



# The Impact of Online Medical Direction on Ambulance Transport of Patients Initially Refusing Medical Assistance

Eric Nigelberg, MS, NREMT-P • Kevin Pesce, EMT-P • Lincoln Cox, MD  
Henry C. Thode, Jr., PhD • Adam J. Singer, MD

Department of Emergency Medicine, Stony Brook University, Stony Brook, NY

## Background:

- Many patients refuse medical assistance from prehospital providers.
- Patients who refuse to be transported may be at risk of serious medical conditions.

## Objective:

- To evaluate the impact that online medical direction has on ambulance transport of hospital patients refusing medical aid (RMA)

## Methods:

### Study Design

- This was a retrospective descriptive analysis of the online Medical Control RMA database for Suffolk County, NY for the period 2007 to 2009

### Setting

- Suffolk County, New York
- Population 1.5 million
- 101 ambulance and fire companies which are predominately volunteer
- Medical Control at regional center

### Interventions

- The RMA process requires online medical direction contact for any high risk patient refusing medical aid.
- Prehospital care providers were also urged to contact medical direction for any patient refusing medical aid that, in the determination of the prehospital care provider, should be brought to the hospital even if the patient did not meet any high risk criteria.
- When indicated, physician spoke directly with prehospital provider, patient and family.
- Physician determined if patient was capable of making an informed decision about refusing treatment and / or transport and was aware of the risks of that decision.

### Outcomes / Measures

- Recommendations for transport
- Need for hospital admission
- ED diagnosis

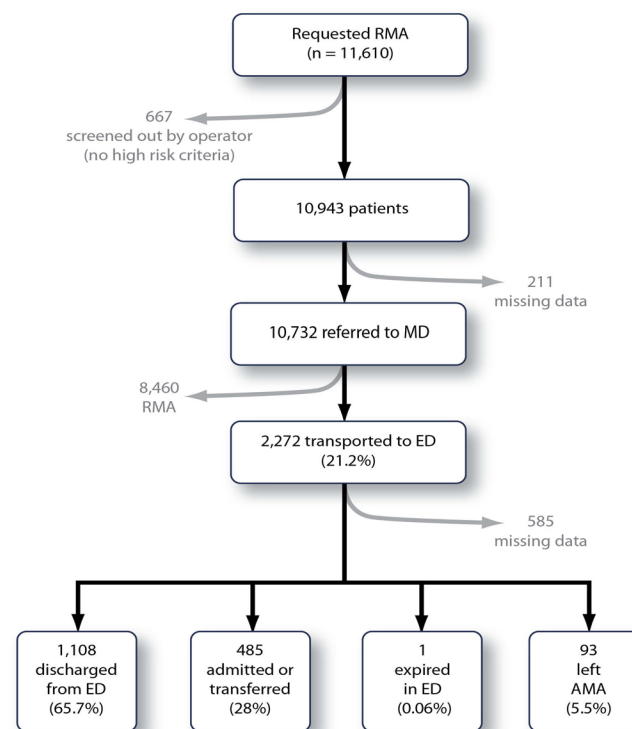
### Data Analysis

- Descriptive analysis was performed using means and proportions with 95% confidence intervals (95% CI)

### RMA High Risk Criteria

- An altered mental status or a suspected head injury
- Age less than 18 years, including situations where the legal guardian is on scene.
- Age greater than 70 years
- Neurological, cardiac, or respiratory symptoms
- A Glasgow Coma Score less than 15
- Abnormal vital signs
- Alcohol or illicit drug use
- Carbon monoxide exposure
- Attempted suicide

## Results:



- There were 10,732 patients who were referred to the physician over the study period.
- 2,272 (21.2%, 95% CI 20.4-22.0) of these patients were transported by ambulance to a hospital.
- 81.3% (95% CI 79.7-82.9) of these had high risk criteria, compared to 80.9% (95% CI 80.0-81.7) of those were not transported.
- Of the 2,272 patients who were transported to the hospital, ED discharge data was not available for 585.
- Of the remaining 1,687 cases, 1,108 were discharged from the ED, 485 (28.8%, 95% CI 26.2-31.0) were admitted or transferred, one died in the emergency department, and 93 left the ED AMA (Against Medical Advice).
- Reasons for admission included stroke, MI, intracerebral hemorrhage, CHF, and atrial fibrillation.

## Limitations:

- Retrospective review
- Single center and system
- Lack of hospital discharge diagnosis
- No follow up on patients refusing transport that stayed home
- Missing data

## Conclusions:

- Online medical direction reduced the rate of RMA's by approximately 20%
- One of four patients subsequently transported to a hospital were admitted suggesting the benefit of online medical control in cases of RMA.