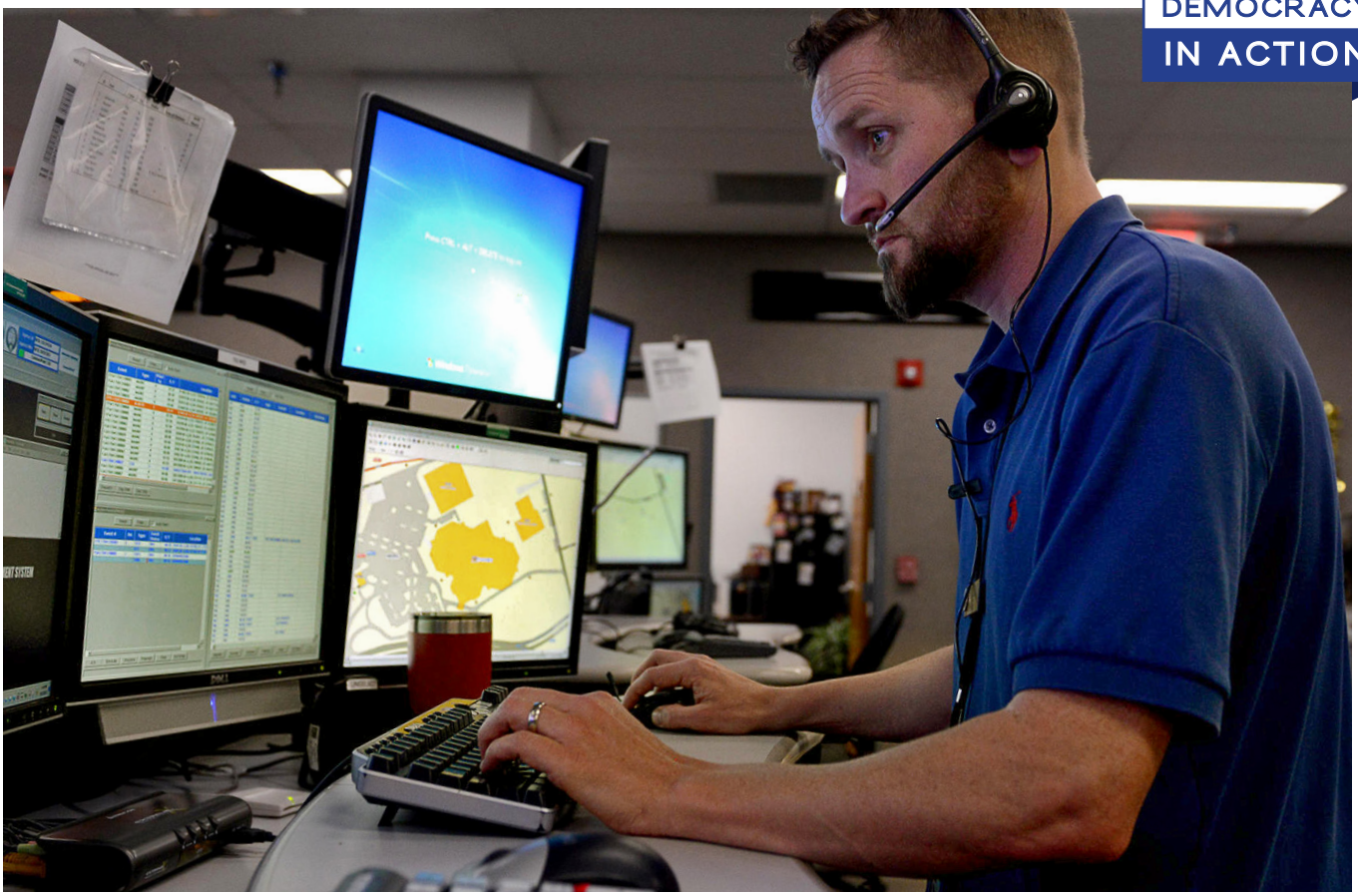
DEMOCRACY IN ACTION



Emergency Medical Services Project

Social Science 495 – Capstone in the Social Sciences
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Background

Objective

To decrease the frequency of repeat 911 callers by finding alternative options and community resources that are more appropriate to their needs rather than repeated use of Emergency Medical Services (EMS). Utiliza-tion of alternative options and resources for low acuity, non-emergent patients will help increase the avail-ability of EMS to higher acuity patients, decrease offload delays at the Emergency Room (ER), and decrease re-admittance rates.

Problem

Fire Service based EMS can be considered the gatekeepers to the healthcare system. The number of 911 habitual users has increased, with these users accessing the system for a plethora of reasons. These reasons include having limited access to primary care, assisted care, or follow up care; a lack of awareness of how to access resources other than 911 for low acuity issues; or suffering from mental health issues or substance abuse problems that interfere in appropriate determination of the 911 system.

The increase in the frequency of habitual users places a strain on EMS operationally as well as financially. This affects EMS resources, including the fire department, Emergency Medical Technicians (EMTs), paramedics, law enforcement, dispatch, ERs, hospitals, Psychiatric Emergency Response Team (PERT) clinicians, and neighboring agency resources.

Previously identified potential solutions involve delivering patient care follow-up, establishing patient care plans and education, alignment of resources for low acuity needs, and local partnerships with law enforce-ment and hospitals.

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Assignment and Methodology

The City of San Marcos and California State University San Marcos (CSUSM) have collaborated on a program called "Democracy in Action." CSUSM's Capstone in Social Sciences class paired with the City of San Marcos' Emergency Medical Services (EMS) Personnel in order to analyze the issues surrounding the misuse and abuse of the city's emergency services. This research focuses on habitual users of 911 emergency medical services. Anecdotally, habitual users might call for a variety of reasons ranging from loneliness to needing a ride to a doctor's appointment.

The Capstone in Social Sciences class was a cohort of 12 seniors with various academic experience including History, Sociology, and Communications. The class was divided into three teams of four members each. As social scientists, the goal was to gain a comprehensive perspective about the misuse and abuse of 911 emergency medical services before forming policy recommendations. To achieve this, team members conducted their own review of the existing academic research that examined misuse of EMS. Each team then combined that information into a concise literature review, which then guided the investigation of current policy around the country. The policy investigation examined past and present attempts to determine what worked or did not work and why. The next step in the process was to have each team put the pieces together to form the policy recommendations for the city. The teams combined their contributions to form a single proposal, presented here.

The limitations of this report include a primary focus on reviewing the national literature. Because the course was one academic semester, the teams were able to review academic research from across the United States and derive potential policy recommendations from that review. However, due to the limited time, the teams were unable to contextualize the recommendations locally. Therefore, some of these recommendations may have already been implemented regionally or may not be feasible given the established practices in the local community.

Contributing Factors for Misuse of 911

Patients transported in ambulances or seeking care in an ER are assumed to have the most urgent of needs. However, a population of people exists that utilizes emergency medical services when their condition does not predicate it. While acknowledging that a general misuse of emergency medical services exists, it is necessary to emphasize the impact of repeat callers who abuse the privilege of emergency services (Koellner, 2010). The research shows that the reasons for misusing emergency services vary and that patients tend to cite not just one factor, but a combination thereof. The 911 emergency medical services habitual users most often called as the result of the following factors:

- Disconnect between patient and provider definition of "emergency"
- Mobility issues
- Insurance coverage
- Age
- Perceptions of care and preference

Disconnect between patient's and provider's definition of "emergency"

Patients and providers tend to speak a different language when it comes to emergency medical services. What the public would describe as an emergency varies and tends to be subjective (Lega & Megoni, 2008; Alvim, Mota, Mota & Joaquim, 2013; Richards & Ferrall, 1999). Patients tend to overestimate the level of severity in a medical situation (Selasawati, Naing, Wan Aasim, Winn & Rusli, 2007). For example, when researchers tasked mothers with classifying their children's ailments to emergency services, they often used the terms "urgent" and "emergency" for ailments that medical professionals would not classify as such (Alvim, Mota, Mota & Joaquim, 2013). Subjectivity shapes the way that individuals use the term "emergency," highlighting the difference in language used by providers and patients (Lega & Mengoni, 2008).

Another study used semi-structured interviews and a cross-sectional questionnaire with participants between the ages of 30 and 75 years old to determine whether people think that the public uses 911 emergency medical services correctly. The result of this research by Adamson, J. et al. (2009) revealed a skewed community awareness of what 911 medical emergen-cies should be and that a focus on educating the community prevents non-emergency medical calls to 911 services. Collectively, these studies point to the conclusion that the public may not be aware of what constitutes a true medical emergency.

Mobility

Experts regard mobility as a means of independence and a gauge of quality of life, which a lack of resources (vehicle) or disability (both age related and non-age related) can inhibit (Broberg & Willstrand, 2014). A lack of transportation, because of its connection to independence, can feel like an emergency. Therefore, some habitual users of 911 consider the need for a ride service to be an emergency and use the services as such. The use of an ambulance from EMS transport for non-urgent medical conditions, or when the patient does not use alternate transportation when it is available, is considered to be a misuse of EMS (DeJean, 2013).

Insurance Coverage

Access to insurance is key to health care accessibility and coverage. Medicaid does cover medical transport when necessary (Richards & Ferrall, 1999). However, current Medicaid reimbursements do not cover the actual costs incurred by many municipal fire departments. Therefore the local agency is left needing to cover the cost. Financial constraints as well as unequal access to full-coverage insurance factor into the misuse of emergency services (Selasawati et al., 2007). One study found that those who call emergency medical services inappropriately are more likely to be uninsured or under-insured with Medicaid (Sharma, 2017). In another study, researchers concluded that low socioeconomic status was a predictor for frequent use of emergency medical services. These same researchers also found that educating frequent users on different non-emergency medical programs such as urgent care centers, specialists, and primary care providers may help alleviate misuse of 911 (Krieg, C., et al., 2016).

Age

A retrospective study on the elderly population's use of emergency medical services showed a rate of misuse higher than the average. Non-emergency elderly patients were often not admitted into the hospital, but rather sent home after utilizing emergency medical services. The researchers suggested mitigating the issue by trying to monitor the elderly population of misusers and to educate this population on the most appropriate medical resource for their particular medical issues (Legramante, J. M. et al., 2016).

Another study explored possibilities for caring for Medicare beneficiaries at a lower cost by using alternatives to requesting an ambulance or other emergency services (Alpert et al., 2013). They estimated that 12.9% to 16.2% of Medicare-covered 911 EMS transports involved conditions that were non-emergency related and could be primary care treatable. Among the beneficiaries who were not admitted to the hospital, they found that 34.5% did not require ER or ambulance services. Furthermore, these Medicare patients were paying about $1 billion per year to cover EMS and ER payments. They estimated that if Medicare had the flexibility to reimburse EMS for managing selected 911 calls in ways other than transport to an emergency department, the federal government could save $283 to $560 million or more per year, while improving the continuity of patient care. Rather than overusing the 911 system, the researchers explored the option of other resources that could be available to the elderly, while still maintaining their overall health and well-being.

These two studies indicate that, nationally, the elderly population tend to contribute to overall misuse of 911. A further examination of local data can provide additional insights if this is true locally, and would help to identify potential interventions to address specialty care for that population while also alleviating unnecessary strain on 911 emergency services.

Perceptions of Care and Preference

In some cases, people turn to emergency services because of a perception of a higher standard of care, expedience, efficiency, and overall cost (Alvim et al., 2013). Due to a general lack of knowledge of the procedures that occur at the ER, some people believe that escort via ambulance grants priority level of care, which may be true in life threatening emergency situations, but not for non-emergency cases. Ironically, the preference of using emergency services in lieu of primary care creates a higher volume of usage, leading to resource degradation and putting at risk the quality of services (Lega & Mengoni, 2008). Another factor that informs perceptions about medical care is psychological vulnerability. The research of Byrne et al. (2003) found that a lack of social support most commonly kept individuals from taking advantage of available resources. Another study (Toloo et al., 2013) identified a basic psychological profile of those who regularly use 911 services: they feel entitled to the services based on self-assessment of their pain or need, and they feel that everyone should be able to use 911 and related services freely.

The literature shows that a patient's perceptions about emergency medical services often inform patient preference for this type of care, which results in overuse of 911 for non-emergency medical care.

Contributing Factors Summary

Some of the contributing factors to 911 misuse include: disconnect between patient and provider definition of "emergency," mobility issues, insurance coverage, age, and perceptions of care and preference. By isolating and examining these specific factors, and considering the academic research that specifies the factors, we can begin to identify potential policy recommendations that will lead to reduced misuse and abuse of 911 emergency medical services.

Policy Recommendations

Based on the contributing factors as examined in the national literature, we believe it is important to address three major trends in emergency medical services misuse: the lack of awareness of what constitutes an emergency; the need for specific types of care for frequent users that could replace calls to 911; and the need to separate non-emergency calls from true 911 emergencies. To address these trends and needs, we recommend:

- Educational efforts
- Dedicated non-emergency line
- Programs to address specialty care of most frequent callers

Education

Education plays a major factor in whether a person will be able to utilize emergency services properly. Due to the lack of community knowledge of the behind-the-scenes procedures of emergency services, some believe that escort via ambulance grants a priority level of care, which is true in cases of emergencies. However, as noted previously, the non-emergency backlog may delay attention to an actual emergency. San Marcos is a diverse city, composed of households with varying income levels, educational statuses, languages, and family size. Education about how emergency medical services are best utilized can help to reduce the misuse of emergency services. This educational approach should incorporate two components: community outreach and a public awareness campaign.

Community Outreach

A series of educational, hands-on community gatherings in several neighborhoods throughout the city, co-sponsored by the city government and emergency service providers, could mitigate the issue of frequent 911 utilization. City staff would engage the community at different events throughout the area to inform citizens on what constitutes an emergency, what they could do in cases of non-emergencies, and the resources available to them. To accommodate the diverse populations of the City of San Marcos, organizers should consider holding the gatherings in accessible locations to community members, including farmer's markets, schools, or city buildings like fire stations or the Senior Center.

For example, the City of San Marcos could hold inclusive "911 Safety Days." In a commitment to inclusiveness, the City of San Marcos would hold these "911 Safety Days" in several communities throughout the city that are easily accessible to as many citizens as possible within their respective neighborhood. In planning these events, the City of San Marcos would consider accommodations for ease of mobility and access to appropriate resources for people with disabilities, non-English speakers, and families with elderly members or small children. By welcoming those populations, the city can increase the community's receptiveness to educational programming on emergency and non-emergency medical services.

Awareness Campaign

The public awareness campaign would use billboards and local radio spots. The aim of the campaign is to highlight the appropriate reasons to call 911, educate about the misuse of 911, potentially introduce other non-emergency resources, and emphasize individual responsibility in the collective well-being. The public awareness campaign could draw on a successful models such as the Smokey the Bear campaign for fire prevention.

Dedicated Non-Emergency Line

Different from 211, which is an information and referral line particularly focused on connecting residents with social services, some cities that have developed non-emergency hotlines (311 or similar) have seen decreases in the misuse and abuse of their emergency (911) lines. 311 systems have revolutionized the way cities gather information, allowing them to catch small problems before they get too big. 311 is an easy-to-remember telephone number that connects citizens with specially-trained customer service representatives ready to assist with city service requests—potholes, stray animals, downed street signs, trash collection, or other city requests. 311 can also be used specifically for non-emergency calls, either from police or emergency services. In 1999, Baltimore was the first city to use 311 as a police non-emergency number. Chicago followed by initiating the first comprehensive 311 system, providing information and tracking city services from intake to resolution, in addition to taking non-emergency police calls.

Many experts see 311 as a transformative technology for cities, capable of helping city leadership make data-informed decisions. Today, nearly 300 cities and counties have a 311 call system or use the basic technology, known as customer relationship management (CRM), to track service requests and a host of other capabilities. Updates to the technology have included automated voice response systems that use computers rather than people to answer basic questions. Cities using 311 systems capture incoming data on each complaint, request and query, so they can track how long it takes a city department to respond and complete the request. As a measure for transparency, some cities publish that information publicly.

Residents continue to become more comfortable with smartphones, which can be used to post a photo of a pothole. Additionally, users have the option to receive push notifications about events and emergency updates. The increased use of such services mean more data to track services and solve problems, making 311 an ideal tool. Smaller cities increasingly have developed 311 systems, hoping to offer their citizens the same kind of customer services available in big cities. Not only do we believe that a 311 service would benefit most residents and visitors of San Marcos, this service could also be used to separate non-emergency calls from the 911 system. If configured accordingly, and advertised as such, 311 could divert non-emergency calls (currently going to 911), thus alleviating the strain on the true emergency services.

Specialty Care

Based on the contributing factors highlighted from the national literature, the research shows that a customized approach for specific populations has proven effective in minimizing the misuse of EMS. Cities can address the needs of populations that might not benefit from general education on emergency medical services by focusing on the population's specific needs, providing resources and specialized education. For this reason, we recommend the following five options for specialty care:

- Leveraging Substance Abuse and Mental Health Services
- Telemedicine
- Nurse Triage
- Case Management
- High Utilizer Program

Leveraging Substance Abuse and Mental Health Services

One recommendation, modeled after a program in Los Angeles (LA) County, is to take a broader approach in addressing

populations who present certain symptoms, such as substance abuse and/or mental health issues. LA County has a police team trained for Mental Health Evaluation and Treatment (MHET) that arrives on calls where the first responders have determined there is little to no medical treatment needed, yet deem that other services beyond law enforcement would be helpful. MHET police officers respond to calls when medical treatment is not required or the caller does not request a ride to the hospital. They provide a mental health check that can direct the patient to proper, more comprehensive help but also prevents future harm or incidents. The service also allows trained emergency responders to respond to cases requiring medical attention. In San Diego County, a similar program exists called Psychiatric Emergency Response Team (PERT). The City of San Marcos could consider leveraging the county PERT program in coordination with the city fire department to most effectively utilize the service by strengthening the collaboration. This model would maximize the impact of existing resources and bring various departments together for the common goal of minimizing 911 misuse. The city could also increase awareness of PERT through aforementioned community outreach efforts.

Telemedicine

Markwick, McConnochie, & Wood (2015) showed that telemedicine could address many common health issues. Telemedicine's unique way of providing medical services eliminates barriers to care for adults who might otherwise not seek medical attention or for those who need frequent attention. The research suggested that patients benefitted from the ability to access care from a familiar setting through telemedicine. The telemedicine industry is worth $17.8 billion and is expected to grow 18.4% annually. Telemedicine cuts down on costs of in-person consultations, specialists and referring physicians, and insurance companies. Telemedicine can improve access to care in both rural settings as well as in the inner city. Structural impediments to accessing available social resources can lead to community overuse of alternative social benefits (like 911). For example, only a limited number of Medicaid providers and urgent care clinics in a given area will accept Medicaid benefits. Individuals who receive these benefits often face limited mobility (because of disability or a lack of transportation options), which can make access to regular services difficult during a health concern or crisis. Instead, these patients will turn to 911. The State of California has approved the use of telemedicine for Medicaid recipients to increase access to needed medical and dental resources (California Department of Health Care Services). This is a potential resource the City of San Marcos could consider to reduce the need for Medicaid recipients to utilize 911 services for non-life-threatening situations.

Nurse Triage

Nurse triage programs are another way to decrease the misuse of 911 emergency services by helping patients receive the right type of care. Typical calls for a triage nurse include poison control, behavioral health, obstetrics, urgent care, established care provider, and self-care. Calls to a nurse triage program can result in a simple phone consultation, a visit by a mobile healthcare provider, and in some cases immediate ambulance services. The financial benefits of this program include savings for ambulance transports, hospital ER visit savings, and total expenditure savings. The nurse triage program helps improve the quality of care provided, adopts protocols, implements a performance improvement system, ensures appropriate practice of nurse triage providers, and generally ensures medical appropriateness of the program based on regulatory agency scope of practice and accepted standards of nurse triage care (Mobile Integrated Healthcare Program-911 Nurse Triage, pg. 8). Triage nurses have an understanding of the urgency of symptoms, provide self-care information, assess treatment options, and can locate the nearest network providers. Additionally, the evidence from this program indicates that combining nurse triage with telemedicine leads to increased efficiency in patient care and, ultimately, lowers the frequency of 911 calls.

Case Management

The literature about the misuse of 911 cites case management as one of the most effective solutions for habitual users of 911 and emergency services. Case managers lowered the frequency of 911 calls by way of intervention as well as education, alleviating undue pressure on emergency services (Althaus et al., 2011). In one specific study, authors found that call frequency lowered by 32% when a city hired a case manager assigned to a specific population that was misusing emergency services (Rinke et al., 2012).

A case manager is a healthcare professional that provides an array of services for the community. In this recommendation, the City of San Marcos would hire a case manager to assist a targeted population of frequent emergency services users, educating them on the proper use of these services and guiding them through the healthcare arena. In Rinke's study, the case manager scheduled appointments, helped with medicine management, and provided follow-up care. The case manager acquainted themselves with individual patient needs, acting as a liaison between patient and provider and helping the patient to communicate specific needs. The ultimate outcome of hiring a case manager position would be for individuals in the frequent user population to become aware of their misuse, receive comprehensive assistance for their current situation, and leave the purview of the case manager with renewed independence.

One version of a case management program, called Resource Access Program (RAP), exists in the City of San Diego. From the program website, "the San Diego EMS Resource Access Program (RAP) is a paramedic-based surveillance and case management system that intercepts high EMS users." These paramedics could check up on the callers, ensure they are taking their medications, and even just spend a few moments with them to hear their concerns. Ultimately, the paramedics focus on linking the patient with the appropriate resources to address their specific needs, often leaning on the expertise and network provided by 211. The City of San Diego has reported a decrease in the number of false emergency calls from those involved in this program. For this reason, we offer the RAP as a recommendation to consider.

High Utilizer Program

Another program to be considered for replication is the MedStar High Utilizer Program. Modeled after Fort Worth's Area Metropolitan Ambulance Authority or MedStar, this program involves a system of customized attention, patient education, and, ultimately, graduation for frequent callers. The city enrolls frequent callers in a system that monitors their health, while also educating them on available resources and how to recognize whether their symptoms require emergency services. The program relies on specially trained Mobile Health Practitioners (MHP) who enroll frequent 911 users in a series of home visits for patient education. Additionally, if someone enrolled in the program calls 911, the MHP is also dispatched to the scene and may intervene to prevent an unnecessary ambulance trip. Some patients may take more time to "graduate" from the program than others, depending on their needs. Once patients demonstrate proficiency at navigating their healthcare network using resources other than 911, they graduate from the program and receive a certificate. As quoted from the MedStar website, "MedStar works together with the patient and numerous healthcare and community-based providers to reduce the incidence of preventable ambulance responses and ER visits. Patients who have graduated from the program have experienced an 84.3% reduction in emergency department use for the 12 months post-graduation compared to the 12 months pre-enrollment." By successfully implementing the program that specifically focuses on frequent 911 users, the evidence indicates that the city could see a reduction in emergency services misuse.

Conclusion

A review of national academic research indicates that frequent users of 911 emergency services do not have malicious intent. They do not purposefully waste resources nor the time of providers. Rather, they are at a loss for what to do next. The research shows that a difference of definition for "emergency" between providers and patients can help explain frequent calls to 911 emergency services. Additionally, factors such as mobility issues, insurance coverage, age, and perceptions of care and preference can drive repeated and frequent use of 911.

Considering this research and the contributing factors, we recommend three possible strategies to address the misuse and abuse of emergency services. First, general community education can bring an awareness to the issue. This can be accomplished through both community outreach as well as an awareness campaign. Second, dedicating a line specifically for non-emergencies can siphon a significant number of calls away from 911 emergency services, thus alleviating unnecessary strain on the 911 system. This strategy can be accomplished by considering another dedicated line like 311. Finally, implementing programs for specialty care may help meet the needs of certain residents, which will result in decreased use of 911 emergency services for non-emergency issue. The recommendations for specialty care include leveraging substance abuse and mental health services, telemedicine, a nurse triage program, case management, and a high utilizers program.

Both the academic research as well as existing programs inform these recommendations. Because of the constraints of a semester-long course, the project focused specifically on a review of the national literature. As a result, some of the recommendations may have already been implemented in the City of San Marcos. Additionally, some of the recommendations may not be appropriate nor translate to the local culture.

We strongly recommend that additional research be done on this project. It is important to examine the resource implications of these recommendations, which will require study. Another next step is to conduct focus groups and interviews with diverse groups of San Marcos residents to determine if all or any of the included recommendations resonate with the residents and would indeed be meaningful if implemented. Focus groups and interviews will help to contextualize the national research by grounding it in the culture, norms, and expectations of the City of San Marcos and its residents.

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