ANNUAL REPORT

FY2020

MANATEE COUNTY EMS

Presented to the Manatee County Board of County Commissioners

November 10, 2020
MISSION STATEMENT

To provide pre-hospital medical care, treatment and transportation based upon the highest standards of medical care in a professional, prompt and efficient manner to the citizens of Manatee County.

ORGANIZATIONAL CHART & REPORTING STRUCTURE

[Diagram showing organizational structure with names and positions]
19* AMBULANCES

Daily coverage & staffing consists of 19 ambulances strategically-located throughout the county, with a minimum of 1 EMT and 1 paramedic staffing each ambulance

* FY21 has introduced a 20th ambulance and will see its 21st added in the 2nd FY quarter

10 ambulance crews
working on a 24-hour rotation daily
(24 hours ON / 48 hours OFF)

4 ambulance crews
working on a 12-hour rotation daily
(24-hour coverage by 12-hour AM/PM crews)

5 ambulance crews
working on a 12-hour rotation daily
(Daytime staffing, only; not 24-hour coverage)

1 Advanced Life Support (ALS) Fire Engine
staffed 24-hours with a Paramedic/Firefighter in Myakka

Operating out of
18 locations
strategically-located throughout Manatee County

5 County EMS Bases

13 Shared-Agreement Locations
“EMS Responding” ... from the time that the tones sound to when your ambulance is responding is only an average of **1 minute and 2 seconds** (chute time) ... that’s quick! Once crews start responding, it takes an average of **8 minutes and 3 seconds** (response time) to arrive to your scene (keeping in mind that some responses only take a minute or two, while others may take over twenty - especially in the more rural areas of the county). Once on scene, EMTs and paramedics assess their patient, provide appropriate treatments, and package them for their transport - which averages out to **18 minutes and 38 seconds** (on-scene time) - before they begin transporting them to a local hospital. From start-to-finish (dispatch-to-available), the average call takes **46 minutes and 34 seconds** to complete.

*COVID-19 made an obvious impact on the call volume trajectory & trending throughout FY20 ... not only in Manatee County, but throughout the nation.*
3-year data averages place January as the busiest month based on call volume, and a complete call volume analysis results in an average monthly volume of 4460 calls per month.

After a 5-year analysis of EMS system demand, monthly call volume demonstrated March as the busiest month with an average volume of 4352 calls per month.
"A" is for "Alpha"

Ambulances throughout Manatee County are called "Alpha" units because the "A" correlates to Advanced Life Support (ALS). Long-range planning for the Division anticipates the addition of "Bravo" units for supplemental Basic Life Support (BLS) ambulances.

LIVE-WORK-PLAY

Monday through Friday consists of the busiest days of the week in Manatee County for its EMS system. Why is this?

Residents + Commerce = Traffic & Activity

Increased roadway traffic, an in-county working population, and an abundance of residents calling Manatee County their “home” make its weekdays just as impactful as its weekends... which speaks to the county’s family & bedroom community appeal.

Call Volume by Day of Week per Fiscal Year

<table>
<thead>
<tr>
<th>DAY OF WEEK</th>
<th>FY2018</th>
<th>FY2019</th>
<th>FY2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>6382</td>
<td>7707</td>
<td>6837</td>
</tr>
<tr>
<td>Monday</td>
<td>7732</td>
<td>8218</td>
<td>7573</td>
</tr>
<tr>
<td>Tuesday</td>
<td>7436</td>
<td>8117</td>
<td>7546</td>
</tr>
<tr>
<td>Wednesday</td>
<td>7334</td>
<td>7907</td>
<td>7452</td>
</tr>
<tr>
<td>Thursday</td>
<td>7644</td>
<td>8116</td>
<td>7586</td>
</tr>
<tr>
<td>Friday</td>
<td>7694</td>
<td>8566</td>
<td>7605</td>
</tr>
<tr>
<td>Saturday</td>
<td>7209</td>
<td>8035</td>
<td>7145</td>
</tr>
</tbody>
</table>

Friday is the busiest day of the week, according to 3-year data analysis, with a total average of 7955 calls occurring on Fridays throughout the year (that breaks-down to an average of 152 calls occurring each Friday of the week, compared to 146 average calls per day).
About our Ambulance Fleet …

Approximately **600,000 miles** driven annually amongst our entire fleet of ambulances (front-line & reserve) - that’s an average of **23,000 miles per ambulance** (which is still further than two round-trips from Bradenton to Anchorage, Alaska)

Over **86,000 gallons of diesel fuel** consumed by EMS

Over **52,000 engine hours** logged amongst the fleet last fiscal year - with an average of **2000 engine hours** per ambulance

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Omega - Echo

911 calls are coded by a priority dispatching system whereby Omega calls are the lowest acuity level, followed by Alpha, Bravo, Charlie, Delta, and Echo as the highest level.
12:00 (noon) is the busiest average hour time period, according to a 3-year data analysis, and 11:00 to 17:00 is the busiest average 6-hour time period of the day.

**12/7 “PEAK” STAFFING**

12 hours per day 7 days per week.

Because of this, Manatee County EMS staffs 5 “peak” response ambulances that are designed to cover the expanding high call volume time periods throughout the day, and allows for the system to contract to a decreased staffing number during time periods of decreased call volume.

Call Volume by Hour of Day per Fiscal Year

<table>
<thead>
<tr>
<th>TIME (HOUR)</th>
<th>FY2018</th>
<th>FY2019</th>
<th>FY2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>00:00</td>
<td>1233</td>
<td>1374</td>
<td>1344</td>
</tr>
<tr>
<td>01:00</td>
<td>1075</td>
<td>1207</td>
<td>1115</td>
</tr>
<tr>
<td>02:00</td>
<td>1006</td>
<td>1145</td>
<td>1095</td>
</tr>
<tr>
<td>03:00</td>
<td>1023</td>
<td>1065</td>
<td>975</td>
</tr>
<tr>
<td>04:00</td>
<td>944</td>
<td>1006</td>
<td>971</td>
</tr>
<tr>
<td>05:00</td>
<td>1043</td>
<td>1025</td>
<td>1066</td>
</tr>
<tr>
<td>06:00</td>
<td>1300</td>
<td>1336</td>
<td>1295</td>
</tr>
<tr>
<td>07:00</td>
<td>1784</td>
<td>1811</td>
<td>1699</td>
</tr>
<tr>
<td>08:00</td>
<td>2225</td>
<td>2518</td>
<td>2272</td>
</tr>
<tr>
<td>09:00</td>
<td>2771</td>
<td>2997</td>
<td>2721</td>
</tr>
<tr>
<td>10:00</td>
<td>3016</td>
<td>3353</td>
<td>2885</td>
</tr>
<tr>
<td>11:00</td>
<td>3179</td>
<td>3479</td>
<td>2991</td>
</tr>
<tr>
<td>12:00</td>
<td>3285</td>
<td>3509</td>
<td>2994</td>
</tr>
<tr>
<td>13:00</td>
<td>3092</td>
<td>3493</td>
<td>3041</td>
</tr>
<tr>
<td>14:00</td>
<td>3142</td>
<td>3512</td>
<td>2970</td>
</tr>
<tr>
<td>15:00</td>
<td>3143</td>
<td>3474</td>
<td>3010</td>
</tr>
<tr>
<td>16:00</td>
<td>3098</td>
<td>3377</td>
<td><strong>3046</strong></td>
</tr>
<tr>
<td>17:00</td>
<td>2929</td>
<td>3153</td>
<td>2860</td>
</tr>
<tr>
<td>18:00</td>
<td>2673</td>
<td>2916</td>
<td>2831</td>
</tr>
<tr>
<td>19:00</td>
<td>2525</td>
<td>2697</td>
<td>2684</td>
</tr>
<tr>
<td>20:00</td>
<td>2240</td>
<td>2534</td>
<td>2411</td>
</tr>
<tr>
<td>21:00</td>
<td>2088</td>
<td>2278</td>
<td>2149</td>
</tr>
<tr>
<td>22:00</td>
<td>1719</td>
<td>1945</td>
<td>1875</td>
</tr>
<tr>
<td>23:00</td>
<td>1490</td>
<td>1603</td>
<td>1568</td>
</tr>
</tbody>
</table>
30,764 patients were transported to nearly a dozen local hospitals.

**In-County Hospitals & Emergency Departments**

Received 95% of Transported Patients in FY20

**Manatee Memorial Hospital**
15,745 patients
2,736 Injury/Trauma - 419 Suspected Stroke - 152 Suspected Cardiac

**Blake Medical Center**
8,643 patients
2,042 Injury/Trauma - 209 Suspected Stroke - 55 Suspected Cardiac

**Lakewood Ranch Medical Center**
3,929 patients
803 Injury/Trauma - 126 Suspected Stroke - 61 Suspected Cardiac

**Doctors Free-Standing Emergency Department**
958 patients
372 Injury/Trauma (Note: Suspected Stroke & Suspected Cardiac patients are not typically transported to free-standing emergency departments)

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8am-8pm

The busiest 12-hour time period throughout the day is between 8am-8pm, which is why additional ambulances are added into the “peak” staffing matrix strategically throughout this time period.
# QUALITY CARE

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responses with Lights &amp; Siren to the Scene</td>
<td>82%</td>
</tr>
<tr>
<td>Responses without Lights &amp; Siren to the Scene</td>
<td>18%</td>
</tr>
<tr>
<td>Transported without Lights &amp; Siren to the Hospital</td>
<td>91%</td>
</tr>
<tr>
<td>Transported with Lights &amp; Siren to the Hospital</td>
<td>9%</td>
</tr>
<tr>
<td>First-Pass Success Rate with an Advanced Airway Device</td>
<td>90%</td>
</tr>
<tr>
<td>First-Pass Unsuccessful Rate Factors: Edema, Obstruction, Swelling, Trauma</td>
<td>10%</td>
</tr>
<tr>
<td>Witnessed Cardiac Arrest Survival Rate</td>
<td>23%</td>
</tr>
<tr>
<td>Total Cardiac Arrest Calls with Resuscitation Attempted</td>
<td>475</td>
</tr>
<tr>
<td>Individual Medication Doses Administered</td>
<td>17,403</td>
</tr>
<tr>
<td>Most-commonly delivered: Ondansetron (Zofran) - Anti-nausea medication</td>
<td>14%</td>
</tr>
<tr>
<td>Arrival-to-ECG Average Time for Patients with Chest Pain</td>
<td>6:17</td>
</tr>
<tr>
<td>Total Time On-Scene for Patients with a Suspected Heart Attack</td>
<td>17:47</td>
</tr>
<tr>
<td>On-Scene Time Less Than 20 Minutes</td>
<td>64%</td>
</tr>
<tr>
<td>Average On-Scene Time for All Responses</td>
<td>18:38</td>
</tr>
<tr>
<td>Patients with a STEMI Alert Notification to the Hospital</td>
<td>185</td>
</tr>
<tr>
<td>Of Which Did Not Meet Selection Criteria, but Were Suspected of Having a Heart Attack</td>
<td>130</td>
</tr>
<tr>
<td>Calls Involving Motor Vehicle Collisions</td>
<td>4870</td>
</tr>
<tr>
<td>Percentage of Patient Transports Due to Motor Vehicle Collisions</td>
<td>36%</td>
</tr>
<tr>
<td>Patients with a Stroke Alert Notification to the Hospital</td>
<td>685</td>
</tr>
<tr>
<td>Met Selection Criteria: Facial Droop, Arm Drift, Speech Difficulty, or Decreased Grip Strength</td>
<td>69%</td>
</tr>
</tbody>
</table>

51,868 Total Calls for Service
GENERAL MEDICAL SYMPTOMS (~15,500 Calls)
Weakness, nausea, sepsis, pregnancy-related, allergic reactions, flu-like symptoms, diabetic issues, and other generalized symptoms

TRAUMA SYMPTOMS (~11,000 Calls)
Falls, bleeding/hemorrhage, fractures/broken bones & sprains/strains, burns, electrocution, and other injuries

NEUROLOGICAL SYMPTOMS (~8800 Calls)
Stroke, syncope/fainting, seizures, paralysis, unresponsiveness, transient ischemic attacks, and headaches/migraines

PAIN SYMPTOMS (~5700 Calls)
Abdominal pain, kidney stones, generalized pain, and other non-traumatic or non-cardiac-related pain

CARDIAC SYMPTOMS (~4100 Calls)
Chest pain, cardiac arrhythmias/irregular heart rhythms, hypertension, hypotension, and cardiac arrest

RESPIRATORY SYMPTOMS (~3600 Calls)
Shortness of breath, pulmonary edema, asthma, bronchitis, chronic obstructive pulmonary disease (COPD)

PSYCHIATRIC/BEHAVIORAL SYMPTOMS (~3100 Calls)
Overdose, suicidal ideations, anxiety, depression, excited delirium, and substance abuse

PATIENT PRIMARY IMPRESSION
NOTABLE EVENTS

BRINGING TRAINING TO THE STREETS

The redevelopment of the Division’s Field Training Officer (FTO) program has brought more training directly to the crews, rather than having to bring all of the crews to a common location for in-services, new hire credentialing, and continued education.

TECHNOLOGY UPGRADES

Updates & upgrades to mobile data terminal computers, portable & mobile radios, and training equipment have helped to both maintain our operational status, as well as propel us into the upcoming years in a highly connected & advanced way.

REHAB & DEPLOYMENT

RAPTOR-1 (Rapid Activation Patient Transport Or Rehab), the Division’s ambubus, was highlighted in countywide fire officer training for its rehab capabilities, and was deployed to the panhandle in September to perform multiple patient transports.

COMMUNITY PARAMEDIC GRANT FUNDING

Proof-of-concept funding for the CP program and its patient remote monitoring device opportunities, as well navigation assistance through a licensed clinical social worker, have all been initiated through grant funding.

TRAINING ... IN AN AMBULANCE

“Practicing like you play” is now more of a reality as the Division welcomes a new addition to its training “fleet” - a model training ambulance located inside the Public Safety Center.

STATION 10 PLANNING

Planning has begun for the EMS Division’s first-ever - ground-up & constructed - stand-alone EMS station to be located on the G.T. Bray Park campus.
Having a social media presence has helped us stay engaged with both our employees and the community through public safety announcements and community outreach initiatives containing pictures & infographics.

In situations requiring additional personal protective equipment, ballistic vests have been added to every responding ambulance and supervisor vehicle to account for all crew members during situations of active or anticipated violence.

The transition of James Crutchfield, CP Division Chief, back into the EMS Division as its new EMS Division Chief brought about an opportunity for the CP program to return to the EMS Division and provide a more global approach toward paramedicine care.

Unlike any other in the industry, a new “family” of highly-advanced (and extremely life-like) mannequins have been welcomed into the Division’s training program to help bring training scenarios “to life” through advanced technology & attention to detail.

A new section within the Division - Special Operations - has begun to take shape as it lessens the already overstretched Operations and Administration sections, and will oversee logistics/support services, planning, and community paramedicine.

Our dash-cam monitoring & analysis vendor - Lytx - has awarded the Division with a 5-Star rating for seeing a 66% decrease in monitored events and a 67% decrease in the severity of monitored events.

COVID-19 also brought about situations where our ambulance resources were deployed throughout the Central region of the state to facilitate interfacility patient transports, and to provide additional support to other highly-taxed resources.

The introduction of “Rucker,” a collaborative partnership service dog, has allowed EMS crews the opportunity to de-stress and find familiar comfort in a furry friend.
COVID-19 has certainly made an impact on the finance, logistics, operations, and planning aspects of the EMS Division - among many other divisions (and EMS agencies throughout the nation). Unanticipated impacts as a result of this global pandemic have certainly been prominent around decreased call volume, supply chain hardships, and clinical practice deviations from normal medical operations. All of these have revolved around an increased need for personal protective equipment (PPE), process changes for symptom screening, and social/physical distancing practices affecting all aspects of our otherwise close-contact industry.

Impacting the EMS Division, specifically, an 8.6% decrease in annual call volume - contrasted with an increase in patient injury/illness acuity - has disrupted budget projections ... especially as the need for increased PPE & decontamination resources have been a correlating result.

In order to adapt to this changing environment, the EMS Division made aggressive changes to our PPE requirements, made process changes by utilizing its community paramedics - and other trained paramedic providers - in a proactive symptom screening process, and increased the agency’s decontamination & cleaning regiments inside of its ambulances in order to prevent the spread of the virus. All of this required an extensive amount of planning, partnership, and collaboration between multiple Divisions, external stakeholders, product vendors, and local & statewide medical subject matter experts.

Fortunately, proactive logistics pre-planning of pandemic PPE & equipment from years’ past worked in the Division’s favor, as it did not have to suffer many of the initial significant hardships that many other EMS agencies throughout the nation had to face. As CARES money became available, the focus of the Division’s spending has been directed toward disposable & reusable PPE options, decontamination equipment, PPE storage, and automation conversion to allow for increased data sharing, employee safety, future planning, and maintaining our current service level.
Symptom Screening & Response Plans

EMS crews were initially challenged with having to adjust their response & assessment practices by performing a 6-foot assessment on every patient encounter - while donning additional personal protective equipment (PPE) - in order to limit the potential for possible infection exposure.

Initial 6-foot assessments required EMS crews to wear, at a minimum, protective glasses & surgical masks for every patient encounter.

FEVER-COUGH-WEAKNESS
DIFFICULTY BREATHING
RECENT TRAVEL
GROUP INTERACTION

COUNTLESS MORE

Patient Encounters
Initially Suspecting COVID-19 Symptoms

Early into the spread of the virus, EMS crews, 911 dispatchers, and 311 call-takers began screening patients for COVID-19 symptoms and dispatching Community Paramedic units rather than ambulances to further screen and direct patient navigation & care in order to reduce crew exposure risk and high system utilization.

FEVER-COUGH-WEAKNESS
DIFFICULTY BREATHING
RECENT TRAVEL
GROUP INTERACTION

1187
Total Patients Encountered
Meeting COVID-19 Criteria

1040
Total Patients Transported
Meeting COVID-19 Criteria

When transported, patients meeting COVID-19 symptom criteria required that EMS crews donned additional PPE, such as N95 particulate masks, goggles, and protective gowns or coveralls; each ambulance also required thorough decontamination after each transport in order to reduce the risk of further contamination.
COVID-19 certainly impacted the Division’s ability to connect with the community - in a traditional sense - but it did not stop our abilities altogether. Earlier events like the County Fair, ongoing events like welcoming students back to school, and new initiatives like “Water Safety Wednesday” all afforded our EMTs and paramedics to be present - engaged - within the community … even at a slightly more social distance. Other impactful programs continued throughout the year and endured as operational changes were made. Despite our need to adapt to a changing environment, thousands of citizens were still positively impacted by the efforts of our community risk reduction and outreach initiatives through public relations efforts like social media interaction and community-based partnerships.
### Community Paramedicine

<table>
<thead>
<tr>
<th>Service</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Paramedicine appointments</td>
<td>2563</td>
</tr>
<tr>
<td>Program referrals</td>
<td>1328</td>
</tr>
<tr>
<td>Patients enrolled</td>
<td>721</td>
</tr>
<tr>
<td>Medical provider communications</td>
<td>402</td>
</tr>
<tr>
<td>Ambulance call diversions</td>
<td>258</td>
</tr>
<tr>
<td>Hospital transport diversions</td>
<td>198</td>
</tr>
<tr>
<td>Completed program enrollments</td>
<td>167</td>
</tr>
<tr>
<td>Medical devices loaned</td>
<td>128</td>
</tr>
<tr>
<td>911 responses made</td>
<td>806</td>
</tr>
<tr>
<td>Estimated total healthcare system cost avoidance</td>
<td>$357,966</td>
</tr>
</tbody>
</table>

The mission of our County’s **COMMUNITY PARAMEDICINE** program is to focus on patient outreach, wellness, and navigation within the healthcare system.

Patients enrolled in our program have access to paramedic providers, a licensed clinical social worker, pharmacy interns & college faculty, and a resource coordinator. We utilize countywide resources to help patients decrease their dependence on the 911 system, focus their attention toward establishing an individualized care network, and promoting their own holistic well-being through addressing the root causes behind their chronic care & social issues.
FY20 brought about a unique timeframe - one that changed the landscape and environment related to how employee engagement could be performed and continued.

Traditional in-person gatherings transitioned to limited-capacity visits; quarterly large group sessions transitioned to regular online updates ... and all of this was performed with an experimental approach. As a Division, we learned what went well and how opportunities to change past practices could better impact our employee engagement efforts in the future.

Our results: blended engagement opportunities allow us to increase outreach, without decreasing impact.

WEEKLY UPDATES

Communication - information - is critical in any organization. Especially in a changing landscape where practices need to be regularly modified & updated, flow charts need clear dissemination, and a mechanism to collaborate on a large scale needs to be available ... this has been a positive impact of COVID-19 on our Division. Weekly (even bi-weekly) updates have been held for all staff members via broadcast platform and intra-division information sharing has been at an all-time high as a result. This has also been complimented by some direct supervisor-to-employee (District Chief-to-crew) online social engagement to lighten the mood a bit from some of the daily stresses of the job (and as a result of COVID).
AWARDS & RECOGNITIONS

While a traditional, large-gathering-based award ceremony couldn’t be performed, a slightly faster-pace drive-thru opportunity could be presented. The Division’s first **socially-distanced pinning ceremony** was held at our Lakewood Ranch EMS base and allowed for crews & families to arrive, walk into the ambulance bay, receive their badges & pin awards, and step aside for the next recipient. Separate from this event, **monthly online award ceremonies** have been celebrated and have allowed for Division employee of the month awards, Medical Director awards, Phoenix life-saving awards, and other recognitions to be shared with all employees … all from the comfort or convenience of their base or home.

FOOD TRUCK WEEK

One of the largest **success** stories of the year—at least by popular demand - was the Division’s first-ever “food truck week.” This was an **excellent opportunity** for leadership staff to share their **appreciation** with all employees through an entire week in August, full of one of the many items that nearly every EMT and paramedic working on the streets appreciates … great food! Sandwiches, wraps, tacos, snacks, and desserts filled an entire week of **celebration & appreciation** for all of the **hard work** and **great deeds** that our employees perform week-in and week-out. This endeavor was surely a **success** (and will be a tough event to beat next year)!

Weekly/Bi-weekly Staff Updates  ★  Online Award Ceremonies
Online Continued Education  ★  Increased Advancement Opportunities
“Rucker” the Service Dog  ★  Semi-annual Pinning Ceremony  ★  Admin. Staff Crew Visits
District Chief Online Crew Engagement  ★  In-station Training  ★  Food Truck Week
Open & Frequent Communications
2021 INITIATIVES

QUALITY
- Remediation Plan & Process
- Protocol Advancement & Promoting Evidence-Based Practices
- Quarterly System Review & Stakeholder Collaboration
- Patient Utilization Review Partnerships
- Employee & Patient Satisfaction Surveying

TRAINING
- Data-Driven Training Initiatives
- Field Training Officer Program Expansion
- Learning Management System Leverage
- Advanced Mannequin Simulation Training
- Improved New Hire Training & Orientation Processes

COMMUNITY
- Increased Community Paramedicine Patient Encounters & Enrollment
- Outreach, Wellness, and Navigation Approach
- Public Education & Social Media Promotion
- Increased Patient Remote Monitoring Capabilities
- Community Risk Reduction & Engagement
**OPERATIONS**

- Alpha-14 - Myakka City Ambulance
- Alpha-21 - University Corridor Ambulance
- Cardiac Monitor RFP
- RAPTOR-2 Ambubus Project
- Station 10 Relocation & Build Project
- YoDeck Station Communication Boards
- New Medication & Equipment Bags

**ADMINISTRATION**

- Automation Conversion
- FirstWatch Data Surveillance Software
- Continue to Implement “Just Culture”
- Results First HR Retention Pilot
- Bargaining Unit Contract Renegotiation
- Increased Employee Engagement Initiatives
- General Order Review & Revision and PowerDMS Conversion

**PLANNING**

- 5-Year Planning / Strategic Initiatives
- Succession Planning
- CAAS Accreditation Preparation
- “Master Plan” Preparation

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