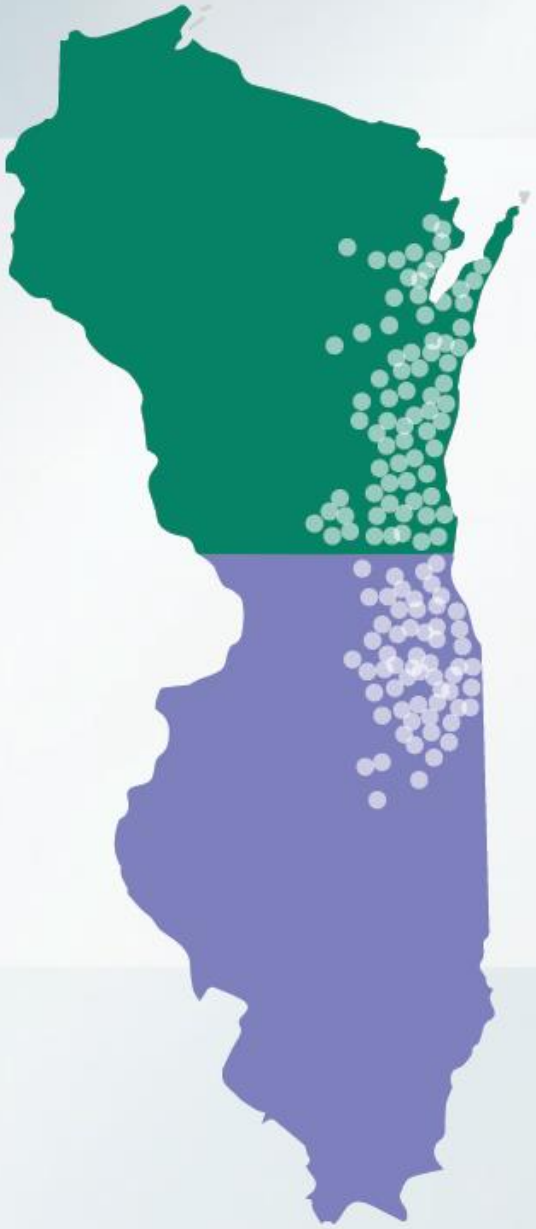

Reactive to Proactive: The Evolution of the Rapid Response Nurse

Northwest Chicago Area Chapter- AACN

January 11, 2020 | Jennifer Caldwell, BSN, RN, CCRN, TNCC
Jisha Joseph, BSN, RN-BC, CCRN

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Rapid Response Team

- RRTs are expert clinicians who provide additional care for patients on acute care units who are experiencing unexpected, sudden changes in their conditions. (Arashin KA, 2010).

- RRT is comprised of a Physician, a Critical Care RN & a Respiratory therapist, who work together focusing on strategies to prevent avoidable patient progression to cardiopulmonary arrest.

History of RRT within Advocate Aurora Lutheran General Hospital

When did it start

What initiated the team

Who comprised the team

How were team members selected

How did the team function

The Origins of Rapid Response at AALGH

2004

In 2004, the Institute for Healthcare Improvement (IHI) initiated the 100,000 lives campaign.

- Comprised of 6 initiatives. The creation and implementation of a hospital wide Rapid Response Team (RRT) was one of the 6 initiatives.

2005

Advocate Aurora Lutheran General Hospital implemented the Adult Rapid Response team on August 1, 2005.

- OB and pediatric RRT were initiated on October 1, 2005.

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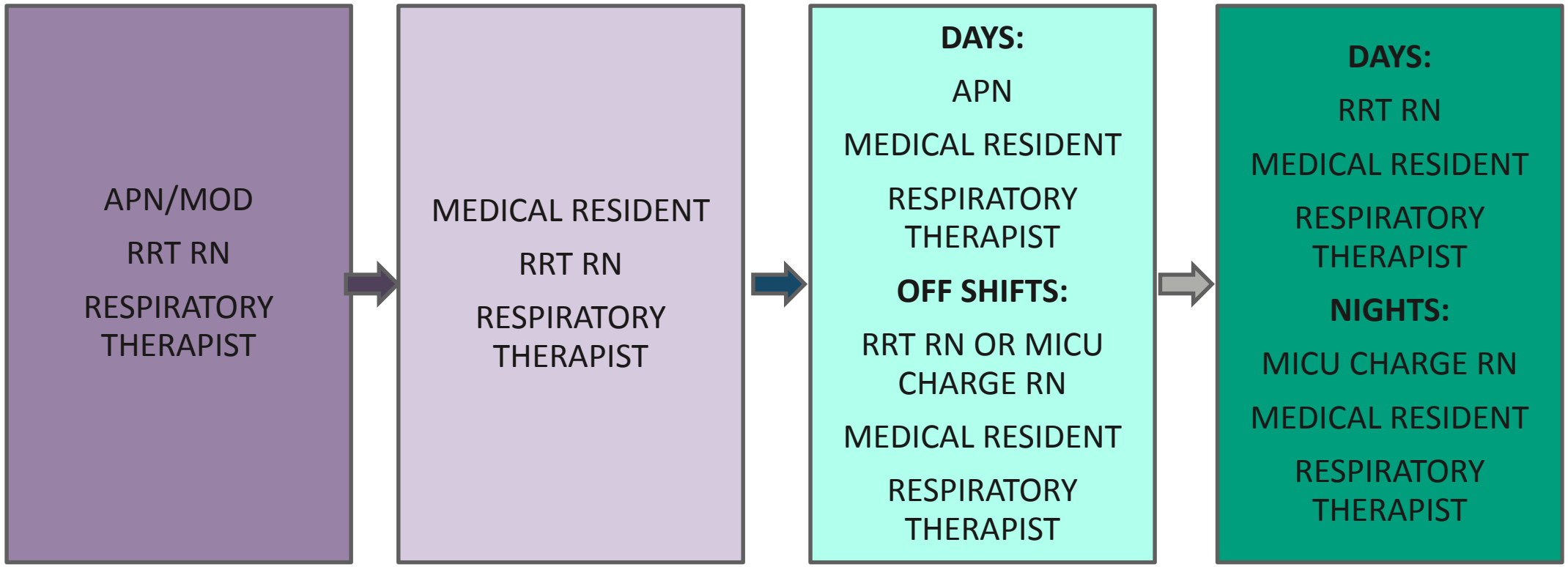
Progression of RRT throughout the years



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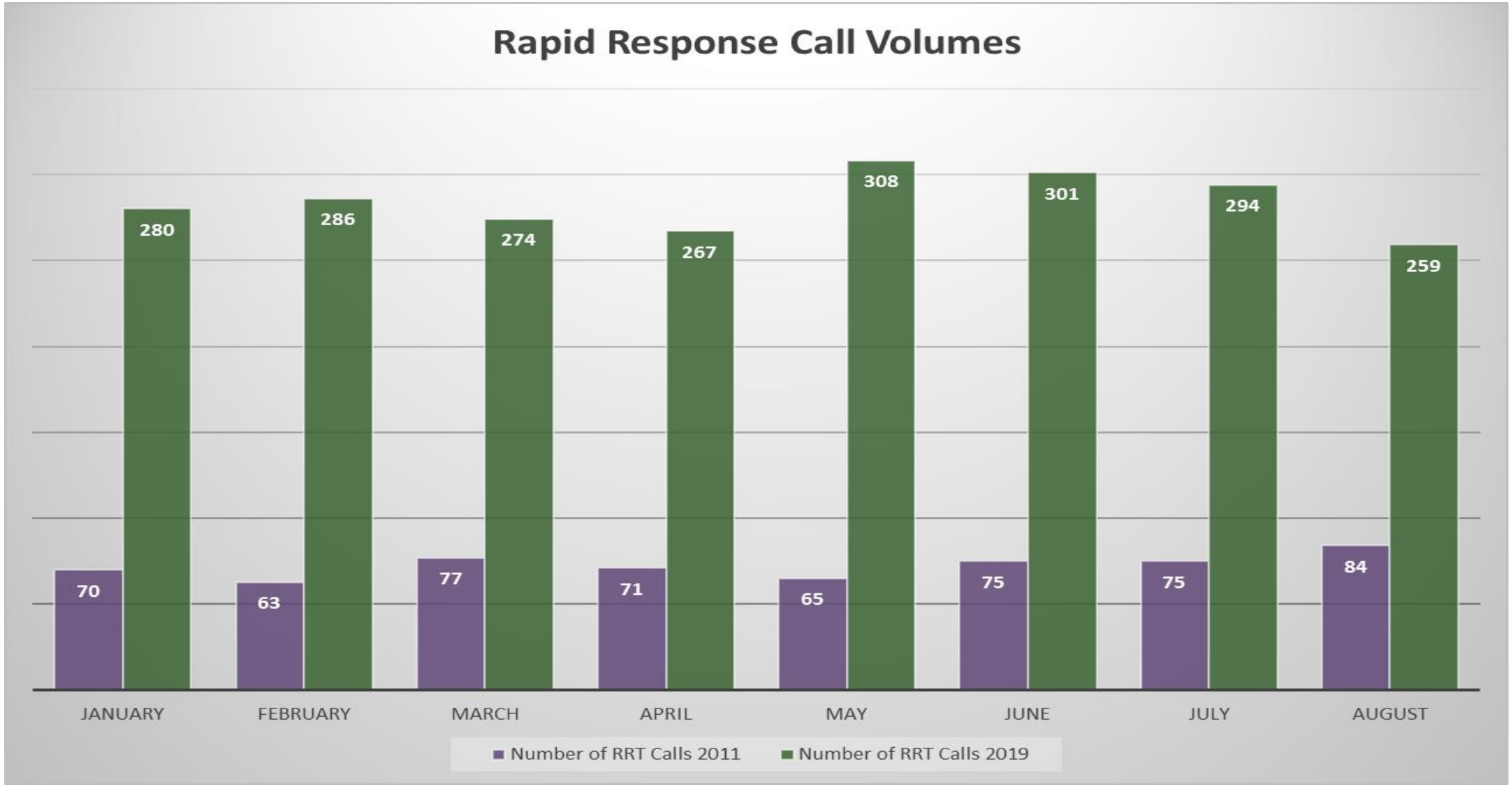
Rapid Response Team at LGH Today

- Team members of the RAPID RESPONSE TEAM
  - RRT RN
  - MOD (Medical Officer On Duty) who responds to RRT calls 1700-0700 M-F and 24/7 Saturday/Sunday and is available on call M-F 0700-1700
  - Attending Physicians M-F 0700-1700
  - Respiratory therapist
  - Nursing supervisor

- ***Unlike traditional "code teams," the purpose of RRT is to identify and treat patients before the patients' condition deteriorates to the point that cardiopulmonary resuscitation is needed. (Scott & Elliot, 2009)***


Rapid Response Call Volumes
280
286
274
267
308
301
294
259
70
63
77
71
65
75
75
84
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
Number of RRT Calls 2011
Number of RRT Calls 2019

RRT RN COVERAGE

Since August 2018 ,

at LGH, designated RRT Nurses

(with no patient assignment) are assigned to cover all shifts. All RRT nurses are CCRN certified.

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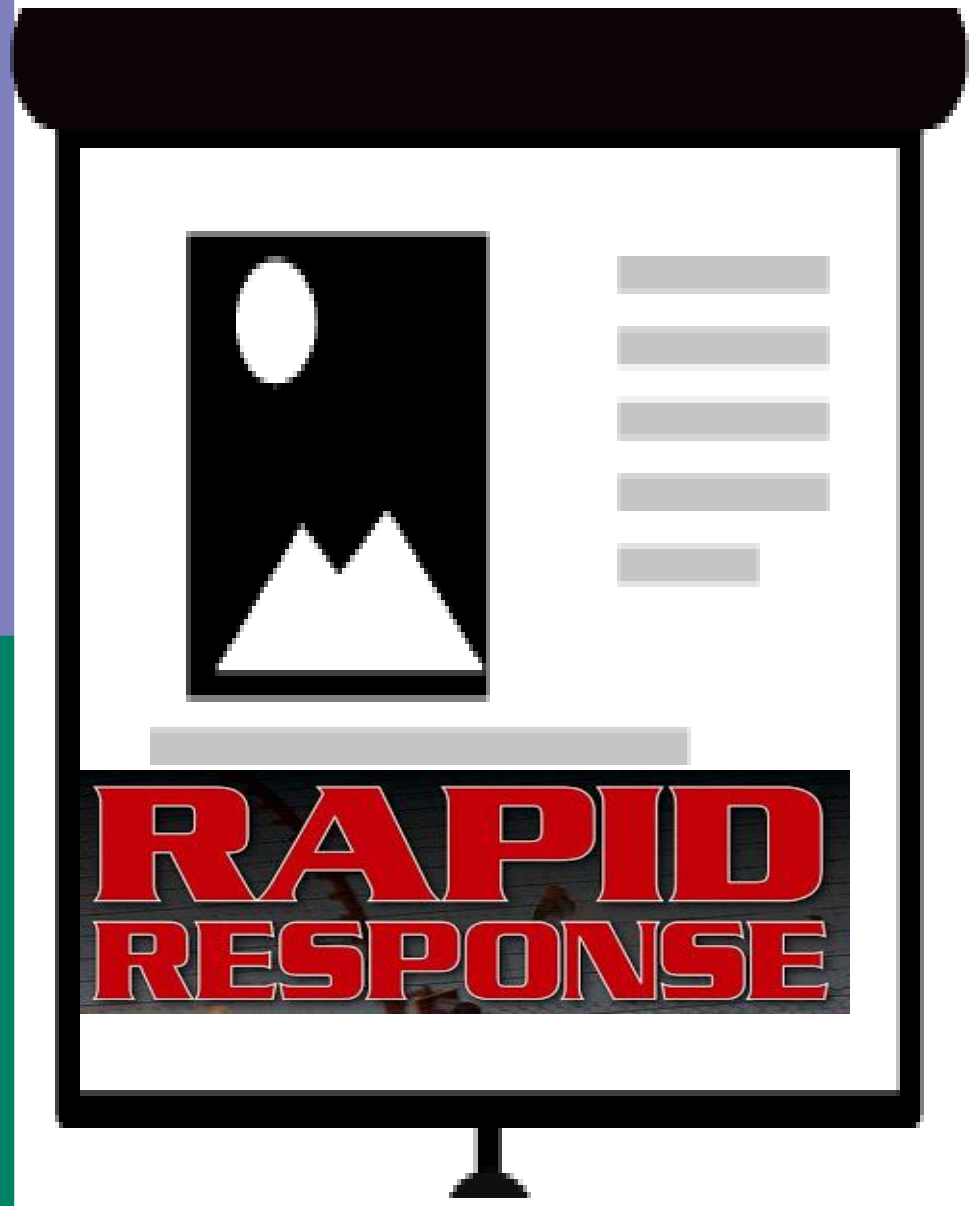

RRT RN: “What we do? Why we do? How we do?”

This presentation lays out the planning, implementation, and evaluation process used for the successful implementation of an RRT RN at Advocate Lutheran General Hospital & the efficacy of such implementation in reducing the number of code events .

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2018-2019 INITIATIVES FOR RRT RN ROLES/ RESPONSIBILITIES

- SEPSIS ALERT MANAGEMENT
- SMALL BORE FEEDING TUBE INSERTION
- HOSPITAL WIDE ROUNDING
- STROKE ALERTS
- TARGET TEMPERATURE MANAGEMENT
- IV INSERTIONS
- CARDIAC AND RESPIRATORY ARREST INTERVENTIONS
- I/O INSERTIONS
- MEWS ROUNDING
- ICU TRANSFER OUT FOLLOW UP

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SEPSIS ALERT RESPONSE

RRT RN respond to SEPSIS alerts throughout the hospital and check for

Compliance in sepsis bundle/Initiation of appropriate treatment plan

- IV Fluid administration and documentation.
- Appropriate cultures ordered/drawn prior to antibiotic administration
- Antibiotics within 3 hours
- Lactate follow-up

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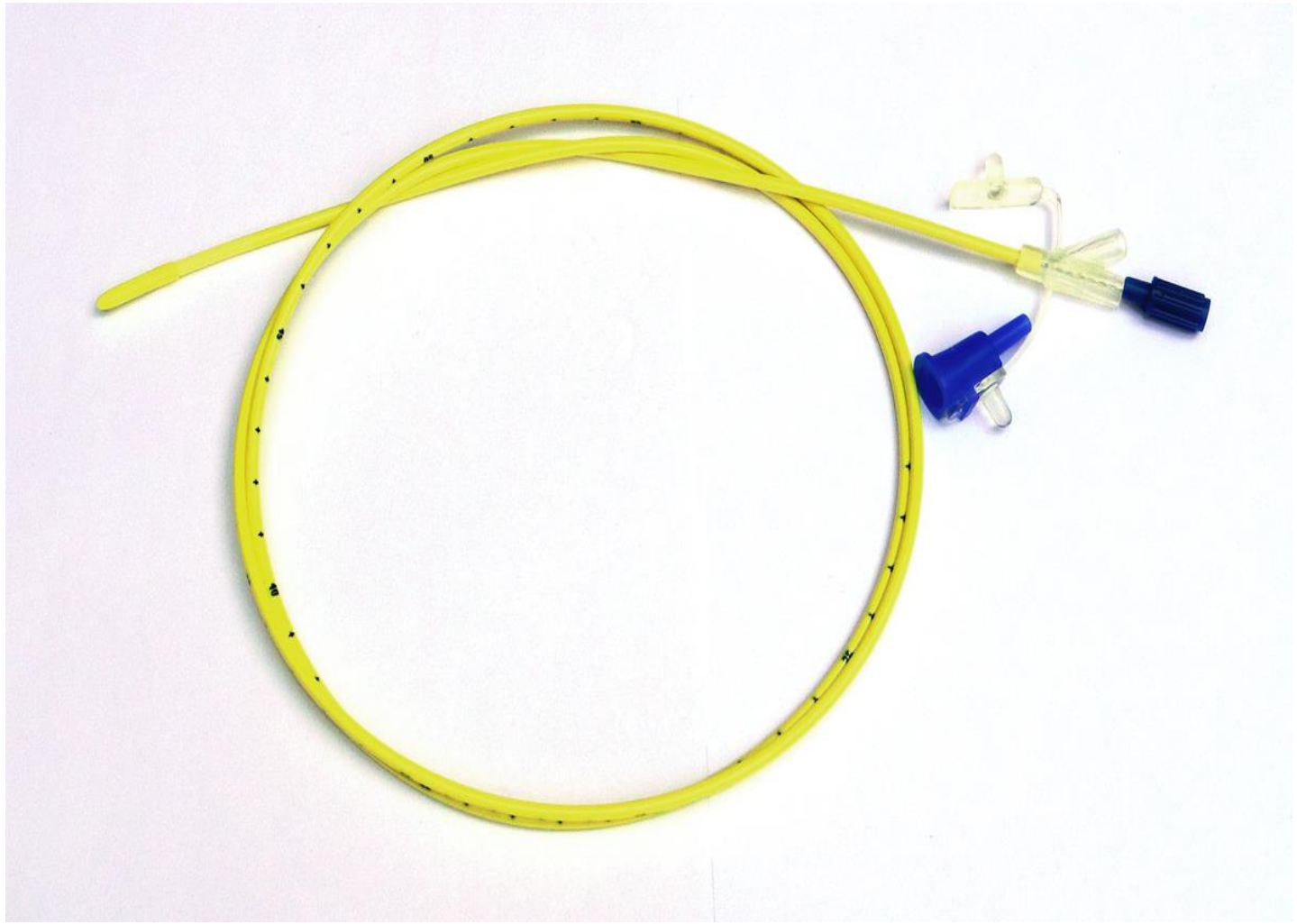

SMALL BORE FEEDING TUBE INSERTION

- Due to the rising number of complications related to small bore feeding tube insertion throughout the hospital- this task was assigned to RRT nurses who are critical care trained and superusers for feeding tube insertion

RESULTS:

A significant drop in the number of documented safety events related to small bore feeding tube insertions.

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HOSPITAL WIDE ROUNDING –INPATIENT UNITS

- RRT RN performs hospital wide rounds to every inpatient unit every shift with focus on–
- Collaboration with Unit charge nurse.
- Discussion about concerning patients.
- MEWS triggers.
- Charge RN resource for concerns.
- IV resource (after all available resources are utilized.)

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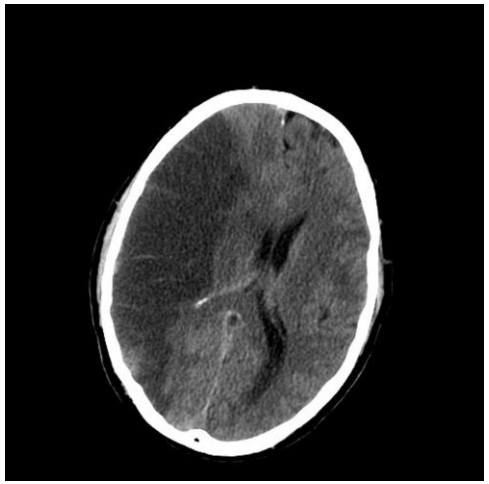
STROKE ALERTS



- RRT RN responds to all inpatient and in ancillary departments with the exception of Emergency Department
- Facilitate TeleStroke
- Assess NIHSS
- Coordinate timely completion of appropriate imaging in compliance with the Stroke Bundle
- Collaborate with appropriate physicians to determine plan of care and patient placement
- Coordinate TPA administration if appropriate
  - Given 4 inpatients TPA within the last year during stroke alerts

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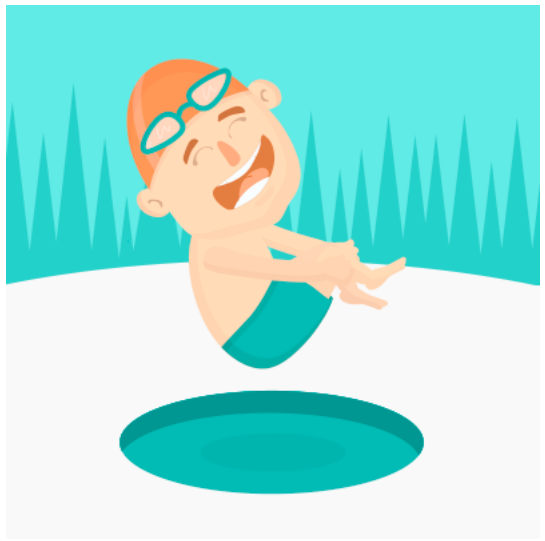
TARGET TEMPERATURE MANAGEMENT (CODE COOL)

- RRT RN responds to all Code Cool Team Alerts
- Coordinates with team members to determine eligibility of patient
- Helps initiate TTM protocol



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IV INSERTIONS

- Resource for patients with limited IV access when IV team is unavailable

"This needle made him faint. Maybe he would've been more comfortable if I had put some ink in it."

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CARDIAC AND RESPIRATORY ARREST INTERVENTIONS

- RRT RN responds to all cardiac and respiratory arrest events
- Assist code team with roles and responsibilities per ACLS guidelines
- Insert I/O when appropriate
- If ROSC is achieved, coordinates with Code Team members to determine if patient qualifies for Target Temperature Management and patient placement
- Helps facilitate transfer of patient appropriate unit

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THE MEWS PROJECT

- Beginning October 22nd 2018, MEWS Project was put into effect under the leadership & guidance of :
  - ***Roseanne Niese (Director of Emergency, Critical Care & Behavioral Services),***
  - ***Brenda Deane (Clinical Manager Of MCICU & Rapid Response Team)***
- MEWS project comprised of Rapid Response team(RRT) nurses monitoring MEWS scores of all inpatient EMR except SICU/MICU/NCCU/PACU & ER.

WHAT IS MEWS?

- *The Modified Early Warning Score (MEWS) is a tool designed to identify patients with declining conditions.*

- *It was originally designed for nurses but can be used by any healthcare professional with adequate training.*

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MODIFIED EARLY WARNING SCORE

(table by C.P Subbe et al., 2001)

SCORE	3	2	1	0	1	2	3
RESPIRATORY RATE		<8		9-14	15-20	21-29	>29
HEART RATE		<40	41-50	51-100	101-110	111-129	>129
SYSTOLIC BP	<70	71-80	81-100	101-199		>200	
URINE OUTPUT	NIL	<0.5					
TEMPERATURE		<35	35.1-36	36.1-38	38.1-38.5	>38.6	
NEUROLOGICAL STATUS				ALERT	Reacting to voice	Reacting to pain	Unresponsive

It was found that majority of patients with a MEWS score of 5 or greater required immediate intervention by activation of the rapid response team or qualified for transfer to higher level of care.

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WHY MEWS?

Because:

Modified Early Warning Score is a strong predictor of outcome and may be used as a monitoring tool for potentially avoidable deaths and unplanned admissions to ICU *(Zografakis et al. (2018)*

Adverse events in hospitalized patients are preceded by signs of clinical deterioration in majority of the patients. Changes in vital parameters such as pulse rate, respiratory rate, and level of consciousness are often considered as early predictors of events such as cardiac arrest, death and unplanned intensive care unit (ICU) admissions.

According to *Smith et al,(2013)* The effectiveness of track-and-trigger systems is dependent on appropriate implementation, compliance and clinical response.

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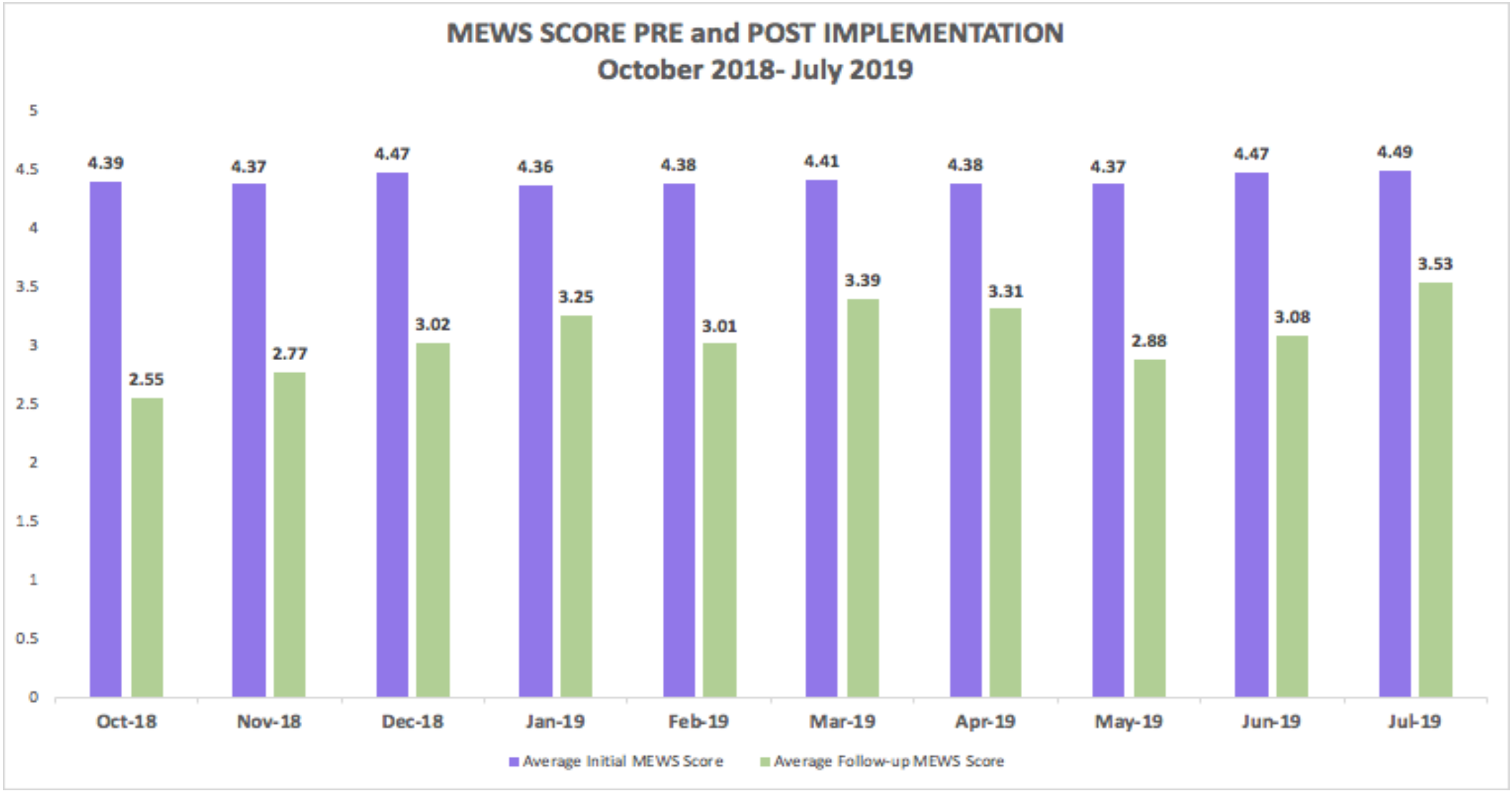
APPROACH- MEWS FOCUSED ROUNDING

- *Assessment of MEWS score is performed by the RRT RN on all inpatient units in the hospital except for SICU, NCCU & MICU.*
- *MEWS dashboard review q8 hours (0900, 1600 & 0100).*
- *Patients with MEWS 4 and above require face to face assessment of the patient by RRT RN after discussion with primary RN and Charge RN of the unit.*
- *Collaboration with MD for appropriate intervention.*
- *Rapid Response Team activation when appropriate.*


MEWS
MONITORING Q8
Hrs
INTERVENTION
OR
CALL RRT WHEN
NEEDED
RRT RN FACE-TO
FACE ASSESSMENT
IF MEWS >4



*Lower MEWS score is better

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SAMPLE CASE STUDY

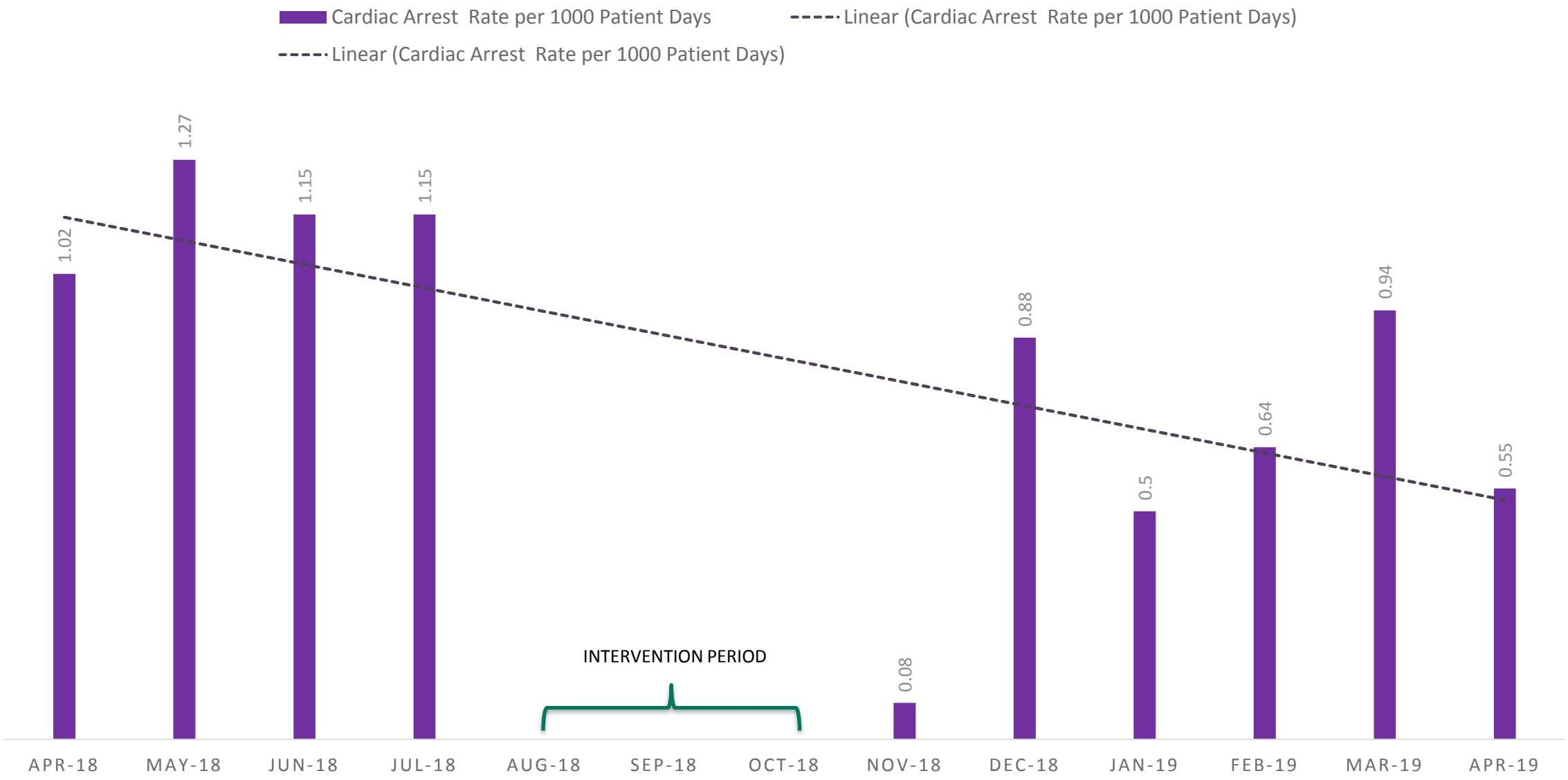
The subject for the case study was a male patient in his late 50's admitted in the medical telemetry unit with pneumonia as main diagnosis on admission. The patient was also manifesting symptoms from alcohol withdrawal which was being managed with benzodiazepines.

Pt triggered a MEWS of 5 (the trigger was due to HR >110, RR >25, MENTAL STATUS – lethargic). Per primary RN, the covering intern and senior resident –the pt's status had remained unchanged since last 24 hours. On RRT RN's assessment- it was found that the pt was barely arousable with very congestive lung sounds on auscultation- NT suction performed with copious secretions obtained. After brief discussion and RRT RN's suggestion a Stat ABG was sent which revealed hypercarbic respiratory failure with PCO2> 100. Pt required immediate transfer to the intensive care unit followed by intubation/mechanical vent support.

Per the above case scenario- the fall backs were –the nurse had received sign off from previous shift that the pt's condition has been the same. The resident physicians had assessed the pt twice within the last 2 hours were under the impression that the pt was temporarily sedated due to benzo drugs.

If not intervened at the right time – pt would have declined in his condition causing possible respiratory arrest. Such conditions require the face-to face assessment of a critical care trained personnel.

CARDIAC ARREST RATE PER 1000 PATIENT DAYS



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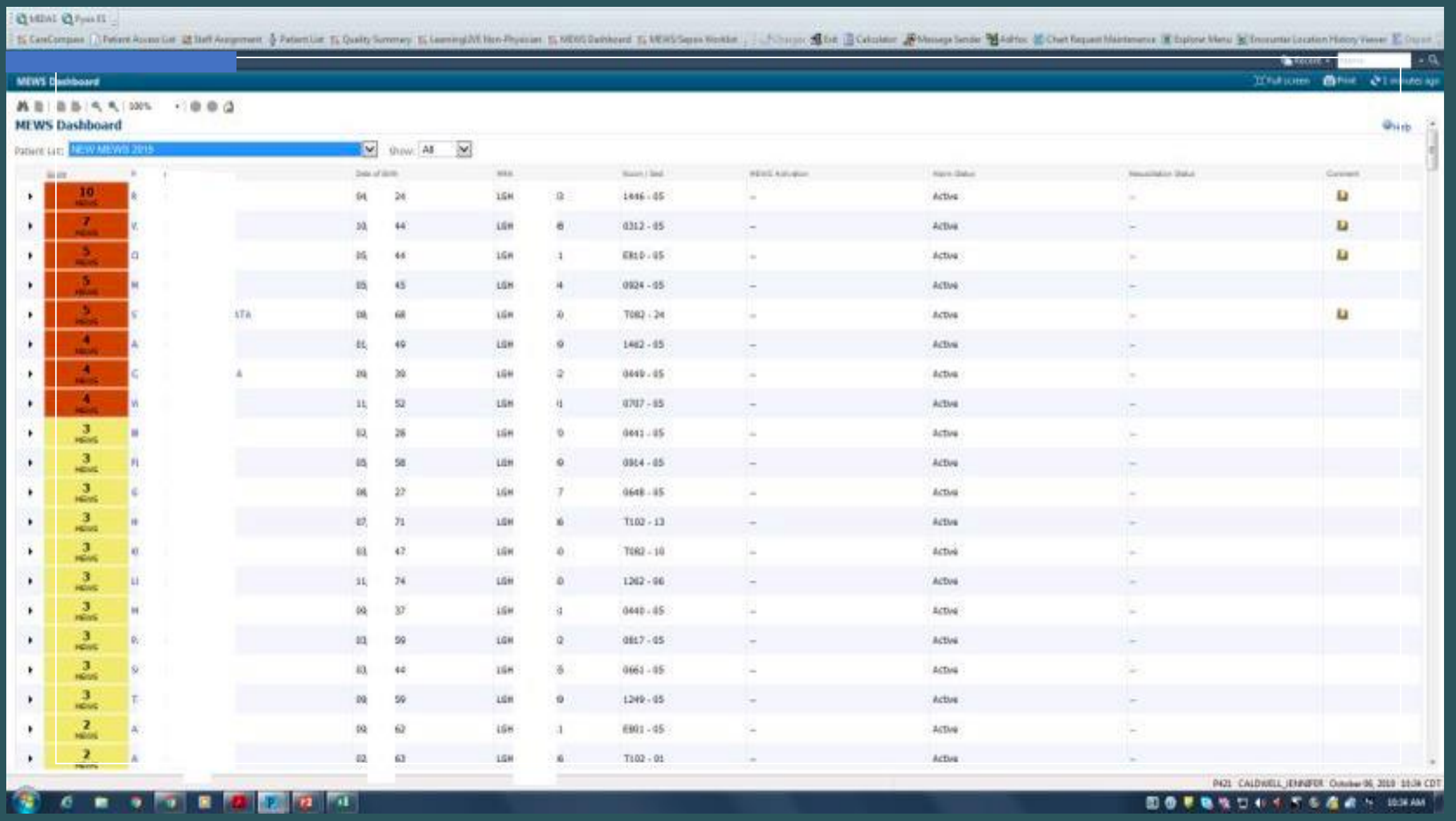
MEWS Dashboard
MEWS Dashboard
Patient List: NEW MEWS 2015
Show: All
Score
Date of Birth
Age
Sex
Room / Bed
MEWS Activation
Alarm Status
Resuscitation Status
Comment
10 MEWS
7 MEWS
5 MEWS
5 MEWS
5 MEWS
4 MEWS
4 MEWS
4 MEWS
3 MEWS
3 MEWS
3 MEWS
3 MEWS
3 MEWS
3 MEWS
3 MEWS
3 MEWS
3 MEWS
3 MEWS
2 MEWS
2 MEWS
LGH
Active
1446 - 05
0312 - 05
E810 - 05
0924 - 05
T082 - 24
1462 - 05
0649 - 05
0707 - 05
0441 - 05
0814 - 05
0648 - 05
T102 - 13
T082 - 10
1262 - 06
0440 - 05
0817 - 05
0661 - 05
1249 - 05
E801 - 05
T102 - 01

FINDINGS

353 PATIENTS WERE ROUNDED ON MONTHLY USING THE MEWS MODEL

THERE WAS A 32% POSITIVE CHANGE IN PATIENT CONDITION OR RETURN TO BASELINE

CODE BLUE EVENTS PER 1000 DAYS OUTSIDE OF CRITICAL CARE DECREASED FROM 0.97 TO 0.72 OVER 6 MONTHS.

RRT CALLS INCREASED FROM 23.7 TO 28.7 OVER 1000 PATIENT DAYS

SEPSIS BUNDLE COMPLIANCE INCREASED FROM 56.8% TO 67%

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CONCLUSIONS

- A SIGNIFICANT DECREASE IN ADULT CODE EVENTS. (20 % AS COMPARED TO 6 MONTHS PRIOR TO PROJECT INITIATION)
- SEPSIS TREATMENT INITIATED ON PATIENTS PRIOR TO DETERIORATION TO SEPTIC SHOCK AND COMPLIANCE WITH SEPSIS BUNDLE
- IMPROVEMENT IN COLLABORATION BETWEEN CHARGE RN , PRIMARY RN AND RRT RN FOCUSING ON PATIENT SAFETY.
- INCREASED CONFIDENCE IN THE RECOGNITION OF DETERIORATING PATIENTS AND MANAGEMENT OF SUCH SITUATIONS AMONG NON-ICU UNIT RNS.
- IMPROVED RELATIONSHIPS BETWEEN RRT RN AND MD

ICU TRANSFER -FOLLOW UPS

- A follow up on all ICU patients that have recently transferred out of the unit is conducted by RRT nurse within the next 24 hours.
- The goal of this follow up is focused on preventing re-admission to the ICU by early intervention of the arising complications in patient status.
- Facilitates easier transition for both patient and family from ICU setting to non-critical care unit

PreAdmitTracking

Daily Transfers

10/06/2019 10:41
e13077

TeleTracking

The Daily Transfers Report provides details and summaries of Transfers, Canceled Transfers, or both, for a single, user-selected date. Details are grouped by Transfer Origin or Destination, per user selection.

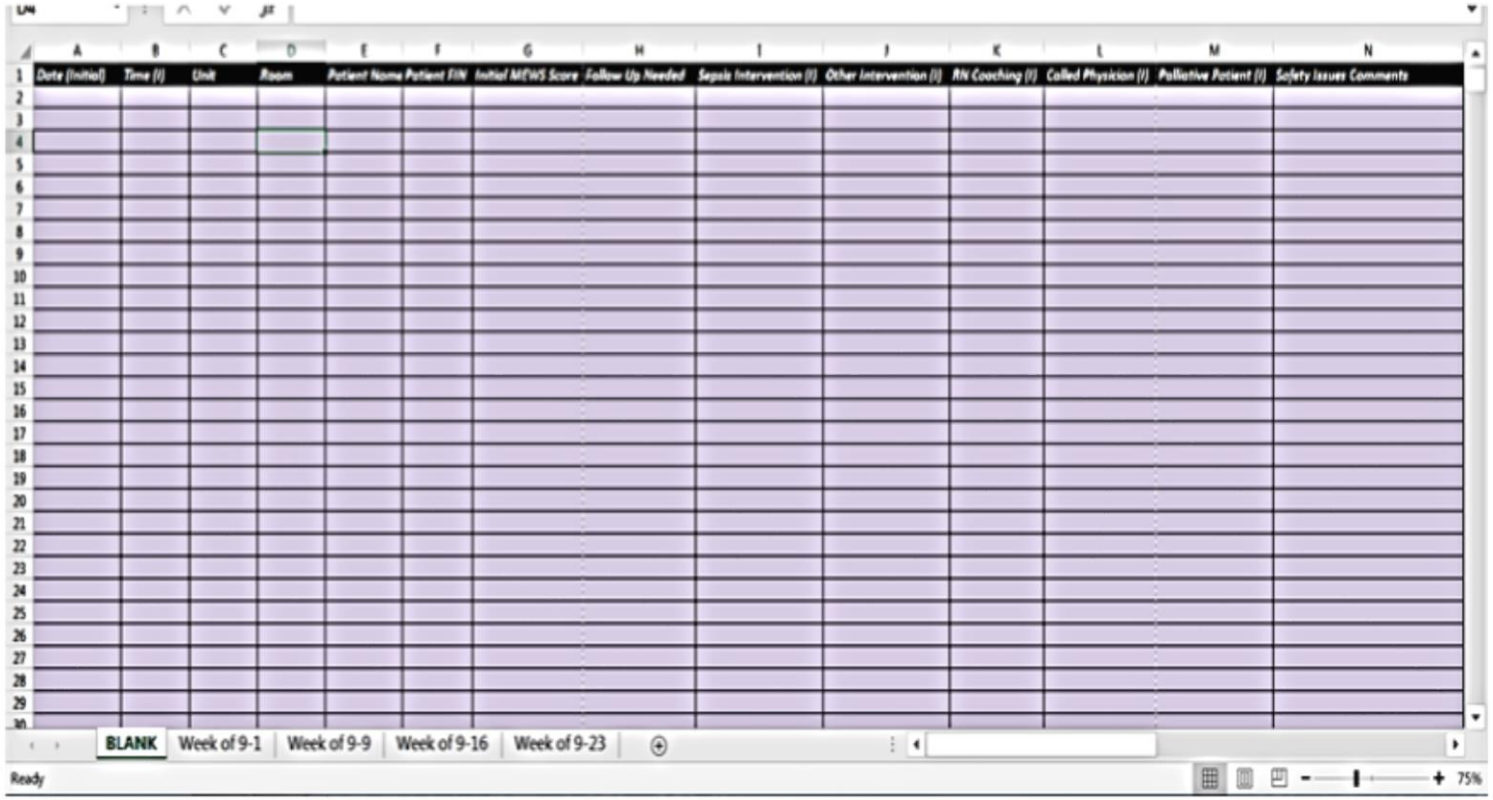
Report Parameters:
Database: Production; Campus: Lutheran General Hospital; Origin Unit: L G H-4 T I N T, L G H- M I C I; Destination Unit: All units associated with the selected campus; Date: 10/05/2019; Included transfers: Completed; Group By: Origin Unit;

Patient	Patient Type	Admit Type	Service	Sex	Age	Dest. Unit	Orig. Bed	Dest. Bed	Trans. Time	Admitting Physician
Origin: LGH-4T INT	**Completed: 1**					**Canceled: 0**				
[redacted]	Inpatient		MEDICAL	M	55	LGH-9C	INTV-03	0912-05	5:25 PM	KON NJEWEL, IRIS C (LGH36833)
urinary retention, acute renal failure										
Origin: LGH-MICI	**Completed: 5**					**Canceled: 0**				
[redacted]	Inpatient		MEDICAL	F	46	LGH-6T/6E	MICI-16	T082-00	4:21 PM	GALVEZ, ANGEL (LGH39003)
Invasive Ductal Carcinoma in Situ										
[redacted]	Inpatient		MEDICAL	M	63	LGH-4W/CE	MICI-23	0402-05	5:00 PM	KOO, KEVIN (LGH35999)
NSTEMI with CHF exacerbation										
[redacted]	Inpatient		MEDICAL	F	66	LGH-4W/CE	MICI-11	0417-05	1:44 AM	MONTGOMERY, VICTORIA M (LGH36456)
Sepsis										
[redacted]	Inpatient		SURGICAL	M	47	LGH-7T	MICI-22	T072-16	8:56 PM	LOU, JADARIGA (LGH35418)
HHS										
[redacted]	Inpatient		MEDICAL	F	44	LGH-14W	MICI-16	1464-05	10:33 PM	HAI, KHOLA A (LGH35509)
benzodiazepine overdose										
Overall Totals	**Completed: 6**					**Canceled: 0**				

DOCUMENTATION

- RRT Data is entered into patient's chart under Patient Care section→Early interventions→ Rapid Response Section
- Excel spreadsheet documentation which includes Initial MEWS and follow up MEWS (a follow up is conducted on qualifying patients by Next shift RRT RN).
- ICU transfer out –follow ups are documented In an excel spreadsheet.
- RRT calls/Stroke Alerts/ Adult Cardiac and respiratory arrests
  require SBAR progress note and documentation on RRT log sheet.
- IV/IO insertions documented within EMR

MEWS ROUNDING



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Date (Initial)	Time (I)	Unit	Room	Patient Name	Patient FIN	Initial MEWS Score	Follow Up Needed	Sepsis Intervention (I)	Other Intervention (I)	RN Coaching (I)	Called Physician (I)	Palliative Patient (I)	Safety Issues Comments
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
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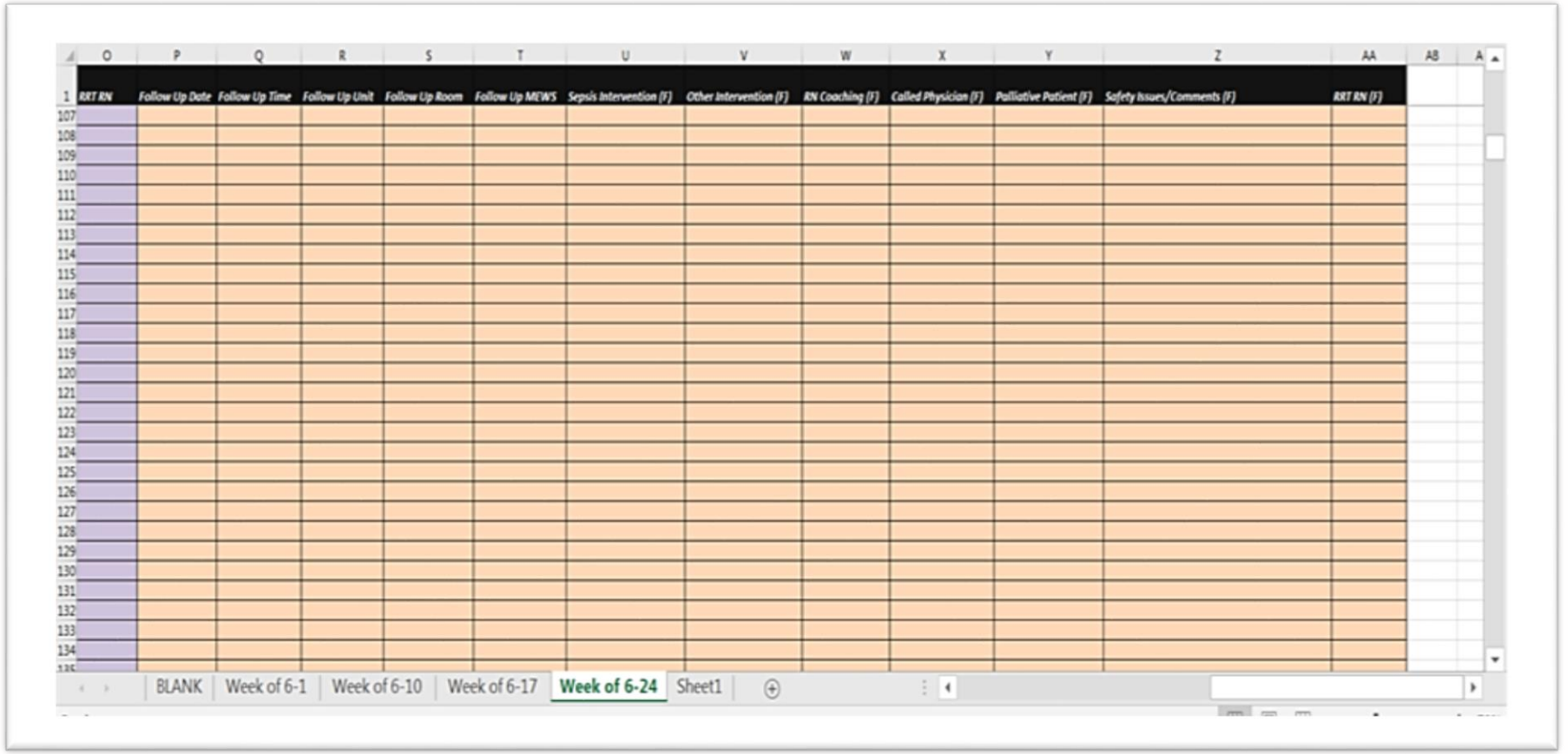
25														
26														
27														
28														
29														

BLANK | Week of 9-1 | Week of 9-9 | Week of 9-16 | Week of 9-23

Ready 75%

MEWS FOLLOW UPS



	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	A
1	RRT RN	Follow Up Date	Follow Up Time	Follow Up Unit	Follow Up Room	Follow Up MEWS	Sepsis Intervention (F)	Other Intervention (F)	RN Coaching (F)	Called Physician (F)	Palliative Patient (F)	Safety Issues/Comments (F)	RRT RN (F)		
107															
108															
109															
110															
111															
112															
113															
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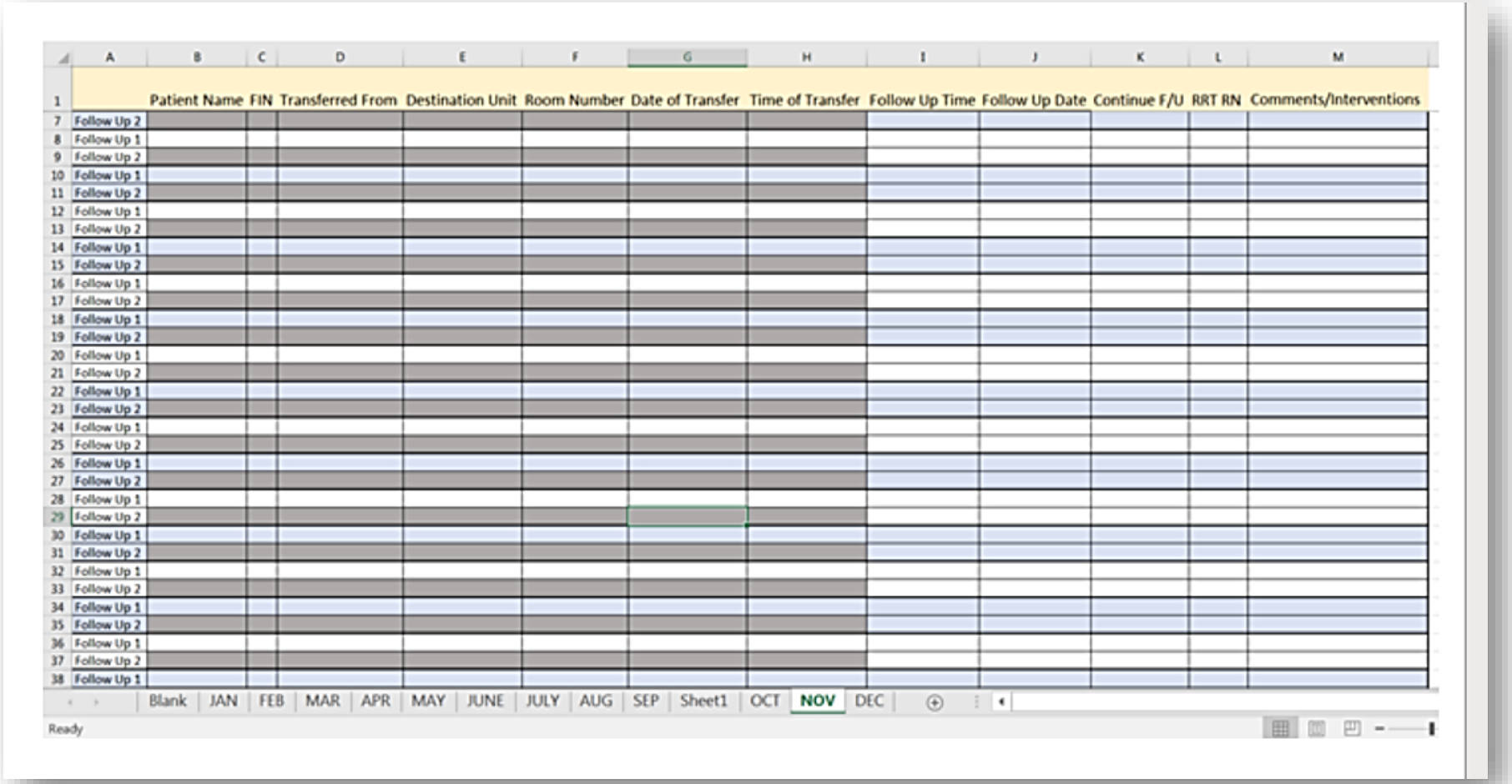
ICU FOLLOW UPS



	A	B	C	D	E	F	G	H	I	J	K	L	M
1		Patient Name	FIN	Transferred From	Destination Unit	Room Number	Date of Transfer	Time of Transfer	Follow Up Time	Follow Up Date	Continue F/U	RRT RN	Comments/Interventions
7	Follow Up 2												
8	Follow Up 1												
9	Follow Up 2												
10	Follow Up 1												
11	Follow Up 2												
12	Follow Up 1												
13	Follow Up 2												
14	Follow Up 1												
15	Follow Up 2												
16	Follow Up 1												
17	Follow Up 2												
18	Follow Up 1												
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32	Follow Up 1												
33	Follow Up 2												
34	Follow Up 1												
35	Follow Up 2												
36	Follow Up 1												
37	Follow Up 2												
38	Follow Up 1												

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Ready

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What is next for RRT?

- Transition to a similar tool with EPIC
- Follow up on patients transferred out from Oncology to inpatient Rehab (6W)
- Automatic sepsis screening for all RRT calls
- Development of an algorithm for multiple RRT calls including overhead paging of all adult RRT calls.
- Inclusion of the pharmacist to the RRT paging system for faster dispensing of medications needed during the RRT.

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- ***Smith, Gary & R Prytherch, David & Meredith, Paul & Schmidt, Paul & Featherstone, Peter. (2013)****. The ability of the National Early Warning Score (NEWS) to discriminate patients at risk of early cardiac arrest, unanticipated intensive care unit admission, and death. Resuscitation. 84. 10.1016/j.resuscitation.2012.12.016.*

QUESTIONS