What Is Mobile Integrated Health and How Can It Benefit Concord Township

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CERTIFICATION STATEMENT

I hereby certify that the following statements are true:

1. This paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

2. I have affirmed the use of proper spelling and grammar in this document by using the spell and grammar check functions of a word processing software program and correcting the errors as suggested by the program.

Signed: _____

Printed Name: Matthew R. Sabo_____

ABSTRACT

The problem that this study has addressed is to determine if there is reasonable evidence to support the use of a mobile integrated healthcare program in Concord Township to fill potential service gaps in the community.

The purpose of this descriptive study was to determine the following: (a) the extent to which Concord Township currently provides some elements of mobile integrated healthcare to the community; (b) the extent to which jurisdictions similar to Concord Township currently provide some elements of mobile integrated healthcare to their respective communities; and (c) the impact, if any, mobile integrated healthcare might have on Concord Township and its fire department. These three areas have also served as the research questions for this study.

In order to gather sufficient data, there were two groups surveyed in respect to the potential for mobile integrated healthcare programs within Concord Township as well as potential or existing programs outside of Concord Township. The first survey was of active members of Concord Township Fire Department (CTFD). This was done to determine the knowledge level of such a program within the department and how the membership saw this program being a part of the daily operations. The second survey was distributed throughout Ohio as well as nationally to determine the extent to which other jurisdictions may be participating in a mobile integrated healthcare program to better serve their customers.

The results of this study showed that there is sufficient evidence to support Concord Township in further development of a mobile integrated healthcare program. The recommendation includes blending current programs into the development of a mobile integrated healthcare program as a pilot program. This pilot program will set the stage for the future development of a long term mobile integrated healthcare program including other agencies.

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INTRODUCTION

Statement of the Problem

Some organizations may be researching mobile integrated healthcare (M.I.H.), formerly known as “community paramedicine”, as a way to supplement or even replace lost revenues from ever changing emergency medical service (E.M.S.) billing standards. Others may be currently investigating M.I.H. as a way to increase value to their healthcare customers and/or business partners. Regardless, Concord Township recognizes the potential value in the implementation of a M.I.H. program and it is hoped that this research, coupled with adequate planning, will prepare Concord Township Fire Department (CTFD) for this potential change in service delivery while minimizing any negative impact to the township. The problem that this research will address is whether there is reasonable evidence to support the use of a M.I.H. program in Concord Township to fill potential service gaps in the community.

The definition of M.I.H., described in the definitions section, sets the tone for the very nature of this study. Mobile integrated healthcare is intended to be an extension of the physician in cases where transport to the emergency department may not be in the patient’s best interests (Centers & Aston, July/August/September 2016).

This study will explore collaborative opportunities through both public and private partnerships and fill any potential gaps that may exist to ensure that each patient is receiving the most appropriate care possible. It is important to point out that, in Ohio, this program is in no way mandatory and its implementation must be decided by each jurisdiction (Menapace, 2016). Menapace also explains that mobile integrated healthcare is a customizable solution to address a jurisdiction’s needs in terms of repeat customers, high acuity customers, as well as offer a new

level of service delivery as an alternate to a potential for an increase in trips to the emergency room on the part of both the patient and EMS providers.

Mobile integrated healthcare has found its way into the scope of service for Ohio's EMS agencies. This is an opportunity for fire departments to expand on its typical service delivery to provide the community with in-home healthcare in an effort to not only increase value of the fire department, but, perhaps more importantly, to increase the health and welfare of those served by the fire department or EMS agency (Menapace, 2016).

Purpose of the Study

The purpose of this descriptive study is to determine the extent to which Concord Township currently provides some elements of M.I.H. to the community, the extent to which jurisdictions similar to Concord Township currently provide some elements of M.I.H. to their respective communities, and the impact M.I.H. might have on Concord Township and its fire department should it be implemented. The intent is to identify potential service gaps that may exist in Concord Township and how the fire department can help fill those gaps by modifying existing programs or developing new programs.

Research Questions

The following questions will be answered by this descriptive research:

1. To what extent does Concord Township currently provide elements of a Mobile Integrated Healthcare program?
2. To what extent do some other jurisdictions similar to Concord Township currently provide elements of a Mobile Integrated Healthcare program?
3. What impact, if any, might a Mobile Integrated Healthcare program have in Concord Township and its fire department?

BACKGROUND AND SIGNIFICANCE

United States President, Barack Obama, signed the Patient Protection and Affordable Care Act also known as the Affordable Care Act (ACA) on March 23, 2010. The ACA includes three main goals of improving the quality of healthcare and lowering costs, improving access to healthcare, and initiating new consumer protections (hhs.gov, November 18, 2014). One significant driver to the implementation of M.I.H. by area hospitals includes readmission penalties. These penalties have been put in place by the ACA to make certain that hospitals are keeping the patient's best interest in mind especially after discharge (Health Policy Institute of Ohio, 2014).

The Affordable Care Act had unintended effects on current trends in healthcare that also offered opportunities for EMS agencies to engage with their customers in a new way (Nicol, 2014). There may be opportunities for CTFD to expand its current service delivery with existing programs to blend into mobile integrated healthcare. The fire department currently manages several programs that put them into the homes of target customers, namely those over the age of 65 who, in 2015, accounted for 50.8 percent of EMS call volume (Runs by Month with Patient Demographics, 2016). Mobile integrated healthcare, while not mandatory, is customizable by the providing agency. The best model to be followed by each jurisdiction choosing to participate is driven by the needs of the community.

In 2015, Concord Township Fire Department had encounters with patients over the age of 65 over 50.8 percent of the time (Runs by Month with Patient Demographics, 2016). This research will investigate if Concord Fire can use a M.I.H. model to serve this population of residents in a more effective and efficient manner by reducing emergency room visits and calls to 9-1-1. This is a measurable data set that can be tracked over time as new programs are

implemented. These programs may include but are not limited to mobile integrated health. They can also be as simple as home safety inspections, the installation of residential lock boxes, and the installation and maintenance of residential smoke alarms. These are all programs currently offered by Concord Fire Department.

LITERATURE REVIEW

The City of Monroe Fire Department established perhaps the first M.I.H. program in Ohio. Fire Chief John Centers has established a model focused on "empowering patients, bringing this care directly to them, and removing barriers" (Centers & Aston, July/August/September 2016, p. 6). John Centers, the Fire Chief of the City of Monroe, established one of the first M.I.H. programs in Ohio. His program was set up for success from the beginning with having registered nurses already working on his staff.

While the City of Monroe is working on its own to establish its mobile integrated healthcare program, Truro Township FD, Violet Township FD, Whitehall Division of Fire, and the Mount Carmel Health System have joined efforts to offer this new service. This has become a working cooperative established after years of coordinated efforts to assist the patient in four main categories including making appointments, understanding home going instructions, coordinating transportation, and tracking of patient outcomes (Little, 2016).

Emergency medical service agencies began incorporating elements of a mobile integrated healthcare program dating back to the 1990's (National EMS Advisory Council, 2014). In 1997 the National Highway and Traffic Safety Administration (NHTSA) made several recommendations for the Agenda for the Future. The Agenda for the Future envisioned several comparisons of current EMS practice to what the projected vision was for the future of EMS (Table 1) (National Association of Emergency Medical Technicians [NAEMT], 2014). It was

foreseen at least twenty years ago that a new model to emergency medicine delivery would be necessary.

Table 1

Changes in EMS for the Future

EMS Today (1996)	EMS Tomorrow
Isolated from other health services	Integrated with the healthcare system
Reacts to acute illness and injury	Acts to promote community health
Financed for service to individuals	Funded for service to the community

NOTE: National Association of Emergency Medical Technicians [NAEMT], (2014).

Additionally, the National EMS Advisory Council references "the triple aim" established by The Institute for Healthcare Improvement (IHI). The triple aim focuses on "improving the patient experience, improving the health of populations, and reducing the per capita cost of healthcare" (National EMS Advisory Council, 2014). The focus of the triple aim can be translated into the mission and vision of the CTFD. The department shows, in their annual report, the importance of community outreach through several programs offered to their customers. Most of the programs offered by the fire department are free services and those programs that do charge, the fee is minimal to cover the cost of materials. The officers of CTFD are charged with developing ways to better serve the community whether it be through fire attack tactics, new and innovative EMS techniques, or community outreach programs.

Similar to the triple aim, the Ohio Department of Public Safety also released a document in which they explain that EMS providers may be able to be utilized to increase patient access to primary care, increase wellness, decrease emergency room visits, save everyone money, and

improve outcomes of those participating in such a delivery of care (Ohio Department of Public Safety [ODPS]). Generally, participation in a M.I.H. program is voluntary by jurisdictions.

However, ODPS has identified associated risks of community's lack of involvement in such a program. Mobile integrated healthcare seeks to address the following risks and include, but are not limited to:

- Patient access to 9-1-1 and EMS frequently for non-emergency services.
- Calls for assistance that do not require the high acuity resources of an emergency department.
- Patients who lack primary medical care and rely on EMS and emergency departments to access the healthcare system.
- Emergency department utilization for non-emergency issues contribute to longer wait times, decreased patient satisfaction, and emergency department overcrowding.
- The lack of primary care physician resources in Ohio may result in episodic care for many patients rather than continuous monitoring and support for those with chronic illness.

Many emergency medical providers have selected this profession out of a desire to help people. Mobile integrated healthcare has had a direct effect on what paramedics are able to provide to a customer before they are in a crisis when they must call 9-1-1. "The overall cost of healthcare in Ohio will increase while EMS providers, a valuable and untapped resource, will be forced to remain on the sidelines except when they are dispatched for patient transport to an overburdened emergency department" (ODPS, 2014, para. 5).

Maggie Adams is the president of EMS Financial Services and has over 20 years experience as a billing and compliance consultant in the EMS industry. Maggie Adams tends to agree with the practice of contracting with local hospitals to provide home healthcare visits. She also understands that this may not be a viable option for all communities. The State of Minnesota not only recognizes M.I.H. as a viable option but also reimburses for these services (Adams, 2013).

Adams also describes another model for funding from Cranberry, Pennsylvania. Their programs include a fee for service. Their Safe Landing program charges $150.00 per visit for new parents. The services include child safety seat installation, home safety checks, as well as educating parents on the proper ways newborns should sleep. They also offer a Community Wellness Check for things like blood pressure checks, medication compliance, home safety checks, and helping with medical questions. This service costs the user $145 for a single person or $170 for a couple for one visit per week (Adams, 2013). If implementation of a M.I.H. program was to prove effective in Concord Township, it is anticipated that the role of the M.I.H. team would most likely be short term with the customer.

Lake County, Ohio has several services available to residents for long term care. These include the Lake County Council on Aging, Lake County Adult Protective Services, Home Care of Lake County, Around the Clock Home Care, Lake County Alcohol, Drug Addiction, and Mental Health Services Board, and others. It would not be the goal for CTFD to attempt to replace such programs, but supplement them by performing patient follow up until these long term services would be in a position to respond to the patient's needs as well as that of the family. This idea of short term involvement is representative of the model followed by the City of Monroe. Even Larry Bennett, Program Chair for Fire Science and Emergency Management at

the University of Cincinnati, says, “To be clear, community paramedicine is not designed to compete with existing home care services” and John Centers, the Fire Chief of Monroe, Ohio calls community paramedicine a “proactive, local, healthcare option” (Hanselman, 2015). For many years, the fire service has focused much attention on fire prevention efforts whether through inspections, education, or influencing building construction techniques. Similarly, a mobile integrated healthcare model is focused on health and wellness and prevention efforts related to keeping residents well (Beers, 2016)

The goal for a M.I.H. program is to bring healthcare to the patient rather than taking the patient to the care, usually the emergency department, whenever possible. “National models suggest that if Medicare patients were transported to a physician’s office, Medicare could save $559.871 million per year and if they were treated at home, the savings would be higher” (National Highway Traffic Safety Administration [DOT], 2013, p. 5). A M.I.H. program gets the patient to the right place at the right time. Its hands are not tied to only delivering a patient to an emergency room as in traditional EMS models. The program allows an EMS crew to come into a patient’s home either at their request or the request of the patient’s physician and provide care to determine the best course of action for that patient.

Chief Norman Seals of the Dallas, Texas Fire Department explains that their program was introduced in phases. In a department the size of Dallas, their initial concern was to reduce the dependence of 9-1-1 for high utilizers of the system. Their first phase began in March of 2014 and enrolled 88 clients. Their program resulted in a 97 percent reduction in 9-1-1 utilization of the clients who graduated from the program (Seals, 2015).

PROCEDURES

This descriptive study began by researching journal articles and related websites to answer the three research questions in order to determine the potential impact a mobile integrated healthcare program would have in Concord Township.

Additionally, two surveys were distributed. The first survey (Appendix 1) was given to the active members of Concord Township Fire Department with a brief description of mobile integrated healthcare. The members of the department are the most familiar with the programs offered to the residents and businesses of Concord Township. This survey solicited ideas with a secondary goal of obtaining buy-in from the membership of how or if they see mobile integrated healthcare playing a role in their own organization. The results of this survey are included in the RESULTS section.

The second survey was distributed to departments outside of Concord Township (Appendix 2). The intent of this survey was to gain an understanding of what M.I.H. programs are currently in place in Ohio as well as at the national level. The goal of this survey was to determine who was currently engaged in a M.I.H. program. Of those who were providing this program, how this program was funded and managed as well as who the target population was for their program. Mobile integrated healthcare is relatively new in Ohio compared to other states in the country. This research may provide a fresh look at the program for those departments considering this in Ohio. The results of this survey are included in the RESULTS section.

The external survey was blindly distributed to fire and EMS agencies with the assistance of the International Association of Fire Chiefs, Northeast Ohio Fire Chiefs' Association, Lake County Fire Chiefs' Association, and Geauga County Fire Chiefs' Association. There were a

total of 44 responses of which 15 were located within Ohio and 28 were located outside of Ohio. One respondent did not include their location.

The data collected as a result of these surveys was used to gain a picture of the trends across the Country in regards to mobile integrated healthcare. More specifically, the data was used to answer the research questions that were the focus of this research. To what extent does Concord Township currently provide elements of a mobile integrated healthcare program? To what extent do some other jurisdictions similar to Concord Township currently provide elements of a mobile integrated healthcare program? What impact, if any, might a mobile integrated healthcare program have in Concord Township and its fire department?

Definition of Terms

Active Member: A member of Concord Township Fire Department actively working scheduled shifts.

Community Paramedicine (C.P.): See Mobile Integrated Health.

CTFD: Concord Township Fire Department

EMS: Emergency Medical Service.

Mobile Integrated Healthcare (M.I.H.): "Mobile integrated healthcare (M.I.H.) is a coordinated model of healthcare delivery that utilizes resources that are already well known and trusted in the community; specifically, paramedics, EMS providers, and dispatch centers paired with established outpatient medical service providers and the community's primary care physicians" (Ohio Emergency Medical, Fire, and Transportation Services Board, 2014, p. 1).

ODPS: Ohio Department of Public Safety.

Super-User: Frequent emergency department (ED) users (often defined as individuals with four or more visits per year). This group makes up 4.5% to 8% of all ED patients across payors but account for 21% to 28% of all visits (Mann, 2014)

Limitations of the Study

The questions for this survey were developed in an effort to obtain a picture of M.I.H. both locally and nationally. Mobile integrated healthcare is a relatively new concept in Ohio but it is recognized that there may be other departments throughout the country who may be using this program in an effort to minimize gaps in service.

This challenge led to a non-descript distribution of the survey to obtain an accurate sample of the population. Future research may benefit by seeking to understand, specifically, how departments who utilize the M.I.H. model may benefit or what challenges they face. The survey was also distributed largely to area departments who are not participating in M.I.H. as it is still very new in Ohio. This could also focus future research on whether these departments are or would consider M.I.H. as a potential for service delivery in the future.

The author has direct knowledge of mobile integrated healthcare programs that are currently active in Ohio. Unfortunately, there were no responses from any organization within Ohio who are currently engaged in a mobile integrated healthcare program.

It is appreciated by the author that many would pursue involvement in a M.I.H. program in an effort to reduce an overwhelming call volume by reaching out to “super-users” of their system. Future research would require additional questions regarding a department’s call volume, type of incidents, and frequency of these incidents. This would assist in evaluating how the involvement in a M.I.H. program had an effect on their overall call volume.

RESULTS

Below are summaries of the responses of the survey distributed to Concord Fire personnel shown in Appendix 1.

Table 1

What is your rank with Concord Fire?

Rank	Number of Respondents	Percentage of Respondents
Chief Officer	1	4.3%
Lieutenant	4	17.4%
Firefighter	18	78.3%

Table 2

What is your employment status with Concord Township?

	Number of Respondents	Percentage of Respondents
Full-Time	11	47.8%
Part-Time	12	52.2%

Table 3

Given a description of M.I.H., what programs does Concord Township currently provide that might fit into the definition of M.I.H.?

	Number of Respondents	Percentage of Respondents
Community CPR/First Aid Training	8	38.1%
Child Safety Seats Inspections/Installation/Education	6	28.6%

Other	3	14.3%
Home Safety Inspections	2	9.5%
Residential Smoke Alarms	2	9.5%
Residential Lock-Box	0	0%

Table 4

What EMS service gaps exist in Concord Twp. that you feel a M.I.H. program might help fill?

	Number of Respondents	Percentage of Respondents
High concentration of specialty care patients	7	30.4%
Increased call volume	6	26.1%
Perceived or real increase in number of EMS super-users	4	17.4%
None	3	13%
Other	2	8.7%
Reduced staffing	1	4.3%

Table 5

Can you offer any additional suggestions in how Concord Fire might get involved in a M.I.H. program?

- None
- By educating the population, i.e. nursing homes, doctors' offices, and patient of benefits and availability of such resources.
- In my opinion, I think that Concord Fire will get involved in a M.I.H. program in the future. I believe that times will change to a point where we will be making follow-up visits to homes that we transport a patient from. This visit will be to make sure that the patient is aware of the medications he/she is having to take and the importance of making sure they take it. I think with this we will need to hire on more staffing due to an increase

in the amount of calls that we would handle and also a higher level of care such as a nurse practitioner. We would be able to go to a home and diagnose the common cold and get a script wrote out to the patient so they do not have to go to a doctor to do so.

- If this was something that was added, I personally feel that it would need to be based on an appointment type of scheduling that was maintained by separate staff rather than the "front-line" employees.
- Not sure.
- Educate the public when it is appropriate to utilize the 9-1-1 system and its services and when it's ok to take themselves or have another person take them to the E.D.
- May need to be its own entity until fully developed; then possibly integrated into CFD's responsibilities slowly, to have a better understanding of the impact and stress of current resources.

A review of the survey distributed to the members of the fire department show that there is more work to be done in the way of education on this topic. However, there does appear to at least be some interest in slowly incorporating a M.I.H. program into the daily operations as a way of possibly reducing overall call volume to those that may be misdirected to the emergency department.

Below are tables showing summaries of the results of the survey distributed to fire and EMS agencies outside of Concord Township shown in Appendix 2. There were a total of 44 respondents of which four (4) acknowledged that they participate in a M.I.H. program. Of the 44 respondents, 15 indicated that they were located within Ohio and none of those within Ohio indicated that they participated in a M.I.H. program.

Table 6

Do you participate in a mobile integrated healthcare or community paramedicine program?

	Number of Respondents	Percentage of Respondents
Yes	4	9.1%
No	40	90.9%

The responses in Table 7 – 15 are indicative of the four departments that answered to the affirmative to the question above.

Table 7

What service gaps were identified that your M.I.H. program help fill?

No response to this question.

Table 8 summarizes the types of activities that are being performed through existing M.I.H. programs. Respondents did not identify a better description for 'other'. This table does show, however, that there are programs in use that provide services outside of the identified services shown throughout the literature review.

Table 8

What services are you providing through your M.I.H. program?

	Number of Respondents	Percentage of Respondents
Other	3	75%
Home Safety Inspections	1	25%
Post-hospital discharge follow-up	0	0%
Routine vital sign monitoring	0	0%
Medications	0	0%

Below is a summary of target populations for providing a M.I.H. program. Again, the respondents did not offer additional information regarding who their target population included when 'other' was selected. Additional interviews with the respondents would be necessary to discover what additional populations are being served by these communities.

Table 9

What is the target population for your program?

	Number of Respondents	Percentage of Respondents
Other	3	75%
Drug & Alcohol dependency	1	25%
Post-discharge care	0	0%
Congestive heart failure	0	0%

The Ohio State Board of Emergency Medical, Fire, and Transportation Services (EMFTS) issued a memo in 2015 which clarified that the Ohio Revised Code was modified to allow Ohio emergency medical technicians to perform in non-emergency situations, however, there would be no change in the Scope of Practice in Ohio (Ohio Development Services Agency website, 2015). This appears to be consistent with the responses presented below.

Table 10

How did your scope of practice change to accommodate participating in a mobile integrated healthcare program?

- Employed a Nurse Practitioner.
- None
- None
- Our scope of practice remained the same.

Table 11

What additional training was necessary for M.I.H. staff?

	Number of Respondents	Percentage of Respondents
Other	2	50%
None	2	50%
Wound Care	0	0%
Specialty Medical Equipment	0	0%

Table 12 summarizes the staffing for active M.I.H. programs. Models shown in the literature review show that many of these programs began with on-duty staff and further developed into the need to add special duty staff specifically assigned with M.I.H. duties. It is expected that, should this model be integrated into the daily operations of Concord Fire, this will be the case.

Table 12

Who staffs your M.I.H. program?

	Number of Respondents	Percentage of Respondents
Special Duty Staff	3	75%
On Duty Staff	1	25%
Other	0	0%

The table below shows a wide gap in the number of hours dedicated on a weekly basis to a M.I.H. program. It can be anticipated that any new program would likely begin with fewer hours dedicated to it and develop over time as the needs and number of those being served increase.

Table 13

On average, how many hours per week are the M.I.H. providers committed to the program?

	Number of Respondents	Percentage of Respondents
0 – 10.99	2	50%
11 – 20.99	0	0%
21 – 30.99	0	0%
31 – 40.99	1	25%
More than 41	1	25%

Table 14

How does your M.I.H. staff mobilize?

	Number of Respondents	Percentage of Respondents
Dedicated marked vehicle	4	100%
Private vehicle	0	0%
Ambulance	0	0%

Table 15 is a summary of funding for current M.I.H. programs. In Ohio there does not appear to be a viable funding option available as discussed in the literature review. However, based on the summary below, there does appear to be a potential for funding in the future.

Table 15

How is your program funded?

	Number of Respondents	Percentage of Respondents
Other	3	75%
Not funded at all	1	25%
Contracts with customer	0	0%
Business agreements with healthcare facilities	0	0%

Table 16

What is your department type?

	Number of Respondents	Percentage of Respondents
Career	25	56.8%
Combination	16	36.4%
Part-Time	3	6.8%
Volunteer	0	0%

Table 17

What is your department's level of service?

	Number of Respondents	Percentage of Respondents
Combination	41	93.2%
Fire Only	3	6.8%
EMS Only	0	0%

Table 18

If EMS is provided, at what level?

	Number of Respondents	Percentage of Respondents
Combination	20	47.6%
ALS Only	16	38.1%
BLS Only	6	14.3%

Table 19

What is the population of your jurisdiction?

	Number of Respondents	Percentage of Respondents
< 10,000	7	15.91%
10,001 – 20,000	7	15.91%
20,001 – 30,000	8	18.18%
30,001 – 40,000	3	6.82%
40,001 – 50,000	5	11.36%
50,001 – 60,000	1	2.27%
60,001 – 70,000	2	4.55%
70,001 – 80,000	1	2.27%
80,001 – 90,000	2	4.55%
90,001 – 100,000	0	0%
100,001 – 500,000	5	11.36%
500,001 – 1,000,000	2	4.55%
> 1,000,001	1	2.27%

In regards to Table 20, the responses commenting in regards to Ohio show a variety of the understanding of the current situation. Additionally, there appears to be continuing legislation throughout the United States.

Table 20

What specific regulation or laws concerning M.I.H. or Community Paramedicine exist in your state?

	Number of Respondents	Percentage of Respondents
None	8	18.18%
Unknown	8	18.18%

- Ohio allows for community paramedicine but has no standard delivery model or qualifications for the community paramedic.
- EMS in Ohio is regulated by the Ohio Revised Code (ORC) 4765 and the Ohio Administrative Code (OAC) 4765. The definition of EMS in Ohio per ORC 4765.01 (G) and ORC 4765.01 (H) limits EMS to the delivery of care within the realm of emergency response care.
- State restrictions for non-emergency care. Nothing right now in the area.
- Allowable by recent Ohio law.
- State is in the process of researching.
- You are familiar with Ohio law. I am looking for ideas to implement in N.E.O.
- In planning/pilot phase
- Must meet State of New Mexico Compliance (training).
- 190.0098 is the statute. I was unsure of what exactly you were wanting.
- Must be licensed as a home health care agency, prohibits our ability to get into this field.
- Scope of Practice.
- M.I.H. is allowed and has been in place by some ALS agencies. Fire based ALS is not permitted by New Jersey law.

- State EMS protocols.
- Missouri Revised Statute 190.098.1 allows the formation of a community paramedic program with minimum training requirements, etc. Currently, each medical director for the EMS provider system sets the level of operation and dictates the training requirements over and above the state set minimums.
- Approval of local medical director
- State is working on requirements
- The State of Missouri has not yet decided on qualifications, scope, etc., on the community paramedicine program. We are engaged with that process, but the legislature and Bureau of EMS have not completed the rules and regulations of the program.
- Allowed by law. Not in scope of practice.
- Our scope of practice is authorized by local medical direction.
- Trial programs being conducted at statewide level.

This research was focused on answering three research questions. An analysis of the data collected along with the accompanying literature review has found potential opportunities for Concord Township in regards to the introduction of a mobile integrated healthcare program.

Question one (1) asks about the programs currently offered by Concord Township that may play a critical role in a M.I.H. program. This research revealed that existing programs may be able to be rolled into a formal M.I.H. program. These would include programs that invite our staff into the homes of our customers before the need for emergency services exist such as residential smoke alarm and lock box programs.

Question two (2) inquires as to what jurisdictions similar to Concord Township are providing in terms of a mobile integrated healthcare program. This research has shown that there is no standard model for providing a M.I.H. program and that these programs are custom tailored to the specific needs of each community. This author believes that this is the strength of such a program. It has the ability to meet the needs of the community as well as the individual customer provided that the service provided remains within the scope of practice for the provider.

Question three (3) asks about any potential impact a M.I.H. program might have in Concord Township. After completing this research, it was discovered by this author that this was the most difficult question to answer based on the literature and data collection from surveys. It can be difficult to project the impact any one program might have in a given jurisdiction until it is actually started. However, this research did find the value in Concord Township engaging first in a pilot program in order to better answer this question.

DISCUSSION

Based upon the data collected in the two surveys, it is apparent that, while there may be an interest in mobile integrated healthcare, there are few respondents currently participating in this program at this time. The author is aware of active mobile integrated healthcare programs in

Ohio that are not representative of the data collected in the survey. Mobile integrated healthcare in Ohio was initiated primarily in the southwestern part of the state and is moving throughout the State.

Of the national respondents who reported that they were active in a M.I.H. program, only one matched closely to the demographic of Concord Township in population and being a combination department. The department relies upon its budget and a hospital partnership to fund their M.I.H. program which focuses on home safety inspections and targets potential and real EMS system super-users.

The remaining respondents to the national survey who reported that they were active in a M.I.H. program all serve a much larger population than Concord Township. These programs focus on addressing EMS super-users and mental health crisis transport diversion. Their target population is substance abuse, mental health, and geriatric care. Super-users are often defined as those patients with four or more emergency room visits per year (Mann, 2014).

Of all respondents who participate in a M.I.H. program, only one indicated that they were engaged in a hospital partnership for alternative funding. All departments responded that a majority of their programs were funded in large part by their current budget with no or minimal additional funding.

Any new program, especially dealing with medicine, will have a cost associated with its implementation. This research did not identify any insurance reimbursement options for Ohio EMS agencies who provide this service to its residents. In the near future it may be necessary for fire and EMS agencies to apply pressure to legislators as well as Medicaid to include such reimbursements. General business principles suggest that there must be a proven link between the cost of the project and the benefit that it will or should provide. These benefits may be

realized by a decrease in super-users to the 9-1-1 system, keeping crews available for true emergencies, or assisting in controlling the flow of patients through the emergency department.

In the Ohio Department of Public Safety Executive Summary, they suggest that it will be in the hospitals' best interest to involve EMS agencies in formal M.I.H. programs. While this may come at a cost to the hospital, these costs are projected to be far less than any readmission penalties that may be applied if the patient returns to the hospital within thirty days (ODPS, 2014). Implementation of a M.I.H. program in Concord Township would require the involvement and participation of several area hospitals due to the geographic location of these hospitals in relation to Concord Township.

Table 21 reflects that CTFD, according to their 2014 Annual Report, transport to several area hospitals in the greater Cleveland area (Concord Township Fire Department [CTFD], 2014). There would be a significant challenge to implement a formal M.I.H. program in Concord Township due to the customers of CTFD being patients of many different healthcare systems. The complete implementation of this program would require the involvement and participation of many healthcare systems to insure the effectiveness of the program.

Table 21

Concord Township Fire Department Facility Destination Summary

	Number of Transports	Percentage of Total Transports	Miles from Concord
Lake Health Tri-Point	721	63.5%	
UH Geauga Medical Center	145	12.8%	
Cleveland Clinic Hillcrest Hospital	133	11.7%	
Lake Health West	101	8.9%	

UH Case	14	1.2%
UH Ahuja	11	1.0%
UH Richmond	5	0.4%
Cleveland Clinic Main	3	0.3%
UH Geneva	1	0.1%
Cleveland Metro	1	0.1%
Cleveland Clinic Euclid	1	0.1%

Note. Data collected from HealthEMS Manager, Concord Township Fire Department's EMS reporting software.

Concord Township expects that its fire department may likely be approached by area hospitals to form business agreements for M.I.H. in response to requirements of the Affordable Care Act in an effort to reduce readmission rates of their patients. Participation in a M.I.H. program may not be mandatory, however, not participating while other programs throughout Ohio may show success in their programs may prove discouraging to the community. A needs assessment of the community would identify what, if any, model of M.I.H. would show any potential benefit to both the EMS agency as well as the customer.

The EMS call volume of Concord Township Fire Department (CTFD) may show the most significant reason for the value of M.I.H. to its community. In 2014, the patient reporting category of "unknown/no medical problem" was selected as the best category for patients 64 percent of the time. It is also noted that 26 percent of all non-transports were in the age category greater than 65 years old (Concord Township Fire Department [C.T.F.D.], 2015).

According to the U.S. Census Bureau, Concord Township had an estimated population of 17,670 in 2010. Of this, 15.7 percent were over the age of 65 years old with a median age of 45.1

years old. The percentage of this age group is projected to increase to 18.4 percent by 2014 data (United States Census Bureau, n.d.).

Concord Township recognizes that it may be possible for some in this patient population to benefit from a M.I.H. program. Concord Township Fire Department, like so many in this industry, continues to strive to provide the best possible service to the community. They recognize that the emergency department is not always the best possible solution to provide the best service to its customers. In many instances, this delivery of patient care results in many unintended effects once the patient is transported to the emergency department including longer wait times, inefficient triaging of patients, and overcrowding (Ohio Emergency Medical, Fire, and Transportation Services Board, 2014).

Under the previous rules of ORC 4765, EMS agencies in Ohio were only permitted to perform emergency services. Recently, this rule was modified to allow EMS providers to perform non-emergency services as well. For those agencies engaged in a M.I.H. program, the patient benefits from not having to be transported to the emergency department unless indicated by the agency's medical direction and protocols.

Concord Township Fire Department currently engages in activities which may be benefited by a formal M.I.H. program. For example, the Concord Township Fire Department 2015 Annual Report shows that the department provides residential smoke alarms to those in need in an effort to ensure that every home has a working smoke alarm. In addition, the report documents other in-home services such as residential lock boxes and home safety inspections (C.T.F.D. Annual Report, 2015). While these programs do not have a healthcare component to them, what they do for the community is provide an additional level of service. The smoke alarm program and those similar to this were, for many years, considered above and beyond the

traditional service level of local fire departments. However, this service has become expected over the years to the extent that additional funding options are being considered to continue this program (C.T.F.D. Annual Report, 2015). All of these programs have a safety, wellness, and service element as the basis for their development and can potentially fill the gap of a lack of EMS prevention. Concord Fire Department recognizes that its EMS may be able to provide additional services to our residents while engaged in traditional delivery of established programs.

In their final advisory, the National EMS Advisory Council explains that emergency care may be enhanced only "if the EMS system is committed to the goals of the PPACA with much deeper and wider integration in the larger health care system" (National EMS Advisory Council, 2014, p. 6). The Council also agrees that the typical 9-1-1 service would be in a position to support elements of the PPACA by "emphasizing its (EMS) role in community level healthcare, prevention, access and the continuum of chronic care management."

RECOMMENDATIONS

Additional collaborations with local hospitals and primary care physicians would be required to ascertain the specific needs in the Concord Township community. With 26.82 percent of all calls for EMS being categorized as "unknown/no medical problem" there may be a need within this patient population to focus on these patient needs to develop future program metrics (Runs by Category, 2016).

While the survey results do not reflect a large number of departments engaged in M.I.H. either nationally or statewide, this author has been observing the trend around Ohio of EMS agencies becoming involved in some form of M.I.H. The 2012 Concord Township Fire Department Strategic Plan states that the Department's mission is "Professionally providing our community with quality service" and a vision to "continually improve the necessary skills and

abilities to safely handle the challenges of emergency incidents now or in the future" (Concord Township Fire Department, 2012, p. 3).

While the design of mobile integrated healthcare is not focused directly on providing emergency services, the role of M.I.H. may have a direct effect on the performance of emergency services and availability of non-emergency services in the future.

Concord Township Fire Department has an opportunity to implement M.I.H. in its community through already established programs. The CTFD strives to provide residents with valuable services The addition of M.I.H. would be just one more way our residents can count on us to promote health and wellness in the community.

The involvement of a department's medical direction is required for the implementation and management of a M.I.H. program. The challenge that Concord Township may be faced with is the fact that Concord Township Fire Department is under the medical direction of University Hospitals of Cleveland. While there are still many residents that use this hospital system for their healthcare, the reality is that more than 70% of Concord Township residents prefer the local hospital, Lake Health. There may be a conflict between the established M.I.H. protocols of University Hospitals of Cleveland, Concord Township Fire Department's medical direction and the physician preferences of Lake Health physicians and administration.

Management of this program would be best established through a dedicated program director assigned within the fire department. This director would be engaged directly with University Hospitals to establish program guidelines, required additional training, and patient inclusion criteria. It would also be necessary to seek out appropriate software to schedule appointments and document patient encounters that will be available for a quality assurance review by medical direction, the department, and the patient's physician.

This research has shown that there is an opportunity for Concord Township Fire Department to begin discussions with University Hospitals of Cleveland as our medical direction to participate in a mobile integrated healthcare program. It would be recommended that this pilot program specifically target Concord Township residents who are patients of the University Hospitals healthcare system who meet pre-determined inclusion criteria established by the department director and University Hospitals Medical Director.

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APPENDIX 1

The survey shown below was distributed via Google Forms to the active membership of the Concord Township Fire Department. A summary of the responses to this survey can be found in the RESULTS section.

"Mobile integrated healthcare (M.I.H.) is a coordinated model of healthcare delivery that utilizes resources that are already well known and trusted in the community; specifically, paramedics, EMS providers, and dispatch centers paired with established outpatient medical service providers and the community's primary care physicians" (Ohio Emergency Medical, Fire, and Transportation Services Board, 2014, p.1). This definition of M.I.H. sets the tone for the very nature of this initiative. Mobile integrated healthcare is intended to be an extension of the physician in cases where a transport to the emergency department may not be in the patient's best interests.

Please take a moment to complete the attached survey so that we may better understand the benefits of the services we provide. Thank you in advance.

1. What is your rank with Concord Fire?
    a. Firefighter
    b. Lieutenant
    c. Captain
    d. Chief Officer
    e. Other
2. What is your employment status with Concord Township?
    a. Full Time
    b. Part Time

3. Given the description of mobile integrated healthcare above, what programs does Concord Township currently provide that might fit into the definition of M.I.H.?

    a. Community CPR/First Aid Training

    b. Child safety seat inspections/installation/education

    c. Residential lock box program

    d. Residential smoke alarm program

    e. Other

4. What EMS service gaps exist in Concord Township that you feel a M.I.H. program might help fill?

    a. Perceived or real increase in number of EMS super-users

    b. High concentration of specialty care patients (i.e. CHF, drug/alcohol dependency, etc.)

    c. Increased call volume

    d. None

    e. Other

5. Can you offer any additional suggestions in how Concord Fire might get involved in a M.I.H. program?

APPENDIX 2

This survey was developed via Google Forms. Links to the survey were distributed via email blast to Lake, Geauga, Trumbull, Cuyahoga, and Portage County, and Ohio fire chiefs. In addition, links will be established via the Ohio Fire Chiefs' Association as well as Northeast Ohio Fire Chiefs' Association website. In order to capture data from across the country, contacts have been made with students of the National Fire Academy's Executive Fire Officer Program to assist in distribution of material. A summary of responses can be found in the RESULTS section.

Mobile Integrated Health questionnaire:

1. Do you participate in a mobile integrated health or community paramedicine program?

IF YES TO QUESTION 1, otherwise skip to question 2:

A. What service gaps were identified that your M.I.H. program helped fill?

B. What services are you providing through your M.I.H. program?

   a. Home safety inspections

   b. Post hospital discharge follow-up

   c. Routine vital sign monitoring

   d. Medication audit

   e. Other

C. What is the target population for your program?

   a. Congestive Heart Failure

   b. Drug and alcohol dependency

   c. Post discharge care

   d. Other

D. How did your scope of practice change to accommodate participating in a mobile integrated healthcare program?

E. What additional training was necessary for M.I.H. staff?
    a. Critical care training
    b. Wound Care
    c. Specialty medical equipment
    d. Other
    e. None
F. Who staffs your M.I.H. program?
    a. On-duty staff
    b. Special duty staff
G. How many hours per week per provider is committed to M.I.H. on average?
    a. 0 – 10.99
    b. 11 – 20.99
    c. 21 – 30.99
    d. 31 – 40.99
    e. More than 41
H. How does your M.I.H. staff mobilize?
    a. Dedicated marked vehicle such as an S.U.V.
    b. Private vehicle
    c. Ambulance
I. How is your program funded?
    a. Business agreements with healthcare facilities
    b. Contracts with customers
    c. Other

   d. It is not funded at all

2. What is your department name?
3. What is your department address?
4. Indicate interviewee name, rank, and contact information.
5. Department type
   a. Career
   b. Volunteer
   c. Part-time
   d. Combination
6. Department level of service
   a. Fire only
   b. EMS only
   c. Combination
7. If EMS is provided, what level of EMS?
   a. ALS only
   b. BLS only
   c. Combination
8. What is the population size of the jurisdiction served?
9. What specific regulations or laws concerning mobile integrated health or community paramedicine exist in your state?