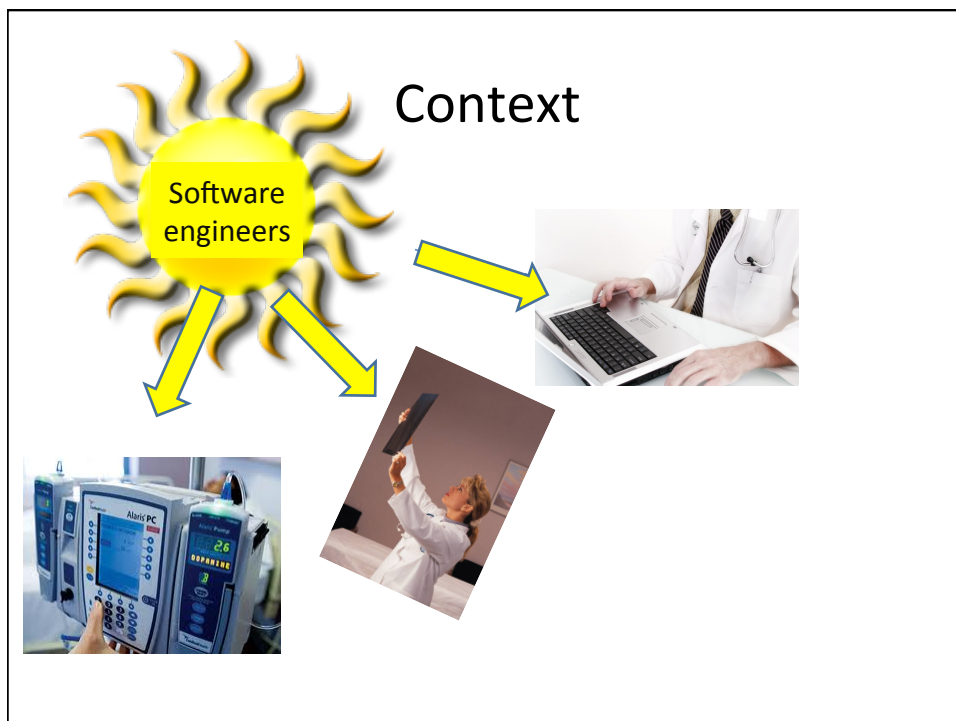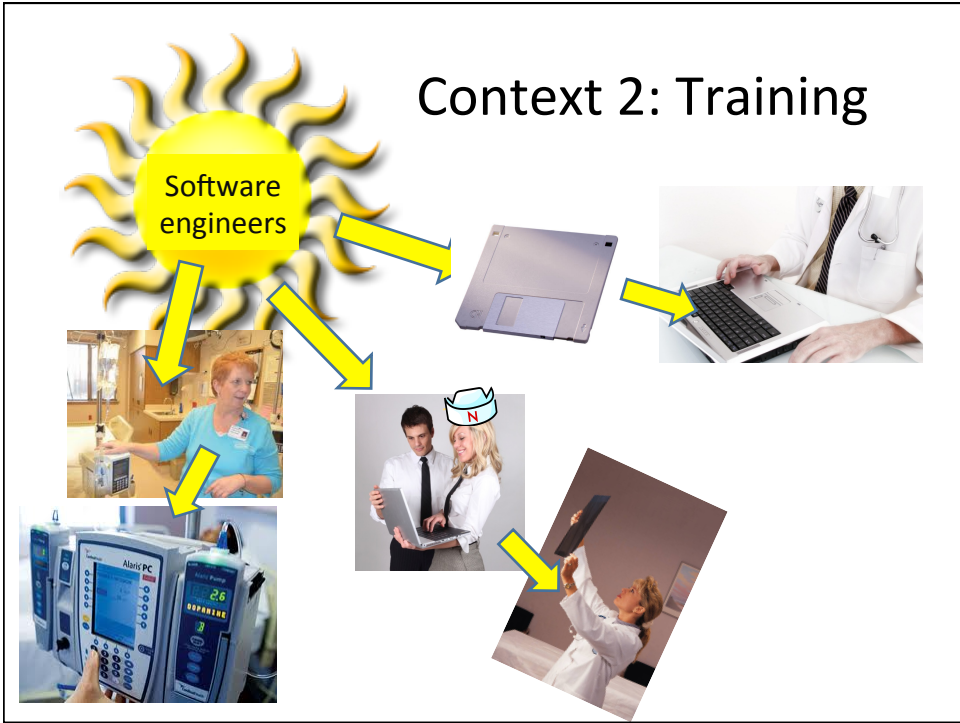# Benefits of Interdisciplinary Cooperation

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RK: Sociology Department & the Center for Clinical Epidemiology and Biostatistics (School of Medicine) University of Pennsylvania

(Also, the RAND Corp; Harvard Medical School; American Medical Informatics Assoc Evaluation Working Group-Chair)

MF-M: Operations Director Penn e-lert eICU; Clinical Nurse Consultant University of Penn School of Engineering

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Context

Software engineers

Context 2: Training

Software engineers

Alignment with actual clinical workflow

One of Our Goals -- Bring together:

- Computer Scientists and Computer Engineers
- Clinicians (Physicians and Nurses), especially experienced with HIT and medical devices
- Sociologists
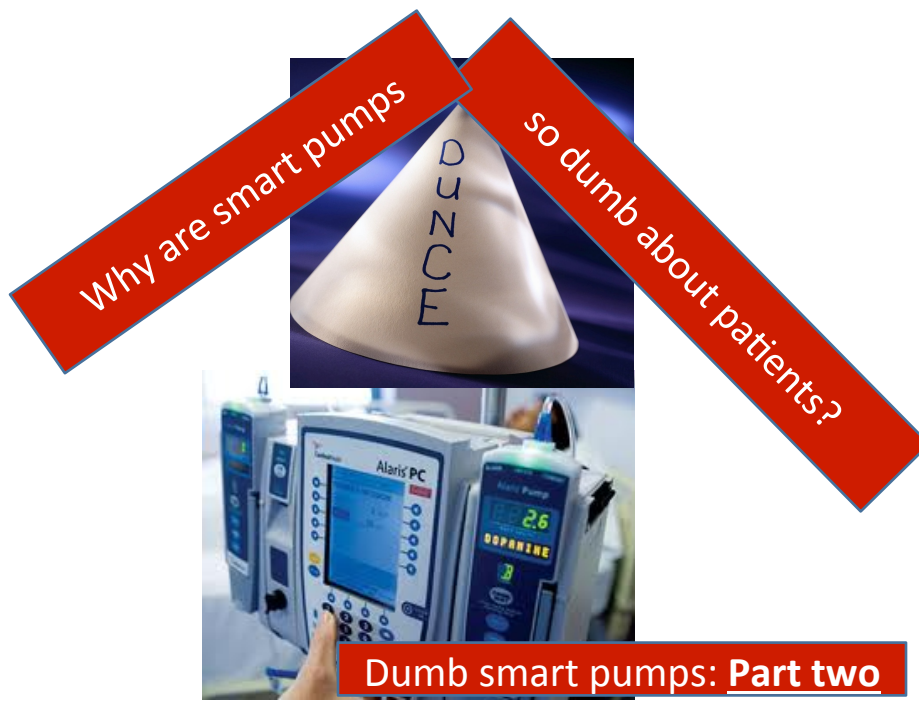- Clinical workflow experts
- Research methodologists

And…

One of Our Goals -- Bring together:

- Medical device makers
- *Regulators (FDA)*
- FMEA (Failure Mode and Effects Analysis folk)
- HIT experts (some w/ focus on unintended consequences)
- NSF – Research focus

Example: False or Irrelevant Alarms

- Drive us nuts
- Are ubiquitous (95.6 alarms per patient per day; thousands per day in one unit)
- Distract from needed care
- Cry wolf….and obscure real alerts
- Are very dumb [1]
- Difficult to adjust to make sensible [2]

Why are smart pumps

so dumb about patients?

DUNCE

Dumb smart pumps: **Part two**

Devices don't talk to each other

Question: What do you do when you hear or see an alarm?

Answer: Wait

And/or look at other indicators

So….What do we do here? What works? (1)

Projects presented by students or faculty --

Then typical discussions:

Does the project make sense <u>in the real world</u>?

What do the data say? [1]

Where are the data from? Reliability; Validity? [2]

Barriers to more information…and suggestions for additional/more data sources [3]

To the General: What do we do here? What works? (2)

Other suggested solutions – statistics, people, other organizations, manufacturers, regulators

Problems with suggestions (oh gosh)

Often: Discussion of workflow and medical specifics

What really works?

The Unexpected and surprising:

- Often it's the misunderstandings and the barriers that….[1]
- Sometimes it's the triumph of computing power over what's understood by ….[2]
  - And we try to help
- Sometimes it's historical context….[3]

Problems and Options?

- Presentation of marginal progress is sometimes boring (for others)
- Insist on only incremental project updates? [1]
- Limit attendance to those who don't blush at the word **_dongle_**?
- And, as noted, it's often the extensions and "distractions" that generate the best ideas and discussions…and the most interdisciplinary interaction and benefits.

Thank you

Questions?

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