

# Cleveland EMS 2015 Response Statistics



Report produced by Timothy Sommerfelt for CARE 1975  
All statistics derived from public records obtained by CARE 1975

## Table of Contents

Service overview, general statistics, and overall response times.....	1
Call prioritization, in-service dispositions, overall 2015 in-service dispositions.....	2
Response times and in-service disposition by dispatch priority.....	3
Day shift vs. night shift breakdown.....	6
Unit by unit breakdown, historical comparison.....	7
Conclusions, methods and limitations, contact info.....	8

### Service Overview:

Cleveland EMS (CEMS) is the division of the municipal government that is the primary provider of 911 medical treatment and transport for the City of Cleveland, Ohio. For the calendar year 2015, service was provided via 18 Advanced Life Support (ALS) ambulances. It should be noted that at certain times throughout the year fewer than 18 ambulances were in service due to staffing shortages or vehicle failures. On rare occasions, 1 to 2 additional ambulances were staffed.

CEMS was assisted by the Cleveland Fire Department (CFD), which staffed 30 Basic Life Support (BLS) units and 5 ALS units. No CFD units were capable of transporting a patient to the hospital. CFD units provided patient care prior to the arrival of CEMS and accompanied CEMS to the hospital if the patient was in critical condition. CEMS was also assisted by the Cleveland Clinic Foundation (CCF) Mobile Stroke Unit, which was a private ambulance designed to provide specialized treatment to stroke patients.

CEMS ALS Ambulances	18
CFD ALS Engine	5
CFD BLS Engine	17
CFD BLS Ladder	11
CFD BLS Rescue	2
<b>Total CFD</b>	<b>35</b>
CCF Mobile Stroke	1

### General Statistics:

Total Emergency calls for 2015	104,376
Duplicate responses (CXR, CXC, CXE, etc.)	9,178
No-call on scene	424
Calls with a recorded on-scene time	<b>94,774</b>

**Overall Response Times:** Historically, Cleveland EMS attempts to meet the National Fire Protection Association (NFPA) standard 1710, which calls for a BLS resource to arrive within 6 minutes from receipt of call and an ALS resource to arrive within 10 minutes from receipt of call.

<b>2015 Overall average response time (min:sec)</b>	<b>11:49</b>
Median response time	9:32

<b>Responses under a specified time</b>	<b># of calls</b>	<b>% of calls</b>
under 20 minutes	87,028	91.8%
under 15 minutes	78,326	82.6%
under 10 minutes	51,353	54.2%
under 8 minutes	32,516	34.3%
under 6 minutes	22,334	23.6%

**Call Prioritization:** Cleveland EMS utilizes a priority dispatch system. Dispatchers assign each call a letter prefix from Alpha-Echo to grade the severity of each call.

Alpha	BLS minor injury/illness
Bravo	BLS patient cannot walk
Charlie	ALS resources needed
Delta	ALS life-threatening emergency
Echo	ALS Inadequate breathing
STBY/BOX	Assist CFD at a fire or CPD at a standoff
Other	Non-common dispatch designation

**In-service Disposition:** Upon completion of the call, CEMS medics assign an in-service disposition to each call. This uses the same grading scale rating calls from Alpha-Echo, but also incorporates when a patient refuses to go to the hospital and situations where the unit cannot locate a patient.

TRA	Transported Alpha- BLS minor injury/illness
TRB	Transported Bravo- BLS patient cannot walk
TRC	Transported Charlie- ALS resources needed
TRDM	Transported Delta Medical- ALS life-threatening medical
TRNT/TRET/TRDT	Transported- life threatening trauma/Traumatic Cardiac Arrest
TEM/TALS	Transported Echo Medical- Medical Cardiac Arrest
DOA/TREA	Dead On Arrival
REFUSAL	Patient refused transport
GOA/UTL	Patient is Gone on Arrival or Unable to be Located.
Other	CFD, CPD, or another agency handled.

**Overall 2015 In-service Dispositions:**

	# of Calls	# of Calls
TRA	16,263	17.2%
TRB	20,108	21.2%
TRC	28,476	30.0%
TRDM	4,983	5.3%
TRNT/TRET/TRDT	3,510	3.7%
TEM/TALS	472	0.5%
<b>Total Transports</b>	<b>73,802</b>	<b>77.9%</b>
DOA/TREA	766	0.8%
REFUSAL	10,183	10.7%
GOA/UTL	3,222	3.4%
Other	6,791	7.2%

## Response Times and In-service Disposition by Dispatch Priority

<b>Calls coded as ECHO</b>				TRA	305	6.9%
Calls with recorded onscene time	4,452	4.7%		TRB	406	9.1%
Average response time	09:03			TRC	1,817	40.8%
Median response time	08:13			TRDM	582	13.1%
under 20 minutes	4,368	98.1%		TRNT/TRET/TRDT	29	0.7%
under 15 minutes	4,095	92.0%		TEM/TALS	272	6.1%
under 10 minutes	3,024	67.9%		DOA/TREA	604	13.6%
under 8 minutes	2,116	47.5%		REFUSAL	319	7.2%
under 6 minutes	925	20.8%		GOA/UTL	41	0.9%
				Other	77	1.7%

<b>Calls coded as DELTA</b>				TRA	3,366	11.3%
Calls with recorded onscene time	29,774	31.4%		TRB	5,280	17.7%
Average response time	10:11			TRC	11,492	38.6%
Median response time	09:03			TRDM	2,569	8.6%
under 20 minutes	28,556	95.9%		TRNT/TRET/TRDT	1,926	6.5%
under 15 minutes	26,156	87.8%		TEM/TALS	161	0.5%
under 10 minutes	17,661	59.3%		DOA/TREA	114	0.4%
under 8 minutes	11,420	38.4%		REFUSAL	2,825	9.5%
under 6 minutes	4,569	15.3%		GOA/UTL	998	3.4%
				Other	1,043	3.5%

<b>Delta and Echo combined</b>				TRA	3,671	10.7%
Calls with recorded onscene time	34,226	36.1%		TRB	5,686	16.6%
Average response time	10:02			TRC	13,309	38.9%
Median response time	09:48			TRDM	3,151	9.2%
under 20 minutes	32,924	96.2%		TRNT/TRET/TRDT	1,955	5.7%
under 15 minutes	30,250	88.4%		TEM/TALS	433	1.3%
<b>under 10 minutes</b>	<b>20,685</b>	<b>60.4%</b>		DOA/TREA	718	2.1%
under 8 minutes	13,536	39.5%		REFUSAL	3,144	9.2%
under 6 minutes	5,494	16.1%		GOA/UTL	1,039	3.0%
				Other	1,120	3.3%



<b>Coded as Charlie</b>						
				TRA	3,302	16.1%
Calls with recorded onscene time	20,460	21.6%		TRB	4,076	19.9%
Average response time	11:36			TRC	9,321	45.6%
Median response	10:09			TRDM	1,240	6.1%
under 20 minutes	18,925	92.5%		TRNT/TRET/TRDT	55	0.3%
under 15 minutes	16,877	82.5%		TEM/TALS	20	0.1%
under 10 minutes	10,583	51.7%		DOA/TREA	0	0.0%
under 8 minutes	6,321	30.9%		REFUSAL	1,537	7.5%
under 6 minutes	2,299	11.2%		GOA/UTL	302	1.5%
				Other	607	3.0%

<b>Coded as Bravo</b>						
				TRA	4,076	21.2%
Calls with recorded onscene time	19,269	20.3%		TRB	4,698	24.4%
Average response time	12:01			TRC	2,000	10.4%
Median response	09:59			TRDM	224	1.2%
under 20 minutes	17,471	90.7%		TRNT/TRET/TRDT	1,214	6.3%
under 15 minutes	15,429	80.1%		TEM/TALS	8	0.0%
under 10 minutes	9,649	50.1%		DOA/TREA	24	0.1%
under 8 minutes	5,819	30.2%		REFUSAL	3,478	18.0%
under 6 minutes	2,265	11.8%		GOA/UTL	1,512	7.8%
				Other	2,035	10.6%

<b>Coded as Alpha</b>						
				TRA	4,920	30.5%
Calls with recorded onscene time	16,109	17.0%		TRB	5,320	33.0%
Average response time	16:44			TRC	3,389	21.0%
Median response	10:55			TRDM	287	1.8%
under 20 minutes	13,160	81.7%		TRNT/TRET/TRDT	113	0.7%
under 15 minutes	11,463	71.2%		TEM/TALS	4	0.0%
under 10 minutes	6,889	42.8%		DOA/TREA	1	0.0%
under 8 minutes	3,971	24.7%		REFUSAL	1,575	9.8%
under 6 minutes	1,327	8.2%		GOA/UTL	273	1.7%
				Other	227	1.4%



<b>Coded as STBYF BOX or Still</b>				TRA	32	1.1%
Calls with recorded onscene time	2,851	3.0%		TRB	2	0.1%
Average response time	07:25			TRC	29	1.0%
Median response	06:34			TRDM	6	0.2%
under 20 minutes	2,803	98.3%		TRNT/TRET/TRDT	25	0.9%
under 15 minutes	2,720	95.4%		TEM/TALS	2	0.1%
under 10 minutes	2,349	82.4%		DOA/TREA	7	0.2%
under 8 minutes	1,923	67.5%		REFUSAL	69	2.4%
under 6 minutes	1,201	42.1%		GOA/UTL	7	0.2%
				Other	2,672	93.7%

<b>Other/non-common dispatch prefix</b>				TRA	196	12.8%
Calls with recorded onscene time	1,527	1.6%		TRB	233	15.3%
Average response time	10:25			TRC	360	23.6%
Median response	08:54			TRDM	65	4.3%
under 20 minutes	1,394	91.3%		TRNT/TRET/TRDT	139	9.1%
under 15 minutes	1,242	81.3%		TEM/TALS	4	0.3%
under 10 minutes	882	57.8%		DOA/TREA	12	0.8%
under 8 minutes	652	42.7%		REFUSAL	287	18.8%
under 6 minutes	364	23.8%		GOA/UTL	81	5.3%
				Other	150	9.8%

In addition, there were 332 Field Generated Events where an ambulance was flagged down for help.

**Day Shift vs. Night Shift Breakdown:**

Calls received 07:00-18:59	53,026	56%	Calls received 19:00-06:59	41,747	44%
Average response time	12:44			10:39	
Median response	10:00			09:03	
under 20 minutes	47,597	90%		39,431	94%
under 15 minutes	42,009	79%		36,317	87%
under 10 minutes	26,510	50%		24,843	60%
under 8 minutes	16,627	31%		15,889	38%
under 6 minutes	6,831	13%		6,385	15%



**Unit-by-Unit Breakdown:** According to research conducted by CARE 1975, most urban EMS services run between 4,000 and 5,000 calls per ambulance per year.

Unit	2015 calls		Unit	average response time
M1	6237		M17*	8:43
M22	6043		M23	11:12
M4	5993		M1	11:13
M41	5947		M13*	11:24
M7	5942		M7	11:25
M36	5837		M4	11:26
M23	5612		M41	11:27
M10	5489		M22	11:30
M11	5478		M43	11:35
M20	5449		M33	11:41
M30	5443		M30	11:42
M31	4742		M20	11:56
M33	4738		M31	11:56
M6	4532		M10	12:03
M42	4447		M36	12:09
M39	4267		M39	12:09
M40	4208		M11	12:14
M43	4030		M6	12:28
M13*	287		M42	12:38
M17*	25		M40	12:38

\*M13 and M17 were only in service for a brief period of time.

In 2015, 11 out of 18 ambulances ran over 5,000 calls with a system-wide average of 5,246 calls per ambulance per year.

**Historical Comparison:**

Year	2012	%	2015	%	% change
Ambulances	15		18		20%
Calls with an onscene time	79,665		94,774		19%
Average response time	12:20		11:49		-4%
Delta+Echo Calls	29,386		34,226		16%
Delta+Echo average times	10:08		10:02		-1%
under 20 minutes	28,080	95.6%	32,924	96.2%	
under 15 minutes	25,786	87.7%	30,250	88.4%	
<b>under 10 minutes</b>	<b>17,397</b>	<b>59.2%</b>	<b>20,685</b>	<b>60.4%</b>	
under 8 minutes	11,078	37.7%	13,536	39.5%	
under 6 minutes	4,386	14.9%	5,494	16.1%	

**Conclusions:** Despite a 20% increase in ambulances, response times remain virtually unchanged from 2012 to 2015 because of a corresponding 19% increase in call volume. Response times to high-priority calls remains unacceptably high, with 40% of patients waiting over 10 minutes for an ambulance. Response times are the worst during day shift, with 50% of patients suffering life-threatening complaints waiting over 10 minutes for CEMS to arrive.

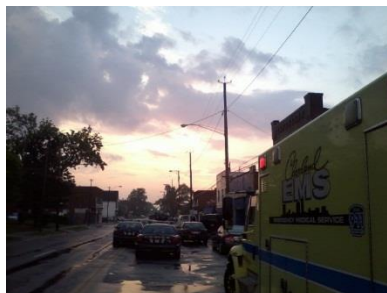
Because of the heavy workload assumed by current ambulances, it is unlikely that response times will decrease without putting additional ambulances on the road, particularly during daytime hours.

In order to reduce response times, it is also critical to adequately staff the Radio Emergency Dispatch (RED) center so that calls are answered and processed in a timely manner.

The priority dispatch system does a good job of ensuring that the appropriate level of help reaches most critical calls with a low under-triage rate. On 9,357 Delta and Echo calls, however, the paramedics entered an in-service disposition of Bravo or Alpha. This means CEMS has a 27% over-triage rate, which is an issue because over-triaged calls waste resources as CFD units are unnecessarily dispatched to the scene. In addition, CEMS units may be diverted from other calls to answer those calls that are over-triaged. Lastly, there is the potential for medics to suffer from [alarm fatigue](#), whereby they become so accustomed to responding to Delta and Echo calls that turn out to be non-emergent that they are slow to react when confronted with a real emergency. CEMS should look for ways refine the dispatch process to lower the over-triage rate, while at the same time preserving the low under-triage rate.

#### **Methods and Limitations:**

These statistics were compiled from a public records request filed by CARE 1975 for the actual call times for every single EMS run for the calendar year 2015. A Microsoft Excel spreadsheet was created, and the data was reviewed to remove events without a documented onscene time and calls that duplicated the same information. Calls with the disposition Cancelled per Red Center (CXR) were also removed because this disposition is used when an ambulance is canceled prior to arriving onscene and the call is typically assigned to another, often closer, ambulance. Together, these accounted for 9,602 calls, which is probably the reason that the run totals in this paper are different than those released in the City of Cleveland budget books and on the Cleveland EMS Twitter feed. Lastly, it appears that through a computer glitch when multiple ambulances respond to the same scene, as in the case of a traffic accident with multiple patients, only the response time of the first-arriving ambulance is recorded. As multi-unit calls represent a small amount of CEMS responses, however, this is unlikely to alter trends.



#### **Contact Information:**

For any questions or comments regarding this report, please contact Timothy Sommerfelt at [tsommerfelt@gmail.com](mailto:tsommerfelt@gmail.com).