

Chesterfield Fire and EMS Mobile Integrated Healthcare: Background and a Case Study

By Lieutenant David Bigelow

Learning Objectives

- Explain the history of Mobile Integrated Healthcare.
- Understand the importance of reducing hospital readmissions.
- Learn how MIH partners with Adult Protective Services and others for the benefit of their patients.

Background

The men and women of Chesterfield Fire and EMS have earned a reputation for excellence as a public safety organization through the skilled delivery of high-quality services and always striving to treat citizens as they would treat their own families. A recent post-911 incident response survey completed by a third party found that 99% of respondents believed that Chesterfield Fire and EMS personnel had been professional and respectful in taking care of them and were highly confident in the personnel that responded to their emergency. Maintaining this standard is no small achievement in a county the size of Chesterfield with a population of 364,000, according to the 2020 census. The department responded to over 50,000 calls in 2022 for the first time in history, of which approximately 80% were EMS-related (consistent with national averages). Sustaining a culture of excellence in the face of this rapid growth has required new and innovative ways of thinking, and since 2014, Mobile Integrated Healthcare (MIH) has been at the forefront of this evolution under the leadership of Operational Medical Director Allen Yee, M.D. Department and county leadership have been instrumental in allowing the team to flourish. The purpose of this article is to discuss the Chesterfield Fire and EMS MIH program, its history, focus, and operation, and to provide a case study that spotlights one of the more comprehensive patient advocacy efforts undertaken since the inception of the program.

As Mobile Integrated Healthcare is still a fairly recent phenomenon, programs across the country have a diverse set of goals and objectives. Some of them focus on resource navigation, chronic disease management, fall risk, addiction, mental illness and many others. The goal in Chesterfield is to address the unmet needs of citizens, typically after 911 calls for non-emergent causes, by developing a comprehensive network of relationships with various organizations. These may be governmental, non-governmental, hospitals, home health, charitable, private, non-profit, and others willing to partner with MIH to meet the diverse needs of its clientele. The strength of the program is the ability and willingness to develop relationships with citizens in need, determine what their goals are and what resources they have available or are eligible for, and collaborate internally and externally to locate and mobilize those resources. By doing so, MIH improves the lives of citizens and also decreases the call load on an extremely busy 911 system while playing an important role in maximizing the effectiveness of the healthcare system.

When Mobile Integrated Healthcare began in Chesterfield in 2014, the original intent was to manage chronic diseases such as congestive heart failure and diabetes after hospital discharge. It

was soon determined that pursuing a focus on chronic disease management in the home would require licensure as a home health agency and would have other undesirable, unintended consequences. Thus, a decision was made by Dr. Yee to utilize the three paramedics and one Lieutenant assigned to MIH from emergency operations to begin working with frequent utilizers of the 911 system in an attempt to navigate them to resources that would decrease their need to utilize 911 for non-emergency reasons. This strategy of resource navigation has been proven to be successful, and of the new referrals generated each year, over 2,000 calls are saved by connecting patients to other appropriate alternatives to 911.

By preventing hospital readmissions, patients benefit from improved healthcare outcomes, hospitals benefit from not being assessed 30-day readmission penalties and reduced overcrowding, and the 911 system benefits from reduced non-emergency call volume and increased resource availability for emergencies.

MIH expanded in 2021 as a result of American Rescue Plan Act funding. The MIH unit is now staffed with five personnel who are, at a minimum, Firefighter/EMT-Bs, but are usually Firefighter/Paramedics, a Fire Lieutenant as the Program Manager, and since 2017, a Peer Recovery Specialist (PRS) from the Chesterfield Community Services Board. The PRS is a person in long-term recovery from Substance Use Disorder who assists patients post-overdose with addiction-related issues. The individuals assigned to the program must have at least five years of experience as a field provider, but are typically some of the most tenured individuals in the organization. They each possess, and have demonstrated, a talent for building relationships, understanding complex patient-care systems, and advocating tirelessly on behalf of those we serve.

The record increase in call volume to over 50,000 calls in 2022 has translated into increases in MIH referrals as well. In 2022, there were 589 new MIH cases opened, compared to 2021 which had 569, and 2020 which had 383. Referrals come from a variety of sources, the most common of which is Emergency Operations after a 911 response. Providers check a box on the ImageTrend PCR labeled “Refer to MIH” and a report is generated from these for the Program Manager to review each day. Additional reports are generated for calls coded as an overdose and any time Naloxone is administered by a crew in the field. Referral reasons often include falls, inadequate self-care, deteriorating medical condition and/or a lack of applicable medical services (such as home health, physical therapy or occupational therapy), and addiction. After securing an information release from the patient, MIH providers work closely with various agencies, physicians, hospitals, home health providers, skilled nursing facilities, county departments, and private or non-profit agencies among others to secure services for the patient.

MIH and the Pandemic

The COVID-19 pandemic provided many challenges across the healthcare system, and Chesterfield Fire and EMS was no exception. Widespread staffing challenges due to provider illness, hospital overcrowding and extended wait times, increased call volume and more acutely ill patients were all obstacles that had to be overcome, and MIH was uniquely positioned to make an impact. The team coordinated the administration of COVID-19 vaccines to 354 homebound individuals in the community and provided them their first round of boosters. These citizens

were unable to travel to a vaccination site due to medical or mobility issues but were still vulnerable to the virus from family and caregivers entering the home. Receiving the vaccine enabled them to continue meeting their need for healthcare and socialization while being less susceptible to acquiring the potentially fatal virus.

Another unfortunate result of the pandemic has been the unprecedented rise in Substance Use Disorder. 2021 saw a grim milestone in the United States with over 107,000 fatalities from overdoses, an increase of over 35% from the year before, which had been the previous high. The loss of in-person addiction services along with people trying to cope with personal, job-related, economic and other hardships brought on by the pandemic are suspected to have contributed to this dramatic increase in substance-use related loss of life. The MIH Peer Recovery Specialist attempts to contact individuals struggling with Substance Use Disorder after 911 calls for overdoses and utilizes a broad network of resources including hospitals, the Community Services Board and private and non-profit addiction recovery services to assist them in getting into a recovery process.

In 2022, there were 219 new Substance Use Disorder referrals, compared to 187 in 2021 and 154 in 2020. The PRS has been successful in reaching many of these people, sharing their story of recovery and assisting them in charting a better way forward for themselves. The PRS has reached many people that uniformed personnel, whether Law Enforcement or Fire and EMS, have been unable to due to the stigma that still surrounds addiction. Chesterfield Fire and EMS also began a harm-reduction partnership in 2021 with the Virginia Department of Health that allows us to leave Narcan behind after overdose calls for service. The intent of all these efforts is to keep people alive while attempting to connect them to a comprehensive recovery program of their choosing. The concept of peers has become much more widely discussed as funding to address this tragic issue is becoming available in the form of Opioid Abatement Funding and other sources. The hope is that a large-scale effort to connect people with others who have similar lived experiences, combined with effective clinical management such as Medication Assisted Treatment and mental health support, will enable more people to recover from addiction and live their best lives.

Relationship building and collaboration are the keys to success in helping MIH patients. Some of the partners that the team routinely works with are hospital case managers and social workers, the Community Services Board, the Chesterfield Sheriff's Office and Police Department, Senior Connections, home health and hospice agencies, the FREE Foundation for medical equipment, Chesterfield Child Protective Services, other private and non-profit organizations, family members of patients, and Chesterfield Adult Protective Services. As CFEMS personnel are mandated reporters in cases involving abuse or neglect, MIH and APS often have patients that are referred to both organizations and collaborative efforts are a natural outgrowth of this. Joint visits are commonplace, and many times patients are willing to open the door for fire department personnel which gives APS the opportunity to assess the situation from their perspective and bring resources to the table that the fire department may not have available.

Case Study

This case study involves the joint efforts of the MIH unit and Adult Protective Services (APS) on behalf of a 59-year old male patient living alone. Names have been changed for privacy, but we will refer to the patient as Mr. Lee. This client was living with unknown health issues at the time.

In October 2016, Chesterfield Fire and EMS responded to a home for a lift assist for a male that had fallen out of his motorized wheelchair. He was offered transport to an emergency department for further evaluation but refused transport and signed a refusal. Once the responding units returned to service, a mandated report was placed through Chesterfield APS. It was reported to APS and MIH that this client was covered in fecal matter, did not have the ability to move his lower body, and was too weak in his upper body to transfer or self-care. His body was covered in scabs in different stages of healing. Mr. Lee owned two large dogs in varying stages of health. The home had a high content level and was considered a hoarder home.

The case was assigned to an APS case manager and an MIH provider, and it was agreed to do a joint visit. The initial visit described the home as being in good condition from the outside with a full access wheelchair van in the driveway. Multiple attempts were made to get the patient to come to the front, side or rear door. Extreme hoarding was noticed when looking through various windows. Eventually, MIH and APS personnel were able to talk to Mr. Lee once he opened the garage door. There was a chair lift inside the garage with only a path between large piles of Amazon boxes. At this initial meeting, various resources were offered, and all were declined. The client had capacity to make his own decisions and believed that he was safe and healthy in the home. Contact information was left along with a Resource Directory from the Chesterfield Council on Aging.

In February 2017, APS notified the MIH program that the client was in Johnston Willis Hospital Emergency Department. The Case Manager spoke with the client and the nurse on the status of the case, while the client was admitted for observation of his swollen and discolored legs. Hospital staff stated that they worked for two hours cleaning fecal matter and other debris from the patient. The Case Manager discussed the dangers of returning to an environment where services could not be placed due to the conditions of the home, but the client was in denial of the situation. He did, however, ask for clean out services and he was referred to several possible service providers. The client was subsequently discharged home Against Medical Advice.

During a later home visit, the MIH provider was allowed into the home, which was described as having large piles of contents with a path to the bedroom, kitchen, and the garage. The client would not let anyone help with cleaning until all his documents were organized. His foot was still in need of treatment and wound care, but he continued to refuse treatment. An organization was recommended that could possibly get the home ready for the placement of services such as a home care and wound care nurse, companion care, pest control, veterinary services for the dogs, and contractors for plumbing, and electrical systems. The available community partners could not put their employees at risk due to the unsafe conditions. APS was able to help get Mr. Lee transportation to appointments by connecting him with transportation services.

In March of 2017, APS and MIH case managers did a joint visit to the skilled nursing facility where Mr. Lee had by then been admitted. When they arrived, he had informed the community managers that he was getting picked up by a friend so that he could retrieve documents from his home, but they did not think that he would return. This was correct, as Mr. Lee was taken back to the home which is where he remained. Client interactions for the remainder of 2017 consisted of monthly phone calls checking on the client. Recommendations were made for quality-of-life improvements and offers of assistance, but the client did not follow through with any actions. The case was closed as the client was unwilling to participate with either Adult Protective Services or Mobile Integrated Healthcare and had the capacity to make this decision. By this time, Mr. Lee had worked with two different MIH case managers with no success.

In September 2021, Mr. Lee was again referred to both MIH and APS after he was admitted to Chippenham hospital. It was documented that Lee had “sores covering the visible portions of his buttocks, legs, face, and arms.” After discharge from the hospital, the client refused in-patient rehab and was again discharged to home. A third MIH case manager was then assigned to the case and joint APS visits were attempted at the home on multiple occasions. They were not able to make contact either by phone or in-person. Contact information was left at the home with door hangers and a copy of the Chesterfield County Council on Aging Resource Directory with a business card attached, but with the client unwilling to participate in the program the case was closed again.

In November 2021, a 911 call for service was placed at the home. When the units arrived, the crews had to don hazmat suits and Self-Contained Breathing Apparatus (SCBA) to make entry into the home. Mr. Lee’s situation had declined to the point that he was beginning to be more receptive to efforts to provide help, and he was transported to the hospital. Ten days after being admitted to the hospital he called an old friend and co-worker from years prior and asked her to go let his dogs out and feed them. When his friend arrived at the home and saw the state of the dogs, she took them to a veterinarian where they were slowly transitioned to a normal diet, given vaccinations and groomed. The friend spoke to Mr. Lee about the situation and then made alternate arrangements for the care of the animals out of state. She was also able to talk him into cleaning out the home while he was in the hospital and doing in-patient rehabilitation in an effort to regain some strength. Once the removal of the contents of the home was completed, it was sterilized and new floors were placed throughout. Even after the clean out, there was still a moderately sized content load in the home.

In February 2022, as Mr. Lee was pending discharge from rehabilitation, the friend found the copy of the Resource Directory that was left at the home in September which included a business card for the MIH provider. Mr. Lee’s friend called and asked for any assistance that could be provided for when he returned home. The case was re-opened and assigned to a fourth MIH provider. Multiple phone calls were made by the friend asking for help to get services into the home. The client was being discharged with home healthcare for one hour a day for seven days by a registered nurse, and no other services were planned or scheduled. He was sent home bedridden and in a manual wheelchair and was unable to do any self-care or activities of daily living. The MIH provider was able to meet with Mr. Lee and his friend the day after he was discharged from the hospital. He was in a new hospital bed with a Hoyer lift and manual wheelchair but was unable to even adjust himself in the bed and did not have access to food,

water or the toilet. The MIH provider spoke with the current home health agency and also made arrangements with another one for additional companion care. The local area agency on aging was contacted, and Mr. Lee was approved for 80 hours of caregiver support, but would then have to self-pay. He was educated on the different levels of assisted living facilities and was shown that it could be safer and less expensive than living at home and self-paying for services. He understood the conversation, but asked if we could still support his attempt to stay at home. The client was reminded that he has the right to make his own choices and that MIH's goal was to help with resources that would support his desire to age in place.

Smoke alarms were placed in the home and a location alert was sent to the 911 call center so if there was an emergency the 911 crews would know how to gain access to the home and where the client would be located. Within seven days the client was dropped by all in home providers and was unable to find anyone that could help him. The companies stated that the client needed more care than they could provide. He became frustrated and asked the MIH case manager not to contact him further. Soon after, the MIH case manager received a voicemail at 1:00 a.m. asking for a list of assisted living facilities (ALFs). The next morning the client was provided a list and was able to do virtual tours on his computer. He called and talked to a local ALF. Admissions procedures dictated that he needed to be seen by a provider to write the order and a nurse would need to see his wounds to make sure an ALF would be the appropriate level of care, but without a primary care physician, this presented a challenge. He also needed a chest x-ray and COVID test before he could move in.

During the next home visit with MIH, Mr. Lee was having a hard time keeping up with all the demands for the move and became emotional. The MIH provider was able to slow the information down to help him more easily process it. During the night before the visit, he had thrown his eyeglasses out of anger and when they were found they needed repair. The MIH provider took the glasses to an optometrist where they were repaired at no charge, and within an hour the client had clean and working glasses. This small act gained a lot of trust.

While Mr. Lee was working on getting the financial requirements for entry into the ALF, the MIH provider was working on getting the physician orders, chest x-ray, and moving of the client's furniture and needed items to Sunrise. The physician from his skilled nursing facility agreed to write an order for placement and coordination was done with an emergency department to get a chest x-ray and COVID test. Mr. Lee's friend spent the weekend before the move packing the needed items, and while he was at the emergency room all the items were taken to the ALF and set up. Transportation was provided from the emergency department to the ALF. Once Mr. Lee was placed, follow up and all documentation was completed, and it was determined that all the patient's needs had been met the case was closed.

This case lasted several years and went through four separate MIH providers. It is a prime example of the good that can happen, even in challenging situations, when people from various agencies and with different skill sets and experiences work together on behalf of the vulnerable. Mr. Lee is thriving at his ALF and has become very social. He has even helped set up hummingbird gardens and feeders for other resident's windows.

Conclusion

Hopefully this case study has shown the complexities that must be navigated on behalf of Mobile Integrated Healthcare patients. This scenario has been repeated, to varying degrees, countless times over the eight years of the program's existence. Many citizens have needs that are not resolvable simply by transport to the emergency department, and the MIH team plays a critical role in helping to ensure that those needs are met.

Study Questions

1. How can Mobile Integrated Healthcare help reduce the number of hospital readmissions?
2. How can MIH help to meet the complex and diverse needs of patients?
3. In what ways has MIH learned to partner with other agencies in Chesterfield County?

Reference

U.S. Census Bureau. (2020). QuickFacts: Chesterfield County, Virginia. Retrieved from <https://www.census.gov/quickfacts/chesterfieldcountyvirginia>

About the Author



Lieutenant David Bigelow has been with Chesterfield Fire and EMS for 15 years, and has been the Mobile Integrated Healthcare Program Manager for two years. He enjoys the collaborative efforts involved in MIH, working with an excellent team of providers within the EMS Division, and is proud to be a part of the exceptional work done on behalf of citizens by the 500+ men and women of Chesterfield Fire and EMS. He can be contacted at bigelowd@chesterfield.gov or (804)768-7757.



Firefighter Melissa Ahern provides a COVID-19 vaccination for a homebound patient.



Firefighter Dan Athey accepts a donation of medical equipment from a citizen that was provided to an MIH client at no cost.