Curriculum Development Centers Program

Awardee of The Office of the National Coordinator for Health Information Technology

HIT Design for Teamwork and Communication

Unit 5b Can HIT Hinder Communication and Care Coordination?

Objective

- Investigate ways in which HIT design can serve as a barrier to effective communication.

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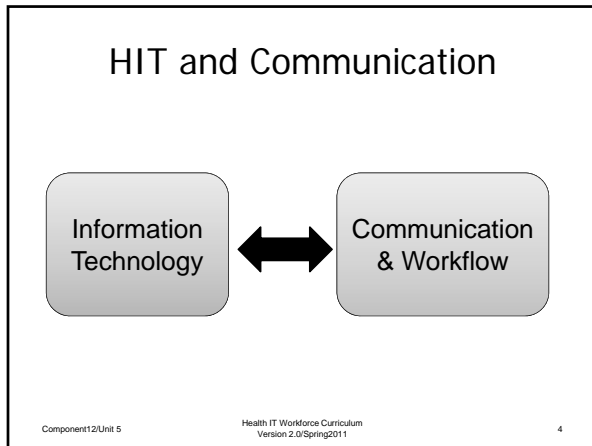Version 2.0/Spring2011

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Information Sharing

"As the healthcare environment has grown more complex , the sharing of patient clinical information among multiple providers has become more problematic. Today's hospital environment is characterized by the provision of complex care through short encounters with multiple providers, a situation fraught with opportunities for communication breakdowns that can lead to increased medical errors."
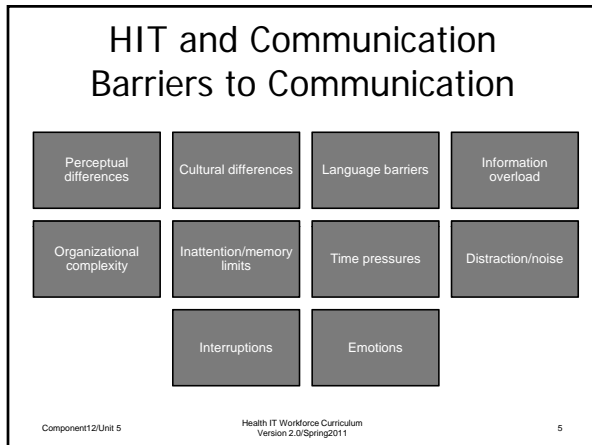
Benham-Hutchins & Effken, 2010

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HIT and Communication

Information Technology ⟷ Communication & Workflow

HIT and Communication
Barriers to Communication

Perceptual differences	Cultural differences	Language barriers	Information overload
Organizational complexity	Inattention/memory limits	Time pressures	Distraction/noise
	Interruptions	Emotions	

HIT and Communication

- Communication is characterized by social interactions and norms
  - Behavioral expectations
  - Cues within a group
- When information technology is introduced into the social group, we need to plan for potential changes in communication patterns.

HIT and Communication

- We don't talk to each other the way we used to, and that has an impact on care.

HIT and Communication

- HIT alters the form and pattern of communication and information exchange
- Design problems can interfere with the clarity of information communicated between providers
- Patch-work systems that do not interact with each other, or that interact inefficiently, and lead to gaps in information, resulting in error

HIT and Communication
Social Network Analysis

- Study of interaction pattern among people, departments, organizations, social groups

"For example, physicians consult with one another in diagnosing a patient's illness. They interact with nurses, pharmacists, and medical technicians in providing patient care. Physicians, clinics, hospitals, medical laboratories, home care agencies, and insurance companies may all share a common electronic medical record system."

HIT and Communication
Social Network Analysis

Relational Data → Who does the provider routinely refers patients to, consult with, discuss professional matters with, or take on-call coverage for?

Clustering → Are there physician subgroups in the practice who have similar patterns of referrals, consultations, discussion, and on-call coverage?

Semi-Structured Observation
A Tool for Communication Analyses

"Healthcare is a communication and information intensive sector with a history of mixed success in the introduction and usage of information systems. Some of the problems can be ascribed to simplistic design processes and methods unsuitable for the complexity of healthcare."

Sorby ID, & Nytro, O. 2010. Analysis of communicative behavior: profiling roles and activities. International Journal of Medical Informatics; 79(6): e144-e151.

Semi-Structured Observation
A Tool for Communication Analyses

- Speech Act = smallest unit in human communication; 3 kinds of meaning

Literal Meaning → "It's cold in here" means it is cold in here.

Social Function → "It's cold in here" might mean "turn off the air conditioning"

Effect → Someone turns off the air conditioning

Austin, J. L. 1962, How to do things with words. Oxford University Press: England

Semi-Structured Observation
A Tool for Communication Analyses

- Collects both quantitative & qualitative data about collaborative communication, focusing on roles, information types, and sources.
- Used to analyze pre-round communication practices in anticipation of information technology implementation
- Researchers developed profiles of
  - Individual providers in one patient care unit
  - Providers in corresponding roles on different units
  - Specific activities such as drug-related events

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Semi-Structured Observation
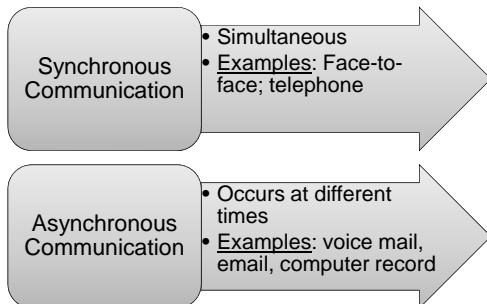## A Tool for Communication Analyses

- Categorize communicative acts
  - Assertive (states a fact)
  - Commissive (states that the speaker will perform a task)
  - Directive (aims to make the listener perform a task)
  - Expressive (state of mind of the speaker)
  - Declarative (changes the world by statement)
- Used these profiles to inform the design of new information systems

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HIT and Communication
Workflow Support & System Design

Synchronous Communication
- Simultaneous
- <u>Examples</u>: Face-to-face; telephone

Asynchronous Communication
- Occurs at different times
- <u>Examples</u>: voice mail, email, computer record

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HIT and Communication
Workflow Support & System Design

"The physician in this case study attempted to make three consultations by landline telephone as the first mode of contact. In the case of consult #3, the physician called, paged, and called a second time, finally leaving a message with the secretary. Each of the three attempts at contact resulted in deferment to an asynchronous mode of communication. Perhaps, had the physician been able to rely on a single, trusted, method of communication, he could have saved time by forgoing the follow-up page and phone call."

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