



**Overview of the Maine EMS System for the  
Maine EMS Board**

**November 30, 2020**



**Maine Emergency Medical Services (Maine EMS)**



## Purpose

This document is designed to summarize the data found within the Maine Bureau of Emergency Medical Services (Maine EMS) eLicensing system and the Maine EMS and Fire Incident Reporting System (MEFIRS). We have chosen these specific items based on questions that were generated by members of the Maine Board of EMS, Maine EMS office, and the Regional EMS Coordinators.

## Demographics and Composition of Licensees

The following tables and figure represent the composition and demographics (specifically age) of individuals currently and previously licensed by Maine EMS in the stated date ranges.

Age Range	Count
18 to 24	815
25 to 40	1902
41 to 55	1574
Over 55	786
<b>TOTAL</b>	<b>5077</b>

*Table 1: Count of EMS Clinicians by Defined Age Ranges*

The data in this table was in response to a specific question that asked for the counts for these specific age ranges.

The table below represents the number of calls that EMS clinicians responded to based on the clinician's age in 2018, 2019, and 2020 YTD combined.

*Table 2: Number of Calls that EMS Clinicians Participated in by Age Ranges in 2018, 2019, and 2020 YTD Combined*

County	18 to 24	25 to 40	41 to 55	Over 55	Grand Total
Androscoggin	18013	53497	42756	14029	128295
Aroostook	4419	23988	21450	13974	63831
Cumberland	31831	171925	82703	30692	317151
Franklin	875	12857	12202	6492	32426
Hancock	5627	22429	16283	11267	55606
Kennebec	26698	95471	57876	15887	196344
Knox	3607	12580	16233	8381	40831
Lincoln	4548	19123	9825	8134	41641
Oxford	2796	21183	22190	15871	62040
Penobscot	26234	100400	65399	16252	208309
Piscataquis	909	4202	11340	6432	22883
Sagadahoc	2945	14562	12270	2807	32604
Somerset	3904	21166	23956	14317	63371
Waldo	2638	8008	7362	10579	28591
Washington	3382	9603	8635	8383	30003
York	23541	105278	57062	18743	204625
<b>Grand Total</b>	<b>161967</b>	<b>696273</b>	<b>467543</b>	<b>202243</b>	<b>1528556</b>

Note: The color gradient spans across both columns and rows. Red indicates a higher number of EMS activations whereas the green represents a lower number.

The following table can be used to answer the question of how long licensees have held a license based on current age group.

Table 3: Number of Years Licensed by Age Group

Row Labels	18 to 24	25 to 40	41 to 55	over 55	Grand Total
0		5	4	1	10
1	16	26	12	5	43
2	67	61	16	8	85
3	485	412	127	71	610
4	57	91	36	13	140
5	70	84	48	11	143
6	83	463	470	234	1167
7	27	196	105	49	350
8	10	202	102	52	356
9	3	334	638	330	1302
10		39	25	14	78
11		1	1		2
12		2			2
13		2	2	1	5
14		1			1
17		2	3		5
19		1			1
22			1		1
<b>Grand Total</b>	<b>818</b>	<b>1922</b>	<b>1590</b>	<b>789</b>	<b>4301</b>

Note: The color gradient is compared across all columns and rows. In this case, red indicates fewer clinicians, whereas green indicates more clinicians.

Table 4: Count of Licensees by Level

Licensure Level	Count
Paramedic	1448
Advanced EMT	859
Emergency Medical Technician	2531
Emergency Medical Responder	89

The table above reflects the count of licensees by their current license level within the Maine EMS. This data reflects the most current licensure data as of November 4, 2020.

The following figure represents the change in count of licenses by level over the past five years. It is important to note that the increases in count do not necessarily mean that those individuals are working in the field but are just licensed at that specific level. It is important to note that there the EMT Critical Care certification ended in 2016.

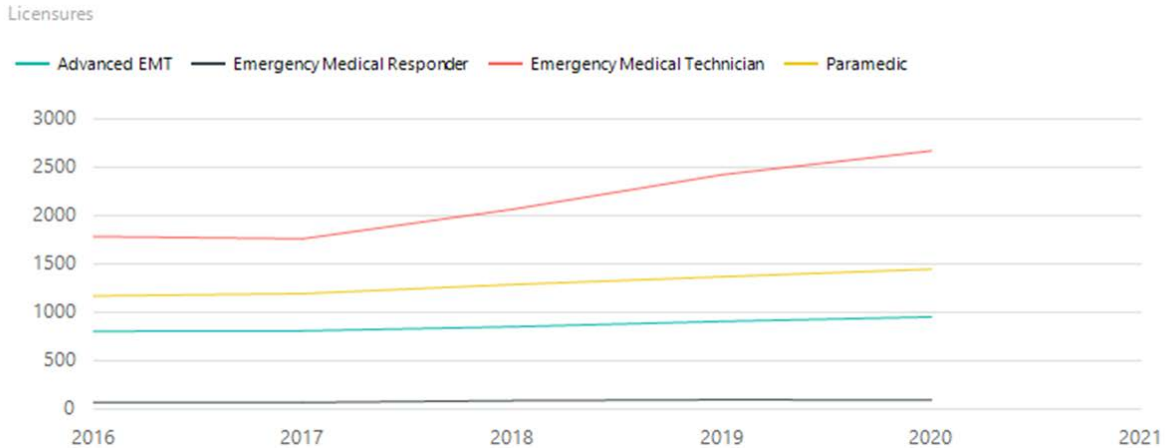


Figure 1: Count of Licenses by Level Over the Past Five Years

## Services and Affiliations

This section is designed to address questions that related to the services and service types that EMS clinicians were affiliated with while licensed with Maine EMS.

Table 5 represents the number of services in the State of Maine based on their permitted response level. It should be noted that many services are licensed at lower response levels but permitted to higher levels which means that they are only obligated to provide response at the lower level but, if resources are available, respond at the higher level of care.

Table 5: Count of Agencies by Service Permit Level

Agency Service Permit Level	Count
Advanced Emergency Medical Technician (AEMT)	26
Emergency Medical Responder (EMR)	6
Emergency Medical Technician (EMT)	109
Paramedic	167

The following table details the associations between licensed services and the clinicians that staff them. The clinician service associations represent the number of clinician service relations within the specified category. That these numbers are elevated suggests that many clinicians work for multiple agencies. The distinct clinicians represent the unique license numbers that are associated with at least one agency type. This data suggests that 3,527 EMS clinicians are associated with at least one 911 response organization that provides transportation. The distinct agencies value indicates the number of agencies that provide that type of service.

*Table 6: Clinician Service Relationships*

Service Type	Clinician Service Associations	Distinct Clinicians	Distinct Agencies
911 Response (Scene) with Transport Capability	8909	3527	162
911 Response (Scene) without Transport Capability	1586	1163	113
Air Medical	58	58	1

The following table details the associations between the organization status of licensed services and the clinicians that staff them. The clinician service associations represent the number of clinician service relations within the specified category. The distinct clinicians represent the unique license numbers that are associated with at least one agency type. This data suggests that 3,407 EMS clinicians are associated with volunteer or mixed organization and that 212 (77%) of organizations rely on some level with volunteer participation. The distinct agencies value indicates the number of agencies that provide that type of service.

*Table 7: Clinician Agency Associations by Organizational Status*

Organization Status	Clinician Service Associations	Distinct Clinicians	Distinct Agencies
Mixed	4904	2644	133
Non-Volunteer	4669	2513	64
Volunteer	980	763	79

Table 8: Clinician Service Relationships

# Agencies Associated with	# Clinicians
179	1
35	1
30	1
26	1
17	1
16	2
15	3
14	2
13	6
12	5
11	8
10	8
9	20
8	51
7	76
6	155
5	235
4	372
3	632
2	894
1	1415
0	387

Table 8 lists the number of clinicians having relationships with the specified number of agencies. The two most notable facts from this table is that 12% of licensed clinicians have associations with 5 or more agencies while 8% of clinicians have no service affiliation.

## Staffing of EMS Activations

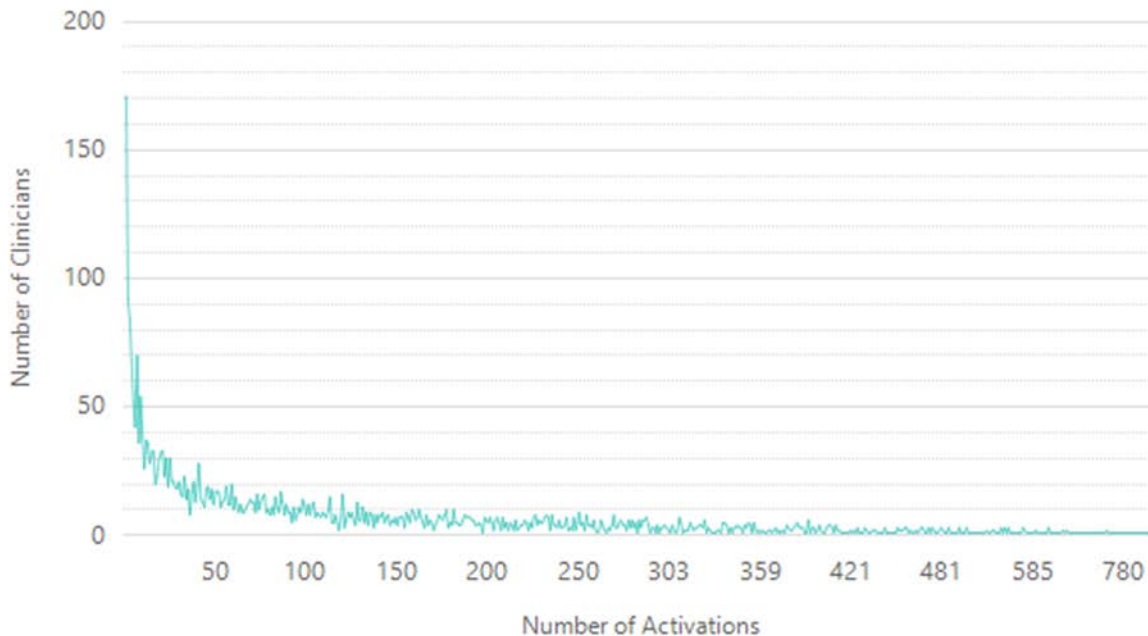
The analysis of clinician participation in EMS Activations can place a spotlight on an impactful issue. Much like the disparities in the number of clinician service affiliations shown above there is also a disparity in clinician participation in EMS activations. This data cannot lend insight as to the motivation for nor against participation by clinicians in EMS activities.

*Table 9: EMS Activation Participation by Clinicians*

Table 9 shows the number of clinicians by ranges of the average number of calls participated in. The data is over 2018, 2019 and 2020. The average is determined by the number of years during that period each clinician was licensed. The table shows that 42% of clinicians participate in, on average, one call a week. 6% participate in at least 1 call per day. This is contrast to the 25% who average less than 1 call per year, 22% of which average 0 calls per year. Figure 2 shows how quickly the number of providers decrease as number of calls rise.

Activations Per Year	# Clinicians
No Calls	1073
Less than 1	147
1 to 9	675
10 to 49	1083
50 to 99	668
100 to 299	1111
300 to 600	295
Over 600	32

Clinician Activation Count On or After 01/01/2020 and Before 01/01/2021



*Figure 2: EMS Activations by Clinicians in 2020*

Similarly, the number of average weekly hours clinicians spend on calls dramatically decreases as the number of average hours increases.

Number of Clinicians for Average Hours Per Week

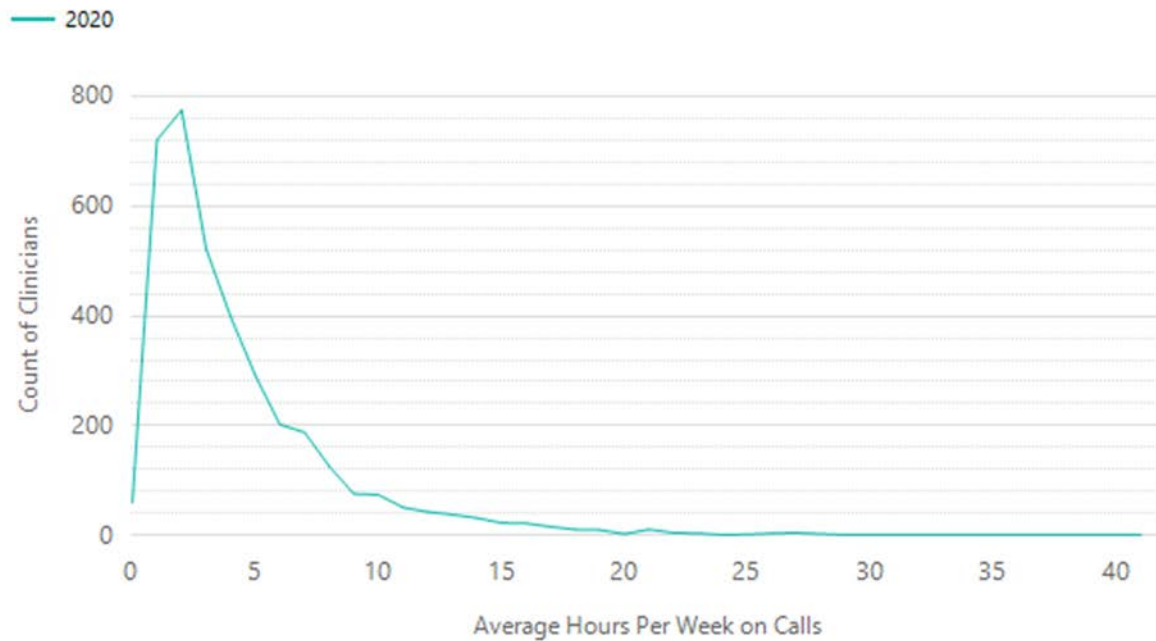


Figure 3: Average Clinician Hours Per Week Spent on Incidents

One of the perceived impacts of EMS staffing shortages is the need for requesting additional services. Table 9 shows that this need increased in 2019. The data for the table was extracted November 4, 2020 and the total for 2020 is projected to increase by an amount similar to the 2018-2019 increase despite an anticipated 9% decrease in call volume between 2019 and 2020

Table 10: Other Service Participation

Service Type	2018	2019	2020	Grand Total
Fire/Rescue	4188	4968	4920	14076
Hazmat	4	9	2	15
Health Care Provider	236	312	223	771
Law Enforcement	5848	6804	6171	18823
Other	99	106	95	300
Other EMS Agency	2919	3411	3379	9709
<b>Grand Total</b>	<b>13294</b>	<b>15610</b>	<b>14790</b>	<b>43694</b>



Another area of impact of staffing shortages is delays. The following two tables show measures of documented delay from 2018 through 2020. Table 11 shows dispatch delays while Table 12 shows Response Delays. More notable perhaps than the trend of increase in some of these measure over time is that these delays do not appear to be rare occurrences.

Table 11: Dispatch Delays

<b>Dispatch Delays Service Type/Year</b>	<b>Diversion/Failure (of previous unit)</b>	<b>High Call Volume</b>	<b>No EMS Vehicles (Units) Available</b>	<b>Grand Total</b>
<b>911 Response (Scene)</b>	<b>11</b>	<b>76</b>	<b>88</b>	<b>175</b>
2018	5	36	30	71
2019	1	16	27	44
2020	5	24	31	60
<b>Intercept</b>	<b>1</b>		<b>1</b>	<b>2</b>
2019			1	1
2020	1			1
<b>Interfacility Transport</b>	<b>1</b>	<b>24</b>	<b>29</b>	<b>54</b>
2018		5	9	14
2019	1	6	10	17
2020		13	10	23
<b>Medical Transport</b>		<b>4</b>	<b>5</b>	<b>9</b>
2019		2	3	5
2020		2	2	4
<b>Mutual Aid</b>	<b>4</b>	<b>3</b>	<b>7</b>	<b>14</b>
2018	1	1	4	6
2019	2	1	2	5
2020	1	1	1	3
<b>PIFT (Paramedic Interfacility Transfer)</b>		<b>6</b>	<b>2</b>	<b>8</b>
2018		1	1	2
2019		1	1	2
2020		4		4
<b>Public Assistance/Other Not Listed</b>		<b>3</b>	<b>1</b>	<b>4</b>
2018		1		1
2019		1		1
2020		1	1	2
<b>Specialty Care Transport</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>6</b>
2018		1	1	2
2019	1	1		2
2020	1		1	2
<b>Grand Total</b>	<b>19</b>	<b>118</b>	<b>135</b>	<b>272</b>

Table 12: Response Delays

Response Delay Service Type/Year	Diversion (Different Incident)	Rendezvous Transport Unavailable	Staff Delay	Vehicle Failure of this Unit	Grand Total
<b>911 Response (Scene)</b>	<b>69</b>	<b>4</b>	<b>389</b>	<b>6</b>	<b>468</b>
2018	16		99	1	116
2019	27	1	162	2	192
2020	26	3	128	3	160
<b>Community Paramedicine</b>	<b>1</b>		<b>1</b>		<b>2</b>
2020	1		1		2
<b>Intercept</b>			<b>3</b>		<b>3</b>
2019			3		3
<b>Interfacility Transport</b>	<b>17</b>	<b>5</b>	<b>48</b>	<b>4</b>	<b>74</b>
2018	8		13		21
2019	4		21	1	26
2020	5	5	14	3	27
<b>Medical Transport</b>	<b>5</b>		<b>27</b>		<b>32</b>
2018	3		7		10
2019			15		15
2020	2		5		7
<b>Mutual Aid</b>	<b>3</b>		<b>6</b>		<b>9</b>
2018			2		2
2019	1		2		3
2020	2		2		4
<b>PIFT (Paramedic Interfacility Transfer)</b>	<b>2</b>		<b>10</b>		<b>12</b>
2018	1		5		6
2019			2		2
2020	1		3		4
<b>Public Assistance/Other Not Listed</b>	<b>1</b>		<b>3</b>	<b>1</b>	<b>5</b>
2018	1		1	1	3
2019			2		2
<b>Specialty Care Transport</b>			<b>10</b>		<b>10</b>
2018			2		2
2019			2		2
2020			6		6
<b>Standby</b>			<b>1</b>		<b>1</b>
2020			1		1
<b>Grand Total</b>	<b>98</b>	<b>9</b>	<b>498</b>	<b>11</b>	<b>616</b>

## Unanswered questions

Questions that cannot be answered by data currently being collected

- Are you having a difficult time filling open positions or even getting qualified applicants?
- Has your overtime budget increased in the period beginning April 1, 2020, through now?
- Are you calling Mutual Aid more often than during the same period last year? And the year before?
- Do you have shifts that you can't fill? If yes, how often?
- Have you had times when you couldn't staff an ambulance?
- Total number of staff: full time, per-diem, drivers
- Licensure level for full time and per-diem staff
- Open vacancies for full time, per-diem and drivers
- Is education/training provided by the service, if so, how
- Is education/training provided by outside educators, if so how
- Other education/training mechanisms