# Improving EMS Data Quality: Massachusetts Paul Coverdell National Acute Stroke Program EMS Stroke Quality Improvement Collaborative Implementation of Stroke Variables in Data Reporting

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## INTRODUCTION

The Massachusetts Paul Coverdell National Acute Stroke Program *EMS Stroke Quality Improvement Collaborative* is working with Emergency Medical Service (EMS) agencies across the state to measure and improve care for patients with stroke, including the EMS to Emergency Department (ED) stroke pre-notification process. A standardized stroke alert policy was approved by the MA Medical Services Committee in August 2013. The role of EMS to notify hospitals when a potential stroke patient is transported requires effective communication from EMS to ED providers. Beginning in August 2014 Massachusetts implemented optional stroke variables into the Massachusetts Ambulance Trip Record Information System (MATRIS) to aid the pre-notification process. 285 or 88% of EMS agencies in MA reported data into MATRIS between August 2014 – June 2016.

## OBJECTIVE

To determine if EMS agencies involved in the Massachusetts Coverdell EMS Collaborative increased use of stroke variables in MATRIS

## METHODS

Data from MATRIS were analyzed to determine frequency of usage by EMS personnel in Massachusetts. Three variables - stroke alert hospital notified, time last known well, and symptoms resolved - were used for analysis. The percent of EMS stroke runs using the three variables was analyzed for the time period between 08/01/2014 – 06/01/2016. Chi-square analysis was used to determine statistically significant changes ($p<.05$).

## CONCLUSIONS

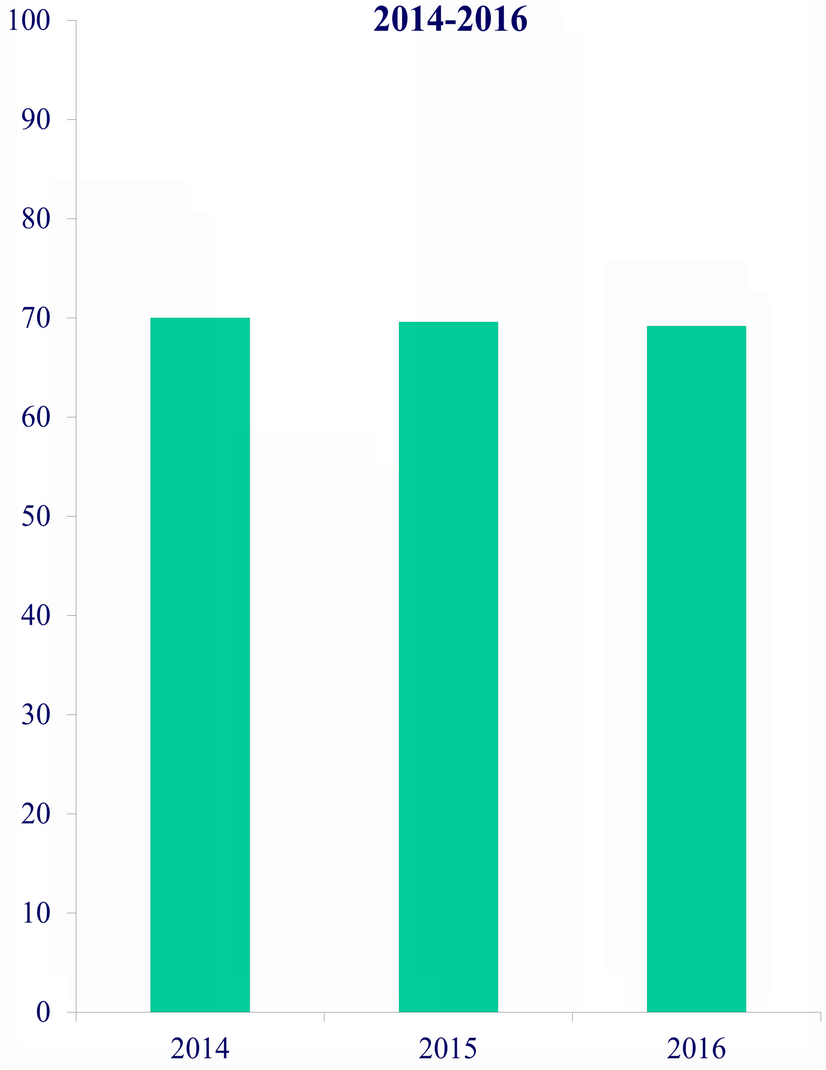
Having EMS agencies regularly record stroke variables prior to patient arrival can be very useful to ED as they prepare for the patient, allowing them to deliver care as quickly as possible. Consistent documentation of these variables may lead to reduced door -to- CT times in the ED which therefore may improve overall clinical outcomes. The percentage of EMS stroke runs using the variables has shown a significant increase between 2015 and 2016. We expect to see similar increases as more agencies become involved with the Coverdell *EMS Stroke Quality Improvement Collaborative.*

## RESULTS

For the 22 - month period studied, 16,173 stroke runs were reported in MATRIS; 3,301 were from agencies engaged in the Collaborative. The percent of stroke runs using the optional stroke variables increased for EMS agencies participating in the Collaborative. Comparison of variable usage by year showed a statistically significant increase between 2015 and 2016 as follows: Populated all 3 variables (17% vs. 32%, $p<.0001$),(Figure 1). Populated any variable (32% vs. 39% $p = 0.0005$).

**Figure 1: Proportion of EMS runs where all 3 stroke variables are populated 2014-2016**


**Figure 2: % Door to CT times <25 min 2014-2016**




## CONTACT INFORMATION

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