Leveraging the Implementation of an Automated **Scoring System (MPEWS) to Earlier Identify Clinical Deterioration of Acute Care Patients**

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Background

Previous system - manual scoring

- Bedside RN would manually click check boxes for:
 - Historical and baseline factors as documented
 - Most recent vital signs documented

• EHR change led to manual scoring challenges

 Initial MPEWS build in new EHR lacked the ability to only display the VS parameters for the patient's particular age Implementation of pre-built Pediatric Deterioration Score • To replace MPEWS build in the new EHR • To remove delay related to manual scoring

Challenges with Prior Systems

Previous system - manual scoring

- Manual scoring was often delayed in busy patient assignments leading to delays in real time notification of surveillance scoring
- EHR change led to manual scoring challenges
 - All reference ranges were displayed making scoring challenging to complete accurately and timely
- This led to many delays in proactive surveillance Implementation of pre-built Pediatric Deterioration Score • Pre-built score lacked ability for customization of thresholds for our patient population

Definitions

- **PDS:** Pediatric Deterioration Score
- **RISK team: Recognized Illness Severity in** Kids team
 - 24/7 acute care decompensation
 - surveillance program
 - Staffed by ICU trained RNs
- **RRT**: Rapid Response Team
- **Rescue:** Initiation of critical care support* within 2 hours of transfer to the ICU Organization's unique definition

New System

- Fully automated Modified Pediatric Early Warning Score (MPEWS)
 - Applied the automated scoring programming from PDS to MPEWS built specifically for our patient population
 - It triggers a BPA in EPIC to alert bedside RN and a text message to RISK RN of potentially concerning patients and updates, recalculating scores every 15 minutes and as new information is charted

New System Benefits

Remove delays in manual scoring

- Care team members document their various assessment data and the score is extrapolated automatically
- RN no longer has to manually search through provider notes, documented assessment fields, and vital signs in order to complete manual scoring
- Proactive surveillance to recognize and alert risk for deterioration sooner
 - Once red MPEWS scoring criteria is met, a Best Practice Advisory (BPA) triggers as well as a text message sent to the RISK RN for immediate evaluation and follow up within 15 minutes
 - Once yellow MPEWS scoring criteria is met, a BPA triggers in the EHR to alert bedside RN and primary care team of the change in patient's documented status, further evaluation to be completed within 2 hours





Yellow MPEWS alarm indicates increased risk for **1** patient for every **20** alarms will need a transfer to the ICU in the next 24 hours



New System Alert Process





will need a transfer to the ICU in the next 24 hours



Education

- Education provided to acute care nurses, providers, and RISK RNs via:
 - In person presentations at staff meetings
 - Online learning module
 - Standardized education emails
 - on-1 education
 - At the elbow support during go-live

Implementation

- Systematically rolled out unit by unit
 - At the elbow support available
- Continuous contact with key stakeholders and build team through completion of roll out
 - Upstaffed RISK team initial 48 hours
 - Daily check ins by build team for 72 hours
 - Weekly check ins by build team for 1 month
- As needed intervention when system issues were escalated

Data





Summary of Data

- Data Groupings
 - Data grouped by corresponding quarters to break out non-viral and viral seasons
 - Historically, the volume of patient days is higher during viral seasons
- Evaluations
 - Post implementation, there was a noted increase in metrics of evaluations, across all months
- Rapid Response

 - Post implementation, there was a slight decrease in the rate of RRTs, across all months
- Rescues
 - Post implementation, there was a noted decrease in the rate of rescues, across all months

Next Steps

• Evaluate new system challenges

- Educate staff on importance of accurate charting
- Consider adjusting score interval refresh times
- Review scoring thresholds

More Information



Contact the Presenters

