# Matanuska-Susitna Borough Emergency Medical Services Data Analysis

## *Executive Summary*

Data for this report was obtained from Matanuska-Susitna Borough Emergency Medical Services (MSBEMS) and in-depth interviews with emergency medical technicians (EMTs), paramedics, fire chiefs, medical providers, hospital staff, and other first responders. In a 12-month period during 2018-2019, MSBEMS responded to approximately 9,248 emergency calls. The calls to MSBEMS were almost evenly split between the classification of non-emergent[1] (53%, 4,231) and emergent calls (47%, 3,728).

The MSBEMS system responds to calls that were distributed almost evenly by gender. Older residents are more likely to request assistance than younger residents. The collection of data on race/ethnicity and sexual orientation and gender was incomplete and this is an area that can be improved in the future to both understand patterns in health inequity and improve healthcare delivery. Most of the service was provided in the core area of the borough. This is defined as the area including and surrounding Wasilla and Palmer.

### *Older Residents*

Annually, there were approximately 2,722 calls from older residents (60+ years) representing 29% of all 911 calls. These calls cost $3,810,976. Forty-nine percent of the calls were classified as requiring a non-emergent response. The most common call types for older residents were:

1. Falls (23%)
2. Breathing problems (12%)
3. Sick person (11%)
4. Medical-other (9%)
5. Chest pain (7%)
6. Abdominal pain (6%)

Eighty-one percent of calls for older residents resulted in transport to the hospital. Eleven percent of calls that did not result in transport after treatment cost $128,609 and the four percent of the calls for lift assist cost a total of $46,323.

### *Residents with Behavioral Health Needs*

Behavioral health includes both mental health and substance use disorder. In 12 months, there were 2,574 calls for patients with behavioral health needs representing 28% of all 911 calls. These calls cost $3,582,546. Many EMS patients that have behavioral health needs do not always call for an obvious psychiatric complaint. The most common call types for patients with a history of behavioral health needs were:

1. Overdose, withdrawal, toxic exposure (11%)
2. Falls (9%)
3. Psychiatric problems (8%)
4. Sick person (8%)
5. Chest pain (7%)
6. Abdominal pain (6%)

The percent of calls that were classified as nonemergent for behavioral health patients is like that of all EMS patients (53%). Eighty-one percent are treated and transported to the hospital. Ten percent are

[1] A call is classified as “non-emergent” if the response to the situation does not require the urgency of driving with lights and a siren for transport.

treated onsite and refuse transport and four percent refused care after an assessment. The treatment onsite and no-transport calls cost a total of $110,483 and care refusal calls cost $45,171. Lift assist calls for this population cost $11,509.

### *Residents with Chronic Health Conditions*

Chronic health conditions last one or more years and require ongoing medical attention and/or limit activities of daily living. In 12 months, there were 5,159 calls for patients with chronic conditions representing 56% of all 911 calls. These calls cost approximately $7,198,060. Most calls (81%) from patients with chronic health conditions required treatment and transport to the hospital. Nine percent of the calls were treated onsite and refused transport and cost $203,701. Four percent refused care and cost $92,068. One percent of the calls required lift assist and cost $21,003. The most common types of calls from these patients were:

1. Falls (14%)
2. Medical other (12%)
3. Breathing problems (12%)
4. Chest pain (9%)
5. Sick person (9%)
6. Abdominal pain (5%)

### *High Utilizer Patients*

High utilizer patients are defined as patients that use MSBEMS five or more times a year. Reducing the demand from high utilizers can bring about cost-savings and contribute to patients' improved health. In 2019, there were 33 high utilizers. In the same year, 280 patients (2.7 average calls per patient) accounted for a total of 780 MSBEMS encounters which cost the Borough approximately $843,404. All high utilizers had a past medical history of mental health issues and many experience chronic health conditions. Approximately, half (49%) of calls for high utilizer patients were classified as non-emergent. The most common types of calls from high utilizer patients were:

1. Sick person
2. Medical other
3. Falls
4. Breathing problems
5. Abdominal pain
6. Psychiatric problems

The data presented in this report reveals that MSBEMS plays an integral role in the Mat-Su healthcare system; however, there appears to be a portion of EMS care that could be channeled to less expensive and more effective programs. The data reveals that approximately half of all calls responded to by EMS were classified as needing a non-emergent response. Older residents had 22% of calls that required treatment but did not result in transport to the hospital. These types of calls were less frequent but still substantial for residents with behavioral health needs (10%) and residents with chronic illness (10%).

The overall cost savings for decreasing these non-emergent response calls cannot be determined based on this analysis; however, the cost of non-emergent response calls for the older residents is $1.867,378 and for residents with behavioral health needs is $1,755,448. Many of these calls may be prevented by creating services that reach residents prior to them calling 911. This could include filling gaps in the physical, behavioral, and long-term care continuums of care and increasing access to existing services in

our community. Additionally, there are behavioral health crisis calls that may be better addressed by a specialized unit like a Mobile Crisis Unit.

There are several programs that have been shown to avert the need for emergency medical care. One of which, the High Utilizer Mat-Su Program (HUMS) is already active in the borough and one is being developed by the State of Alaska (Mobile Crisis Unit as part of the Crisis Now initiative). Two others that could be explored are establishing a Community Paramedicine Program and a client-centered home-based intervention program for older residents, an example of which is the Community Aging in Place-Advancing Better Living for Elders (CAPABLE Program).

### *Recommendations*

**Recommendation 1: Establish a Community Health Advisory Committee to address non-emergent service needs**

The Paramedic Foundation recommends development of a targeted effort to address the calls that MSBEMS are getting that, while feeling like an emergency and immediate need to the patient, may be addressed earlier by a form of preventive care or addressed at the time of the call by a more appropriate services like a Mobile (behavioral health) Crisis Unit. A Community Health Advisory Committee (CHAC) should be initiated with a project charter and membership specifically designed for this purpose. The CHAC could be composed of MSBEMS leadership, and representation from Mat-Su Regional Medical Center, long-term care and assisted-living programs, and the following sectors: senior services, medical services, allied health, social services and behavioral health. The CHAC can review the data in this report, discuss the need for services to address the non-emergent needs of EMS patients, and guide and monitor the development of these services.

**Recommendation 2. Implement programs to address non-emergent service needs**

Initial efforts should be focused on a few targeted areas for risk and expense reduction that will also result in improved health outcomes and greater quality of life for the affected populations. There will be some overlap between these efforts. The populations to focus on are older residents, residents with behavioral health needs and/or chronic health conditions, and EMS high utilizers.

**Recommendation 3. Explore lessons learned from the Emergency Triage, Treat, and Transport [ET3] Model**

In February 2020, the U.S. Centers for Medicare & Medicaid Services (CMS) announced its first cohort of model applicants for an initiative it named Emergency Triage, Treat, and Transport (ET3), to allow CMS beneficiaries to access the most appropriate emergency services at the right time and place. Although this program is not available in Alaska, it illustrates the federal support for significant changes in the EMS funding models that are likely to be coming to Alaska. It will be important for the CHAC to review information about this initiative.

**Recommendation 4. Improve MSBEMS Data**

The analysis for this report brought to light several next steps for MSBEMS that will improve future reports and analyses. Cleaning up the existing data collection platform would allow for more detailed and accurate reports