

Improved patient safety and quality using an Hospital Information System (HIS) based electronic handover tool

Karim Jessa MD, FRCPC
CMIO, Hospital for Sick Children
eHealth, June 4, 2014



Healthier Children. A Better World.



The Issue

- Information transfer can be problematic in High Risk Organisations
 - Airline industry: Air Traffic Control and Cockpit communication
 - Nuclear industry
 - Health Care
- How can IT help in this process?



Healthier Children. A Better World.



Acknowledgements

- Team from Sickkids
 - Dr. Trey Coffey
 - Dr. Zia Bismilla
 - Dr. John Edmonds
 - Narissa Dharamshi
 - I-PASS investigators
- No financial conflicts or disclosures



Healthier Children. A Better World.



Why is this a problem?

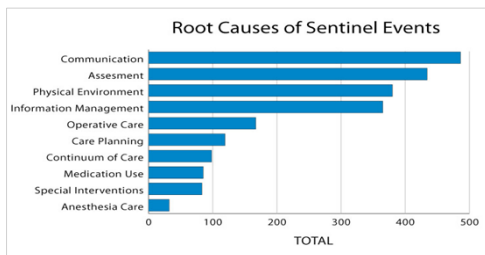
- Institute of Medicine estimates up to 100,000 patients die in U.S. hospitals annually due to errors in their care.
- Failures in communication a leading cause of adverse events in healthcare.
- Issues around communication, continuity of care, or care planning cited as root cause in >80% of reported sentinel events.
- Australian review of 28 hospitals found communication errors associated with twice as many deaths as clinical inadequacy.
- Coverage by a second team of residents one of strongest predictors of adverse outcome



Healthier Children. A Better World.



Communication Failures



Joint Commission. (2011). Sentinel Event Statistics Data - Root Causes by Event Type (2004 - Third Quarter 2011)



Healthier Children. A Better World.



Greg Price



Healthier Children. A Better World.



Change in Medical Models

- Highly specialized care teams
 - Leads to fragmentation
 - "from a cardiology point of view patient is fine"
 - "not my patient"
 - "the regular nurse is on break, I'm just covering"
- Decreased length of stay and higher turnover of patients
- Decreased primary care involvement in hospitals
- Shorter shift hours

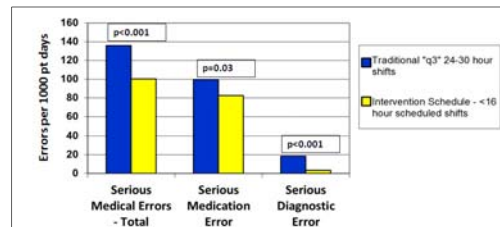


Healthier Children. A Better World.



Intern Sleep and Patient Safety Study

Randomized Controlled Trial of extended shifts (24-30h) vs. 16h limit



Landrigan. NEJM 2004; 351: 1838-1848



Healthier Children. A Better World.



Consequences of Shorter Shifts



Shorter shifts



Increased frequency of handoffs



Healthier Children. A Better World.



Extensive Literature on Handoffs and Communication

THE PRACTICE OF EMERGENCY MEDICINE CONCEPTS

The Unappreciated Challenges of Between-Unit Handoffs: Negotiating and Coordinating Across Boundaries

Brian Higgins, PhD, MEd, Michael D. Cohen, PhD

Quality improvement report

An institution-wide handoff task force to standardize and improve physician handoffs

Laura I Horvitz,^{1,2} Kevin M Schuster,³ Stephen F Thong,⁴ David C Heath,¹ Rosemarie L Fisher,⁵ Nabeel Qureshi,⁶ William Custing,⁷ Judy Nunes,⁸ David D Blumenthal,⁹ Cyrus V Javali¹⁰

OBJECTIVE: To address the unappreciated challenges of between-unit handoffs, to improve the quality of patient care, and to reduce the risk of medical errors.

DESIGN: A quality improvement report.

SETTING: A tertiary care hospital.

PATIENTS: Patients of all ages.

MEASUREMENTS AND MAIN RESULTS: The handoff task force identified key areas for improvement and developed a standardized handoff process. The process was implemented across the hospital, and the results were evaluated. The handoff process was found to be effective in improving the quality of patient care and reducing the risk of medical errors.

CONCLUSIONS: A standardized handoff process is essential for ensuring the quality of patient care and reducing the risk of medical errors. The handoff task force identified key areas for improvement and developed a standardized handoff process. The process was implemented across the hospital, and the results were evaluated. The handoff process was found to be effective in improving the quality of patient care and reducing the risk of medical errors.

Accepted for publication 17 November 2013
© 2013 by the American Association of Critical-Care Nurses
Published by 1099 West 16th Street, Torrance, CA 90501



Recent Media Attention

Globe and Mail: May 20, 2014



Globe and Mail: May 23, 2014



Healthier Children. A Better World.



The Handoff Players

Sender



Receiver



Healthier Children. A Better World.



Common theme

- Handoffs are important
- Source of potential error
- Standardized approach is valuable
- Importance of:
 - Physical Setting
 - Social Setting
 - Language barriers
 - Communication skills



Healthier Children. A Better World.



What interventions can improve communication?

Abstract
Objectives: Rates of Medical Errors and Preventable Adverse Events Among Hospitalized Children Following Implementation of a Resident Handoff Bundle
Background: Medical errors are a leading cause of medical errors. Residents are frequently involved in handoff communication programs and are...
Methods: We conducted a retrospective analysis of a handoff bundle program...
Results: Medical errors decreased from 33.8 per 100 admissions (95% CI, 27.3-40.3) to 18.3 per 100 admissions (95% CI, 14.7-21.9; P < .001), and preventable adverse events decreased from 3.3 per 100 admissions (95% CI, 1.7-4.8) to 1.5 (95% CI, 0.5-2.4) per 100 admissions (P = .04) following the intervention. There were fewer omissions of key handoff elements on printed handoff documents, especially on the unit that received the computerized handoff tool (significant reductions of omissions in 11 of 14 categories with computerized tool).

Boston Childrens Hospital

- Interns and Residents
- Decreased medical errors
- Decreased preventable adverse events
- No change in workflow
- Increased time at bedside



Healthier Children. A Better World.



Components of Ideal Handoff

- Systematic approach to communicating needed information. Use one consistently so receiver knows what to expect.
 - --Systems --IPASS the BATON
 - --SIGNOUT --SBAR
 - --SAFE-IR --Problems
- Contingency planning – i.e. anticipated problems, results, procedures and what to do about them: BE SPECIFIC
- “Read back” to verify a shared mental model



Healthier Children. A Better World.



Resident Handoff Bundle Pilot Study



PEDIATRICS
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

I-PASS, a Mnemonic to Standardize Verbal Handoffs
Amy J. Starmer, Nancy D. Spector, Rajesh Srivastava, April D. Allen, Christopher P. Landrigan, Theodore C. Sectish and the I-PASS Study Group
Pediatrics 2012;129:2011; originally published online January 9, 2012;
DOI: 10.1542/peds.2011-2966




Healthier Children. A Better World.

I-PASS Study Plan

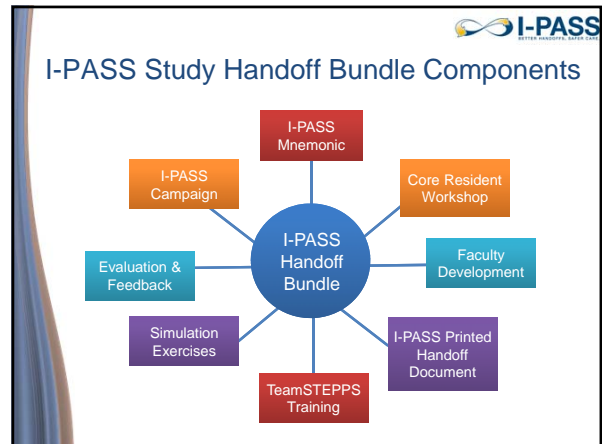
- Assessment of effectiveness of I-PASS resident handoff bundle (RHB)
 - TeamSTEPS™ communication training
 - Verbal and written handoff skills curriculum
 - Implementation of I-PASS mnemonic
 - Revision of computerized / written handoff tools
- Collect baseline data
- Conduct training and roll out intervention
- Collect post-intervention data

© 2013 I-PASS Study Group/Boston Children's Hospital. All Rights Reserved. For Permissions contact pass.study@childrens.harvard.edu



Healthier Children. A Better World.

The I-PASS Study

The I-PASS Mnemonic

- I Illness Severity**
Stable, "watcher," unstable
- P Patient Summary**
Summary statement; events leading up to admission; hospital course; ongoing assessment, plan
- A Action List**
To do list; timeline and ownership
- S Situation Awareness & Contingency Planning**
Know what's going on; plan for what might happen
- S Synthesis by Receiver**
Receiver summarizes what was heard, asks questions; restates key action/to do items

© 2013 I-PASS Study Group/Newton Children's Hospital.
All Rights Reserved. For Permissions contact ipass.study@childrens.harvard.edu



At Sickkids

Worked with IS to incorporate elements of the I-PASS model and content to create an electronic handoff tool using our HIS (Allscripts- Sunrise Clinical Manager)

Housestaff were already accustomed to completing our discharge planning document

Requirements

- Simple
- Iterative
- Efficient
- Scalable

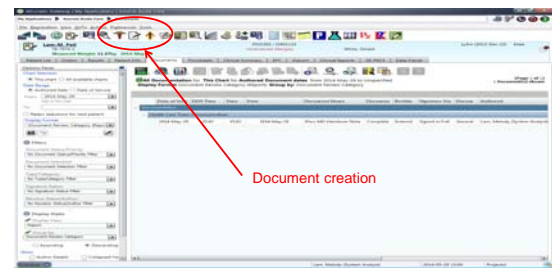


Healthier Children. A Better World.



The Printed Handoff Document

- Supplements the verbal handoff
 - Allows receiver to follow
 - Comprehensive information
- Efficient information transfer
- Requires daily updates
 - High-quality information
 - Senior/supervising resident should edit and ensure quality



Healthier Children. A Better World.



Choose iPass MD Handover note



Healthier Children. A Better World.

SickKids
THE HOSPITAL FOR
SICK CHILDREN



Healthier Children. A Better World.

SickKids
THE HOSPITAL FOR
SICK CHILDREN

I
P
A
S
S



Healthier Children. A Better World.

SickKids
THE HOSPITAL FOR
SICK CHILDREN

Document report



Healthier Children. A Better World.

SickKids
THE HOSPITAL FOR
SICK CHILDREN

