Physician Hand-Offs

Chris Feddock, MD, MS, FAAP, FACP

Objectives

- List elements of effective hand-off communication
- Describe the setting most conducive to communication
- Explain the current SCM physician hand-off tool

UK UNIVERSITY OF KENTUCKY College of Medicine

What is the most common cause of mistakes in the hospital?

Root Cause Analysis

- Majority have multiple causes
- Hand-off communication ~ 80% of errors

UK
UNIVERSITY OF
KENTUCKY
College of Medicine

Root Cause Information for Op/Post-op Complication Events Reviewed by The Joint Commission

(Resulting in death or permanent loss of function)

2004 through Third Quarter 2011 (N=604) ***The majority of events have multiple root causes***	
Human Factors	362
Communication	337
Assessment	310
Leadership	255
Information Management	125
Operative Care	95
Care Planning	72
Physical Environment	71
Medication Use	61
Continuum of Care	51

The reporting of most sentinel events to The Joint Commission is voluntary and represents only a small proportion of actual events. Therefore, these root cause data are not an epidemiologic data set and no conclusions should be drawn about the actual relative frequency of root causes or trends in root causes over time.

© Copyright, The Joint Commission

Root Cause Information for Wrong-patient, Wrong-site, Wrong-procedure Events Reviewed by The Joint Commission

(Regardless of the magnitude of the procedure)

2004 through Third Quarter 2011 (N=782) *The majority of events have multiple root causes*	
Leadership	649
Communication	536
Human Factors	496
Information Management	279
Operative Care	271
Assessment	259
Physical Environment	77
Patient Rights	48
Anesthesia Care	42
Continuum of Care	28

The reporting of most sentinel events to The Joint Commission is voluntary and represents only a small proportion of actual events. Therefore, these root cause data are not an epidemiologic data set and no conclusions should be drawn about the actual relative frequency of root causes or trends in root causes over time.

© Copyright, The Joint Commission

Handoffs Causing Patient Harm

- Massachusetts General Hospital
  - 249 IM & Surgery residents
- Survey
  - Think about handoffs on your most recent rotation
  - Identify patients who were harmed
    - Minor patient harm: limited clinical consequence
      - More frequent monitoring or transient discomfort
    - Major or significant harm: significant consequences
      - Deterioration in clinical status, organ dysfunction
      - Prolonged hospitalization, disability, death

Jt Comm J Qual Pt Safety. 2008;34:563-70.

UK UNIVERSITY OF KENTUCKY College of Medicine

Problematic Handoffs

- 59% reported 1+ patients were harmed
  - 58% reported minor harm
  - 12% reported major harm
  - 38% reported an increased length of stay as a result
- Handoff resulted in misinformation to:
  - Patient or patient's family (59%)
  - Nurse or technician (52%)
  - Another resident physician (52%)
  - Consulting physician (50%)
  - The attending physician (46%)

Jt Comm J Qual Pt Safety. 2008;34:563-70.

UK UNIVERSITY OF KENTUCKY College of Medicine

Current Hand-offs

JCAHO Communication Standard

- Effective hand-off communication
  - Patient's condition & care
  - Treatment, medications & services
  - Any recent or anticipated changes in patient condition
- Characteristics
  - Interactive
  - Up-to-date (recent or anticipated changes)
  - Verification or "read-back"
  - Ask clarifying questions
  - Limit interruptions

UK UNIVERSITY OF KENTUCKY College of Medicine

ACGME Requirements

VI.B. Transitions of Care

1. Programs must design clinical assignments to minimize the number of transitions in patient care.
2. Sponsoring institutions and programs must ensure and monitor effective, structured hand-over processes to facilitate both continuity of care and patient safety.
3. Programs must ensure that residents are competent in communicating with team members in the hand-over process.
4. The sponsoring institution must ensure the availability of schedules that inform all members of the health care team of attending physicians and residents currently responsible for each patient's care.

UK UNIVERSITY OF KENTUCKY College of Medicine

Impact of 2003 Duty Hours

- Internal Medicine Services
  - University of California, San Francisco
  - Brigham and Women's Hospital
  - University of Chicago
- Average intern ~ 300 hand-offs per month
  - 40% increase compared to pre-duty hours
- Average of 3 daily hand-offs per patient

J Hosp Med. 2006;1:257–266.

UK UNIVERSITY OF KENTUCKY College of Medicine

Literature on Hand-offs

- 18 substantive articles
  - Only four of high quality
  - Only six described features of effective hand-offs

Acad Med. 2009; 84:1775–1787.

UK UNIVERSITY OF KENTUCKY College of Medicine

What information should be relayed during a handoff?

Communication Failures

- 26 interns on inpatient general medicine services
  - 52 interviews after call night
    - 25 distinct events related to hand-off
  - 21 worst events due to deficient sign-out in last year
- Semi-structured interviews
  - Description of any incidents
  - Inquiry about improving communication

Qual Saf Health Care. 2005;14(6):401-7.

UK UNIVERSITY OF KENTUCKY College of Medicine

Communication Content Failures (39/46)

- Active medical problems (16)
  - Problem worked up as new although it had been present for days
- Medications or treatments (11)
  - Heparin listed as a medication but turned off by primary team
- Tests or consults (10)
  - Consult recommendations that were not checked
- Code status (5)
  - Emergency code conducted on a patient who was DNR
- Rationale of the primary team (5)
  - Patient appearing septic but not on antibiotics
- Baseline status (2)
  - Patient transferred to ICU because they were thought to be worse

Qual Saf Health Care. 2005;14(6):401-7.

UK UNIVERSITY OF KENTUCKY College of Medicine

Handoff Content

	Sometimes, Rarely or Never
Tasks to be completed	3%
Principle reason for admission	5%
Two patient identifiers	14%
All major active clinical issues	16%
Current clinical condition	24%
Code status (if less than full)	36%
Anticipated events	42%

Jt Comm J Qual Pt Safety. 2008;34:563-70.

UK UNIVERSITY OF KENTUCKY College of Medicine

What is the most appropriate setting to handoff?

Hand-off Barriers

- Communication
  - 14 General communication problems
  - 8 Hierarchy/social barriers
- Missing information
  - 9 Incomplete/missing information
  - 4 Errors in information
- Physical barriers
  - 7 Time-constraints
  - 5 Interruptions/distractions
  - 3 Chaotic environment

Acad Med. 2009; 84:1775–1787.

Massachusetts General Hospital

- 94% reported face-to-face communication
  - 44% rarely or never in a quiet, private location
  - 37% most or always interrupted multiple times
  - 16% sometimes or rarely time for questions
- Type of communication
  - 14% verbal only without written communication
  - 13% written only without verbal communication

Jt Comm J Qual Pt Safety. 2008;34:563-70.

UK UNIVERSITY OF KENTUCKY College of Medicine

Structured Handoff Process

Necessary Elements

- Geography
- Timing
- Written Template
- Verbal Communication

UK
UNIVERSITY OF
KENTUCKY
College of Medicine

Geographic Element

- Quiet work room
  - 3-4 individuals present
  - No TV, radio or other sound distractions
- Confidential location
  - No access by other patients, families, etc.
  - Consider involving patient and their nurse
- Ready computer access
  - SCM should be open during the hand-off
  - Allows for corrections
- Face-to-Face
  - Incoming and Outgoing physicians

Temporal Element

- Determined by individual services
- Dedicated time is necessary
- Consider schedule variations
  - Weekdays
    - Morning vs. Evening
  - Weekends
    - Morning vs. Evening
- Educate other healthcare professionals
  - Should be a protected time
  - Nursing contact should be for emergencies only

UK
UNIVERSITY OF
KENTUCKY
College of Medicine

Written and Verbal Elements

- Written
  - SCM Handoff
- Verbal
  - DATA?

UK
UNIVERSITY OF
KENTUCKY
College of Medicine

SCM Tab

Patient List | Orders | Results | Documents | Flowsheets | Clinical Summary | Patient Info | Images | CDV | SRM | UpToDate | KHIE | Physician Handover | Patient ED

Patient Count: 13 Show Me: Service: Medicine / Internal Medicine Team 1

Accept Handover .Select One---> Print Select All

Service Numbers

Demographic	History	Labs	Procedures/Events	Medications	Comments	ToDo
	AdmitDx: Fever / Leukocytosis UKO **PMX:** **WorkingDx:** Fever / Leukocytosis UKO	8.0 21.1 x 783 23.6 145 | 109 | 8 --------------------154 3.9 | 24 | 0.75 7.49/33/103/25		**Continuous:** Acyclovir, Cefepime, Vancomycin, Ampicillin, Enoxaparin (PROPHYLAXIS), Pantoprazole, NS (no additives) **Scheduled:** Metronidazole, Valsartan, Metoprolol	Leukocytosis FUO AMS s/p laprotomy Foot fracture Diarrhea	NTD if febrile re Cx, if does not look septic no need to restart Abx
	AdmitDx: DIC **PMX:** **WorkingDx:** DIC	8.4 5.9 x 92 24.5 138 | 106 | 45 --------------------155 3.9 | 21 | 5.49 7.41/31/81/19		**Continuous:** Darbepoetin - anemia ESRD, Heparin, Sodium Citrate Cath Flush 4% **Scheduled:** sensipar 30 MG Tablet Oral once a day, LevoFLOXacin, Sildenafil, Metoprolol, Diltiazem Capsule, Extended Release, Promethazine, Aspirin, Pentoxifylline Tablet, Extended Release, Sodium Bicarbonate, Pantoprazole, PredniSONE, Sirolimus, Simvastatin, Sevelamer, Iron Polysaccharides, Multivitamin Vitamin B Complex with C and Folic Acid		
	AdmitDx: Fulminant Liver failure **PMX:** liver dysfunction **WorkingDx:** Fulminant Liver failure	13.8 24.0 x 78 37.6 128 | 94 | 75 --------------------87 3.9 | 17 | 5.87		**Continuous:** Metronidazole, Ceftriaxone , Heparin, Pantoprazole, Octreotide, Albumin 25% **Scheduled:** RifaXIMin, Propranolol, Midodrine, Pentoxifylline Tablet, Extended Release, LacTULose, Multivitamin with minerals Therapeutic Multiple Vitamins with Minerals, Cyanocobalamin, Folic Acid, Thiamine	Fulminant Liver failure Acute Alcoholic Hepatitis ESLD SBP HRS on HD Partial SBO/Colitis	NTD if deteriorating might need to go to ICU
	AdmitDx: jaundice **PMX:** **WorkingDx:** jaundice			**Continuous:** NS (no additives) **Scheduled:** PrednisoLONE		
	AdmitDx: UGIB 2/2 cirrhosis **PMX:** HCV, cirrhosis, COPD, UTI, Hem **WorkingDx:**	11.2 7.1 x 82 32.7 130 | 99 | 10 --------------------92 4.0 | 26 | 0.70		**Continuous:** Ceftriaxone **Scheduled:** Propranolol, aMILoride, Docusate Sodium, Pantoprazole, Multivitamin with minerals Therapeutic Multiple Vitamins with Minerals, Folic Acid, Thiamine	- Upper GI bleed - Liver Cirrhosis - HCV - COPD, UTI - Hematuria	NPO after midnight

Sidebar | Feddock, Christopher (Attending) | 11/02/2011 06:16 | SCMPROD1

What patients do you want?

Patient List | Orders | Results | Documents | Flowsheets | Clinical Summary | Patient Info | Images | CDV | SRM | UpToDate | KHIE | Physician Handover | Patient ED

Patient Count: 13 **Show Me:** Service: — Medicine / Internal Medicine Team 1

Print | Select All

Accept Handover | .Select On

My Patients:
Service:
Location:
Provider:

Service Numbers

Demographic	History		cedures/Events	Medications	Comments	ToDo
	AdmitDx: Fever / Leukocytosis UKO **PMX:** **WorkingDx:** Fever / Leukocytosis UKO	21.1 x 783 23.6 145 | 109 | 8 ------154 3.9 | 24 | 0.75 7.49/33/103/25		**Continuous:** Acyclovir, Cefepime, Vancomycin, Ampicillin, Enoxaparin (PROPHYLAXIS), Pantoprazole, NS (no additives) **Scheduled:** Metronidazole, Valsartan, Metoprolol	Leukocytosis FUO AMS s/p laprotomy Foot fracture Diarrhea	NTD if febrile re Cx, if does not look septic no need to restart Abx
	AdmitDx: DIC **PMX:** **WorkingDx:** DIC	8.4 5.9 x 92 24.5 138 | 106 | 45 ------155 3.9 | 21 | 5.49 7.41/31/81/19		**Continuous:** Darbepoetin - anemia ESRD, Heparin, Sodium Citrate Cath Flush 4% **Scheduled:** sensipar 30 MG Tablet Oral once a day, LevoFLOXacin, Sildenafil, Metoprolol, Diltiazem Capsule, Extended Release, Promethazine, Aspirin, Pentoxifylline Tablet, Extended Release, Sodium Bicarbonate, Pantoprazole, PredniSONE, Sirolimus, Simvastatin, Sevelamer, Iron Polysaccharides, Multivitamin Vitamin B Complex with C and Folic Acid		
	AdmitDx: Fulminant Liver failure **PMX:** liver dysfunction **WorkingDx:** Fulminant Liver failure	13.8 24.0 x 78 37.6 128 | 94 | 75 ------87 3.9 | 17 | 5.87		**Continuous:** Metronidazole, Ceftriaxone , Heparin, Pantoprazole, Octreotide, Albumin 25% **Scheduled:** RifaXIMin, Propranolol, Midodrine, Pentoxifylline Tablet, Extended Release, LacTULose, Multivitamin with minerals Therapeutic Multiple Vitamins with Minerals, Cyanocobalamin, Folic Acid, Thiamine	Fulminant Liver failure Acute Alcoholic Hepatitis ESLD SBP HRS on HD Partial SBO/Colitis	NTD if deteriorating might need to go to ICU
	AdmitDx: jaundice **PMX:** **WorkingDx:** jaundice			**Continuous:** NS (no additives) **Scheduled:** PrednisoLONE		
	AdmitDx: UGIB 2/2 cirrhosis **PMX:** HCV, cirrhosis, COPD, UTI, Hem **WorkingDx:**	11.2 7.1 x 82 32.7 130 | 99 | 10 ------92 4.0 | 26 | 0.70		**Continuous:** Ceftriaxone **Scheduled:** Propranolol, aMILoride, Docusate Sodium, Pantoprazole, Multivitamin with minerals Therapeutic Multiple Vitamins with Minerals, Folic Acid, Thiamine	- Upper GI bleed - Liver Cirrhosis - HCV - COPD, UTI - Hematuria	NPO after midnight

Sidebar | Feddock, Christopher (Attending) | 11/02/2011 06:21 | SCMPROD1

What is your role?

Patient List | Orders | Results | Documents | Flowsheets | Clinical Summary | Patient Info | Images | CDV | SRM | UpToDate | KHIE | Physician Handover | Patient ED

Patient Count: 13 Show Me: Service: Medicine / Internal Medicine Team 1

Accept Handover | .Select One---> | Print | Select All | Service Numbers

- Add as Consult
- Add as ADT Attending
- Add to Team
- Remove Relationship

History	Labs	Procedures/Events	Medications	Comments	ToDo
...ver / Leukocytosis ... Fever / Leukocytosis	8.0; 21.1 x 783; 23.6; 145 | 109 | 8 —154; 3.9 | 24 | 0.75; 7.49/33/103/25		**Continuous:** Acyclovir, Cefepime, Vancomycin, Ampicillin, Enoxaparin (PROPHYLAXIS), Pantoprazole, NS (no additives) **Scheduled:** Metronidazole, Valsartan, Metoprolol	Leukocytosis FUO AMS s/p laprotomy Foot fracture Diarrhea	NTD if febrile re Cx, if does not look septic no need to restart Abx
AdmitDx: DIC **PMX:** **WorkingDx:** DIC	8.4; 5.9 x 92; 24.5; 138 | 106 | 45 —155; 3.9 | 21 | 5.49; 7.41/31/81/19		**Continuous:** Darbepoetin - anemia ESRD, Heparin, Sodium Citrate Cath Flush 4% **Scheduled:** sensipar 30 MG Tablet Oral once a day, LevoFLOXacin, Sildenafil, Metoprolol, Diltiazem Capsule, Extended Release, Promethazine, Aspirin, Pentoxifylline Tablet, Extended Release, Sodium Bicarbonate, Pantoprazole, PredniSONE, Sirolimus, Simvastatin, Sevelamer, Iron Polysaccharides, Multivitamin Vitamin B Complex with C and Folic Acid		
AdmitDx: Fulminant Liver failure **PMX:** liver dysfunction **WorkingDx:** Fulminant Liver failure	13.8; 24.0 x 78; 37.6; 128 | 94 | 75 —87; 3.9 | 17 | 5.87		**Continuous:** Metronidazole, Ceftriaxone , Heparin, Pantoprazole, Octreotide, Albumin 25% **Scheduled:** RifaXIMin, Propranolol, Midodrine, Pentoxifylline Tablet, Extended Release, LacTULose, Multivitamin with minerals Therapeutic Multiple Vitamins with Minerals, Cyanocobalamin, Folic Acid, Thiamine	Fulminant Liver failure Acute Alcoholic Hepatitis ESLD SBP HRS on HD Partial SBO/Colitis	NTD if deteriorating might need to go to ICU
AdmitDx: jaundice **PMX:** **WorkingDx:** jaundice			**Continuous:** NS (no additives) **Scheduled:** PrednisoLONE		
AdmitDx: UGIB 2/2 cirrhosis **PMX:** HCV, cirrhosis, COPD, UTI, Hem **WorkingDx:**	11.2; 7.1 x 82; 32.7; 130 | 99 | 10 —92; 4.0 | 26 | 0.70		**Continuous:** Ceftriaxone **Scheduled:** Propranolol, aMILoride, Docusate Sodium, Pantoprazole, Multivitamin with minerals Therapeutic Multiple Vitamins with Minerals, Folic Acid, Thiamine	- Upper GI bleed - Liver Cirrhosis - HCV - COPD, UTI - Hematuria	NPO after midnight

Sidebar | Feddock, Christopher (Attending) | 11/02/2011 06:23 | SCMPROD1

Verbal Element – Outgoing (DATA)

- **D**etailed demographics of each patient's hospital stay
  - 1-3 sentences
  - Summary of patient identification and hospital course
  - NOT a repeat of the history of present illness
- **A**ctive issues
  - Limited to the essential active issues only
  - NOT a complete summary of every problem
- **T**o Do
  - Tests, procedures, or therapeutics which need to be reevaluate
- **A**nticipatory Guidance
  - Clues to potential issues & suggested remedies
  - If-then contingency planning

UK UNIVERSITY OF KENTUCKY College of Medicine

Verbal Element – Incoming (?)

- Interactive questioning
  - Clarify or correct information
  - Ensure understanding

UK
UNIVERSITY OF
KENTUCKY
College of Medicine

Communication Summary

Written	Verbal
Brief admission history	
Active problems	Active problems (brief)
Important Past History	
Baseline Status	Baseline Status
Recent Events	Recent Events
Current Meds	
Allergies	
Code status	Code status
Pending results to check	Pending results to check
“To Do” List	“To Do” List
Anticipated Problems	Anticipated Problems

UK UNIVERSITY OF KENTUCKY College of Medicine

Structure of Process

- Set time and location
- Open SCM team list prior to the hand-off
- Verbal communication about each patient
  - Outgoing follows format
  - Incoming repeats key information and asks for clarification
- Once entire hand-off is complete
  - Incoming assumes care for patients
  - Pagers are exchanged (if applicable)

UK University of Kentucky College of Medicine

Summary

- Communication failure result in most errors
  - Missing and/or inaccurate information
  - Poor communication
- Duty hour restrictions
  - More handovers of patient care
  - Team care is essential
    - THE physician will not be available
- Standardized Process