

# The Cultural Production of Safety in Clinical Settings

Laurie Lovett Novak, PhD, MHSA

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# Medication Safety Informatics



## ***Barcode Medication Administration***

### **Ethnographic research on system implementation raised questions:**

- How do busy nurses make tradeoffs?
- How do the system's assumptions about safety compare to the nurses' views?
- What are the institutional and cultural influences on situated action in medication administration?

# Goals

- Explore concepts and theory related to risk, safety and clinical practice
- Discuss a practice-oriented perspective on understanding risk that can be used by health IT designers

# The Standard View of safety in health care

- Adverse events are the result of bad processes. Safety can be designed into the system.
- “Students of error recognize that most human errors are symptoms of underlying systems failures, not personal failures.”<sup>1</sup>
- How do we predict which part of the system will fail?

<sup>1</sup> Leape, et al. Reducing Adverse Drug Events: Lessons from a Breakthrough Series Collaborative. 2000. Joint Commission Journal on Quality Improvement. 26(6) 321-331.

# “Colonising the Future”<sup>1</sup>

- The future is unknown.
- Identifying potential failures in processes requires an abstract theory of risk.
- Where do theories of risk come from?

**Experts!**



<sup>1</sup> Giddens, Anthony. Fate, Risk and Security. In Cosgrave, James. (ed) *The Sociology of Risk and Gambling Reader*. 2006. New York: Routledge.

# Theories of Risk

- Technical/calculated
  - Engineering – probabilistic risk assessment
- Economic – cost/benefit analysis
- Psychological – cognitive perception
- Social Theory – societal/ governmentality
- Sociotechnical systems

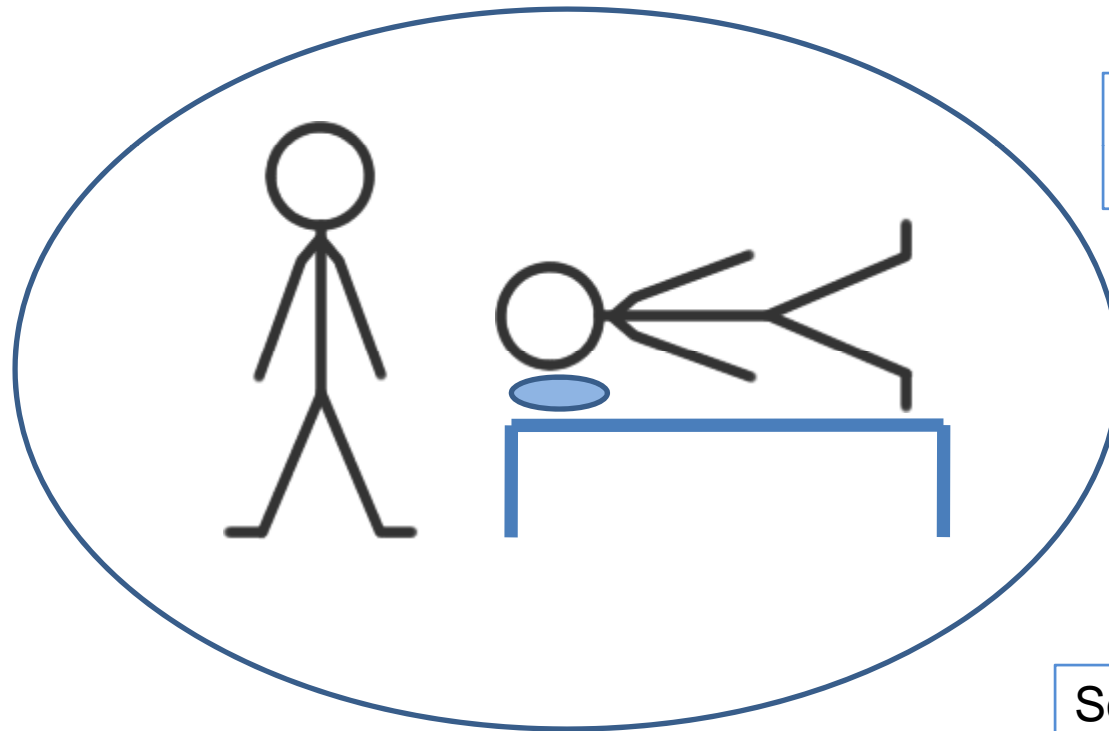
# Abstract

Governmentality

Cognitive Perception of Risk

Environmental Hazards

Economic Risk



Probabilistic Risk Assessment

Sociotechnical Vulnerabilities

# Concrete



Patients (and other raw materials) can be unpredictable.

# Concrete



Tradeoffs are made in resource-poor environments.

# Concrete



Practitioners have agency.

# Concrete: disasters resist simple explanations

Governmentality?

Cognitive Perception of Risk ?

Economic Risk?



Environmental Hazards?

Probabilistic Risk Assessment?

Sociotechnical Vulnerabilities?

# Situated Action

- Actions are sometimes choices, sometimes habit.
- Risky actions are defined by the abstract theory and the researchers.
- How do the **actors** think about risk?

# Understanding practice

*Hazlehurst and McMullin: Ethnographic research among intensive care nurses identified “orienting frames”, or conceptual resources for action:*

1. Being prepared for emergencies
2. Being organized
3. Being responsible and accountable

***How well do health IT systems support these frames?***

*Hazlehurst and McMullen, Orienting Frames and Private Routines, International Journal of Medical Informatics 76S(2007) S129-S135.*

# Implications for Design

- Understanding how clinicians think about and enact “safe practice” can provide insights for the design of policies, procedures and health IT systems.
- The notion of a “user interface” can be expanded to reflect the larger-scale sociotechnical system
- All of these concepts are also applicable to the design of tools for patient use.

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