

City of Nashua CQI Review



DEC 2013

CQI Review

The information contained in this report is confidential in nature and may contain personal and or patient information that is subject to Federal Privacy laws.

DEFINITIONS

ITEM	Definition
ROSC	Return of Spontaneous Circulation: Patients who have return of cardiac activity producing circulation of blood flow.
RAPS	Rapid Acute Physiology Score: Measurement used to predict hospital mortality. Scores range from 0 – 16. Patients with a score of 16 have a 97% hospital mortality rate whereas a score of 0 has a 4% hospital mortality rate.
EtCo2	End Title Carbon Dioxide: ETCO2 is the partial pressure or maximal concentration of carbon dioxide (CO2) at the end of an exhaled breath, which is expressed as a percentage of CO2 or mmHg. The normal values are 5% to 6% CO2, which is equivalent to 35-45 mmHg. CO2 reflects cardiac output (CO) and pulmonary blood flow as the gas is transported by the venous system to the right side of the heart and then pumped to the lungs by the right ventricles.
SpO2	Saturation of Peripheral Oxygen: The percentage of the blood's hemoglobin that is transporting oxygen.

PAIN AND SUFFERING

	Patients Transported	Pain Decrease	RAPS Improvement	2 or More Pain Scales Documented	Pain Treated with Medication	Pain Treated with Procedure
AMR National Average Oct 2013	37,750	6.6%	25.6%	17.6%	17.9%	4.8%
NH April 2013	305	4.3%	27.6%	9.2%	17.9%	1.6%
NH May 2013	281	4.6%	31.8%	7.8%	18.8%	3.1%
NH June 2013	269	4.5%	32.3%	7.8%	18.8%	5.8%
NH July 2013	252	3.6%	33.3%	10.7%	40.5%	7.1%
NH August 2013	251	3.2%	30.1%	7.6%	21.1%	2.9%
NH September 2013	240	5.8%	27.5%	11.7%	18.2%	6.8%
NH October 2013	222	4.5%	32.1%	16.7%	26.4%	4.1%

Comments

AMR New Hampshire remains in line with AMR national average. Efforts to encourage employees to report multiple pain scales in the patient care record have resulted in a 5% increase in this category. However efforts to improve documentation of non-medication interventions i.e. (Icepack, positioning) have not been as successful. Efforts going forward will include engaging labor leaders to increase employee buy in.

Definitions

Inclusion Criteria: Primary Impressions of Gastrointestinal: Nausea, Gastrointestinal: Vomiting, Neuro: Headache, Other: Headache, Other :Migraine, Includes the word "Pain"

Pain Treated with Medication: Based on percentage of patients transported with an initial pain scale greater than 0 who received one of the following: Meperidine, Ketamine, Toradol, Ketorolac, Nitrous Oxide, Vicodin, Morphine, Dilaudid, Fentanyl, Hydromorphone, Zofran, Phenergan, Reglan, Droperidol, Demerol

Pain Treated with Procedure: Based on percentage of patients transported with an initial pain scale greater than 0 who received one of the following: Heat Therapy, Ice Pack for Pain, Swelling, Trauma, Fracture, Injury, or Comfort, Splinting, Burn Care

RAPS Improvement: Rapid Acute Physiology Score; Measurement used to predict hospital mortality. Scores range from 0 – 16. Patients with a score of 16 have a 97% hospital mortality rate whereas a score of 0 has a 4% hospital mortality rate.

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CARDIAC ARREST

	Total	ROSC	Defibrillation PTA	First Rhythm Shockable	Median Time to Defibrillation (minutes)	Documentation of EtCO2 Twice	Field Termination of Efforts
AMR National Average Oct 2013	3,873	20.1%	10.4%	18.8%	11.0	46.7%	36.7%
NH April 2013	27	18.5%	3.7%	29.6%	21	44.4%	33.3%
NH May 2013	31	22.5%	16.1%	19.3%	16	6.4%	70.9%
NH June 2013	42	28.6%	19.1%	23.6%	9	30.9%	71.4%
NH July 2013	39	28.2%	15.38%	23.1%	9	38.4%	43.5%
NH August 2013	41	29.3%	19.5%	26.8%	8.5	46.3%	43.9%
NH September 2013	32	18.75%	12.5%	21.8%	9.5	59.3%	50.0%
NH October 2013	32	9.38%	9.38%	18.75%	10.5	50.0%	56.2%

Comments

9.38% of Cardiac Arrest patients had return of spontaneous circulation on arrival at the Emergency Department. 56.2% of the cases resulted in field termination of resuscitation efforts due to no response to treatment within 20 minutes as outlined in NH EMS protocol.

Note: Not included in this report was a November case of Cardiac Arrest where the patient had ROSC and after a brief hospital admission was discharged home with zero neurological deficits.

Definitions

Inclusion Criteria: Emergency Calls, Patients with CARES Data Completed, Only Includes Attempted Resuscitation

ROSC: Percentage of Cardiac Arrest Patients with "Return of Spontaneous Circulation" upon arrival at the Emergency Department.

Defibrillation PTA: Percentage of Cardiac Arrest Patients receiving defibrillation prior to EMS (Transporting Unit) arrival i.e bystander with AED or other Fire / Police first responders.

First Rhythm Shockable: Percentage of cardiac arrest patients with an initial rhythm of v-tach, v-fib or as determined by AED.

Median Time to Defibrillation: Median time from 911 call to defibrillation in minutes.

Documentation of EtCO2 Twice: Percentage of cardiac arrest patients with two or more EtCO2 readings documented.

Field Termination of Efforts: Percentage of cardiac arrest patients who receive a field termination of efforts.

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VENTILATION

	Total	Percent of Patients with Assisted Ventilations*	Percent of Patients with EtCo2 Improvement	Two or More EtCo2 Readings Reported	RAPS Score Improvement	Advanced Airway Success Rate
AMR National Average Oct 2013	3,121	1.63	4.18%	36.19%	17.4%	(112) 84.3%
NH April 2013	41	1.25%	2.70%	24.39%	26.83%	(5) 83.33%
NH May 2013	59	1.74%	0.0%	18.64%	20.34	(3) 33.33%
NH June 2013	54	1.67%	5.88%	22.22%	22.22%	(6) 100%
NH July 2013	46	1.48%	2.5%	32.6%	19.5%	(5) 100%
NH August 2013	41	1.35%	0.0%	19.5%	24.4%	(6) 75%
NH September 2013	49	1.70%	12.5%	40.8%	28.57%	(4) 100%
NH October 2013	40	1.31%	8.82%	35.0%	32.5%	(3) 66.67%

Comments

Patients that require assisted ventilations represent a small portion of the total population. October saw the most significant increase in RAPS score improvement. Four of these patients required the placement of an advanced airway with a success rate of 66%. Improvement objectives will be targeted toward the increase use of ETCO₂ monitoring with these patients.

Definitions

Inclusion Criteria: Cardiac Arrest Excluded. Patients that require assisted ventilations

***Percent of Patients with assisted ventilations:** Percentage of total patient volume (*All patient contacts*) that required assisted ventilations.

Percentage of Patients with EtCo₂ Improvement: Percentage of patients with assisted ventilation that have two or more EtCo₂ readings documented whose initial reading was less than 35 or greater than 45 and whose final reading was between 35 and 45.

Two or More EtCo₂ Reading Reported: Percentage of Patients where two or more EtCo₂ readings were documented.

RESPIRATORY

	Total	Percent of Patients with RAPS Improvement	Percent of Patients with SPO2 Improvement	Percent of Patients with EtCo2 Improvement
AMR National Average Oct 2013	12,097	41.7%	31.3%	1.6%
NH April 2013	150	47.06%	29.63%	2.05%
NH May 2013	301	8.27%	4.49%	0.00%
NH June 2013	217	14.71%	40.35%	0.93%
NH July 2013	90	44.0%	42.8%	2.25%
NH August 2013	89	43.8%	17.39%	1.15%
NH September 2013	80	51.85%	21.74%	2.70%
NH October 2013	106	42.65%	10.0%	3.88%

Comments

RAPS scores have increased and are ahead of national averages. In order to accurately report improvements in SPO2 and EtCo2 two or more readings are required. The action item for this category will be to improve documentation and recording of repeat SPO2 and EtCo2 readings.

Definitions

Inclusion Criteria: Patients having 1 of 60 possible Respiratory type primary impressions.

MAJOR TRAUMA

	Total	Average Scene Time	Scene Time <= 10 minutes	RAPS Improvement
AMR National Average Oct 2013	2,603	19.45%	22%	29%
NH April 2013	3	16.67	0%	0%
NH May 2013	16	19.94	0%	22.22%
NH June 2013	7	16.86	0%	50.0%
NH July 2013	6	16.83	0%	60.0%
NH August 2013	25	14.24	8.0%	77.27%
NH September 2013	10	30.2	33.0%	66.67%
NH October 2013	4	15.25	0%	33.3%

Comments

Average scene times decreased to the second lowest level in the reporting history. A scene time under 10 minutes is the platinum standard but is difficult to obtain when extrication is involved. Education will continue to stress the importance of decreasing scene times.

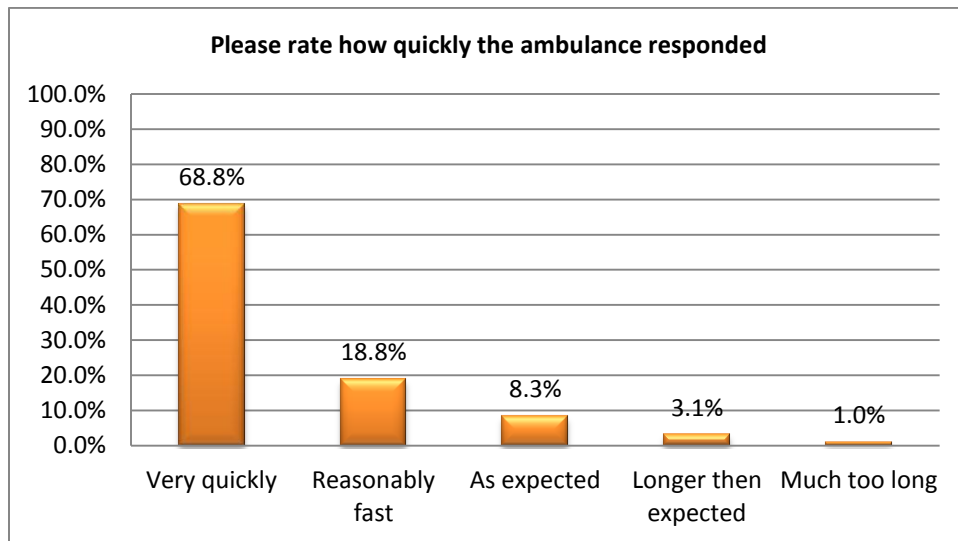
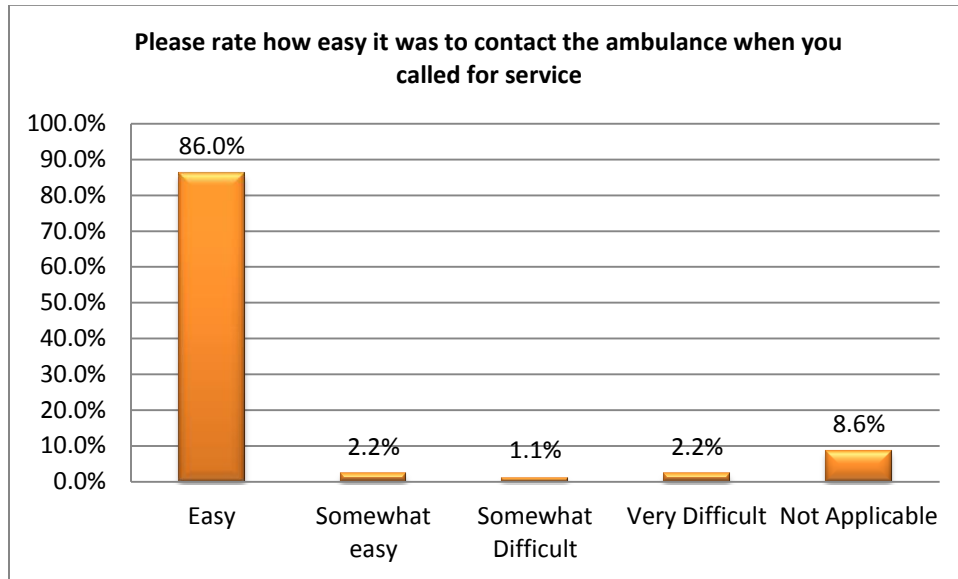
Definitions

Inclusion Criteria: Patients with one or more of the following, Major Trauma = True, Trauma Activation = True, Primary Impression = Traumatic Arrest, Trauma Criteria Documented

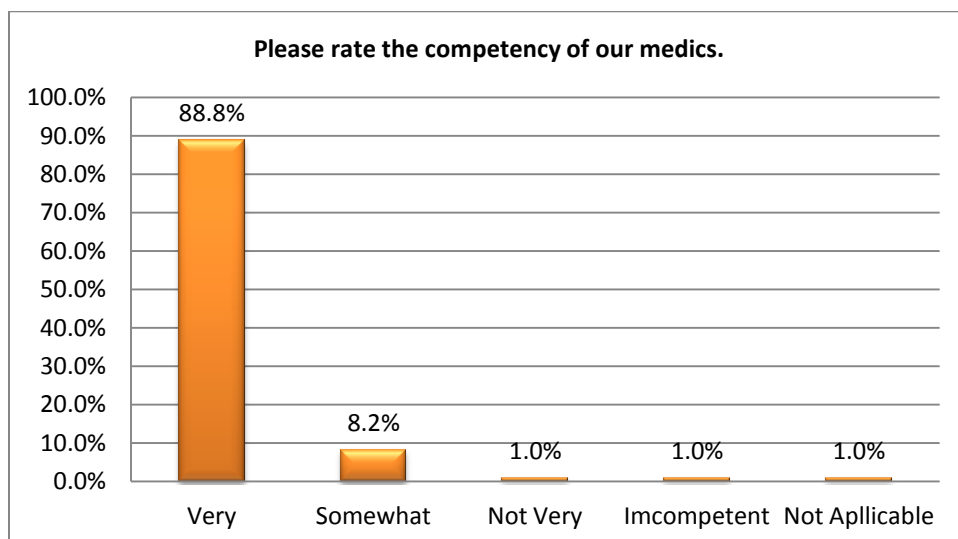
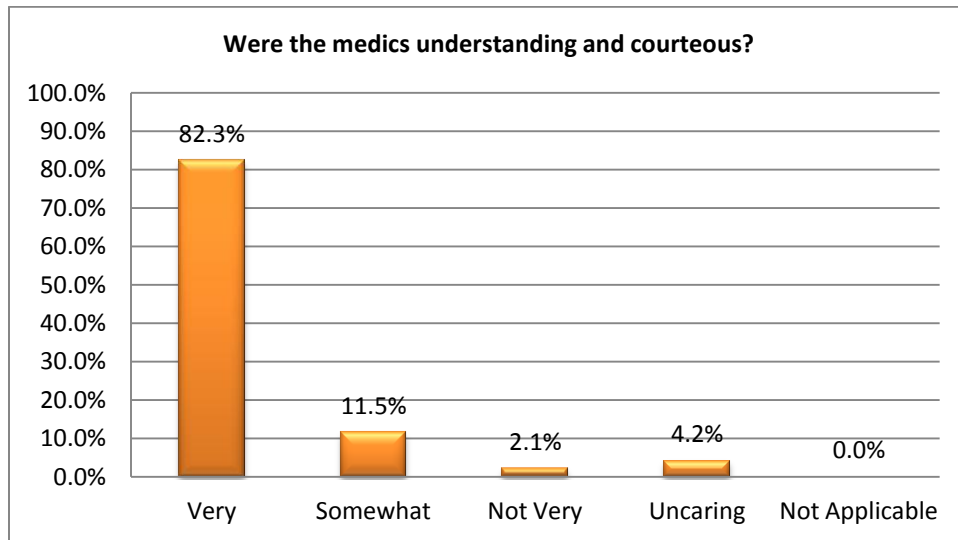
RAPS Improvement: Percentage of Patients with a RAPS Score > 0, which had an improvement.

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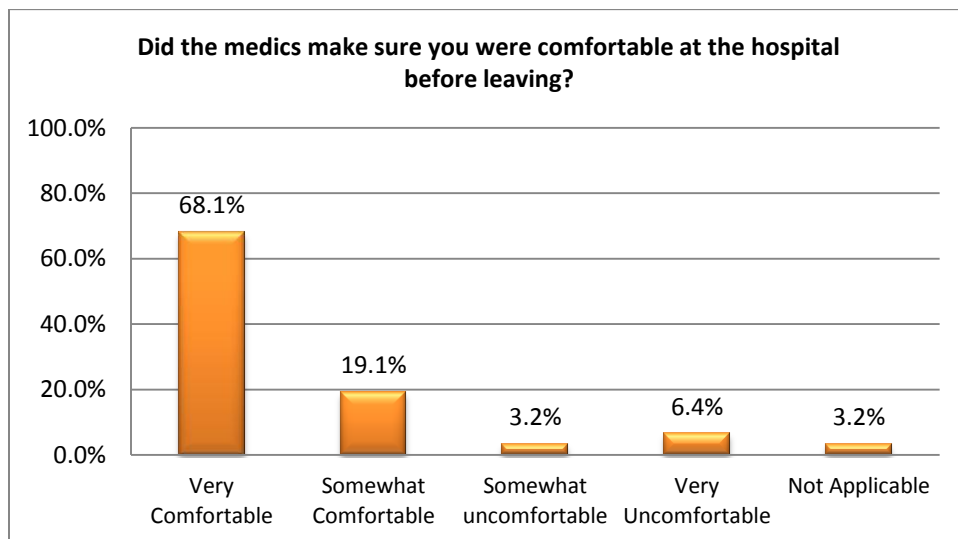
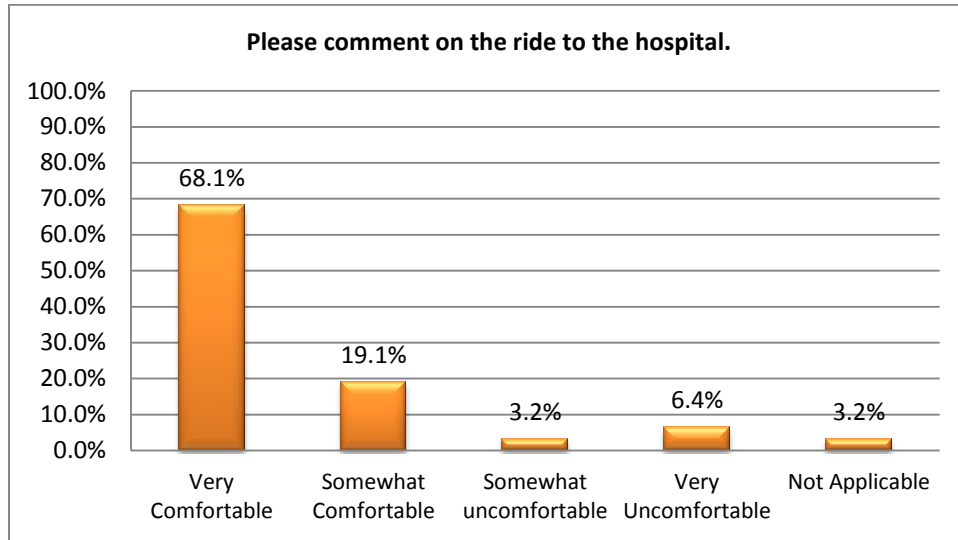
PATIENT SATISFACTION



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Comments

Period: November 1, 2012- October 31, 2013 n=103

Patient satisfaction remains high. The new survey tool has been created and tested and will begin full rollout with the December 2013 mailings.