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HIT Design for Teamwork and Communication

Unit 5.1: Care Coordination

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Slide 2

Objective

 Assess the impact of teamwork and communication on patient safety and care coordination



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Slide 3

Goals of Meaningful Use Improve quality, safety, & efficiency Improve care coordination Improve population & public health; reduce disparities Ensure privacy & security protections

Care Coordination

1 priority area for national action Aim: "to establish and support a continuous healing relationship, enabled by an integrated clinical environment and characterized by the proactive delivery of evidence-based care and follow-up.

Slide 5

Care Coordination Failure

A major contributor to adverse events in health care



Slide 6

Care Coordination Transitions of Care

- Provider to provider (within facility)
- Care area to care area (within facility)
 Facility to facility transfer
- Admission to facility from home (primary care provider to hospital-based care)
- Discharge to home (hospital-based care to primary care provider)

Hand-Off

- Transfer of care from one provider to another provider
- Vulnerable to communication failure

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Provider Hand-Offs

- Reduced resident duty hours have been mandated for all US residency programs since 2003

 - Less fatigue and improved well-being for residents
 Need for increased hand-offs and reduced continuity of
- Concerns about inadequate hand-offs
 Average patient is handed-off 5 to 10 times per admission
 - Health care communications are prone to interruption
 - National Patient Safety Goal requires organizations to develop a standardized approach to hand-off communications

Slide 8

Provider Hand-Offs

Barriers

- Communication
- · Lack of a standard
- system or requirement
- · Lack of training
- Incomplete information Specified location
- Noise/interruptions
- · Lack of time
- Complexity/volume

Strategies · Standardized process

- Standardized content
- Limit hierarchy
- Training/education
- Limit interruptions
- Technology

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Provider Hand-Offs

- Study of Emergency Physician-Hospitalist hand-offs
- Differences in function and emphasis
- Emergency physician: talks, emphasizes immediate care decisions
- Hospitalist: listens; emphasizes information needed for long-term inpatient care
- · Analysis of utterances
- Primarily geared toward information giving and not question-and-answer events
- · Few direct statements of acceptance of responsibility

Transfers Within Organizations • Average of 40-70% of inpatients are transferred each day • Complex and multi-departmental • Requires seamless inter-departmental coordination Operating 3 General Care

Slide 11

Transfers Within Organizations

- Challenges to inter-departmental coordination
 - Ineffective inter-departmental interactions
 - Clinical-nonclinical
 - Clinical-clinical
 Ineffective information hand-offs
 - Timeliness
 - Withholding of information
 - Ineffectiveness of information technologies

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Abraham and Reddy, 20

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Hospital Discharges

- Deficits in communication and information transfer when patients are discharged from hospitals are common and may affect quality of care and patient safety
- On discharge, hospital physicians transfer responsibility for the patient's care to primary care providers

"Timely transfer of accurate, relevant data about diagnostic findings, treatment, complications, consultations, tests pending at discharge, and arrangements for post-discharge follow-up may improve the continuity of this hand-off."

Kripalani et. al, 2007

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Hospital Discharges

- Direct communication between hospital and primary care providers was low: 3% - 20%
- Availability of the discharge summary within one week of discharge was low: 12% 34%
- Availability of discharge summary remained low after four week post discharge 51% - 77%
- When present, discharge summaries lacked important clinical information
- Poor communication was the cause of primary care provider dissatisfaction

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Hospital Discharges

Inpatientoutpatient physician discontinuity Changes and discrepancies in medication regimen

Self—care responsibilities and social support Ineffective physician-patient communication

Kripalani et. al., 2007

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Primary Care Coordination Tasks

- Maintain patient continuity with primary care provider
- Document & compile patient information generated within and outside the primary care office
- Use information to coordinate care for individual patients and for tracking different patient populations within the primary care office

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Primary Care Coordination Tasks

- Initiate, communicate, and track referrals and consultation
- Share care with clinicians across practices and settings
- Provide care and/or exchange information for transitions and emergency care

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O'Malley et al. 2009

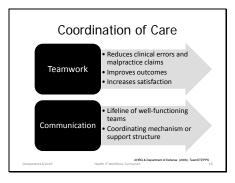
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Primary Care Coordination Effectiveness of EHR

- EHRs as currently designed are helpful for care coordination within practices but less helpful across practices
- EHRs are designed for point-in-time documentation; care coordination is dynamic
- Managing repetitive content of notes and inappropriate use of templates is a barrier
- Limited ability to capture care planning

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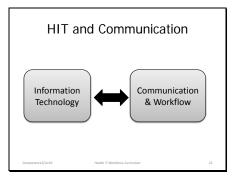
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Slide 19 HIT Design for Teamwork and Communication Unit5.2 Can HIT Hinder Communication and Care Coordination? Slide 20 Objective Investigate ways in which HIT design can serve as a barrier to effective communication. Slide 21 Information Sharing "As 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 Barriers to Communication

- · Perceptual differences
- Cultural differences
- · Language barriers
- Information overload
- · Organizational complexity
- Inattention/memory limits
- · Time pressures
- Distraction/noise
- InterruptionsEmotions

Slide 24

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.



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HIT and Communication

- HIT implementation 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

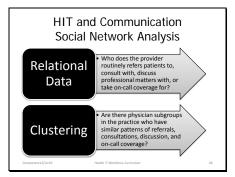
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HIT and Communication Social Network Analysis

Study of the pattern of interactions among a set of people, departments, organizations, or other 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."

	Anderson, 2002	
ealth IT Workforce Curriculum		



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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."

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Semi-Structured Observation A Tool for Communication Analyses					
 Speech Act = smallest unit in human communication Three kinds of meaning of speech acts 					
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				
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Semi-Structured Observation A Tool for Communication Analyses

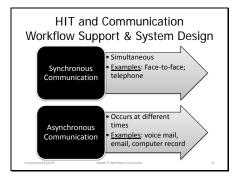
- Collects both quantitative and qualitative data about collaborative communication, focusing on roles, information types, and sources.
- Used to analyze pre-round communication practices in anticipation of information technology implementation
- Researchers developed profiles of
- Individual providers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

Sørby & Nytrø, 2009



HIT and Communication Workflow Support & System Design

- Communication inefficiencies abound
 Edwards and team reported the following example:

"The physician in this case study attempted to make three "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." Edwards, et. al. 2009

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HIT Design for Teamwork and Communication

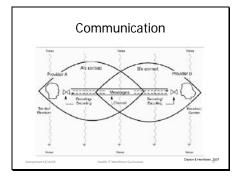
Unit5.3: Tools to Enhance Communication and Care Coordination.

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Objective

 Describe ways in which HIT design can enhance communication and care coordination.

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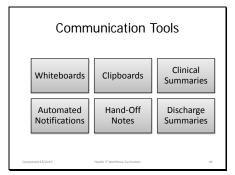
Hand-off Communication

- Joint Commission (TJC)

 Center for Transforming
 Healthcare
- Healthcare
 Seeks solutions to critical safety and quality problems through collaborative
 Improving hand-off communication is one of its current priority projects.

- World Health Organization
 Designated TJC and TJC International are the WHO Collaborating Center for Patient Safety Solutions
- High 5 Project: focuses on finding 5 patient safety solutions over 5 years
- · Prevention of patient care hand-over errors

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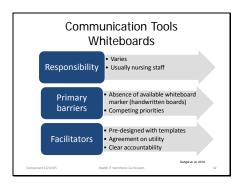
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Communication Tools Whiteboards

- · Names of the members of the patient care team
- Clinical service of record
- · Patient-specific risks or precautions
- · Daily goal of care
- Family contact information
- · Scheduled activities
- Anticipated discharge date

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Communication Tools Whiteboards



Manual

- Single, visible display
- Data manually entered by identified individuals.
- · Must be erased and replaced as data changes
- Can use color as flags
 Manually move patient from one location to another
- Only accessible at a single

Electronic

- Single, legible, highly visible, user-friendly display
 Data extracted real-time from interfaced clinical information system
- Able to key in variable data, such as patient assignments
 Can use color & symbols as flags
- Hands-free patient tracking
 Accessible from anywhere

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Communication Tools "Clipboard" Tools



- May be entirely manual or a print-out from the EHR
 - · Single data source
 - Multiple data sources
- Print-outs may require whitening-out or crossing-out non-essential items
- Manual forms may entail bundling (organizing pieces of information and taping them together)
- · Both can require annotating

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Communication Tools Clinical Summary Tools

- Electronic; designed to be viewed on-line
- Facilitate communication, discussion, and planning
 Provider-Provider

 - Team-Team
 - Facility-Facility
- Pull clinical data from various places in the electronic health record into one view
 - Vital signs (high, low, most current, ranges)
 - Significant events, problems, allergies, medications
 Daily goals, progress toward outcomes

 - Other patient-specific information

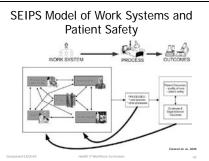
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Communication Tools Automated notifications

- Facilitate human-computer interaction

- Facilitate human-computer interaction
 Examples:
 Electronic referral requests (based on pre-defined referral criteria)
 Electronic communication of abnormal diagnostic test results (alert notifications)
 Prescription transmission (provider-to-pharmacy transmission) through provider order entry
 Researchers are using multiple qualitative methods to analyze these tasks.
 Are there potential sources of error introduced by these tools?

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	Component 12/ContS Health 17 Workforce Cuttoulum 47			
e 48	Communication Tools Automatic Notification • Maintenance of critical information in longitudinal record with automatic data transfer to latest encounter record • Automatic flag and link sent to latest encounter record to indicate presence of patient information in longitudinal record			
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Communication Tools Hand-Off Notes

- Provide structured content and process for all types of hand-offs
 - Shift-to-shift
 - Cross-coverage
- Lunch/break coverage
- Can pull relevant data to a summary note, and add to-do section for immediate needs.

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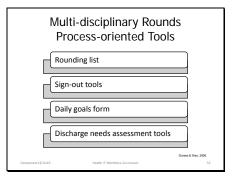
Communication Tools Discharge Summaries

- Also provide structured content and process for discharges
 - Electronic summaries can be automatically faxed to the primary care provider and other postdischarge providers, such as home health services
 - Discharge worksheets can be designed to populate patient discharge instructions in patientfriendly language, including the new Home Medication List

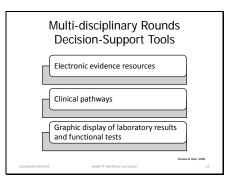
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Beds	ide monitoring devices	
	Qurs	es & Xiao, 2006.
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Slide 54

Multi-Disciplinary Rounds **Evaluating Usefulness of HIT Tools**

- Look at communication processes
 Content, frequency
 Time, noise & interruptions
- Time, noise & interruptions
 Assess effectiveness of communication
 Situation awareness
 Decisions, goals, needs
 Assess impact on care processes
 Frequency of adverse events
 Variations from clinical pathways
 Identification of safety risks
 Follow-through on discharge needs

Summary

- Effective communication is a necessary pre-requisite to improving care coordination, a top national health care priority
- The greatest risk for ineffective communication occurs during provider hand-off and transitions of care
 Health IT can both enhance and hinder effective communication and care coordination
- The HIT professional is instrumental in implementing information and communication technologies to support interdisciplinary care coordination
