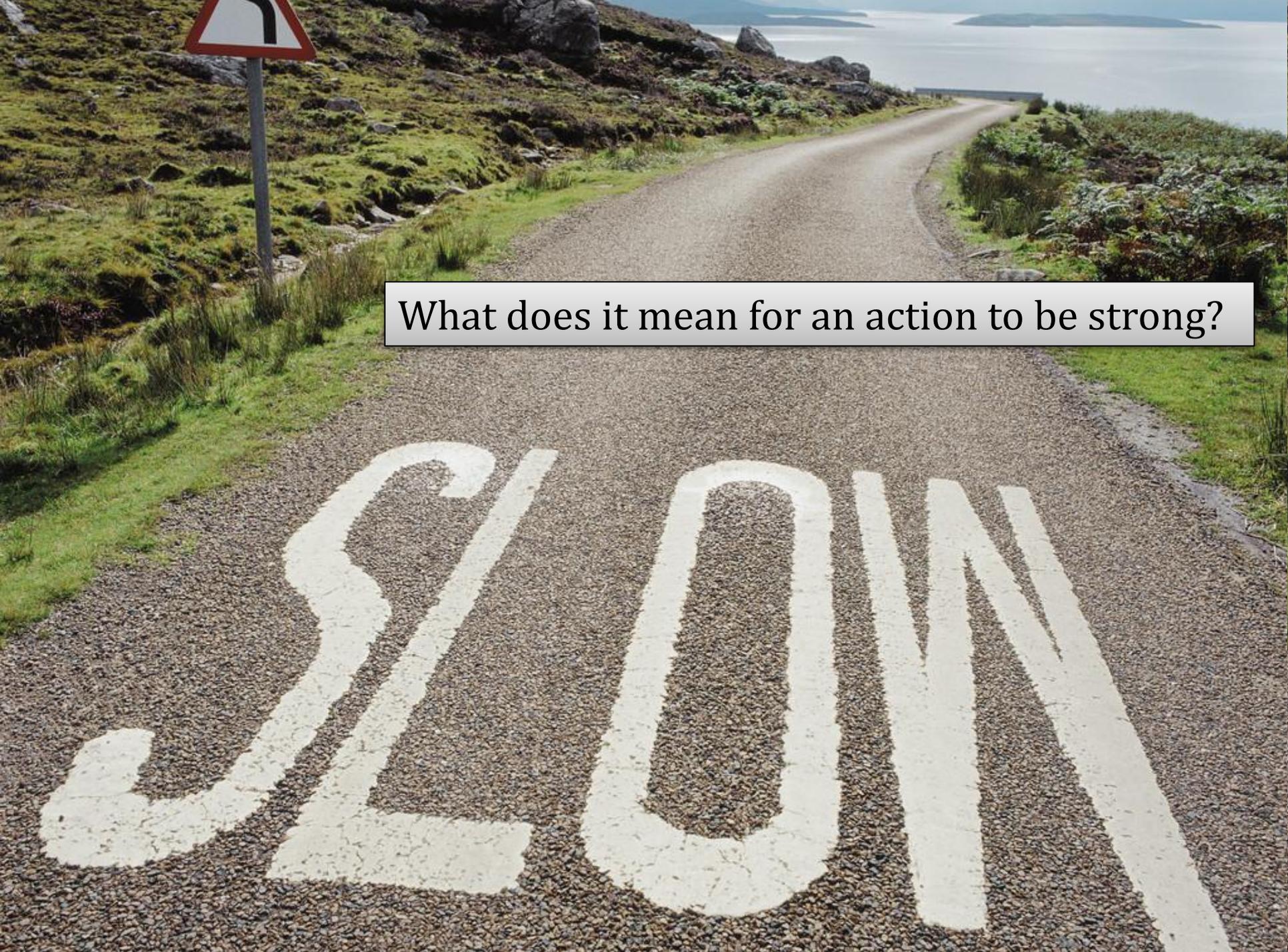
VHA National Center for Patient Safety

## We will answer these questions

1. What does it mean for an action to be strong?
2. How do you use the hierarchy?
3. What have we learned from using the hierarchy?

## In short

- The strongest actions force the safer process
- If the human is forced to complete a process a certain way, the process will be reliable, and should sustain itself
- VA Patient Safety uses the hierarchy as a framework to assess and understand corrective actions as they are submitted by RCA teams
- The most important part of the hierarchy is the framework for discussion
- Encourage teams to propose actions across the strength spectrum



What does it mean for an action to be strong?

# What does it mean for an action to be strong?

- 90% of patients won't experience an adverse event in a hospital
- We achieved this by hiring smart, well educated people
  - When events occurred, we fired the bad people, retrained those that remained and rewrote the policy
- In other words, we depended on people doing the right thing



What does it mean for an action to be strong?



Even smart, well educated  
humans aren't perfect

# What does it mean for an action to be strong?

So we focus on creating a system that is  
1) fault tolerant and 2) helps the human  
complete the process



# What does it mean for an action to be strong?

Or healthcare process

**Fault-tolerant design** is a design that enables a system to continue its intended operation, possibly at a reduced level, rather than failing completely, when some part of the system fails.<sup>1</sup>

Read “...harming the patient”

Think “human makes mistake”, “equipment breaks”

Johnson, B. W. (1984). "Fault-Tolerant Microprocessor-Based Systems", IEEE Micro, vol. 4, no. 6, pp. 6-21

# What does it mean for an action to be strong?

Helping the human perform the process means that we don't rely exclusively on training, memory and expertise. The system is designed to walk the human through the process.



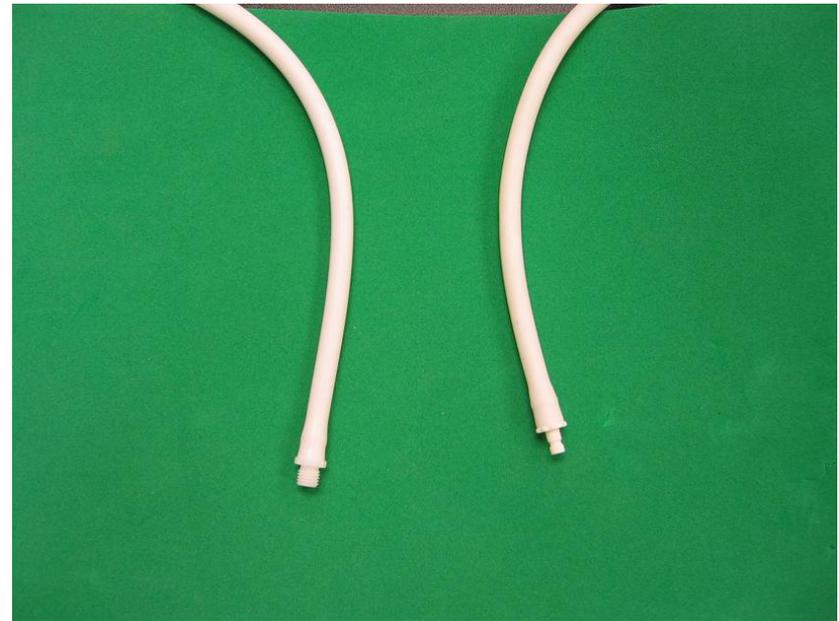
A target with concentric rings of white, black, blue, red, and yellow. Two arrows are embedded in the red ring. The target is mounted on a green stand. The background is a blurred green field.

Using the Hierarchy

# Using the hierarchy

## Stronger actions

- Standardization (Process/Protocols, Equipment, Coordination of Care)
- Engineering Control/Change (Device or interlock, Environmental, Work Area Redesign)
- Architecture/Physical Plant Changes
- New Device (Medical and Non Medical)
- Leadership Culture Change
- Simplify



# Using the hierarchy



## Intermediate Actions

- Eliminate or Substitute System/Device
- Staffing/Scheduling/Assignments (Patient Scheduling)
- Enhanced Documentation/Communication
- Enhanced information Display (Staff, Patients/Visitors)
- Redundancy
- Software/Hardware

# Using the hierarchy

## Foundational(Weaker) Actions

- Analyze (FMEA, Simulation, Survey/Inspections)
- Continuous Quality Improvement
- Incentives
- Policy/Procedure
- Supervision
- Training/Education (Staff, Patient/Family)
- Warning indicators (Visual and Auditory)



# Using the hierarchy

## Useful tips for evaluating an action

- How they are doing it is as important as what they are doing
- Ask yourself three questions
  - Does the system force the process to be done safely?
  - Does the human need to remember to use this process?
  - Does the human need to remember how to do this process?
- Sometimes a strong action isn't possible, but an intermediate action is
- Foundational actions are not bad actions, they are very important
  - However, not all of the actions should be foundational

# Using the hierarchy

## **Example:**

OR nurse called ICU RN #1 to give report on the patient. The report included mention of the epidural line. ICU RN#1 gathered all the equipment including the yellow epidural pump and the yellow-tinged epidural tubing and placed the equipment at the patient's bedside. ICU RN#2 was assigned to take the post-operative patient. ICU RN#1 gave ICU RN#2 a report on the patient. When patient arrived to the ICU from the OR, he was accompanied by a nurse anesthetist, the surgeon and a surgical resident, all of whom assisted with the admission. There was also another RN at the patient's bedside to assist, so the noise level/distraction level was higher than usual. ICU RN#2 picked up the epidural tubing and connected it to the patient's central line. The nurse anesthetist saw the tubing misconnection and immediately disconnected the tubing and informed the ICU RN#2. The epidural tubing was then properly connected to the epidural line and the medication was administered through the epidural line as ordered.

From NCPS SPOT DB

# Using the hierarchy

## **Example:**

The action associated with this event was “ Epidural tubes will be labeled with a sticker that states “Epidural line”

From NCPS SPOT DB

# Practice

A decision tool will be developed to triage patients being admitted to CLC to allow them to be segregated by specific population or complexity of care required as much as possible.

Documentation will be improved and standardized by adding fields to the restraint template for attending provider to include additional details regarding the ordering or discontinuance of a restraint.

## Practice

An additional grab bar will be installed in SCU rooms that currently have a single bar to allow patients support on both sides when rising off the toilet. This will also be added to recommendations for the future renovations of inpatient wards.

Work with nursing service to develop a handoff practice to communicate patient needs/status and if necessary have patient placed in MR safe wheelchair on the ward.

## Practice

A standard practice of using sterile saline to dampen any gauze being used during heat cauterization will be developed by surgical services. This will significantly decrease the likelihood of the material reaching ignition temperature during the procedure.

Develop a standardized process for surgical patients who are prescribed CPAP/BiPAP devices that could take place during a pre-op visit to prepare for the admission and need for the equipment so issues could be resolved in advance.

# Practice

Investigate available systems for consideration of installation of alarm system to detect pressure on top of corridor doors

Signs to be made and placed in strategic locations on Unit 73 reminding all staff contractors, visitors, volunteers and others to remain at the door until it closes and latches before leaving the area (Reference Action from RCA E-Q1-07)

## Practice

In addition to warning signs in areas of risk to patients, a 6 inch wide red line will be painted on pavement to designate areas that patients should not access.

Current signs intended to discourage patients from wandering into areas of risk on the facility will be replaced with a larger yellow sign that is more visible. The signs will not only be placed on the paved sections, but also at intersections with unpaved pathways to prevent patients in wheelchairs from leaving the pavement.

A laminated 8 x 10 inch copy of the facility map with clearly illustrated hazardous areas will be provided to each resident on the CLC who is able to independently travel around the facility either walking or using a wheelchair.



What We Have Learned

# What we have learned

The hierarchy creates shared terminology for having the conversation about the efficacy of actions

- This work is a starting place

Even with the definitions, there are still judgment calls

- This introduces variability into the process

Assigning the strength based on the action category can oversimplify the concept of a “strong” action

- There are levels of strength within each category
- For example, some software fixes have required fields, which is arguably a forcing function
- Buying a new device does not necessarily make the process safer
- High-fidelity simulation is different than reading a brochure



**Questions?**