Specific Care Question: What evidence based practices have been effective in standardizing bedside nursing handoffs?

What are current best practices in ED staffing models and handoff of patient information when patients transition to inpatient units?

The Children's Mercy Medical Librarians performed a literature search using the CINAHL (Cumulative Index to Nursing and Allied Health Literature) database. 58 citations were identified. The search strategy employed for this question follows:

S3: S1 AND S2; limited to Evidence-Based Practice AND last five years
S2: (MH "SBAR Technique") OR "six sigma" OR "LEAN" OR (MH "Health Care Errors+") OR (MH "Job Satisfaction+") OR (MH "Patient Safety+")OR "best practice"
S1: (MH "Hand Off (Patient Safety)+") OR "handoff"

After a review of the 58 titles and abstracts identified from the search, eight references were recognized to potentially answer the question. From the identified eight references, one reference (Salani, 2015) did not provide insight to handoff standardization rather it simply focused on moving patient report to the bedside; therefore, it was not included in this synopsis. Of the remaining seven studies, three were reviews. Of the reviews, one was a systematic review (Robertson, Morgan, Bird, Catchpole, & McCulloch, 2014), one was a qualitative systematic review (Holly & Poletick, 2014) and the other was a narrative review (Gregory, Tan, Tilrico, Edwardson, & Gamm, 2014). In addition four single studies are included in this analysis: an observational study (Foster-Hunt, Parush, Ellis, Thomas, & Rashotte, 2015), a pre-post quasi-experimental study (Sand-Jecklin & Sherman, 2014) and two quality improvement studies (Lin, Heisler, Fahey, McGinnis, & Whiffen, 2015; Younan & Fralic, 2013).

In September 2016, the EBP Office was asked an additional question about handoffs:
What are current best practices in ED staffing models and handoff of patient information when patients transition to inpatient units? The search strategy employed for this question follows:

PubMed search strategy
("Patient Handoff"[Majr]) AND "Emergency Service, Hospital"[Mesh] Sort by: PublicationDate Filters: Publication date from 2015/01/01 to 2016/12/31; English OR Search ((((handoff*[tiab] OR "hand off*"[tiab] OR handover*[tiab] OR "hand over*"[tiab] OR signover*[tiab] OR "sign over*"[tiab] OR "sign out*"[tiab] OR "intrashift communication"[tiab])) AND ("2016/01/01"[PDat] : "2016/12/31"[PDat]))) AND (("emergency department"[tiab] OR ED[tiab] OR ER[tiab] OR "emergency service*"[tiab])) Sort by: PublicationDate Filters: Publication date from 2016/01/01 to 2016/12/31; hand-filtered for language, relevance

Twenty four articles were identified from this strategy. One study was determined to answer the question after a review of the title and abstract. Upon review of the single study (Kerr, Klim, Kelly, & McCann, 2014) did not address the question asked.

CINAHL search strategy

(MM "Hand Off (Patient Safety)+") AND (MH "Emergency Medical Services+") Limiters - Published Date: 20150101-20161031; English Language; Exclude MEDLINE records
Five articles were identified from this strategy. One study was determined to answer the question after a review of the title and abstract. Upon review of the single study (Benjamin, Hargrave, & Nether, 2016) did not address the question asked.

EBP Office Bottom line: We have no confidence in the findings reported in the standardized bedside nursing handoff literature. The findings from Robertson et al. (2014), a systematic review, highlight the issues related to synthesizing current handoff literature (see page 2). Having noted this, what the primary author of this synthesis identified has identified as a guiding theme within the seven articles in this synopsis is that in order to create a standardized handoff at Children's Mercy, nursing must be well represented in the design and implementation to garner buy in.

Within the articles there were keys points that appeared critical in moving to a standardized bedside report:

- Investigating how the EMR can assist in the handoff exchange
- Education and coaching during the change implementation
- Identifying where the handoff exchange can and cannot be modified by departments
- Patients and family members should be included in design, implementation, and tests of change
- Measures must be identified apriori.

Though Benjamin, Hargrave and Nether (2016) do not answer the subsequent question asked about best practices in ED staffing models to , it does provide potential detection tools in which targeted solutions could be developed.

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Review of the Systematic Literature:

Robertson et al. (2014) preformed a robust literature search. A modified Downs and Black (D&B) checklist was used to evaluate the literature thereby employing a systematic literature approach. Twenty nine studies were included in the review. Due to the diversity of the literature the authors were not able to accurately assess the data as they did not achieve a significant difference between the positive and negative studies based on the D&B score. Due to the inconclusiveness of the literature, the authors suggest that: (1) the measurement of an effective handoff revolves around completeness, accuracy, and organization; (2) an agreed upon taxonomy for handoffs must be developed; and (3) improved study design should be employed (Robertson et al., 2014).

Holly and Poletick (2014) performed a metasynthesis of 29 qualitative studies and identified two overall study findings (1) individual nurses influence the patient care nurse as the gatekeeper of information handed off that is used for subsequent care decisions (p. 2391), and (2) there is an embedded hierarchy in relation to the handing over of information that serves as a method of enculturation into the nursing unit. (p. 2393). A standardized information handoff was identified as important, thought incomplete or inaccurate information was shared in these handoffs. Strict reliance on technology could reduce information seen as insignificant but may be overall important. Face to face report is seen as an enculturating activity for nursing staff based on team building and supportive discussions that occur at this time (Holly & Poletick, 2014).

Gregory et al. (2014) is a narrative review that included 33 articles specifically on bedside nursing handoffs. Six data domains were identified (1) team based variables, (2) dyadic relationships, (3) individual benefits, (4) confidentiality concerns, (5) accountability, and (6) cost containment. To quantify these finding, the Summary of Findings table from the study was included in this synopsis (see Figure 1).

Figure 1. Studies Fitting Inclusion Criteria: Summary of Findings (Gregory et al., 2014, p. 542).

Category	Summary of Findings
Team-based variables	• Positive attitudes[1,5,13] • Improved patient-centered care[1-3,5-10,14,16,20-24] • Improved family-centered care[1,5,13] • Care coordination[3,7,20-22] • Team collaboration[1,4,8,13,18,21,22,28] • Engagement after implementation of BSR[5,6,9,10,29]
Dyadic relationships	• Nurse-patient dyadic relationship ○ Patients are able to ask questions[3,8,11,17,19,28,30] ○ Share information regarding medical history[3,16,28] ○ Participate in the decision-making process[3,6,8,10,17,28] • Nurse-nurse dyadic relationship ○ Increased socialization by sharing stories and experiences[21,31] ○ Emotional support to one another[11,21,31] ○ Communication [9,12-14] ○ Mentoring and coaching[4,17,18,21] ○ Networking opportunities[18,23]
Individual benefits	• Patient individual benefits ○ Patient empowerment by being able to ask questions about their care[2-4,6,14] ○ Increased patient satisfaction[1-3,5-7,9,14,16-18,23,24] ○ Patients feel safer being able to see two nurses at shift change[3,5,6,16] ○ Increased patient safety[3-12] ○ Increased communication with nurses[3,4,6,10,16,18,22,24-26] ○ Increased understanding of care[4,5,14,22,28] • Nurse individual benefits ○ Increased communication skills and accurate information[1,3,11-14,16,26,27] ○ Nurses' involvement with care[3-5,13,20,27] ○ Nurse empowerment[16-19] ○ Nurses being able to visualize the patient[1,4,6,9,14,18,22] ○ Nurses leaving shift on time[13,14,21] ○ Reduction in time spent writing shift reports[2,5,13,14,18,21,23,26,32] ○ Building rapport with patients[17,31] ○ Increased nurse satisfaction[1,2,5,9,13,14,16,24,25]
Confidentiality concerns	• Privacy issues while discussing patient medical history[1-5,7-9,14,16,17,19,21,22,31] • Having to ask visitors to leave the room during BSRs[8,17]
Accountability	• Lack of confidence on medical knowledge[4,5,16,33] • Burden of having to be in control[2,17] • Higher confidence in thorough, more accurate reporting[6,14]
Cost containment	• Reduction in overtime accumulated between shift changes[1,7,13,14,18,21,23,32]

Single Studies to Gain Handoff Context:

Foster-Hunt et al. (2015) is an observational study that occurred in the Pediatric Intensive Care Unit. The authors identified a high level of information through content categorization (along with specific content exchanged within each high-level category (see Figure 2). The high level information is found on the left of the figure and the specific content categories are found on the right of the figure. In addition, across all hand offs there was a common meta-structure (see Figure 3).

Figure 2. Information Sharing Levels: High Level and Specific Content Categories (Foster-Hunt et al., 2015, p. 160).

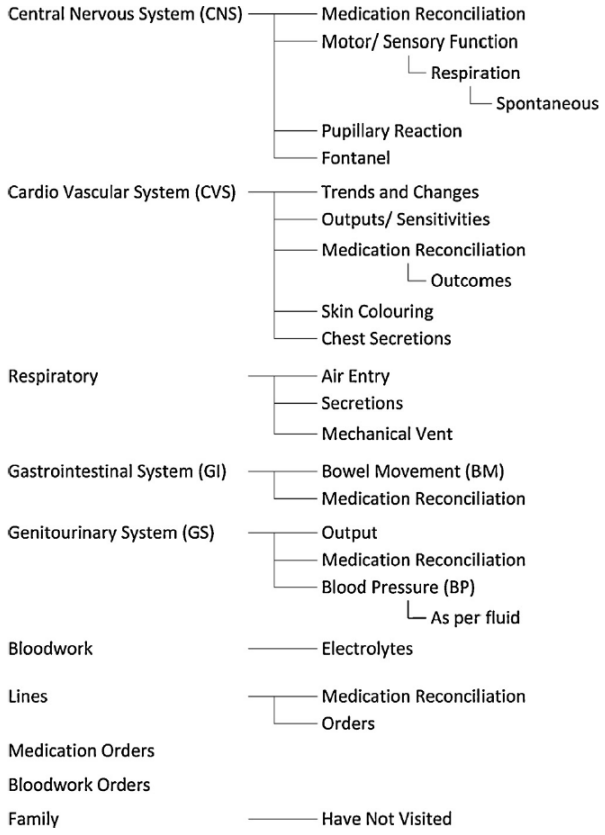


Figure 3. Meta-structure of shift handoff information (Foster-Hunt et al., 2015, p. 160).

High level categories	Specific content categories
Introduction	Familiarity with Patient
	Patient History and/or Clinical History
Systems	Central Nervous System (CNS)
	Cardiovascular System (CVS)
	Respiratory
	Genitourinary System (GU)
	Gastrointestinal System (GI)
Patient care – next 12 hours	Blood work (Orders, Results, Schedule)
	Medication (Orders, Changes, Schedule)
	Upcoming Procedures/Appointments
Family	Family/Psychological and Social aspects

Lin et al. (2015) reports employing the human-centered design model to create the structure for Nursing Knowledge Exchange *plus* or NKE*plus* (a Kaiser Permanente product) which was composed of six core elements:

1. Patients were informed on "end-of-shift" rounds that shift change was about to commence so staff proactively addressed the needs of all patients before report
2. Patient care assignments that limited the number of departing nurses from which each oncoming RN receives report
3. Unit secretaries answer telephones and call lights and delegate to NAs or change nurses (departing charge nurse handles any unanticipated patient needs or admissions
4. KP SMILE standardized reporting format used (see Figure 4)

Figure 4. KP SMILE Standardized Shift Report

K now the patient: manage up by helping staff succeed at providing excellent care.
P rofessional exchange report: review outstanding orders and other important information.
S napshot report: review of systems
M edication administration record: review new and outstanding medications.
I ntake and output: IV fluids, prescribed diet, urinary output, and bowel movements
L abs: critical lab results and new orders
E ducation: patient learning needs and goals
IV, intravenous.

5. Standardize safety check format (see Figure 5)

Figure 5. HEAL/S Safety Check Performed by Departing and Oncoming Nurses Together

H igh-alert medications: verify orders and that pumps are programmed correctly and running as ordered.
E quipment: ensure that all needed equipment, from Ambu bag to walker, is in the room.
A larms: ensure that all alarms are activated and ready to signal if needed.
L ines: ensure that all lines are attached, running properly, and not infiltrated.
S kin: assess skin and agree on condition at start of shift OR sensitive issues: use a code word to indicate a need to discuss something privately.

6. Updating of patient's care board with oncoming RNs name and other caregivers and patient goals

How the authors spread the handoff to other areas in the hospital is discussed on page 308 within the study.

Measures used for this quality improvement study are found in Figure 6.

Figure 6. Measures Used to Assess Nurse Handoffs Using NKE*plus* Spread and Sustainability

Level	Measure	Source and Frequency
Regional	Percentage of spread to medical/surgical and specialty units Percent completion of strategic plan NKE*plus* behavior bundle* Nurse communication scores Nurse responsiveness scores	Number of units completing champion orientation, quarterly Quarterly Monthly patient survey HCAHPS
Medical Center	NKE*plus* competency Individual NKE*plus* behaviors* Patient perception of nurse communication	Annual competency evaluation form Monthly patient survey Patient interviews; twice weekly by rounding manager

HCAHPS, Hospital Consumer Assessment of Healthcare Providers and Systems.

*Nursing behaviors as reported by patients: (1) The care board in my room was always updated with my new caregiver's names and my plan; (2) The nurse reviewed my daily care with me in a way I could understand; (3) When nurses changed shift, the nurse caring for me introduced me to the new nurse; and (4) The nursing staff asked me for input about my daily care.

Sand-Jecklin and Sherman (2014) reported findings from a quasi-experimental pre- and post-implementation of blended (recorded and bedside) report. The recorded report used the SBAR format for new issues and abnormal patient assessment findings. The bedside report included:

1. Permission to conduct report at the bedside
2. Introductions
3. Discussion of the plan of care
4. Visualization of patient incisions, drains and lines
5. Pain assessment
6. Review of any potential safety issues.

Patients reported a significant positive change with the blended report for the following items: knowing which nurse would be caring for them, important information was communicated to the oncoming shift, and the patient was included in the shift report discussion. Nursing staff reported a significant positive response for the following items: report promoted patient involvement (p = 0.000), prevented patient safety issues (p = 0.001), and assured accountability (p = 0.002). However, nursing staff identified the blended report was ineffective (p = 0.000), inefficient (p = 0.000), increased stress (p = 0.000). The nursing staff also perceived that report was not completed in a reasonable timeframe (p = 0.000); however, there was not a significant increase in overtime between baseline and the two post-implementation reported time periods.

An additional strength of the study was the researchers used a validated instrument to measure staff and patient perceptions. A limitation of the study included the identification from the patients and nursing staff that there were inconsistencies in bedside reporting however the authors did not quantify these inconsistencies.

Younan and Fralic (2013)

Staff nurses at the Labib Medical Center were invited to participate in determining which standard handoff would be implemented. Once designed, they were asked to attend three two-hour in-service sessions learning about the standardized hand off implementation. To minimize interruptions during handoffs an alternative medical round time was negotiated, patients were told that handoffs were about to commence and were asked if they had any needs prior to the handoff occurring, admissions and recovery room staff avoided sending patients during handoffs.

The outcomes measured by the authors:

1. The mean number of information omissions per patient handoff before and after introduction of the standardized handoff tool (mean number of omissions decreased by 2.67, $p \leq .000$).
2. The mean number of interruptions during the handoff before and after reorganization of the concurrent processes (mean number of interruptions decreased by 0.91, $p \leq .001$).
3. The percentage of criteria listed by RNs as essential to be exchanged during the patient handoff communication before and after the training (abnormal labs decreased by 11%, $p \leq .004$ and abnormal radiology decreased by 44%, $p \leq .005$).

The authors did identify that more work was needed with interruptions (phone calls, side talks between nurses, nonurgent admissions and transfers, and blood draws)

The Labib Medical Center does not have an electronic medical record and therefore created a four page hybrid handoff tool, the first page (see Figure 7) was not changed unless there was a patient change during the hospitalization. The subsequent pages (see Figure 8-10) were changed by the outgoing nurse caring for the patient. *These pages are included in the synopsis to assist in the identification of needed standardized handoff data.*

Figure 7. Labib Medical Center Paper Handoff Tool, page 1 (Younan & Fralic, 2013, p. AP4).

Labib Medical Center
Patient Handoff Tool
CN-FO-019

PATIENT LABEL

Situation & History Admission / Date/ Time: _____ /_____: _____ From: _____ To: _____
Transfer / Date/ Time: _____ /_____: _____ From: _____ To: _____

Cause of hospitalization Primary Diagnosis: _____ Planned Intervention: _____

Past medical history	**Labs & Tests on Admission:**
Past surgical history	**Critical Values:**
Home medication	

DATE	___/___/___		___/___/___		___/___/___		___/___/___	
Critical Information	**D**	**N**	**D**	**N**	**D**	**N**	**D**	**N**
Abnormal vital signs & Action taken								
Abnormal lab values & Action taken								
Abnormal x-ray values & Action taken								
Allergy: If yes, indicate the type								
Isolation: If yes, indicate the type								
–Risk for pressure ulcer –Has a pressure ulcer (type, stage)								
–Risk for fall –Preventive measures								
Restrictions								

Figure 8. Labib Medical Center Paper Handoff Tool, page 1 (Younan & Fralic, 2013, p. AP5).

Labib Medical Center
Patient Handoff Tool
CN-FO-019

DATE	___/___/___		___/___/___		___/___/___		___/___/___	
Abnormality in physical assessment findings	**D**	**N**	**D**	**N**	**D**	**N**	**D**	**N**
1. Neurological • LOC • Behavior • Mood • Speech • Reflexes								
2. Respiratory • Respirations • Breath sound • Cough • Sputum								
3. Cardiovascular • Pulse • Edema • Capillary refill								
4. Gastrointestinal • Abdomen • Nausea • Vomiting • Bowel								
5. Genitourinary • Urine: color, amount, elimination • Discharge								
6. Skin assessment (condition, color, temp)								

(continued on page AP6)

Figure 9. Labib Medical Center Paper Handoff Tool, page 1 (Younan & Fralic, 2013, p. AP6).

DATE	___/___/___		___/___/___		___/___/___		___/___/___	
Nursing Care	**D**	**N**	**D**	**N**	**D**	**N**	**D**	**N**
1. Diet • PO • NPO • N/G(quantity___, Q___ h)								
2. Tracheostomy: • Dressing • Suctioning								
3. Oxygen therapy • Method ____L/min								
4. Chest tube • Number • Location • Suction • Underwater seal • Oscilliation (Yes, No)								
5. Surgical site • Dressing time • Drain, quantity____, color____ • Sign of infection, if yes indicate								
6. Infusion line • Peripheral • Central (dressing time) • Site integrity (Intact, pain, swelling) • Transfusions DATE								
7. Hygiene • Self • Assisted • Foley catheter care done								
8. Mobility (self, assisted)								
9. Activity (positioning, dangling)								
10. Traction If yes , Site_____, Weight _____								
11. Cast /Gypsona (edema, pain)								
12. Pain (location, intensity, time, intervention, evaluation)								
Current medications								
Other								

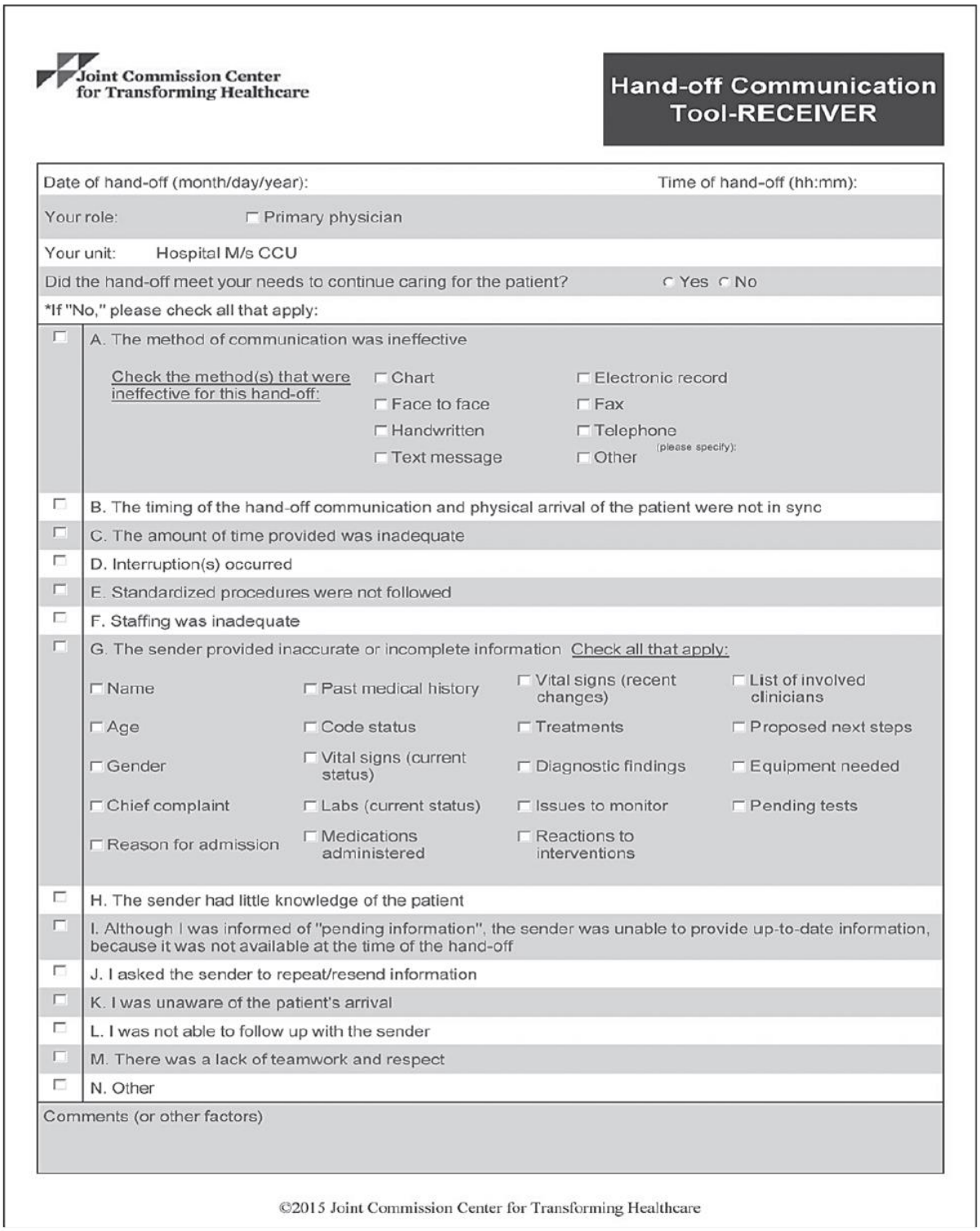
(continued on page AP7)

Figure 10. Labib Medical Center Paper Handoff Tool, page 1 (Younan & Fralic, 2013, p. AP7).

DATE	___/___/___		___/___/___		___/___/___		___/___/___	
Recommendation								
Lab								
ECG								
Radiology								
Consultations Reason Informed (I) Not informed (NI) DONE								
Treatment plan: - - - - - - - - -								
Pending issues								
RN Signature								

Though Benjamin, Hargrave and Nether (2016) does not answer the subsequent question asked, it does provide potential detection tools in which targeted solutions could be developed.

Figure 11. The Hand-off Communication Tool--Receiver (Benjamin, Hargrave & Nether, 2016, p. 109).



Joint Commission Center for Transforming Healthcare

Hand-off Communication Tool-RECEIVER

Date of hand-off (month/day/year): Time of hand-off (hh:mm):

Your role: ☐ Primary physician

Your unit: Hospital M/s CCU

Did the hand-off meet your needs to continue caring for the patient? ○ Yes ○ No

*If "No," please check all that apply:

☐ A. The method of communication was ineffective

Check the method(s) that were ineffective for this hand-off:

☐ Chart ☐ Electronic record
☐ Face to face ☐ Fax
☐ Handwritten ☐ Telephone
☐ Text message ☐ Other (please specify):

☐ B. The timing of the hand-off communication and physical arrival of the patient were not in sync

☐ C. The amount of time provided was inadequate

☐ D. Interruption(s) occurred

☐ E. Standardized procedures were not followed

☐ F. Staffing was inadequate

☐ G. The sender provided inaccurate or incomplete information Check all that apply:

☐ Name	☐ Past medical history	☐ Vital signs (recent changes)	☐ List of involved clinicians
☐ Age	☐ Code status	☐ Treatments	☐ Proposed next steps
☐ Gender	☐ Vital signs (current status)	☐ Diagnostic findings	☐ Equipment needed
☐ Chief complaint	☐ Labs (current status)	☐ Issues to monitor	☐ Pending tests
☐ Reason for admission	☐ Medications administered	☐ Reactions to interventions	

☐ H. The sender had little knowledge of the patient

☐ I. Although I was informed of "pending information", the sender was unable to provide up-to-date information, because it was not available at the time of the hand-off

☐ J. I asked the sender to repeat/resend information

☐ K. I was unaware of the patient's arrival

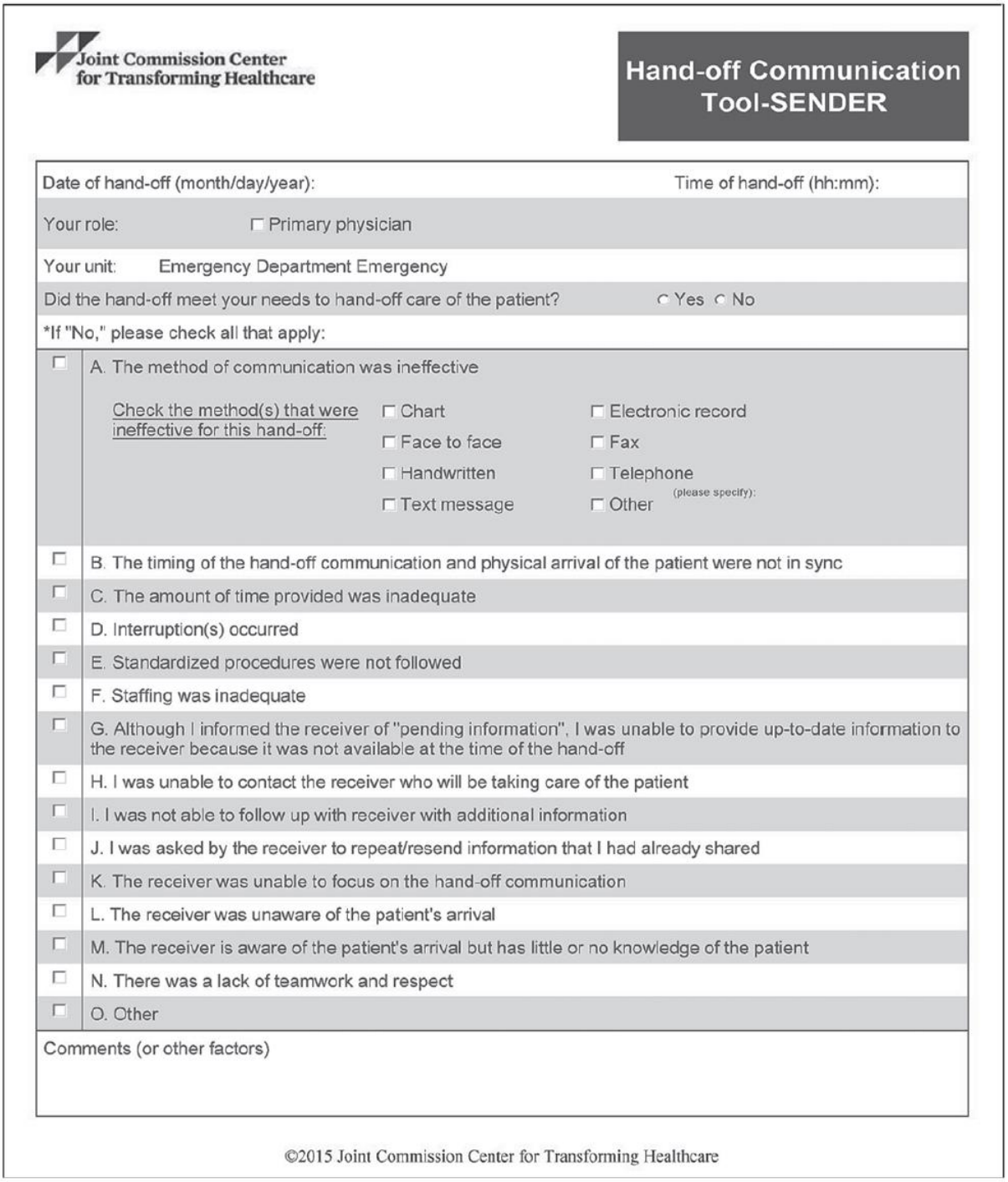
☐ L. I was not able to follow up with the sender

☐ M. There was a lack of teamwork and respect

☐ N. Other

Comments (or other factors)

Figure 12. The Hand-off Communication Tool--Sender (Benjamin, Hargrave & Nether, 2016, p. 110).



Joint Commission Center for Transforming Healthcare

Hand-off Communication Tool-SENDER

Date of hand-off (month/day/year):	Time of hand-off (hh:mm):
Your role: ☐ Primary physician	
Your unit: Emergency Department Emergency	
Did the hand-off meet your needs to hand-off care of the patient? ○ Yes ○ No	
*If "No," please check all that apply:	
☐	A. The method of communication was ineffective Check the method(s) that were ineffective for this hand-off: ☐ Chart ☐ Face to face ☐ Handwritten ☐ Text message ☐ Electronic record ☐ Fax ☐ Telephone ☐ Other (please specify):
☐	B. The timing of the hand-off communication and physical arrival of the patient were not in sync
☐	C. The amount of time provided was inadequate
☐	D. Interruption(s) occurred
☐	E. Standardized procedures were not followed
☐	F. Staffing was inadequate
☐	G. Although I informed the receiver of "pending information", I was unable to provide up-to-date information to the receiver because it was not available at the time of the hand-off
☐	H. I was unable to contact the receiver who will be taking care of the patient
☐	I. I was not able to follow up with receiver with additional information
☐	J. I was asked by the receiver to repeat/resend information that I had already shared
☐	K. The receiver was unable to focus on the hand-off communication
☐	L. The receiver was unaware of the patient's arrival
☐	M. The receiver is aware of the patient's arrival but has little or no knowledge of the patient
☐	N. There was a lack of teamwork and respect
☐	O. Other
Comments (or other factors)	

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