Finding What's Needed:
Observe & Document Without Critique

Bob Barnes and Marilyn Lombardi

Duke
UNIVERSITY

Introduction

* A case study of observation in action
* Observing <u>without critique</u> – the first step in the innovation process
* Using the ethnographic research method to gather data and information
* Maintaining a Professional, Legally Defensible Notebook

Why Observation Matters: A Case of Innovation

* Using observation **to identify and to verify** the limitations and inadequacies of current approaches
* The story of "smart" infusion pump technology.

The case of the smart infusion pump

* The Catalyst
  * A 2006 report from the Institute of Medicine (IOM) linked **7,000 deaths every year** were caused by **medication errors**, harming 1.5 million people in the U.S. & costing $3 billion a year to treat error-related injuries (IOM, 2006)
  * Drug infusion pumps are the standard tool for delivering fluids, medication or nutrients into a patient's circulatory system
  * The US Federal Drug Administration (FDA) received ~56,000 reports of infusion pump-related errors between 2005 and 2010.

The case of the smart infusion pump

* The First Response:
  * A multidisciplinary team at Massachusetts General Hospital **used direct observation to uncover, confirm, and verify the significance of the problem in their local setting.** They studied current practices and procedures & identified points in the process where errors were most likely to occur.

The case of the smart infusion pump

* The Observed Situation
  * Clinicians were ordering and administering drugs without detailed guidance on proper drug and infusion protocol at the point of care.
  * Once a clinician ordered the wrong drug or made a drug dosage calculation error, there was no automatic, consistent way of preventing these errors from impacting the patient.

The case of the smart infusion pump

* The Solution
  * Embed a library of IV drugs and infusion protocols into the software that runs the IV pump.
  * The pump sounds an alert when a clinician programs the machine either to dispense the wrong drug or a dose that lies outside predefined limits for that drug.

The case of the smart infusion pump

* The Power of Observation
  * The innovation team was able to understand the real, rather than the hypothetical, needs of the affected stakeholders
  * The team verified objectively that the observed problem was sufficiently important to guarantee that a new solution would be accepted by all those involved.

Observation: What is it good for?

* To find a clinically relevant need when the need is not yet clear
* To define a need when it is complex and embedded in multiple systems or sectors
* To identify participants when the participants, population sectors, stakeholders are not yet known or identified.
* To clarify the range of settings where a need currently exists
* To document a process
* To identify differences in culture and reasoning among stakeholder participants

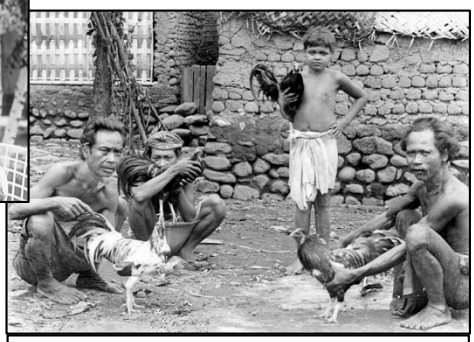
Adapted from the work of LeCompte & Schensul, 2010

Observation: Why 'Without Critique"?

* The parable of the blind men and the elephant
  * Participants will see any given scene through their traditional frameworks and assumptions
  * In healthcare, those assumptions have great deal to do with a person's practice role and common responsibilities
  * He or she can be oblivious to other perspectives on the same event, owing to something cognitive psychologists call "**perceptual blindness**."
    * People can fail to notice an unexpected occurrence right in front of their eyes when their attention is focused on a demanding task.

Observation: Borrowing from Ethnography

Ethnography is an elaborate exercise in "**THICK DESCRIPTION**" (Geertz, *The Interpretation of Cultures*, 1973).



Balinese Cockfighting
Photo: Tropenmuseum of the Royal Tropical Institute (KIT)

Becoming immersed in experience of the treatment team (without participating in its work) will give you insights into the culture and conflicts, while interviews will help you understand for the wide range of perspectives on the full cycle of care.

Healthcare Ethnography

Across the Full Cycle of Care and in Different Settings

1. Work your contacts in order to gain access to a site, and remember it is a privilege to be permitted to observe and that patient welfare always comes first.

2. Become embedded in the team, view problems from different perspectives, and observe similar teams tackle similar events to gauge variability across sites.

3. Watch for clues that latent problems exist, ask questions and challenge dogma. Look for signs of risk, malfunction, uncertainty, patient stress/pain, cost and inefficiency

4. Build a "thick description" of behaviors and of the organizational culture, including the social, political and historical forces at play to help you assess the culture's readiness for change.

Tips for Writing 'Thick Descriptions'

Things to include in your "Thick Descriptions":

* Layout of the clinic space,
* Specific objects, elements, equipment
* People involved,
* Clues as to their status and roles,
* Explicit structures, rules and norms
* Emotions evident in the participants
* Interactions among people
* Specific verbal and non-verbal behaviors

Don't forget to be self-reflective!

* How did your presence affect the environment?
* How did your own assumptions & reactions influence what you noticed?

"Thickly" Describe. But Don't Interpret (Yet)

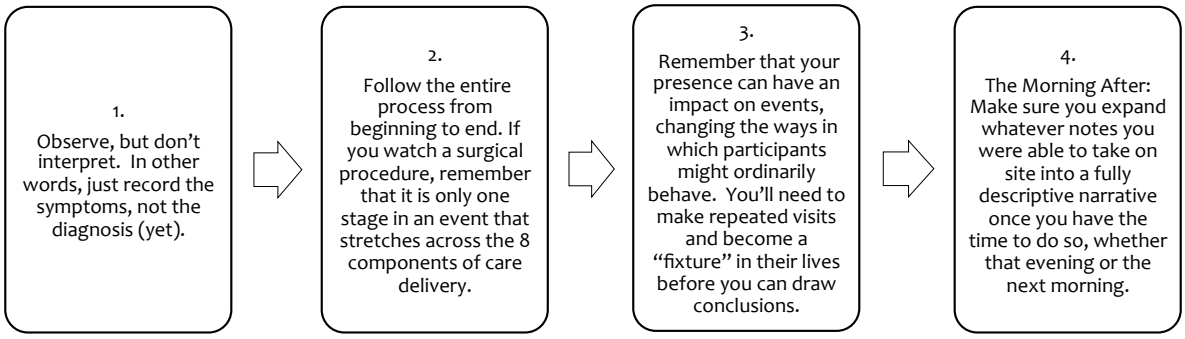
DO create an objective account of a clinical setting:

"There was on discarded glove on the floor and several electrical wires that made it difficult to move."

* **DO NOT** write an interpretive description of the setting:

"The space was unhygienic and a fire hazard."

A Brief Recap of the Process



The Notebook

1. Sign and date each entry (date with month spelled out)
2. Have an independent witness sign and date each entry
3. The witness cannot be co-inventor and must understand data
4. Do not change entries
   * If you need to change an entry, make a new entry and cross-reference to prior entry
5. Use past tense
6. Do not omit any result, no matter how odd
7. Fill consecutive pages
8. Cross out unused parts of pages
9. Never remove original pages or attachments
10. Record all discussions/meetings/ideas relevant to the project
11. Record as much detail as possible and be as accurate as possible
12. Cross out mistakes lightly (might need to recover)
13. Write legibly

Thank you for listening!