

Elimination of Emergency Department Ambulance Divert During the COVID-19 Pandemic Did Not Increase the Average Number of Ambulance Arrivals Per Day

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INNOVATIVE DESCRIPTION

During the COVID-19 pandemic, ambulance diversion reached critical levels. We hypothesized that eliminating ambulance diversion would not increase the average number of daily ambulance arrivals.

OBJECTIVE

To quantify the EMS and ED impact of eliminating ambulance diversion during the COVID-19 pandemic.

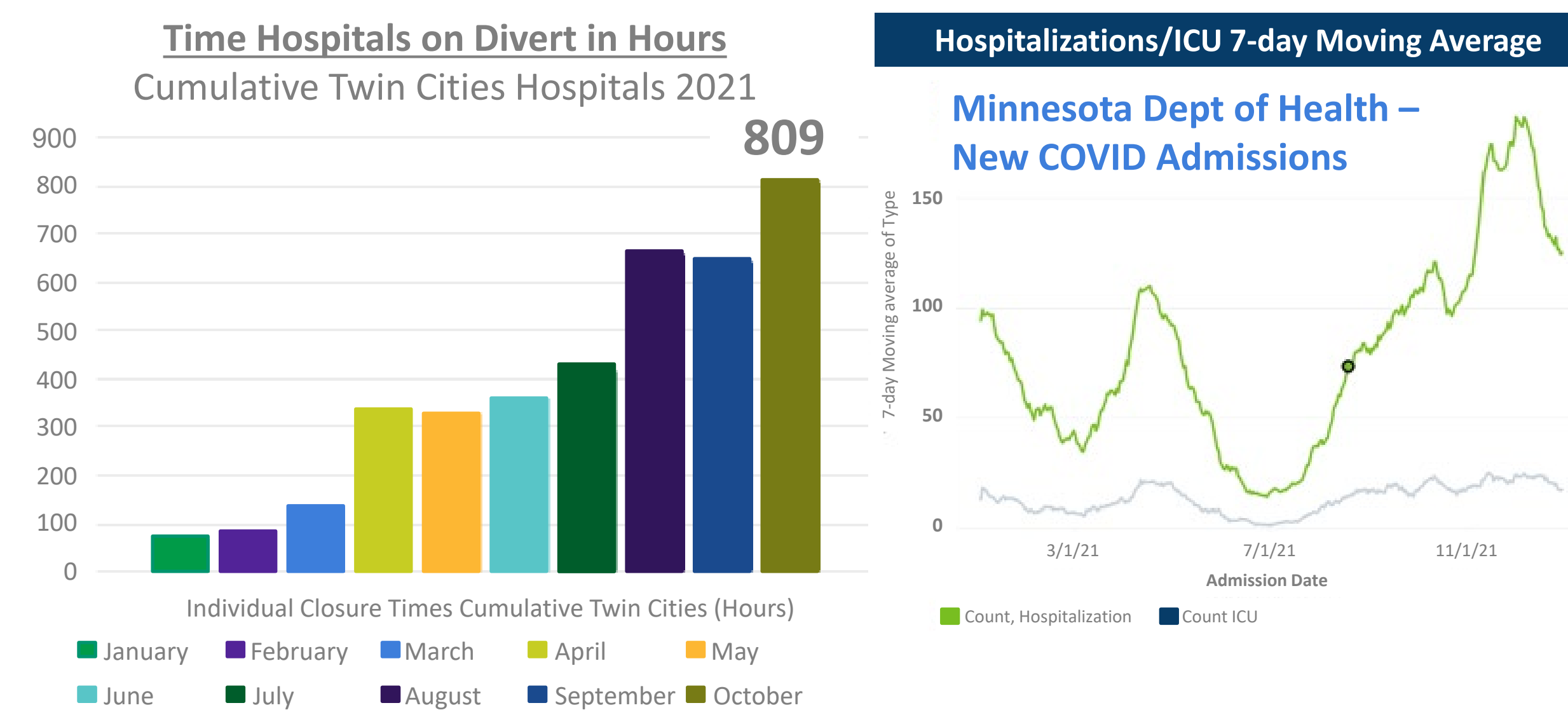
METHODS

Regional Hospital diversion data were obtained for the Minneapolis/St. Paul, Minnesota metro area from MNTrac, a state supported online system designed to allow hospitals to indicate their divert status to EMS. ED metrics are reported for a single, Level 1 Trauma Center and were obtained by a deidentified data abstraction from our electronic medical record. The data cover the three months with the highest diversion utilization (October – December 2021) and the 12 months following diversion elimination.

During the 12 months following diversion elimination.

Plan-Do-Study-Act Record		Date: 12/8/2021	EMPAC
<p>Act</p> <p>Ending East Metro ED Diversion Description: The Metro EMS region of MN will discontinue ambulance diversion on 1/3/22. Compiled by:</p>			
<p>PLAN</p> <p>Questions: What do we want to know? How does this affect ED volumes (wait times, boarding numbers, # ambulances arriving)? How does this affect EMS turnaround times (are medic rigs getting stuck waiting in bays to offload patients due to capacity constraints)? Are there any adverse effects for patients? Predictions: What do we think will happen?</p> <p>Plan for change or test: Who, what, when, where. What are we going to do to make our test happen?</p>			
Area	Measure	Definition	Measure Type
Emergency Department	ED Wait Times	1) Average Door to Room Times by Arrival Method (Ambulance vs. Non-Ambulance) 2) Average Door to Room Times for ESI Level 2 Patients	Balancing Measure
	ED Admission Rates	Average Admission Rates by Ambulance Arrival Patients	Balancing Measure
	# Ambulances Arriving	# Ambulances Arriving by Day by Hour	Process Measure
	Patients Boarding in ED	# of Patients Boarding per Day @ TAM by Mental Health and MedSur	Balancing Measure
Patient Safety	Placement of EMS patients	1) # of ambulance patients initially placed in triage 2) # patients placed in hallway bed during ED visit by arrival method	Outcome Measure
	Patients that Left Without Being Seen	% of patients that left without being seen	Balancing Measure
Patient Safety	EMS Turnaround Times	Average time between arrival to emergency department and back in service status	Process Measure
	Adverse Patient Safety Events (Safety Event Reporting System)	1) # ED Safety Events 2) Door to balloon time for STEMI patients (P11 System Pre-hospital STEMI) 3) Door to CT time for stroke patients arriving by ambulance 4) # Code Behavior Health Emergency (Ex. Code Purple) *Potential Separation or Door to Antibiotics	Outcome Measure
Patient Safety	Impacts on admitting units	# days requiring an evening bed meeting to place ED patients on inpatient units	Balancing Measure

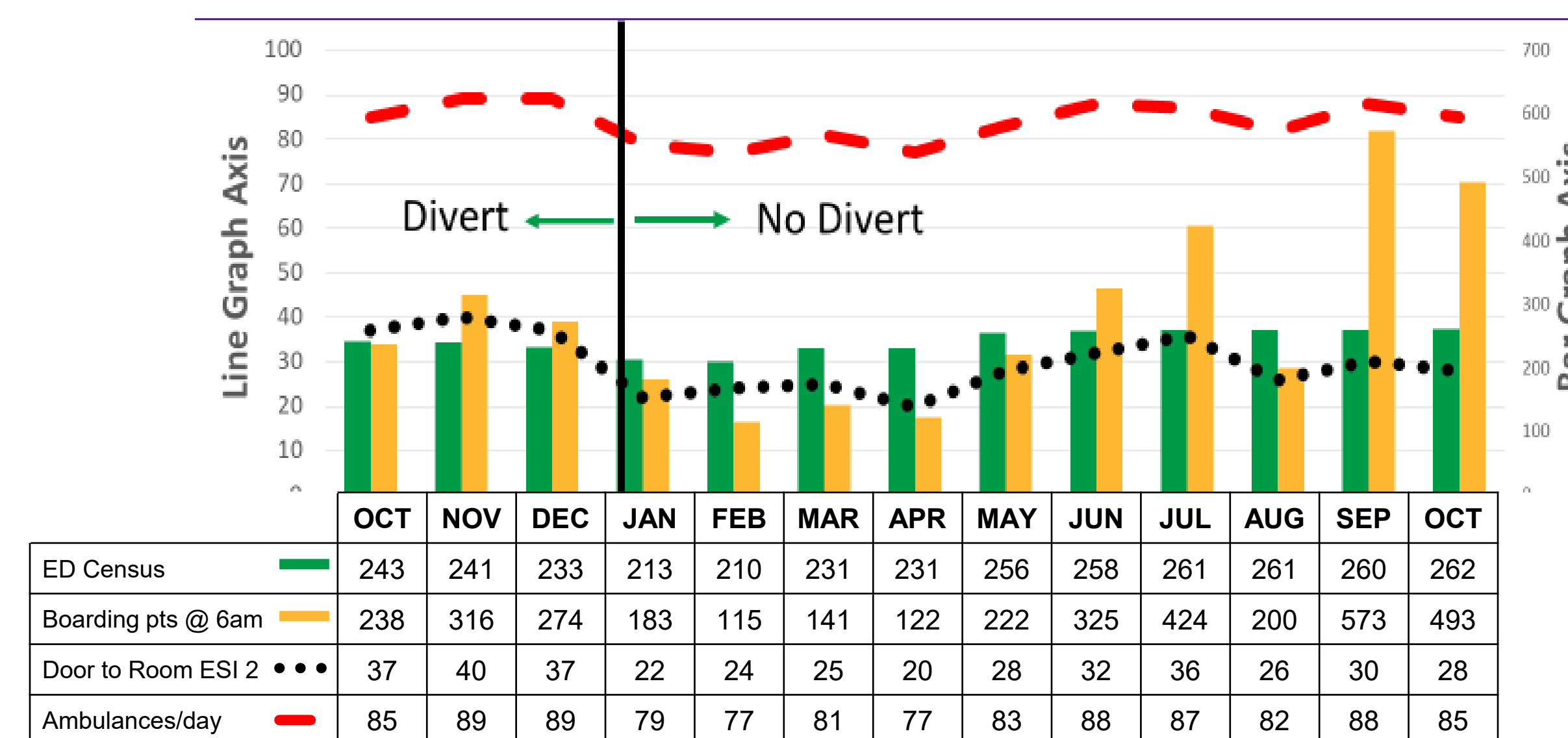
Divert vs COVID Hospitalization Rate



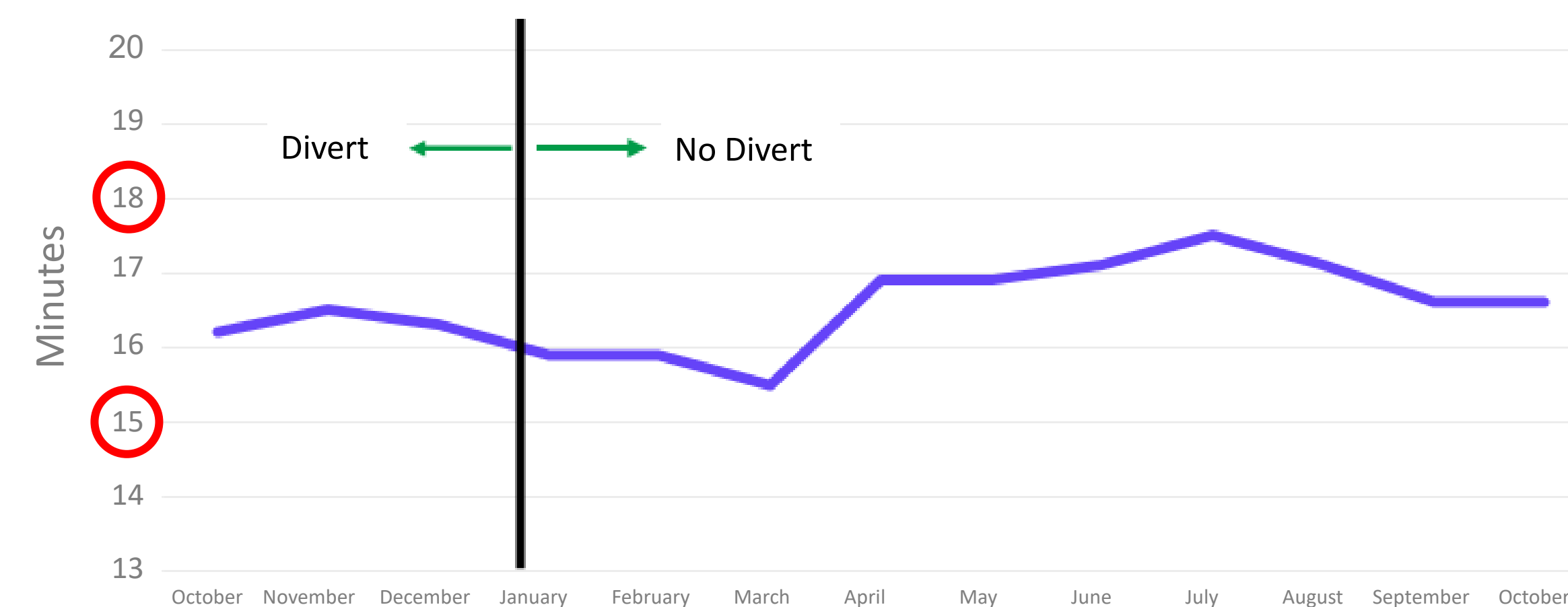
RESULTS

Regional utilization of ambulance diversion increased by 859% from January to October 2021 when 355 individual diversion events occurred. These events encompassed a total of 809 hours (34 days). In the 12 months following the elimination of diversion, there was no increase in mean ambulance arrivals per day (84/day 2021 vs 83/day 2022, range 77-87/day), arrival to room time for high acuity patients (28 min/2021 vs 28 min/2022, range 20-36 min) or time to obtain emergent head CT in acute “code stroke” patients (12 min/2021 vs 12 min/2022, range 9-14 min).

ED Metrics October 2021 – October 2022



EMS ED Turnaround Time by Month



CONCLUSIONS

Elimination of ambulance divert **did not** increase the number of mean daily ambulance arrivals, prolong EMS turnaround time, delay high acuity patients from being placed in a bed or prolong time to head CT in stroke code patients.

CONFLICTS

No financial conflicts of interest to disclose.