



2020 2nd Quarter Report to the
Lowell, Massachusetts
Board of Health

Reporting Period: Apr 1 – Jun 30 2020

- **INTRODUCTION:**

This is the 2nd Qtr. 2020 Report for the Lowell Board of Health.

Any questions or concerns surrounding the contents of this report should be directed to:

Trinity EMS, Inc.

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Thank you,

Management Team

Trinity EMS, Inc

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TIMES:	Trinity BLS Q3 2019	Trinity ALS	LGH ALS	Trinity BLS Q4 2019	Trinity ALS	LGH ALS
Fractile %	93.45%	88.50%	91.57%	91.87%	84.32%	92.12%
Avg out of chute	24 sec	1 min	45 sec	43 sec	1 min 5 sec	50 sec
Avg resp time	4 min 11 sec	5 min 30 sec	5 min 12 sec	4 min 48 sec	4 min 53 sec	5 min 56 sec
Avg on scene time	11 min 42 sec	14 min 47 sec	13 min 10 sec	11 min 41 sec	13 min 52 sec	15 min 16 sec
Avg transport time	6 min 54 sec	7 min 38 sec	10 min 32 sec	6 min 42 sec	7 min 9 sec	10 min 44 sec
# of events >7:59 response time	375	23	156	429	37	145
# of events using Non Trinity BLS	0			1	<-- 8th 911 call in Lowell at that time	
	Trinity BLS Q1 2020	Trinity ALS	LGH ALS	Trinity BLS Q2 2020	Trinity ALS	LGH ALS
	91.70%	84.92%	91.65%	92.28%	86.30%	91.10%
Avg out of chute	58 sec	1 min 11 sec	56 sec	1 min 2 sec	1 min 19 sec	58 sec
Avg resp time	5 min 25 sec	7 min 8 sec	6 min 13 sec	4 min 36 sec	5 min 57 sec	5 min 23 sec
Avg on scene time	12 min 49 sec	15 min 17 sec	14 min 55 sec	11 min 46 sec	9 min 57 sec	13 min 3 sec
Avg transport time	7 min 4 sec	6 min 3 sec	10 min 25	6 min 17 sec	7 min 59 sec	10 min 23 sec
# of events >7:59 response time	429	30	150	389	27	148
# of events using Non Trinity BLS	0			2	<-- 1 was the 7th 911 call, the other was the 6th 911 in Lowell at that time.	

	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q 3 2019	Q4 2019	Q1 2020	Q2 2020
TEMS BLS	94.72%	94.03%	92.75%	94.28%	93.45%	91.87%	91.70%	92.28%

BLS OUTLIERS:	2018 Total		2019		Last 4 Qs Total		Q3 2019		Q4 2019		Q1 2020		Q2 2020	
1st Emergency	340	24%	386	26%	425	26%	85	23%	121	28%	108	25%	111	29%
2nd Emergency	372	26%	400	27%	404	25%	102	27%	96	22%	101	24%	105	27%
3rd Emergency	259	18%	306	20%	341	21%	91	24%	95	22%	87	20%	68	17%
4th Emergency	189	13%	181	12%	222	14%	43	11%	58	14%	64	15%	57	15%
5th Emergency	146	10%	135	9%	136	8%	31	8%	39	9%	41	10%	25	6%
6th Plus Emergency	115	8%	96	6%	94	6%	23	6%	20	5%	28	7%	23	6%
	1421		1504		1622		375		429		429		389	
BLS REASONS OVER 7:59:	2018 Total		2019		Last 4 Qs Total		Q3 2019		Q4 2019		Q1 2020		Q2 2020	
Total	1421		1504		1622		375		429		429		389	
Couldn't locate house/lost	40	3%	88	6%	107	7%	34	9%	26	6%	20	5%	27	7%
Crew took long route	115	9%	105	7%	73	5%	15	4%	29	7%	15	3%	14	4%
Distance	350	24%	362	24%	387	24%	85	23%	127	30%	93	22%	82	21%
Dispatch delay	40	3%	141	9%	163	10%	43	11%	35	8%	35	8%	50	13%
Highway	9	1%	17	1%	21	1%	7	2%	5	1%	6	1%	3	1%
Out of chute	186	13%	149	10%	150	9%	35	9%	39	9%	43	10%	33	8%
TEMS Dispatch error	127	7%	49	3%	52	3%	17	5%	12	3%	14	3%	9	2%
Weather	47	5%	42	3%	24	1%	11	3%	7	2%	4	1%	2	1%
EMD	227	16%	257	17%	239	15%	64	17%	70	16%	49	11%	56	14%
911 Call volume	235	17%	215	14%	212	13%	45	12%	56	13%	65	15%	46	12%
others/blank	45	3%	79	5%	194	12%	19	5%	23	5%	85	20%	67	17%

BLS OUTLIERS:	2018 Total	2019		Last 4 Qs Total		Q3 2019		Q4 2019		Q1 2020		Q2 2020	
Witin the standard (7:59 >)		20243	95.78%	19519	92.35%	5289	93.48%	4838	91.85%	4741	91.70%	4651	92.28%
0800-0859		734	3.47%	768	3.63%	174	3.45%	197	3.91%	207	4.11%	190	3.77%
0900-0959		402	1.90%	415	1.96%	110	2.18%	110	2.18%	107	2.12%	88	1.75%
1000-1059		201	0.95%	217	1.03%	54	1.07%	61	1.21%	53	1.05%	49	0.97%
1100-1159		77	0.36%	94	0.44%	14	0.28%	29	0.58%	21	0.42%	30	0.60%
1200 plus		83	0.39%	122	0.58%	17	0.34%	32	0.63%	41	0.81%	32	0.63%
						see below		see below		see below		see below	
12 PLUS BREAKOUT	2018 Total	2019		Last 4 Qs Total		Q3 2019		Q4 2019		Q1 2020		Q2 2020	
911 Call volume (5th +)		26	21.31%	28	22.95%	3	9.38%	10	31.25%	9	28.13%	6	18.75%
Distance			0.00%		0.00%	1	3.13%	1	3.13%	3	9.38%	1	3.13%
Crew got lost/couldn't find house		11	9.02%	17	13.93%	1	3.13%	4	12.50%	6	18.75%	6	18.75%
EMD		13	10.66%	16	13.11%	3	9.38%	5	15.63%	3	9.38%	5	15.63%
Highway call		6	4.92%	7	5.74%	1	3.13%	3	9.38%	1	3.13%	2	6.25%
TEMS Dispatch error/delay		13	10.66%	11	9.02%	4	12.50%	3	9.38%	2	6.25%	2	6.25%
Others		12	9.84%	37	30.33%	4	12.50%	6	18.75%	17	53.13%	10	31.25%
41 Q1 2020 over 12 minutes													
1	Fall, pt refusal	17	Psy, pt with PD, TEMS disp delay										
2	COVID +, gen weak difficulty finding apartment	18	Diff ambu, patient refusal										
3	GI Issues, TEMS posting error	19	psy, highway call										
4	Psy, 911 call vol. Waited for PD	20	Unable to ambu, EMD										
5	? Lift assist, 911 call vol	21	Gen weak, 911 call volume										
6	COVID +, gen weak, no GPS	22	Life call activation, pt refusal										
7	MVA, no transport	23	Hyperglycemic, ALS w/ PT										
8	Fall, VNA w/ patient.	24	Bleeding, EMD										
9	Syncope, ALS w patient	25	Medication mis-dose, PT refusal										
10	Psy, EMD	26	CP, GPS fail. ALS w PT										
11	? Lift assist, No GPS	27	Rib pain, EMD										
12	Highway call, called by Fire	28	ETOH, diff finding house										
13	UTI, patient refusal	29	Post surg bleeding, Chute, BLS to hospital										
14	Large fight in progress. Canceled by PD	30	ABD pain, GPS fail, priority 3 to hospital										
15	Gen weak, 911 call volume	31	Life call activation, pt refusal										
16	Psy, GPS fail	32	Fall, 911 call volume										

VOLUME:	2018		2019		Last 4 Qs		Q3 2019		Q4 2019		Q1 2020		Q2 2020	
Total responses (ALS & BLS)	30318		30019		29607		7710		7350		7591		6956	
Total ALS Responses	8511	28%	8276	28%	8116	27%	2050	27%	2082	28%	2068	27%	1916	28%
TEMS ALS Responses	955	11%	871	11%	785	10%	200	10%	236	11%	200	10%	149	8%
LGH ALS Responses	7556	89%	7405	89%	7331	90%	1850	90%	1846	89%	1868	90%	1767	92%
INCIDENTS:	21807		21743		21138		5660		5268		5170		5040	
BLS Incident	12340		13467		13022		3610		3186		3102		3124	
ALS and BLS Incident	8467		8276		8116		2050		2082		2068		1916	
Needle pick ups	728		280		172		62		41		28		41	
Non Emergent Lift assists	784		582		163		102		37		15		9	
TRANSPORTS:	2018		2019		Last 4 Qs		Q3 2019		Q4 2019		Q1 2020		Q2 2020	
Total Transports (ALS & BLS)	16379		16483		15802		4117		4167		4063		3455	
Total BLS Transports	13078	80%	12963	79%	12636	80%	3206	78%	3348	80%	3270	80%	2812	81%
Total ALS Transports	3301	20%	3520	21%	3166	20%	911	22%	819	20%	793	20%	643	19%
TEMS ALS Transports	503	15%	362	10%	265	8%	112	12%	118	14%	20	3%	15	2%
LGH ALS Transports	2798	85%	3058	87%	2901	92%	799	88%	701	86%	773	97%	628	98%

Last Name	First Name	Hire Date	Positio	MA Certification #
Bertolini	Lizlye	2020-06-15	EMT-B	E0912337
Delima	Dalton	2020-06-15	EMT-B	E0904924
Diaz	Marlena	2020-06-15	EMT-A	A0900421
Doherty	Patrick	2020-06-15	EMT-B	E0916492
Ewing	Lucas	2020-06-15	EMT-B	E0917458
Garcia	Idalisse	2020-06-15	EMT-B	E0917675
Graham	Caitlin	2020-06-15	EMT-B	E0911226
Lindberg	Gary	2020-06-15	EMT-P	P833269
Penta	Cory	2020-06-15	EMT-B	E0909190

EMD- Direct to Trinity

	2018 Total	2019	Last 4 Qs Total	Q3 2019	Q4 2019	Q1 2020	Q2 2020
Alpha (BLS-P3)	1524	1296	1316	296	335	396	289
Bravo (BLS-P2)	444	453	408	90	129	120	69
Charlie (ALS-P1)	722	719	773	220	167	190	196
Delta (ALS-P1)	634	716	821	223	163	169	266
Echo (ALS-P1)	3	6	9	2	1	1	5
Total EMD by Trinity in Lowell	3327	3190	3327	831	795	876	825

The above data are direct calls to Trinity for patients in Lowell.

Alpha- results in BLS going no lights or sirens to the patient

Bravo- results in BLS going lights and sirens to the patient

Charlie, Delta, Echo- results in ALS and BLS going lights and sirens to the patient

As part of Trinity EMS's EMD accreditation a portion of the above calls are randomly selected for quality assurance review. TEMS reviews 25 EMD'ed calls per week. These 25 calls could come from any city or state.

Potentially none or all 25 calls could be for patients in Lowell.

Trinity EMS an Accredited Center of Excellence through the International Academy of Emergency Dispatch. Trinity is 1 of 2 in Massachusetts and 1 of 184 of these centers in the world



	2018	2019	Last 4 Qrts	Q3 2019	Q4 2019	Q1 2020	Q2 2020							
Total ORI in Lowell	811	523	497	127	125	91	154							
Priority 1 ORI in Lowell	455	313	302	79	84	57	82							
Trinity wide ORI	1206	855	850	235	209	182	224							
Trinity wide Priority 1	708	545	542	151	144	124	123							
ORI in Lowell by setting:														
Inside Private home	327	40%	206	40%	192	39%	42	33%	68	54%	36	40%	46	30%
Public location inside	82	10%	76	10%	42	8%	14	11%	15	12%	10	11%	3	2%
Public location outside	386	48%	230	48%	253	51%	69	54%	42	34%	41	45%	101	66%
Other	16	2%	11	2%	10	2%	2	2%	0	0%	4	4%	4	3%
Gender:														
Female	224	28%	151	28%	138	28%	33	26%	34	27%	24	27%	47	31%
Male	588	72%	372	72%	358	72%	94	74%	91	73%	66	73%	107	69%
Females U20	2	1%	3	1%	0	0%	0	0%	0	0%	0	0%	0	0%
Female 20-29	78	35%	32	35%	35	25%	5	15%	6	18%	10	42%	14	30%
Female 30-39	79	35%	53	35%	45	33%	7	21%	12	35%	7	29%	19	40%
Female 40 - 49	36	16%	42	16%	36	26%	14	42%	11	32%	3	13%	8	17%
Female 50- +	29	13%	21	13%	22	16%	7	21%	5	15%	4	17%	6	13%
Male U20	2	0%	1	0%	2	1%	0	1%	1	0%	0	1%	1	0%
Male 20-29	178	30%	91	30%	74	21%	19	21%	21	20%	13	23%	21	20%
Male 30- 39	178	30%	129	30%	127	35%	35	35%	34	37%	23	37%	35	35%
Male 40 - +	124	21%	65	21%	70	20%	19	20%	14	20%	13	15%	24	20%
Male 50 - +	106	18%	86	18%	85	24%	21	24%	21	22%	17	23%	26	26%

	2018 Total		2019 Total		Last 4 Qs Total		Q3 2019		Q4 2019		Q1 2020		Q2 2020		
Acre	125	15%	63	15%	54	11%	15	12%	13	10%	13	14%	13	8%	
Back Central	107	13%	82	13%	104	21%	21	17%	20	16%	14	15%	49	32%	
Belvidere	17	2%	17	2%	24	5%	5	4%	6	5%	5	5%	8	5%	
Centralville	109	13%	68	13%	58	12%	14	11%	27	22%	8	9%	9	6%	
Downtown	204	25%	138	25%	122	25%	34	27%	25	20%	24	26%	39	25%	
Highlands	48	6%	36	6%	28	6%	8	6%	6	5%	7	8%	7	5%	
Lower Belvidere	21	3%	11	3%	8	2%	2	2%	2	2%	1	1%	3	2%	
Lower Highlands	81	10%	51	10%	48	10%	10	8%	16	13%	6	7%	16	10%	
Pawtucketville	48	6%	25	6%	22	4%	10	8%	5	4%	5	5%	2	1%	
Sacred Heart	42	5%	21	5%	20	4%	5	4%	3	2%	6	7%	6	4%	
South Lowell	9	1%	11	1%	9	2%	3	2%	2	2%	2	2%	2	1%	
Home towns of patients:															
Lowell	487	60%	314	60%	302	63%	74	58%	76	70%	49	54%	103	67%	
Dracut	39	5%	20	5%	13	3%	7	6%	3	3%	2	2%	1	1%	
Billerica	26	3%	19	3%	17	4%	3	2%	4	4%	6	7%	4	3%	
Chelmsford	18	2%	7	2%	5	1%	0	0%	1	1%	0	0%	4	3%	
Tewksbury	16	2%	11	2%	13	3%	3	2%	4	4%	1	1%	5	3%	
Other/unknow	225	28%	135	28%	130	27%	40	31%	20	19%	33	36%	37	24%	

ALS: Life Support- may refer to vehicles staffed with a least one paramedic or refer to a paramedic level of patient care. Trinity Emergency ALS vehicles are staffed with two paramedics.

A Response: Is defined as dispatching or sending an ambulance to a request for service. In this report , a response is further sorted to include only emergency responses. These numbers do not include routine transfers such as dialysis patients or radiation treatment patients.

A Transport: Is defined as taking a patient in an ambulance to a destination.

BLS: Basic Life Support- may refer to a vehicle staffed with two emergency medical technicians (EMT) or an EMT level of patient care. Trinity BLS ambulances are staffed with two EMT's

EMD: Emergency Medical Dispatch- a nationally recognized system whereby dispatchers are trained and follow a specific protocol to ascertain the nature of illness/injury and provide patient care instructions to the caller until the First Responders or ambulance arrives.

Intubation Attempt: Is defined as insertion of the laryngoscope blade into the oral cavity for the purpose of inserting an endotracheal tube.

MAI: Medication Assisted Intubation is generally regarded as facilitating an intubation with the use of sedatives. In Massachusetts how ever, this term includes the use of Paralytics. The Massachusetts MAI program is not part of the standard scope of practice for Paramedics. It is controlled through the Department of Public Health's Office of Emergency Medical Services Medical Services Committee.

On scene time: The amount of time that has elapsed from the moment the ambulance is on scene to the moment the ambulance begins transport or is released back into service

Out of chute time: The amount of time that elapses from the moment when the ambulance is dispatched to the moment the ambulance begins moving towards the call.

On time performance score: Is the percentage of calls that meet or exceed the response time criteria.

Request for service: When a dispatcher receives request for an ambulance usually via telephone or radio

Response time: The amount of time that has elapsed from the moment the call is completely entered into the dispatch system to the moment the ambulance arrives on scene.

RSI: Rapid Sequence Intubation is the facilitation of intubation using both sedatives and paralytics

Service Zone Plan: M.G.L. Part 1 Title XVI Chpt. 11C Section 1 defines as "a geographic area defined by and comprised of one or more local jurisdictions, in which a local jurisdiction may select and the department shall designate an EMS first response service and an ambulance service to provide EMD first response and primary ambulance response to the public within the defined area, pursuant to section 10." Massachusetts Regulations 105 CMR 170.249.

Transport time: The amount of time that has elapsed from the moment the ambulances leaves the scene with a patient to the moment the ambulance arrives at the receiving facility

Triage down: When a paramedic units arrives at the patients side and based on the patient condition determines that the patient may be treated and transported at the BS level. Note- There is no protocol for this practice, however, OEMS does address it though an administrative advisory: A/R5=620.

- The following document is a detailed outline of the reporting process used by Trinity EMS.
- **Responding lights and sirens**
 - From Lowell 911
 - All calls require a lights and sirens response regardless of the patients condition except
 - Needle pick ups
 - Pt carry down/up without a medical issue
 - Unless requested to response without lights and sirens by the 911 center.
 - Direct to Trinity calls that Trinity EMD's
 - Bravo, Charlie, Delta, and Echo go with lights and sirens
 - Alpha or Omega level calls go without lights and sirens
 - Direct to Trinity that Trinity doesn't EMD
 - Response lights and sirens for any patients. Unless the calling agency EMD'ed the call to a non-urgent level.
 - This set of calls would include call from UMASS PD, or other ambulance services.
- Incident
 - A request for or by someone within the city limits of Lowell that requires an EMS response.
 - Each request is counted as 1 incident
 - A patient that gets a BLS unit for back pain is counted as 1 incident
 - A 10 car MVC with 20 patients requiring 6 BLS, 2 ALS, and 2 helicopters is counted as 1 incident
- Responses
 - Counts the number of occurrences when EMS vehicles response lights and sirens to a call.
 - An ALS and BLS unit response to a patient with chest pain, that counts as 2 responses. (2 vehicles put their lights on)
- Times:
 - All below are from incidents
 - BLS
 - Priority 1, and 2 incident responses
 - Includes 911 and calls direct to Trinity
 - Any call directly to Trinity from another call center that would require an emergent response
 - (IE- Umass Lowell calls Trinity for a chest pain)
 - Any Charlie, Delta, Echo response called and EMD'ed by Trinity
 - Includes call when ALS and BLS responded as well as call when just BLS responded.
 - **Q# year# Performance score**
 - Is the created by
- Dividing the number of incidents BLS units responded to.

- Into the number of those calls that shows a response time over 08:00 or greater
 - Calls excluded
 - Delta level calls EMD'ed by Trinity that had a total response time of greater than 07:59
- **Avg out of chute**
 - Time from Trinity designated and selected ambulance was assigned call to selected crew to the time selected vehicles starts movement towards this call
 - Excluded-
 - Any time showing more than 10 minutes is excluded as likely time stamp missing
- **Avg response time**
 - From Call saved by Trinity dispatch to time ambulance arrived at geocoded location of the call.
 - Within Trinity CAD- The call saved time is called "call taken". This time is created after Trinity dispatch get an address, apartment, complaint, and any other info 911 passed along.
 - Excluded-
 - Charlie, delta, Echo, and Omega calls direct and EMD'ed by Trinity that result in a response time over 07:59
 - Any time showing more than 20 minutes is excluded as likely time stamp missing
- **Avg on scene time**
 - Includes only calls included above
 - Time from crew arrival on site to time vehicle:
 - Clears
 - Occupies to the hospital
 - Excluded
 - Any time showing more than 30 minutes is excluded as likely time stamp missing
- **Avg transport time**
 - Includes only calls included above
 - Time from crew: Clears or arrives to the hospital
 - Excluded
 - Any time showing more than 20 minutes is excluded as likely time stamp missing
- **# of events >7:59 or greater**
 - Includes any call that includes calls included from reasons earlier in the section
 - That's response time is greater than 07:59
 - Excluded
 - Any call where the unit is canceled prior to arrival
- Called that were EMD'ed by Trinity

- No other calls are excluded- weather, 911 call volume as examples are outliers counted and categories in the “BLS reasons over 07:59”
- **# of events using Non Trinity BLS units**
 - Requests for ambulances to Trinity that Trinity was not able to send a BLS unit on within the State mandated 5 minute dispatch time for
 - Any 911 priority 1 or 2 call
 - Any call directly to Trinity from another call center that would require an emergent response
 - (IE- UMass Lowell calls Trinity for a chest pain)
 - Any Charlie, Delta, Echo response called and EMD’ed by Trinity
- ALS
 - The only difference from the BLS is the ALS times start at dispatch, and not call created
- **BLS Outliers:**
 - For any BLS response over 07:59
 - Trinity will make note and report in this section the number of concurrent emergencies in Lowell at the time this call is created.
 - Includes 911 calls and calls direct to Trinity
 - Non-emergency and call in other cities will not be counted
- **BLS Reasons over 07:59**
 - For any BLS response over 07:59
 - Trinity will conduct a route cause analyses as to the reason for the response time
 - Trinity will take note and report in this section. These reasons will be grouping into 1 of the following
 - Couldn’t location house/lost
 - Crew passes the geo-coded location for the address more than once without getting on arrival
 - Crew took long route
 - Crew did not take the fastest route from their dispatch location to the pickup location
 - Distance
 - Usually this is used when a
 - Dispatcher gives the call out within 60 seconds
 - The crew is enroute within 120 seconds
 - Posting is happening
 - The ambulance crew went the most direct route
 - Circumstances include
 - If there is a second call in a sector of the city before reposting. 2nd call in downtown, this ambulance to the second call has two reports a much greater distance to the patient.

