

Handoffs: A High Risk Area for Patient Safety

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Disclosures

I have no actual or potential conflict of interest in relation to this program/presentation.

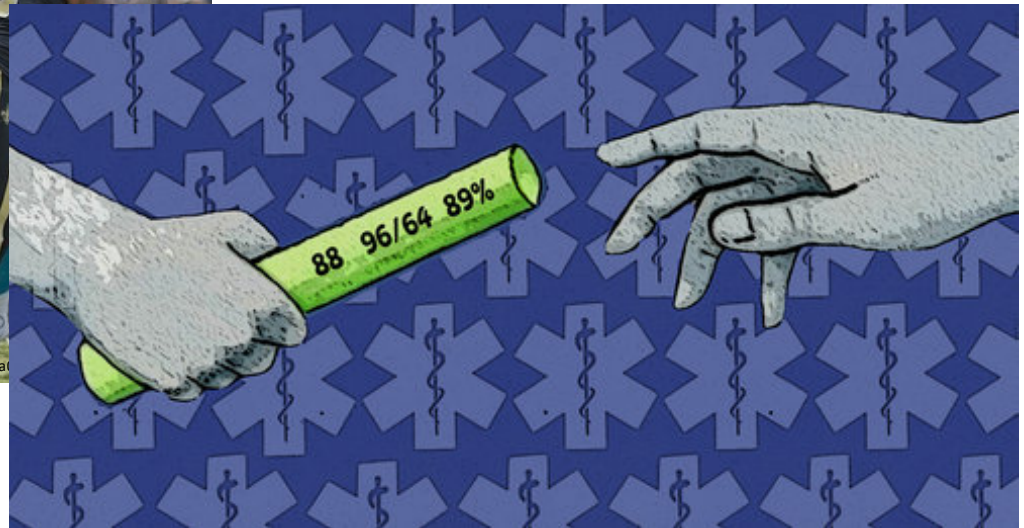
I will be not discussing off-label uses of medications.

Objectives

After this presentation, the attendee will be able to:

1. Define the key elements of a good handoff.
2. List examples of handoff tools.
3. Identify literature with evidence that supports the use of standardized handoff practices.
4. Return to his or her agency with resources for effective handoff processes.

We All Know What a Handoff Is



Why Is It Important to Practice and Study Handoffs?



<https://www.nextlevelstorage.com/wp-content/uploads/2014/05/Safety-First.png>

CLINICAL HANDOVER IS A HIGH RISK AREA FOR PATIENT SAFETY

- 80% of serious preventable adverse events included a communication failure
(The Joint Commission 2017)

What's the Problem?

- Loss of information
- Incorrect information
- Variability

“clearly defined processes for the contemporaneous face-to-face communication of key information...are critical to improving patient safety, reducing medicolegal risk, and integrating EMS with the healthcare system.”

- NAEMSP, NASEMSO, NAEMT 2014

What Is a Handoff?

- A transition of care that occurs when two or more health care providers exchange information that is a summary of the patient's situation, specific to the mission of shaping subsequent treatment and decision making, *and* the responsibility for the patient is transferred from one care provider to another.
- Entails the exchange of:
 - mission-specific information
 - responsibility for patient care
 - authority for treatment and procedures

- AAP, ACEP, ENA 2016

*Referred to as a “sign-out,”
“handover,” “report,” or
“transition of care”*

Defined Purpose of a Handoff

Transfer of information



Transfer of care



Transfer of responsibility
and accountability

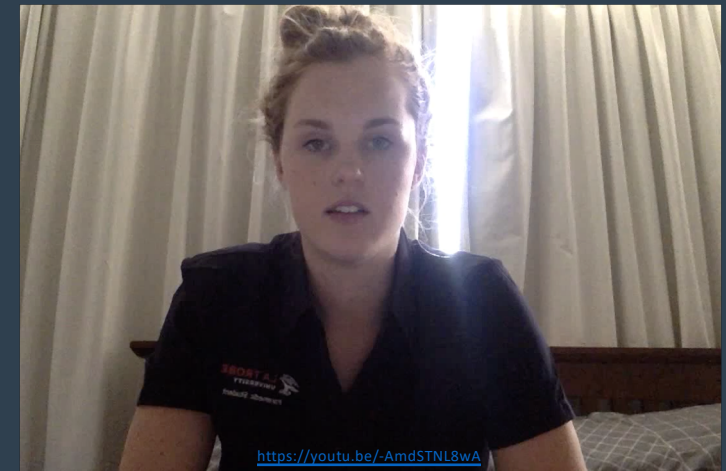
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What a handoff is *not*:

- A comprehensive communication of every detail of the patient's history or clinical course



<https://youtu.be/-AmdSTNL8wA>

Handoff Situations



Handoff Situations

EMS Delivering	EMS Receiving
EMS to ED	Bystander to EMS
EMS to EMS	Hospital to EMS
EMS to Inpatient	Nursing Home to EMS
EMS to PD or Coroner	Clinic to EMS
	Sports Trainer/School/Daycare to EMS

Handoff Principles

- Consistent structure and content
- Clear and direct communication
- Timely, concise
- Opportunity to ask and answer questions
- Appropriate environment
- Involvement of patient and families (unless inappropriate)



Handoff Barriers (what to avoid)



- Distractions and interruptions
 - Lack of attention, divided attention, lack of active listening
 - Sender and receiver are subject to ineffective communication practices
- Lack of a common language
- Professionalism (lack of)
- Authority gradients

Standardization Is Key

Opportunity to maximize quality of care

- Audit points for
 - Detection and mitigation of failure
 - Rescue and recovery in unclear situations

Opportunity to limit negative impact of human factors

Opportunity to align expectations of sender and receiver

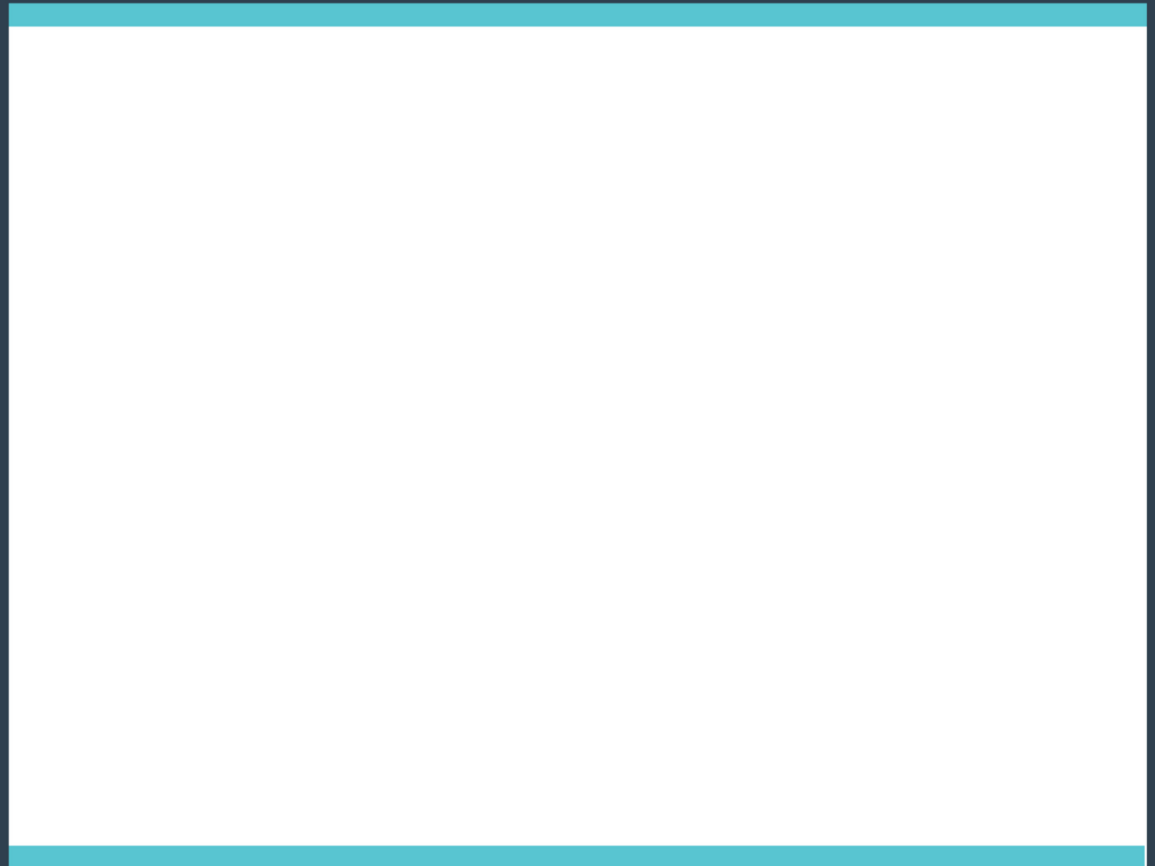
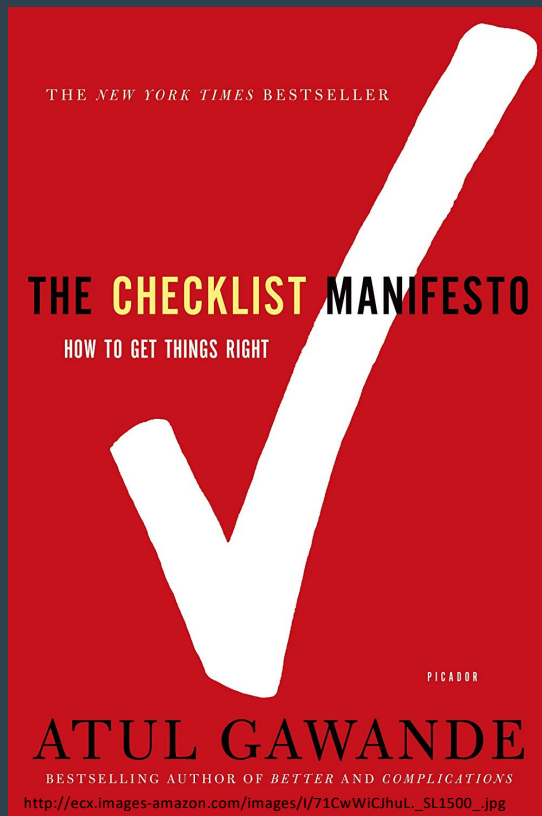
- Checklists
- Acronym-based prompts

Structured and Consistent

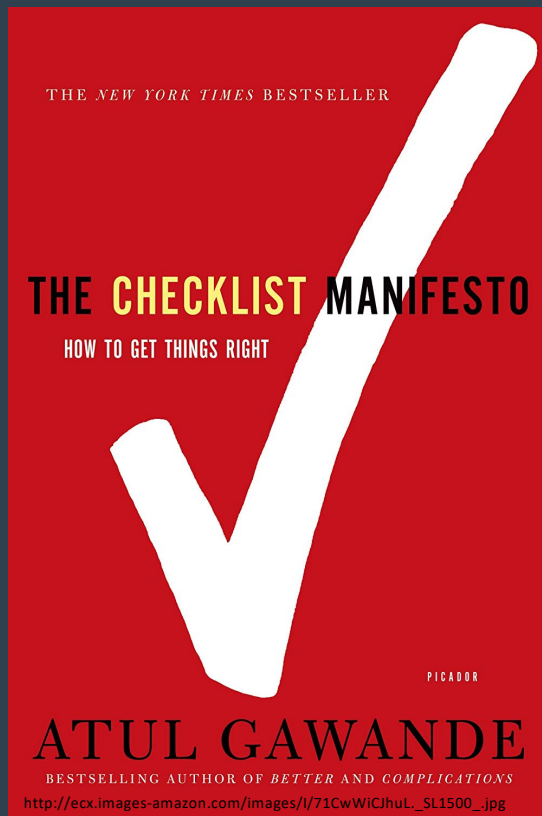


- Language is
 - Scripted
 - Precise
 - Unambiguous
 - Impersonal
 - Efficient
- Framework allows opportunity for reassessing clinical reasoning and providing read-back of information

Structured and Consistent



Structured and Consistent



- Simplifies the process
 - What is conveyed
 - Order of information
- Mitigates the negative impact of human factors
- Creates cues
 - Eliminates need for memorization
 - Aligns expectations of information provider and receiver

Very Little Objective Data

- Not enough evidence to recommend one tool or process over another



http://1.bp.blogspot.com/-FmSjW8q_dGg/TcBhZqEfA7I/AAAAAAAAAJY/-HpD9mVs1Ow/s200/detective.png

Systematic Review

Riesenberg et al, *Am J Med Qual* 2009

- English language handoff mnemonics articles published 1987-2008
- 46 articles, 24 mnemonics
 - 4 mnemonics listing “Ambulance” as a discipline or department:
 - MIST
 - DeMIST
 - ASHICE
 - SOAP

Tools - MIST



**North Central Regional
Trauma Advisory Council**



Design and Trial of a New Ambulance-to-ED Handover Protocol: 'IMIST-AMBO'

Iedema et al, *BMJ Qual Saf* 2012

- Video-reflexive ethnographic study
 - Focus groups, feedback of video footage, design of practice solutions
- 137 handoffs were filmed
 - 74 pre-implementation
 - 63 post-implementation

	Pre-Implementation	Post-Implementation
Duration of handoff	96 seconds	77 seconds
Questions during handoff	93%	41%
Information repeated	67%	33%

ISBAR During Handoff of Trauma Patients

Yegane et al, *Prehosp Disaster Med* 2017

- Performed in Iran, 2016
- **One-hour education session** for EMS providers and Emergency Medicine Assistants
- One month following education, 65% of handoffs followed ISBAR completely

Increased Reporting

- Date of birth
- Clinical situation compared to condition on arrival
- Allergies
- Treatments given

EMS Handoff of Critical Patients

Goldberg et al, *Prehospital Emergency Care* 2017

- Observation of EMS-to-ED handoff of patients brought directly to resuscitation area
 - n = 97

Initial presentation	58%
Vital signs	57%
Physical findings	47%
Age	43%
Medications	32%
Allergies	6%
Blood glucose	4%

Videographic Review of Pediatric Resuscitations

Sumner et al, *Prehospital Emergency Care* 2019

- Retrospective review of QI videos
- Three measures:

Completeness	Verbal reporting by EMS (%)	CC, HPI, PMH, PE, complete VS, estimated weight, allergies, treatments provided
Timeliness	Patient handoff time Report time	Arrival-to-ED gurney Time from first word to last word
Efficiency	Interruptions Asks for information already provided Asks for information not provided	

Videographic Review of Pediatric Resuscitations

Sumner et al, *Prehospital Emergency Care* 2019

Completeness	
Chief complaint	88%
EMS interventions	81%
Physical findings	63%
Age	56%
Estimated weight	21%
Respiratory rate	53%
Heart rate	41%
SpO2	41%
Blood pressure	31%

Timeliness	
Patient handoff time	50 sec [IQR 30,74]
Report time	108 sec [IQR 62,252]

Efficiency	
Overall	13%
Interruption	51%
Ask to repeat information	40%
Ask for missing information	65%

NAEMSP 2019 Abstracts

22. EXPLORING PARAMEDIC-PHYSICIAN HANDOFFS DURING THE CARE OF THE CRITICALLY-ILL: A MIXED METHODS STUDY

Emily Hillman, Charlie Inboriboon, Bryon Vogt, Jennifer Quaintance, University of Missouri-Kansas City CATEGORY OF SUBMISSION: OPERATIONS, QUALITY, SAFETY SYSTEMS

Conclusions: The patient handoff is affected by a variety of factors. This framework adds to the existing literature, highlighting that interdisciplinary training and intersystem collaboration are needed. It can be used to guide multidisciplinary training, modify or enhance handoff tools, and direct system-based solutions. A multipronged approach is required to improve handoff processes in clinical practice.

46. AN INCOMPLETE MEDICAL RECORD: TRANSFER OF CARE FROM EMS TO THE EMERGENCY DEPARTMENT

Akash Shah, Jeffrey Lubin, Department of Emergency Medicine, Penn State Health Milton S. Hershey Medical Center CATEGORY OF SUBMISSION: STUDENT, RESIDENT, FELLOW

0.811). **Conclusions:** There were significant differences between the information transferred to the ED through the TOC compared to what was recorded in the PCR. Further evaluation of the transfer of care process is needed to improve accuracy.

64. HOW DO PARAMEDICS PERCEIVE THEIR ROLE IN THE EMERGENCY DEPARTMENT?

Melissa Snyder, Donald Eby, Schulich School of Medicine, Western University CATEGORY OF SUBMISSION: STUDENT, RESIDENT, FELLOW

Conclusions: Paramedics' perceive themselves as providing valuable information and advocacy for their patients in the ED. In order to present this information, they require uninterrupted time, as short as 30-seconds, for communication. Their relationship with the ED staff is further strengthened by mutual respect and understanding of each discipline's scope of practice and interdisciplinary teamwork. Paramedics would like more feedback on clinical outcomes and on their prehospital care. Some areas for practice change suggested by this study include: time for un-interrupted communication of prehospital information, formal feedback, and reflection on how to improve interdisciplinary interactions.

What We Know and What We Don't Know

- EMS handoffs are
 - Variable
 - Less than perfect
 - There are many different handoff tools
 - Handoff training improves completeness
 - Handoffs can be done efficiently
 - Bedside handoffs are preferred by hospitalized patients
- Which handoff tool is best
 - Which handoff aspects have the biggest impact on patient safety and quality of care

My Experience

- Adopted IMIST-AMBO
- Brief education
 - Trauma division meeting
 - ED division meeting
 - Station visits to EMS
- Posters on walls in resuscitation rooms
- Flyer near base station phone



PHOENIX CHILDREN'S
Level 1 Pediatric Trauma Center

EMS Handoff Tool

I	Identification of patient
M	Mechanism of injury or medical complaint
I	Injuries or information related to complaint
S	<p>Signs</p> <p>HR: ____ BP: ____/____ RR: ____ Sats: ____%</p> <p>GCS: E ____ V ____ M ____ Temp: ____</p>
T	Treatment and trends

Pause for Questions

A	Allergies
M	Medication
B	Background
O	Other Information

Version 1.0 12/2017

My Experience

- Structured process included agreement on when to move patient

Receiving Handover: Unstable Patient

- Hands off, Eyes on **where appropriate**
- Receive IMIST handoff on ambulance stretcher
- Only team lead and pre-hospital lead to communicate
- Secure lines and tubes; patient moves to ED gurney
- Receive –AMBO at this time
- Chance to ask questions

Steps to Ensure Quality and Limit Variability

- Structured process for handoff
 - Policy, Procedures, Tools, and Guides
- Regular evaluation of processes
- Establish a supportive culture that values handoff
- Provision of training to all relevant staff



Practice Makes Perfect



<https://image.al.com/home/bama-media/widhows/image/sports/impact/photo/drew-breesmark-ingram-147607583405e0a2.jpg>

Take Home Points

Handoffs impact patient safety and quality of care

Handoffs should be structured and consistent

Providers need training and practice in good handoff processes

Picking one tool is more important than which tool you pick

Go forth and

- *Create a handoff culture*
- *Implement a handoff tool*
- *Keep researching handoffs*

Thank you

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