**SUMMARY:**
The "Push-pull" process establishes a standardized nursing handoff between ED and inpatient nurses for each ED admission.

**SUBMISSION CATEGORY:**
- Care Coordination

**CATEGORY:**
- A: Arrival
- B: Bed Placement
- C: Clinician Initial Evaluation
- D: Disposition Decision/Throughput

**KEY WORDS:**
- Continuity of Care
- Hand-Offs
- Length of Stay
- Patient Satisfaction

**HOSPITAL:** Northridge Hospital

**LOCATION:** Northridge, CA

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**HOSPITAL METRICS:**
- Annual ED Volume: 57,000
- Hospital Beds: 409
- Ownership: Not-for-Profit
- Trauma Level: II
- Teaching Status: Yes

**TOOLS PROVIDED:**
- Roles and Responsibilities
- MD Newsletter Article

**CLINICAL AREAS AFFECTED:**
- ED

**STAFF INVOLVED:**
- ED Staff
- Nurses
- Physicians
Innovation

The "Push-pull" process establishes a standardized nursing handoff between ED and inpatient nurses for each ED admission. The key element is a face-to-face handoff between the ED and inpatient nurse at the bedside, facilitating a patient and family-centered approach to care. When the ED is not crowded and/or when the inpatient units are working to clear beds every morning, the ED nursing staff transport the patient to the inpatient unit where the handoff is performed ("push"). During periods of ED crowding, the face-to-face handoff occurs in the ED ("pull"), with inpatient unit nursing staff coming to the ED to receive report and to transport the patient to the inpatient unit. Handoffs that occur in the ED allow inpatient nursing staff to identify patients who are not appropriate for the destination unit. Shifting the workload associated with patient transport from ED to inpatient nurses during periods of ED overcrowding allows ED staff to focus on caring for incoming ED patients and to reduce diversion of paramedic traffic.

This process addresses a variety of issues, including patient safety associated with handoffs, ED throughput for admitted patients, ED overcrowding, nursing collaboration and patient satisfaction.

Background

Prior to the initiation of the "Push-pull" process, admission handoffs at Northridge Hospital Medical Center incorporated non-standardized communication processes (phone, fax, face-to-face) across different units. The patient and family were not involved in the handoff, and many patients were transferred from the ED to inpatient unit by a transporter alone. During the wait for a transporter, patients’ condition would at times deteriorate without being detected by ED staff, resulting in placement on an inappropriate level of care and occasional RRT events shortly after arrival to the inpatient unit. Finally, during periods of ED crowding inpatient nursing staff were generally ineffective in offloading patients due to a lack of experience in the unfamiliar environment of a busy ED.

Under the Push-pull process, handoffs begin with a telephone report that allows the inpatient nurse to anticipate patient needs and prepare for patient arrival. Once the ED care is complete and the patient is ready to move, the inpatient unit is notified of readiness and whether the handoff is to occur on the inpatient unit or in the ED. Handoffs occur in the ED during time periods typically associated with ED crowding (relieving the ED staff from the burden of patient transport) and any other time that the ED is experiencing crowding based on an objective, standardized ED crowding assessment tool. Metrics associated with the transfer process are tracked by unit so as to measure and compare performance (ready-to-move to ED departure interval) across various inpatient units.

Innovation Implementation

Supported by house-wide executive leadership, the "Push-pull" team was assembled from front-line inpatient and ED nursing staff interested in improving the admission process. Lean methodology was utilized, including process mapping, problem identification/prioritization and “brainstorming” followed by rapid cycle testing of new ideas to develop standard work for staff involved in the handoff process. Patient safety and patient and family satisfaction remained the center of focus by the team during process development.

After some trial and error, a standardized process was developed involving a greater share of workload for ED staff in the morning when inpatient units were focusing on discharging existing patients, and then a shift in the workload to the inpatient staff in the afternoon and evening when the ED would predictably experience crowding. At any time if the ED was overcrowded based upon a standardized objective measure (CALDOCS tool) the workload was shifted to the inpatient staff by conducting the handoff in the ED.

Team members monitored the process during implementation with each new unit, providing support and bringing helpful feedback to the team resulting in additional refinements. Standardized performance reports were circulated to involved units and to executive leadership.
Existing Performance Excellence staff and a physician champion (ED Medical Director) were utilized to plan and implement the process. There were nursing hours billed for meeting attendance and implementation monitoring. No ongoing new resources are required to sustain the "Push-pull" process.

**NHMC “Push-Pull” ED Admission Process Overview**

**Timeline**

Pre-planning for the changes, including executive leadership review and approval occurred over a period of two months commencing July 2013. The team then worked for two months on process development and education planning. A phased roll-out was established on a unit-by-unit basis. There were some delays due to the opening and closing of units related to extraneous factors, resulting in a process implementation timeline that covered 5 months. Data collection and analysis with occasional process refinement are ongoing.
Results/Evaluation

Reduction in ED diversion - diversion rate for the 2nd quarter of CY 2014 hit its lowest since baseline, even after adjusting for seasonal census fluctuation.
Reduction in the frequency of RRT events shortly after admission from the ED
After averaging 2.5 RRT events (within 4 hours of admission) per month for the previous 9 months, there has been only 1 RRT event during the 5 months over which RRT data are available.

Cost/Benefit Analysis
- The cost to implement the team was estimated to be $4,346 for front line staff participation, meeting accommodations and supplies.
- During fiscal year 2013, the estimated loss related to diversion is at $7.1M ($8K/EMS patient/diversion hour). In the last quarter of FY 2014 a significant trend in diversion reduction was achieved. This is estimated to result in a 20% reduction in the annualized rate, translating to a projected savings of $1.5M.

Advice and Lessons Learned
1. Depending on baseline state, this can be a major change in nursing workflow, particularly for inpatient nurses who are not used to coming to the Emergency Department to receive report and transport the patient to the destination unit. Find team members who understand and will promote the positive aspects of this process: patient and family centered approach to care, patient safety and ED throughput.

2. Ensure Nursing and Executive Leadership approval so that any initial setbacks are met with resolve to work through the issues. Nursing Directors from all of the involved units need to be fully aware of the process changes, anticipated benefits and potential pitfalls.

3. Utilize a phased approach to implementation on a unit-by-unit basis so that lessons can be learned from the initial trials.

4. Educate all leadership, medical staff and ancillary departments on the process changes, reasons for them and desired results.

Sustainability
Hospital executive leadership continues to promote this process based upon the reduction of EMS diversion and the desire to sustain a patient and family centered approach to care. Team meetings continue on an ad-hoc basis to address the following issues:
Transport staff availability and involvement in the admission process when assistance is needed
Gurney/wheelchair return to the ED after patient is “pulled” to the inpatient unit
Expediting patient movement out of the ED particularly during periods of overcrowding
Dealing with high admission volume units (particularly the observation unit)
Improving the delivery of performance feedback to unit nursing staff and leadership
Consideration of a means of providing a “face-to-face” handoff without taking a nurse off of their unit, e.g. Skype
Northridge Hospital Medical Center
ED Admission “Push-Pull” Process

Roles and Responsibilities for ED Patient Admission

Unit Charge RN
- Bed prioritization in TeleTracking
- Receive bed assignment page in TeleTracking, notify patient RN of bed assignment
- Receive ‘preliminary report’ notification page in TeleTracking, notify patient RN that the preliminary report is now available
- Receive RTM page and courtesy call, notify patient RN of page and if the transport will be a “push” by ED RN or “pull” by unit RN
- Work with patient RN to decide who will be involved in the face-to-face handoff
- If patient is a “pull” and Charge RN to go to the ED, follow Unit RN “pull” instructions as indicated below
- In case of MTG, RRT or Code Blue on unit, receive alternate transport plan from House Supervisor.

Unit RN
- Review preliminary report in TeleTracking (check when bed is assigned or when notified that report is available after bed assignment), prepare room for patient arrival
- Notify unit RT of any patient respiratory needs based on preliminary report
- Receive notification of RTM message from Charge RN
- If patient is a “pull”:
  - Contact admission transporter at ext. 7662 as needed (M-F 3:30-Midnight), arrange “meet in the ED” time
  - ASAP (within 15-20 minutes of RTM), report to ED Central Nursing Station (with wheelchair if patient is ambulatory)
  - Receive ED patient room location and Professional Nurse Bedside Hand-over Tool from ED Staff at the ED Central Nursing Station
  - If transporter is not available and assistance is needed, ask ED Charge RN to arrange for alternate assistant
  - Report to ED patient room
  - Introduce yourself and receive face-to-face bedside report (with Professional Nurse Bedside Handoff Tool) from ED RN
  - Ask the patient if they have any questions
  - Receive admission packet from ED staff
  - Transport to unit
  - Arrange for ED gurney and monitor return, as needed (call ext. 2000)
- If patient is a “push”:
  - Report promptly to patient room when patient and ED RN arrives on unit
  - Receive admission packet, ED chart and Professional Nurse Bedside Hand-over Tool from ED RN
  - Receive face-to-face bedside report from ED RN
  - Ask the patient if they have any questions.

September, 2013
Nursing Supervisor

- Receive bed request in TeleTracking, make bed assignment
- Receive sitter request if needed, arrange for sitter; if delay notify ED Charge RN
- Receive RTM page, contact ED Charge RN in case of Code Blue, RRT or MTG event impacting inpatient unit, work with ED Charge RN to create patient transport
- Notify Unit Charge RN of alternate plan for patient transport.

ED RN

- Prepare ‘preliminary report’ in MEDHOST
- Prepare patient for admission (belongings, medication reconciliation, obtain admission orders, prepare Professional Nurse Bedside Hand-over Tool and store in red folder at the nursing station)
- When above has been completed, send RTM signal, including “push” signal when ED is at Caldocs levels 1 or 2, or if sending patient to a unit that does not pull patients
- If the patient is a “push”:
  - Arrange additional resource for transport as needed (may contact admission transporter at ext. 7662 as needed, M-F 3:30-Midnight)
  - Notify RT assigned to ED as needed
  - Pull ED Chart from red folder, admission packet from Dispo Station
  - Disposition patient from MEDHOST
  - Transport patient to assigned unit ASAP (within 15-20 minutes of RTM)
  - Report to Unit Nursing Station, report patient arrival and proceed to assigned room
  - Provide admission packet, ED chart and Professional Nurse Bedside Handoff Tool to Unit RN or Unit Charge RN
  - Provide brief (3-10 minute) verbal report at the bedside
- If patient is a “pull”:
  - Report promptly to the patient’s room when Unit RN or Unit Charge RN arrives
  - Provide brief (3-10 minute) verbal report at the bedside
  - Obtain admission packet from dispo station and give it to Unit RN or Unit Charge RN
  - Ensure transport resource is provided if requested
  - Disposition patient from MEDHOST.

ED Charge RN

- Update Caldocs when ED transitions from possible level 2 to level 3 or greater and vice versa, keep ED RN’s up to date on current saturation level
- Assist Unit Secretary directing inpatient unit RN to patient room when pulling patients
- Arrange for transport assistance if requested by unit RN
- Work with Nursing Supervisor on a plan for patient transport when notified that the nursing unit is impacted
- Arrange for alternate RN to be involved in bedside handoff (in the ED or inpatient unit) if primary ED RN is with a critical patient.

September, 2013
Northridge Hospital Medical Center
ED Admission “Push-Pull” Process

Roles and Responsibilities for ED Patient Admission

**ED Unit Secretary**
- Place admission bed request in TeleTracking
- Receive preliminary report order, translate into TeleTracking, and if a bed has been assigned, instant notify Unit Charge RN of TeleTracking update
- Receive RTM order, update TeleTracking and instant notify Unit Charge RN and House Supervisor of RTM update including “push” vs. “pull”
- When Unit RN or Charge RN arrives at ED Central, receive request for transport assistance, provide chart from red folder, and direct Unit RN to patient’s room
- Work with ED Charge RN to secure a transport resource, if requested
- MEDHOST page the patient’s RN that the Unit RN has arrived for the bedside report.

**Admission Transporter (ext. 7662), ED EMT, Radiology Transporter, Inpatient Unit Aide:**
- All represent resources available for transport of large, non-ambulatory patients
- Assist in transport of patient from ED to inpatient unit
- Return gurney and monitor to ED as needed.

**All Staff**
- Preliminary reports are sent via TeleTracking 24/7
- RTM messages are sent 24/7
- Patient transport does not occur from 6:30-7:15 (am and pm)

September, 2013
New ED Admission Process Initiated

A team of inpatient and ED nursing staff members has created and implemented a new hand-off process for patients admitted to the hospital from the Emergency Department. The new process was developed with two goals in mind: first, to improve patient satisfaction and safety by ensuring a face-to-face hand over of care from the ED nurse to the inpatient unit RN. Second, to reduce patient boarding in the ED (which is associated with negative outcomes such as increased cost and admission length of stay, decreased compliance with core measures and increased mortality rate in ICU admitted patients). Reducing ED boarding is expected to result in more patients being transported to Northridge Hospital by paramedics, allowing us to better serve the community.

A face-to-face handoff of care at the bedside places our commitment to patient safety and our nursing expertise in full view of the patient and family, who at the same time are given the opportunity to express their needs related to the hospital admission. There is a brief co-operative patient assessment that ensures that the patient is stable for transfer and that the inpatient unit assignment is appropriate given the patient’s condition.

A final benefit will be realized as ED and inpatient nursing staff work more cooperatively with each other. I was impressed when I heard about the results of this process from another facility, whose ED Nurse Manager stated that not only were their patient satisfaction scores are higher, but also that there was an "amazing change in relations between ED RNs and Floor RNs", resulting in “a very collegial relationship”.

In my brief role as facilitator, I’d like to thank Barb Payne, Interim CNE for her guidance, Performance Excellence Director Glorivic Fazon-Ruiz and all the nurse team members for working hard to develop a better way to care for our newly admitted patients.

Stephen Jones, MD,
ED Medical Director,