Supplementary Appendix: Huddle Implementation and Facilitation Tips

Detailed structure of morning inpatient huddle (mesosystem level):

- Starts promptly at 8 am, all attendees are welcomed by the Manager of Patient Services
- Manager of Patient Services reports on:
  - Overall inpatient census at 6 am
  - Overall inpatient and individual unit capacity using classification scheme:
    - <85% = green (plenty of capacity exists throughout system)
    - 85-90% = yellow (nearing capacity limits, delays in admissions and transfers may occur)
    - >90% = red (very close to capacity limits, delays in admissions and transfers are likely)
  - Emergency department volume to predict flow
  - Any code events, transfers from acute care to critical care, and unrecognized clinical deterioration events in last 24 hours
  - Prediction of patient flow for the day and any areas where delays in admissions and transfers may occur.
- Each inpatient unit charge nurse (n=19) reports on:
  - Current unit census
  - Predicted discharges, admissions, and transfers
  - Nurse staffing and staffing requests
  - High-risk patients as classified by:
    - “watcher” status: patients that nurses or physicians have a “gut feeling” that they are at high risk for clinical deterioration
    - Pediatric early warning score (PEWS) of ≥5 (score based on deviations from normal/expected in behaviour, cardiovascular, and respiratory domains)
    - Family concerns about patient safety
    - Communication concerns (usually with multiple medical teams) that may impact patient safety
    - High-risk therapies (therapies that are risky or unfamiliar to that unit)
  - High-risk situations for patient/family experience failures
    - Representative from family relations assists in focused discussion
- If no concerns are identified, report takes 15-30 seconds
- If concerns are identified, MPS and Safety Officer of Day question/coach charge nurse regarding:
  - Previous communication with physician team
  - Presence of clear plan
  - Comfort with plan
  - How and when MPS and Safety Officer of Day can assist with follow-up
- Adjourns between 8:15 and 8:30 am
- More complex patient safety concerns are discussed between charge nurse, MPS, and Safety Officer after the meeting
### Details of Huddle System

<table>
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<tr>
<th>Question</th>
<th>Structure</th>
<th>Implementation/Facilitation issues considerere</th>
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| **Microsystem (Unit)** | Who? | Varies somewhat by unit (types of patients, number of staff)  
• Led by charge nurse  
• Bedside nurses in attendance  
• Physician attendance varies | Led by charge nurse going off shift  
• Nursing and medical director attend periodically to coach and support  
• Working to increase physician participation |
| | What? | Structured discussion of:  
• Predicted admissions/ discharges  
• Nurse staffing needs  
• High-risk patients including watchers  
• Potential family experience issues | Tested and implemented after inpatient huddle when there was good understanding of data to monitor (e.g., watcher) and mechanism to escalate  
• Much of the data already integrated into electronic health record |
| | When? | Varies somewhat by unit  
• Nursing change of shift  
  • 7 am, 3 pm, 7 pm, 11 pm  
• 7 days per week  
• Always <10 minutes, usually 3-5 | Took advantage of existing structures around nursing change of shift  
• Important to keep brief and focused to ensure continued buy-in  
• Better integration with physicians still needed |
| | Where? | On unit | Semi-private space important for shared discussion |
| | Why? | Goals are to identify:  
• Unit risk level  
• High-risk patients that need monitoring/mitigation by charge nurse and physician team  
• Any high-risk patients/situations that need to be escalated to inpatient huddle | Clear mechanism to escalate through inpatient huddle needs to be established so that value of identifying high-risk patients is clear  
• Measures are in place to identify outcomes such as unrecognized clinical deterioration and delayed discharges |
| **Mesosystem (Inpatient)** | Who? | Co-led by Manager of Patient Services (MPS, nurse manager of inpatient) and Safety Officer of the Day (SOD, senior attending pediatrician)  
• Attended by charge nurse from each inpatient unit  
• Also attended by Protective Services, Family Relations, Social work manager, Equipment supervisor, ED manager | Coached and facilitated by senior clinicians  
• Requires continuous group and individual coaching  
• Peer coaching/modeling allowed less experienced charge nurses to learn from more experienced in collaborative setting |
| | What? | Each charge nurse presents:  
• Number of patients on unit, predicted admissions, discharges, and transfers  
• Nurse staffing  
• Any high-risk-patients  
• Risk for experience issues  
• Structured discussion of high-risk patients regarding plan and follow-up led by MPS/SOD | Structured paper data collection forms completed by charge nurses before huddle  
• Data placed on screen in front of room in real-time through Microsoft Excel®  
• Two years after start high-risk patients identified through separate patient list in electronic health record |
| | When? | Three times daily: | Initial focus was to build infrastructure and |
| Where? | Conference room near inpatient units  
|        | - Environment aims to be comfortable but not too comfortable  
|        | - Data is displayed to keep everyone focused  
|        | - Side conversations kept to bare minimum  
|        | • Aimed to make environment collegial  
|        | • Use first names, welcome and orient new people  
|        | • Constructive feedback generalized in public, personal feedback private and after meeting |  
| Why? | Goals are to address in near real-time any:  
|      | - Escalated patient safety concerns  
|      | - Escalated patient/family experience concerns  
|      | - Patient flow concerns/hot spots  
|      | - Nurse staffing concerns  
|      | - Predictions for risk in any of the above domains in next 8 hours  
|      | • Huddle aims were clearly tied to organization’s strategic priorities around safety, patient/family experience, and flow  
|      | • Positive feedback and coaching were delivered in real-time  
|      | • Able to coach on how to make predictions even when it is often not comfortable in face of uncertainty |  
| Macrosystem (Daily Operations Brief) | Who? | Co-Led by Nurse or administrative senior leader and Safety Officer of the Day administrator of the day  
|      | - Mesosystem and department leaders report out  
|      | - Project manager attends and manages logistics and follow-up  
|      | • CEO set expectation for attendance and participation  
|      | • CEO attends periodically  
|      | • Expectation clear department leader attends or delegates if necessary |  
|      | What? | Leaders report out on:  
|      | - Unexpected events of the previous 24 hours  
|      | - Any predicted issues/threats of next 24 hours  
|      | - Resolution/follow-up to issues of the previous 24-48 hours  
|      | • Each mesosystem/department has developed huddles to prepare for Daily Operations Brief daily  
|      | • Significant coaching and feedback required to make leaders effective on prediction  
|      | • Trust developed over time to discuss failures openly |  
|      | When? | Once daily at 8:35 am  
|      | - 7 days/week  
|      | - Always <23 minutes, 90% < 17 minutes  
|      | • Crucial to start on time  
|      | • Follow-up immediately when individual misses call. This occurs rarely |  
|      | Where? | Conference room near inpatient unit with call-in number  
|      | - Most leaders call in  
|      | • In person preferred, but campus is too large.  
|      | • Crucial to have and use effective technology |  
|      | Why? | Goals are to each day:  
|      | - Predict and plan for big issues of the day  
|      | - Facilitate cross-discipline (across “silos”) problem-solving for issues at intersection of departments  
|      | - Share learnings from unanticipated events between mesosystems/departments  
|      | • Key driver to establish high reliability culture  
|      | • Establishes expectation leaders are aware of real-time failures and are continuously anticipating potential threats  
|      | • Establishes expectation of rapid problem resolution and follow-up |