Pitfalls in Assessing and Improving Patient Handovers

Julie K. Johnson, MSPH, PhD
Associate Professor, Faculty of Medicine
Deputy Director, Centre for Clinical Governance Research
University of New South Wales
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Today’s Presentation

- Overview of handover projects in the US and Netherlands
- What worked well
- What were glaring opportunities
- What were our objectives?
- What are the core parts of our research (and lessons learned) that are generalizable across all clinical handover processes?
Research in the US and NL

- Work based on 2 projects – 1 at University of Chicago and 1 at University of Amsterdam

- Our aim in the United States
  - How can we create a model for improving the effectiveness of resident to resident handovers?

- Our aim in the Netherlands
  - How can we translate a US model . . . .?
How Can We Improve Handovers?

Developing a Standard Handover Protocol at an Academic Medical Center in the US
A Model For Developing a Standard Protocol

- Principles underlying the model
  - The handover protocol needs to be discipline (and profession) specific
  - Standardization is key for both process and content

- PROCESS
  - Create a process map

- CONTENT
  - Create a standard check-list

- IMPLEMENTATION
  - Leadership and clinician buy-in

- MONITORING
  - Ensure the protocol is in place and identify and resolve barriers
1. Understanding Handovers as a Process
Neurology Hand-Off

Universal pager is transferred to on-call Intern (@8am – 9am)

Team conducts rounds (Attending, PGY4, PGY2)

Are there tasks to be completed?

Yes

PGY4 assigns tasks

Post-call Intern runs the list with on-call Intern in the Conference Room (noon-1 pm)

Post-call intern forwards pager to on-call intern

On-call intern continues care and follow up on any tasks

No

Are the tasks completed?

Yes

Intern reports status of task to PGY4 and on-call intern

No

Input given to PGY4 that tasks not completed

Unfinished tasks go to on-call intern
Pediatric Resident Post-Call Hand-Off

The post call intern updates sign-out on the computer (noon – 1p.m.) ➔ Post call intern brings copy of sign-out for on call intern ➔ Team meets to review list after noon conference (team includes other interns, senior residents) ➔ Post call intern reports on each patient

Are there tasks to be completed? (e.g., f/u labs, imaging, discharge)

No ➔ Sign-out given to on-call intern ➔ On-call intern continues care and follow-up on any tasks

Yes ➔ Sr resident assigns tasks to other interns ➔ Are the tasks completed?

No ➔ Sr Resident offers input on completing task ➔ Unfinished tasks go to on call intern

Yes ➔ Intern reports status of task to senior resident and on-call intern

“closed-loop” communication
Anesthesia Resident to PACU Nurse
Hand-Off

Clear delineation of roles/responsibility
Back-up Behavior

Patient in OR

Is patient ok to go to PACU?

no

Patient goes to ICU

Patient in OR

Resident tells circulating nurse about special needs (ventilator, a-line, invasive monitors, etc.)

Resident mentally summarizes case to prepare for documentation

Resident moves patient to PACU

Resident arrives in PACU and shouts out to unit clerk "Where am I going/what number bed?"

Sec'y or someone else answers with bed or slot number

Resident takes patient to designated slot

Are nurses waiting at slot?

yes

Nursing hooks up monitors with priority on oxygen and pulse ox, then EKG and blood pressure, etc.

Resident completes documentation of case (fills out PACU vitals, writes note, documents handoff given)

Is there a greater than 30 second delay in hook up?

no

Resident mobilizes nursing team to put on monitors

yes

Nurses accept patient

PACU resident called and given special report

Resident identifies nurses that are taking care of patient

Resident gives report (content checklist)

Nurses accept patient

Resident completes and signs PACU orders

Is patient high risk? (difficult airway, labile vitals, anes problem)

no

Resident identifies nurses that are taking care of patient

Yes

PACU resident called and given special report

Back-up Behavior

Resident puts monitor on patient and hooks up oxygen, questions why no nurses

no

Resident mobilizes nursing

Nurses arrive

Resident mobilizes nursing team to put on monitors

Is there a greater than 30 second delay in hook up?

no

Resident completes documentation of case (fills out PACU vitals, writes note, documents handoff given)

Is patient high risk? (difficult airway, labile vitals, anes problem)

no
2. Determine the Standard Content: ANTICipate

- Develop a checklist
- Have disciplines customize to their needs
- Can be used to evaluate the quality of handovers

<table>
<thead>
<tr>
<th>Administrative Data</th>
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<tbody>
<tr>
<td>□ Patient name, age, gender</td>
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<tr>
<td>□ Medical record number</td>
</tr>
<tr>
<td>□ Room number</td>
</tr>
<tr>
<td>□ Admission date</td>
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<tr>
<td>□ Primary inpatient medical team, primary care physician</td>
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<tr>
<td>□ Family contact information</td>
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<table>
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<tr>
<th>New Information (Clinical Update)</th>
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<tbody>
<tr>
<td>□ Chief complaint, brief HPI, and diagnosis (or differential diagnosis)</td>
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<tr>
<td>□ Updated list of medications with doses, updated allergies</td>
</tr>
<tr>
<td>□ Updated, brief assessment by system/problem, with dates</td>
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<tr>
<td>□ Current “baseline” status (e.g., mental status, cardiopulmonary, vital signs, especially if abnormal but stable)</td>
</tr>
<tr>
<td>□ Recent procedures and significant events</td>
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<table>
<thead>
<tr>
<th>Tasks (What needs to be done)</th>
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<tr>
<td>□ Specific, using “if-then” statements</td>
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<tr>
<td>□ Prepare cross-coverage (e.g., patient consent for blood transfusion)</td>
</tr>
<tr>
<td>□ Warn of incoming information (e.g., study results, consultant recommendations), and what action, if any, needs to be taken that night</td>
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<table>
<thead>
<tr>
<th>Illness</th>
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<tbody>
<tr>
<td>□ Is the patient sick?</td>
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<tr>
<th>Contingency Planning / Code Status</th>
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<tbody>
<tr>
<td>□ What may go wrong and what to do about it</td>
</tr>
<tr>
<td>□ What has or hasn’t worked before (e.g., responds to 40mg IV furosemide)</td>
</tr>
<tr>
<td>□ Difficult family or psychosocial situations</td>
</tr>
<tr>
<td>□ Code status, especially recent changes or family discussions</td>
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How Can We Translate the Model?

*Developing a Standard Handover Protocol at an Academic Medical Center in the NL*
Design of the Project

- Research was coupled with 4 workshops with the residents and their supervisors over 3 months to:
  - review the baseline data
  - complete the model (process map, content, implementation, and monitoring)
  - teach improvement skills
Design of the Project

- Assembled small workgroup in each specialty (pediatrics, medicine, and surgery)
- Session 1
  - Kickoff with residents and supervisors – why this important work and setting expectations
- Between session work
  - Baseline research (observations of process and content, interviews with residents and supervisors, process mapping)
- Session 2
  - Feedback of data and forming improvement teams
- Between session work
  - Resident driven improvement teams
- Sessions 3 and 4
  - Resident presentations
Development and Implementation of a Standard Protocol

- At University of Chicago 9 residency programs that take in-house call participated
- In the Netherlands, pediatrics and surgery have participated. Medicine will start in March
Continuing work

- Completing study in the US on transitions from inpatient care to the community
- Continuing with residents in the NL
- Starting EU grant on handovers from inpatient to outpatient settings
- Ultimately, the goal is to identify and implement interventions that can reduce the risks associated with transitions in care
What Do I Think is Generalizable to all handovers?

- The Model:
  - Process
  - Content
  - Implementation
  - Monitoring

- The Method from the NL
  - Collaborative format, team driven improvement, coupled with research
Challenges/Opportunities

- Sustainability
- Local leadership
- Monitoring and Evaluation
- Training
Challenges/Opportunities

- **Sustainability**
  - Our goal was empirical research coupled with improvement
  - You can do the research, you can make the improvements, but how do you sustain the improvement?
  - What happens when you are “done” with the project?
Challenges/Opportunities

- Local leadership
  - All change is local
  - The research team can’t improve the process that is being studied
  - Local champions are necessary to lead and manage the improvement piece
  - Champions need to be nurtured (they won’t necessarily know what to do)
Monitoring and Evaluation

- What are the best process and outcome measures of an effective handover?
  - Patient outcome measures (clinical, functional, satisfaction, costs?)
  - Provider outcome measures (satisfaction, communication effectiveness, efficiency of work flow?)
  - Process measures (presence of critical content, adherence to process?)

- How would you collect the data?
  - Direct observation?
Monitoring and Evaluation (continued)

- 10-item Handoff CEX
  - A standard instrument to evaluate handovers in real time
  - Adapted from mini-clinical evaluation exercise (CEX) to document competence in clinical and professional skills
  - Handover CEX measures quality of verbal communication, organization, content, clinical judgment, and professional/humanistic qualities displayed during handover history
How can you train newcomers in handover communication?

- The tools created for process and content form the basis of a training program
- Opportunities for simulation for new trainees
Discussion