Ethnographic Observation Methods

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  - original learning module creators

Purpose

- Observations describe behavior, communication patterns, workflows and tasks of clinicians in specific work environments.
- UCD process relies on systematic understanding of clinician behavior and environment constraints.

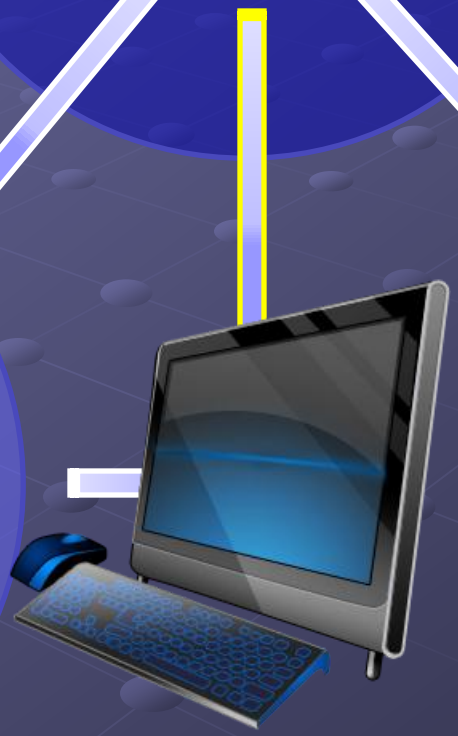
Methods
- Observation
- Ethnography
- Interviews
- Log analysis
- Cognitive analyses
- Task analysis
- Expert walkthrough

Informaticist
Designer

expertise
Usability, HCI, methods
Interface design

Methods
- Surveys
- Questionnaires
- Focus groups
- Pilot studies
- Guidelines
- Regulations

emergent characteristics
- Interaction strategy
- Collaborative relationships
- Contextual knowledge
- Workflow routines
- Unintended consequences



characteristics
Medical expertise
Clinical role
Experience
Preferences

Clinician

attributes
Clinical objectives
Constraints
Collaboration
Workflow

Environment

Goals

- Determine workflows
  - Help to ensure that IT fits with or improves existing workflows
- Identify inefficiencies
  - Where are the breaks, gaps, disconnects, and opportunities for error?
- Identify opportunities
  - What can be done better?

Goals

- Describe clinicians
  - Hospitalists, specialists, surgeons, nurses, EMS personnel, support.
- Describe clinical environments
  - Ambulatory, hospital floor (service), surgical, critical care, emergency care
- Describe opportunities for error
  - Interruptions, handoffs, missing info
  - Workarounds, safety concerns

Goals

- Describe interactions
  - Among clinicians and with patients
    - Face-to-face, phone (real-time)
  - Clinicians with information systems
    - Search and retrieval of data
    - Documentation
  - Clinicians and physical environment
    - Rooms, clean environment, transfers, location of workstations, nursing stations

Preparing for Observations

- Identify key stakeholders
- Gain access
- Set primary focus
  - Workflow model (present and future), communication pattern, deviation from protocol, situational awareness, tracking flow of care and time to treatment
- Identify participants and conditions
  - Physicians, nurses, coordinators
  - High/low patient volume, handoff

Preparing for Observations

- Develop an approach
  - Observations of work? Interviews?
- Develop supporting materials
  - Observation sheet
- Use de-familiarization
  - Don't assume you know how work is conducted
- Triangulate
  - Compare data from different methods

Observation Techniques

- Shadowing
  - Follow one clinician over the course of a shift (or less, 2-3 hrs) and create field notes.
  - Record activities, interactions, events, their duration, time and location.
  - Do not ask questions or interrupt, clinicians may volunteer explanations

Observation Techniques

- Observe group behavior
  - Take notes on activities at specific locations – description, goal, frequency, duration, clinical role.
- Observe from patient perspective
  - Follow one patient through an episode of care – describe interactions, kind and source of information, waiting.

Ethnographic Descriptions

- Observation and shadowing
  - Evaluating authentic behavior
  - Time consuming, may not understand reasons for actions
  - Interpretation may be difficult
- Interviews (open, semi-structured)
  - Excellent to fill observation gaps

Structured Observations

- Define activities, tasks, artifacts
  - Prepare from literature, prior studies, informants, experts, interviews.
- Develop field notes collection tool
  - Timestamp, pre-defined categories, descriptive notes
  - Paper or electronic format

frm_BWH

Observer: Matt

Date: Wednesday, March 25, 2009

Subject: 2

Session: 4

BRIGHAM AND WOMEN'S HOSPITAL
A Teaching Affiliate of Harvard Medical School

Event

Patient Code: 0

Patient MRN:

Patient Name:

StartTime: 9:38:49 AM Now

EndTime: 9:44:16 AM Now

Elapsed Time: 0:05

Activity

View	Input
☐ Note	☐
☑ Order	☐
☐ Labs	☐
☐ Vitals	☐
☐ Meds	☐
☐ Allergies	☐
☐ Radiology	☐
☐ EKG	☐
☐ Other	☐

System

- ☑ ED Track
- ☐ ED Border
- ☑ BICS
- ☐ LMR
- ☐ Centricity
- ☐ CAS
- ☐ Web Appl
- ☐ Paper
- ☐ Phone Dictation
- ☐ Phone
- ☐ Other

Human

- ☐ Patient
- ☐ Attending
- ☐ Resident
- ☐ PA
- ☐ Consult
- ☐ Nurse
- ☐ Triage
- ☐ Registrar
- ☐ PCP
- ☐ Other

Individual / code:

Location

- ☐ Alpha
- ☐ Bravo
- ☑ Obs
- ☐ Ecnu
- ☐ Waiting
- ☐ Hallway
- ☐ Triage
- ☐ Registry
- ☐ Other

Event: < Prev 269 Next >

Narrative comments:

R click in EDT to review and take off orders. R click in EDT to look at BICs-info he was looking for not entered their yet. " that's frustrating"

Sample Observation Notes

9:47:40	Orders come up on EDT, prints them.
9:49:46	Opens BICS to look up container types for lab tests- not all the info is there. Writes down on orders page the info he can get.
9:51:41	Calls lab control to get the info missing from BICS, about what tubes to use for different blood draws.
9:54:45	Calls tissue typing (got number from lab control) to ask about how to draw sample for test - gets the info he needed.
9:59:24	Enters pt room to give discharge instructions on paper and verbally, prescriptions, etc.
10:01:24	Looks through pt binder, writes in ED progress note. Then stacks papers in order, paperclips them and puts them back in binder
10:05:01	Enters pt room to give discharge instructions
10:13:21	Logs back into computer, r-click to BICS to view pt registration info to make sure of proper billing.
10:15:25	Back to writing in ED progress note, clips together puts on business specialist's desk.
10:23:48	EDT right click to view pt disposition order then rclick to assign nurse to pts

Data Analysis

- Summarize your collected data according to primary focus
  - Workflow – Chronology, task structure
  - Performance – Duration, duplication
  - Interactions – Information flow model
  - Patient Safety – Workarounds, errors
- Identify best available electronic interventions to observed behavior

Data Analysis

- Identifying work and information flows

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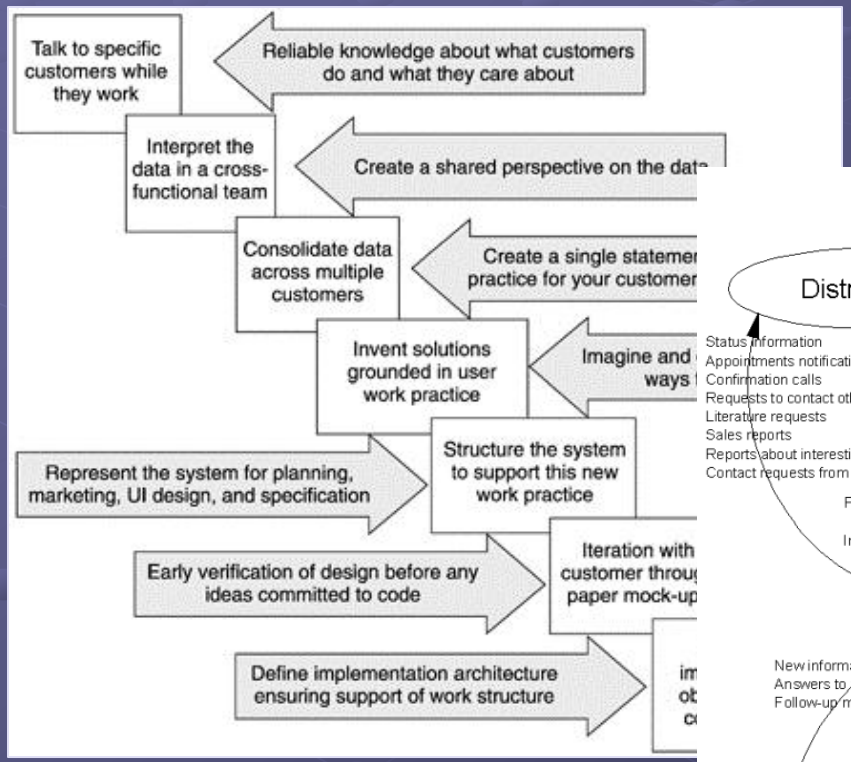
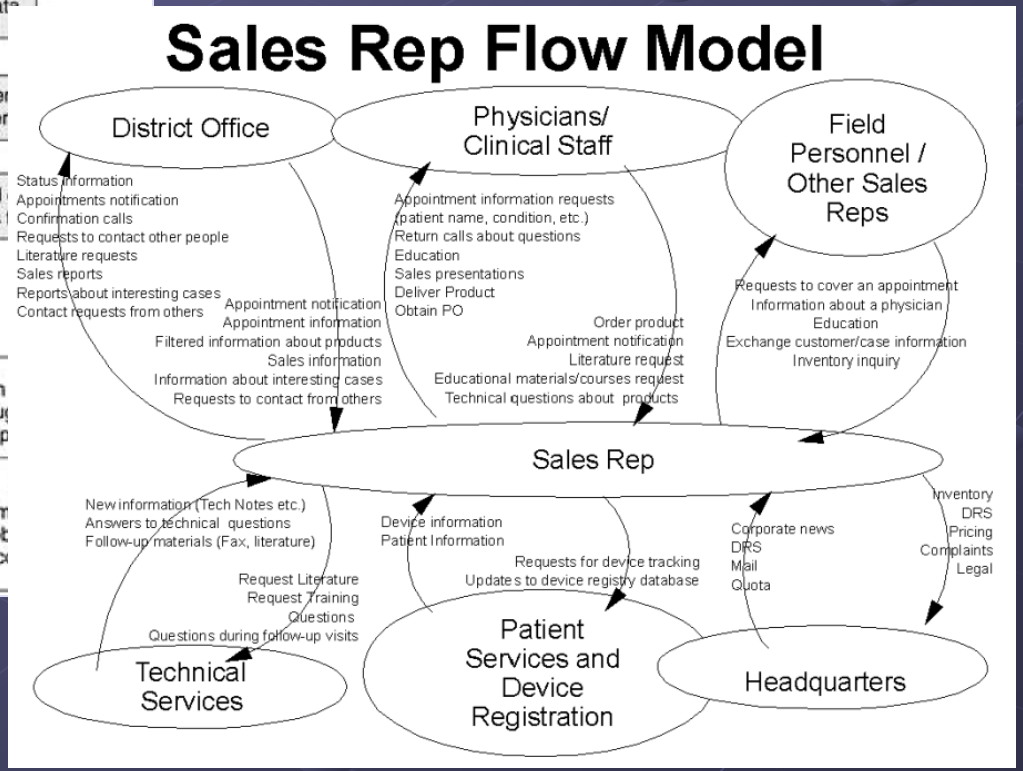
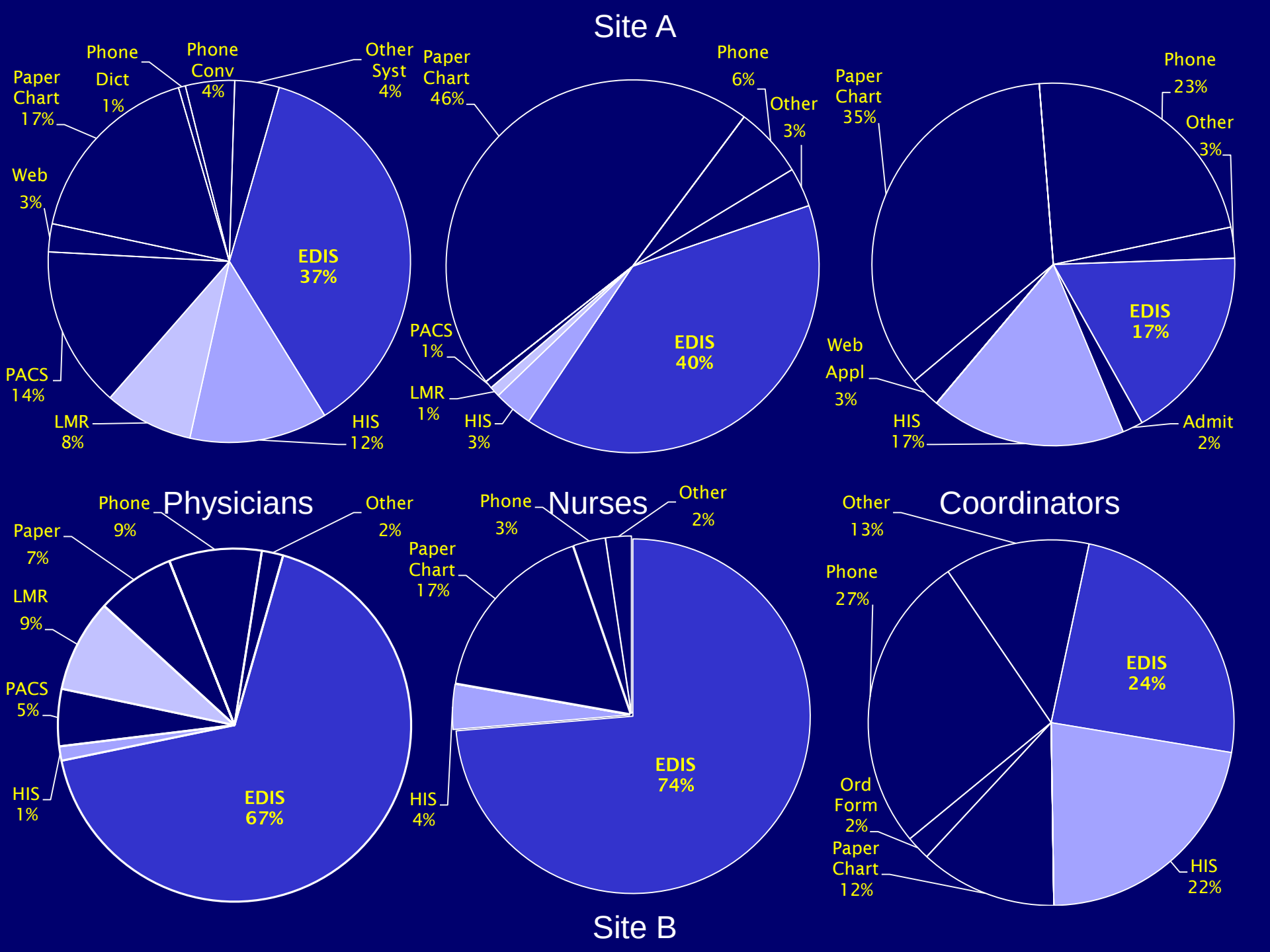
- Identifying work and information flows





Data Analysis

- Identify best available electronic interventions to observed behavior
- Develop low-fidelity prototypes
  - Paper sketches, Power Point
- Use prototypes to validate findings and conclusions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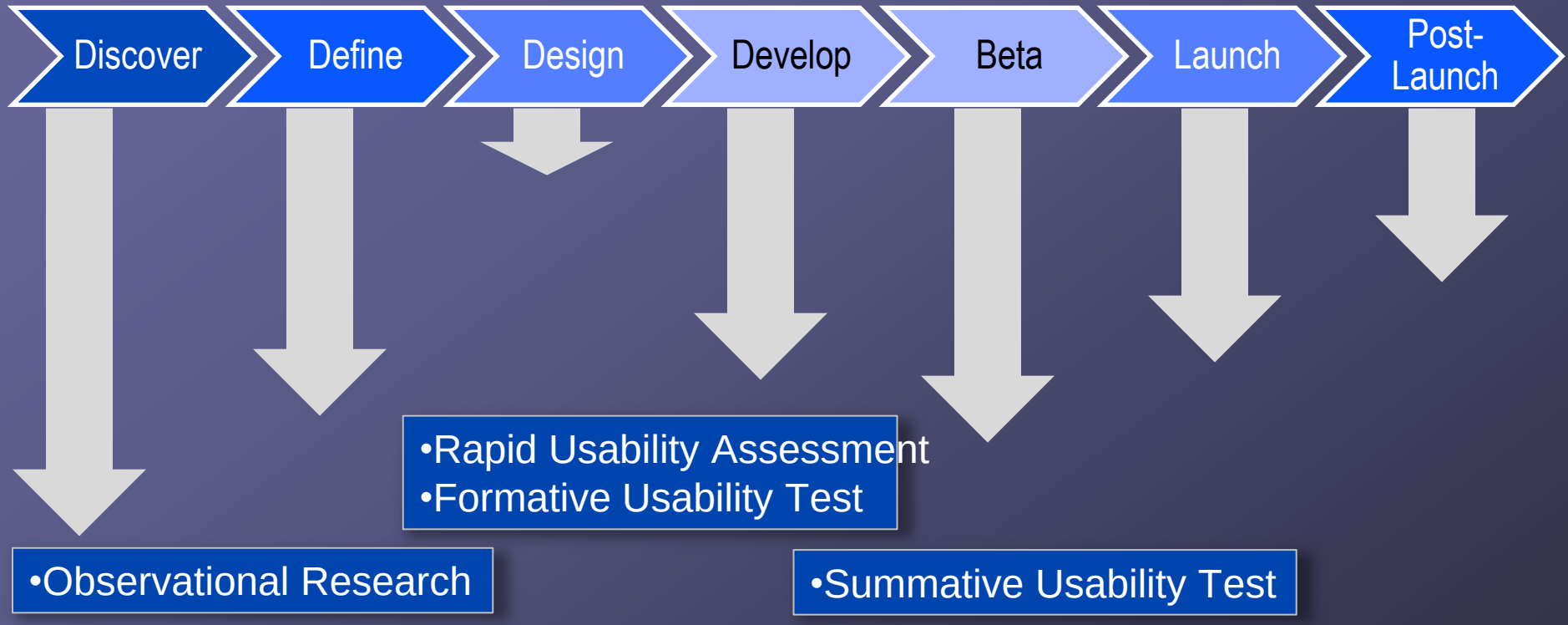
Site B

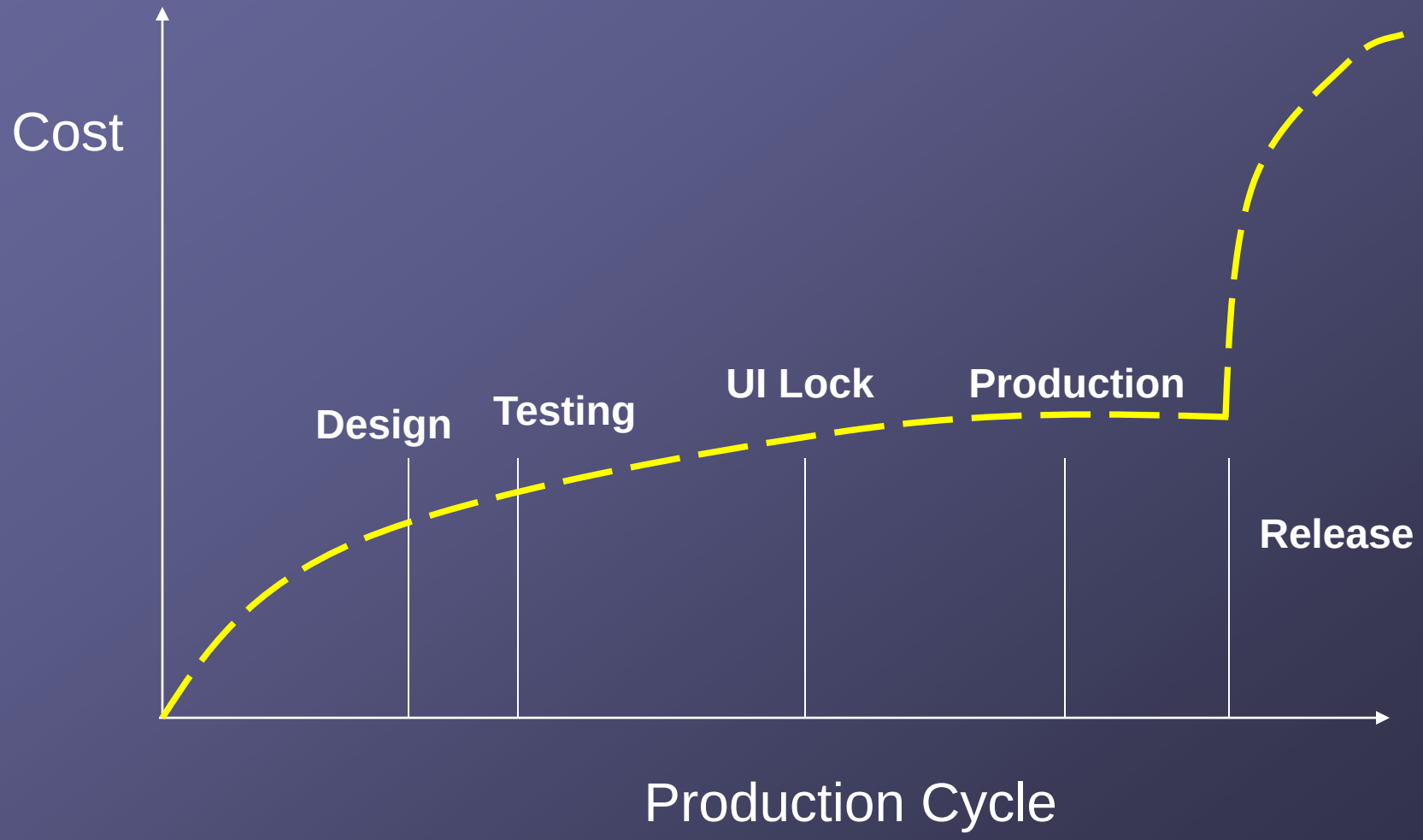
Development Lifecycle

- Observe early in the process long before any screens are built and likely before features and functions are identified.
- During implementation focus on workarounds, workflow fit, errors

Design and Test Process



Cost Distribution



Exercise

- Identify an issue to address in an ambulatory visit
  - Patient, Nurse, Physician, EHR
- Watch video of a simulated visit
- Take notes on observations.
- Discuss problems, improvement
  - Documentation, organization