Ohio Critical Access Hospital and Ambulance Agency Interfacility Transfer Study

May/2020

Report Commissioned by the Ohio State Office of Rural Health

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FREQUENTLY USED ACRONYMS

The Emergency Medical Services (EMS) field makes frequent use of acronyms that may not be familiar to many persons. The following acronyms are defined as:

AEMT	Advanced EMT
ALS	Advanced Life Support (e.g., EMT-I/AEMT or paramedic level service)
BLS	Basic Life Support (e.g., EMT/EMR level service)
CAD	Computer Aided Dispatch software system
E-9-1-1	Enhanced 9-1-1 System (provides number and location services)
EMD	Emergency Medical Dispatch (pre-arrival instructions for 9-1-1 incidents)
EMR	Emergency Medical [First] Responder
EMS	Emergency Medical Services
EMT	Emergency Medical Technician

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NRP	Nationally registered paramedic
PIER	Public Information, Education, and Relations
PSAP	Public Safety Answering Point
PUM	Public utility model uses a governmental entity to manage EMS in a community
TPF	The Paramedic Foundation
3rd Service	EMS delivered by a local government alongside other public safety departments (police and fire) and employs civilian EMS practitioners.

EXECUTIVE SUMMARY

The Paramedic Foundation (TPF) was retained by Ohio's State Office of Rural Health (SORH) to conduct a study that examines the current issues in the ability for Critical Access Hospitals to obtain, and for rural ambulance agencies to provide, interfacility transport services. In Winter 2019, TPF conducted online surveys of CAHs and ambulance agencies. The financial support for this survey and report is HRSA-funded by the Medicare Rural Hospital Flexibility Grant Program.

AIR AND GROUND AMBULANCE AGENCIES USED BY CRITICAL ACCESS HOSPITALS

RESULTS

The Ohio CAHs were surveyed to find out what ground ambulance services respond to their request for patient transfer services. The CAHs use between one and ten ambulance services to transfer their patients. ProMedica Transportation Network (used by 5 CAHs), Portsmouth EMS (4); Community Care Ambulance Network (3); and Mercy Lifestar are the most used ambulance agencies by the CAHs that responded to the survey.

The complete list of ground ambulance agencies used by CAHs includes:

Air Evac, Buckeye Ambulance, Care Flight MICU, Central Lorain County Joint Ambulance District, Central Ohio Transport, Cleveland Metro, Community Care Ambulance Network, Donald Martens and Sons, First Care, K&P, Legacy, LifeCare Ambulance, Life Star, Life Support, Lynx, Med-Care, MedFlight MICU, MedPro, MedTrans, Mercy Lifestar, Midwest, Mobile Life, Napoleon Fire, North Central, Ohio Medical, Portsmouth EMS, Prestige, ProMedica Transportation Network, Quality care, Robinaugh, St Vincent Toledo, Samaritan Care Ambulance, Spirit, The Toledo Hospital, and Wauseon Fire.

We also asked the CAHs what air ambulance agencies they used for helicopter or airplane transport needs (See Table 1). The CAHs used between one to three air ambulance agencies. ProMedica Air (used by 5 CAHs), Medflight (4), Mercy Lifeflight (4); and, Metro Health LifeFlight (3) were the most commonly used air ambulance agencies.

Table 1: Count of Air Ambulance Services Used by Critical Access Hospitals

Air Ambulance Service	Number of CAHs Using
ProMedica Air	5
Medflight	4
Mercy Lifeflight	4
Metro Health LifeFlight	3
Air Evac	1
Akron Children's	1
Careflight	2
Cleveland Metro	1
Lutheran Air	1
Metro Health LifeFlight	1
Nationwide	1
St. Vincent	1
Samaritan	1
Survival Flight	1
UC Air	1
UH Med Evac	1

Three CAHs reported that they used neonatal teams, and one said they use Emergency Response Nurses, for specialty transport.

The average distance between the CAH and the hospital patients are transferred to that was listed first by the CAH is 47 miles with a range from 13 to 105. The average distance between the CAH and all hospitals transferred to is also 47 miles, and the range is also from 13 to 105 (shortest and longest distances are in the group listed first by CAHs).

The hospitals that receive interfacility transfer patients from CAHs are listed in Table 2.

Table 2: Count of Hospitals Receiving Critical Access Hospital Patient Transfers

Hospital	Number of CAHs Sending
Adena - Chillicothe	2
Aultman Hospital - Canton	1
Children's - Akron	2
Children's - Cincinnati	1
Children's - Dayton	1
Cleveland Clinic - Akron	1
Cleveland Clinic - Cleveland	5
Elyria Medical Center - Elyria	1
Firelands - Sandusky	1
Grant Medical Center - Columbus	3
Hamot Medical Center - Erie	1
Lutheran Hospital – Fort Wayne, IN	1
Marietta Memorial - Marietta	1
Mercy Health - Lorain	1
Mercy Anderson - Cincinnati	1
Mercy Clermont - Batavia	1
Mercy St. Anne - Toledo	1

Mercy St. Charles - Oregon	1
Mercy St. Vincents	1
MHSVMMC - Toledo	1
Metro Health Medical Center - Cleveland	1
MHT - Tiffin	1
Miami Valley - Dayton	1
Mount Carmel Grove City - Columbus	1
OHM - Mansfield	1
Ohio State University - Columbus	4
Parkview Regional Medical Center – Ft Wayne, IN	2
ProMedica Flower Hospital - Sylvania	1
ProMedica Toledo Hospital - Toledo	3
Riverside - Columbus	5
Springfield Regional Medical Center - Springfield	1
Southern Ohio Medical Center - Portsmouth	1
St. Luke's Hospital - Maumee	1
St. Rita's Medical Center - Lima	1
St. Vincent - Toledo	3
Summa Akron City Hospital - Akron	1
The Christ Hospital - Cincinnati	1
The Toledo Hospital - Toledo	1
UH Cleveland Medical Center - Cleveland	2
UH Geauga - Chardon	1

University of Cincinnati Medical Center - Cincinnati	1
University of Michigan Medicine – Ann Arbor, MI	1
University of Toledo Medical Center - Toledo	2
Wexner Medical Center - Columbus	1

Eight of 15 CAHs receive transfers from other hospitals. Interestingly, only two receive transfers back from a facility they transfer patients to. The average distance between the CAH and the hospital patients are transferred from that was listed first by the CAH is 32 miles with a range from 5 to 70. The average distance between the CAH and all hospitals patients are transferred from is also 32 miles, and the range is also from 5 to 70 (shortest and longest distances are in the group listed first by CAHs).

The hospitals sending patients to CAHs are listed in Table 3.

Table 3: Count of Hospitals Sending Patients to Critical Access Hospitals

Hospital Transferred From	Number of CAHs Receiving
Adena - Chillicothe	1
Aultman Hospital - Canton	1
Bay Park Community Hospital - Oregon	1
Children's Nationwide - Columbus	1
Clark Co Mental Health - Springfield	1
Cleveland Clinic - Akron	1
Cleveland Clinic - Cleveland	1
Haven BH - Dayton	1
Marietta Memorial - Marietta	1
Mercy - Defiance	1

Mercy Health - Lorain	1
Pomegranate BH - Columbus	1
ProMedica - Defiance	1
ProMedica - Fostoria	1
ProMedica - Fremont	1
St. Luke's Hospital - Maumee	1
UH Geauga - Chardon	1

CRITICAL ACCESS HOSPITAL REPORTED WAIT TIMES

The CAHs were asked how long they have to wait for an ambulance to arrive when they request a transfer (See Table 4).

Table 4: Average Duration of Delayed Transfers

Time Delays for Transfer Initiation	Number of CAHs
29 minutes or less	0
One half to 1 hour	0
1-2 hours	2
Greater than 2 hours	4

All of the above*	8

**Respondents indicated that they have waits that included all of the options.*

The CAHs were asked at what time range throughout the day delays were most likely to happen (See Table 5).

Table 5: Count of Time Of Day Of Delayed Transfers

Time of Day of Delays	Number of CAHs
Midnight to 7am	4
7am to 5pm	1
5pm to midnight	9

The CAHs were asked why they thought delays occur (See Table 6).

Table 6: Count of Reported Reasons for Delayed Transfers

Reasons for Delays	Number of CAHs
Lack of staffing	12
On other calls	13
Safety reasons (weather, roads, etc.)	3
Surge volume at the receiving hospital	3
Patient acuity at the receiving hospital	1

The CAHs were allowed to provide free text for other reasons for the delay. The responses include:

- Behavioral Health and non-insured patients
- Only one squad on nights and won't take out of service to transport psych patients

AMBULANCE AGENCY SURVEY

AGENCIES NOT PROVIDING TRANSFER SERVICE

Nineteen of thirty-three ground ambulance agencies surveyed indicated they do NOT do interfacility transports (IFT). Of the 34 that responded to this question, the breakdown by type of agency is provided in Table 7.

Table 7: Percent of Agencies by Type that Provide Transfer Services

Type of Agency	% of Type That Provide IFT Services
For-Profit	100%
Hospital	50%
Third Service	43%
Non-Profit	33%
Fire Based	28%

The reasons cited for not providing this service are found in Table 8.

Table 8: Count of Reasons Agencies Do Not Provide Transfer Service

Reason for not providing transfer service	Fire Based	For-Profit	Hospital	Non-Profit	Third Service	(blank)	Total Count
Not enough staff or funding	2				2		**4**
Provide ambulances for air ambulance trips done by ground	1						**1**

There is no hospital in our coverage area	1						**1**
We are a 911 service only	4		1	2	2		**9**
We are a taxpayer-funded fire-based EMS district	5						**5**
(blank)	5	4	1	1	3		**14**
Total Count	**18**	**4**	**2**	**3**	**7**	**0**	**34**

The ambulance agencies that responded to the survey and that do IFTs reported the number of IFTs on average that they complete each month are found in Table 9.

Table 9: Count of Average Number of IFTs Performed Monthly

Number of IFTs per Month	Fire Based	For-Profit	Hospital	Non-Profit	Third Service	Total Count
0-5	3			1	1	**5**
6-10	2					**2**
11-15						**0**
16 or more		4	1		2	**7**
(blank)	13	0	1	2	4	**20**
Total Count	**18**	**4**	**2**	**3**	**7**	**34**

Seven ambulance agencies said they can do more IFTs. They are dominated by five of the agencies already doing 16 or more IFTs per month.

When asked how far the transfers are, nine agencies said 50 miles or less, and five said 51-100 miles.

When asked how long (the total time) the ambulance is out of service in their primary response area, two said 29 minutes or less, seven said 30 to 119 minutes, and five said 120 to 239 minutes.

Nine agencies said they dispatch their unit when the call is received, and five said they delay the dispatch. Nine said they delay dispatch on a small percentage of calls because of staffing issues, and three agencies said they delay dispatch all the time. One agency said they delay dispatch rarely, and another said they only do transfers of local residents from the hospital to their home.

Ten agencies said they delay dispatching because they are on other ambulance runs. Two agencies said they delay dispatch due to crew fatigue. One agency said they delay dispatch for safety reasons other than fatigue, such as weather issues (See Table 9).

Table 10: Count of Average Dispatch Delays

Dispatch Delays	Fire Based	For-Profit	Hospital	Non-Profit	Third Service	Total Count
29 minutes or less	3	2			1	**6**
30 - 59 minutes	2	1			2	**5**
60 minutes to 119 minutes		1	1			**2**
120 minutes or more				1		**1**
(blank)	13		1	2	4	**20**
Total Count	**18**	**4**	**2**	**3**	**7**	**34**

One agency said that the time of day it is hardest for them to respond to an IFT is from midnight to 7am, eight agencies have the most trouble from 7am to 5pm, and three agencies from 5pm to midnight.

One agency said that sometimes their area is coverage compromised, but not all of the time.

Five agencies said the coverage in their primary service area is not compromised when they perform IFTs, and nine agencies said coverage was compromised (See Table 10).

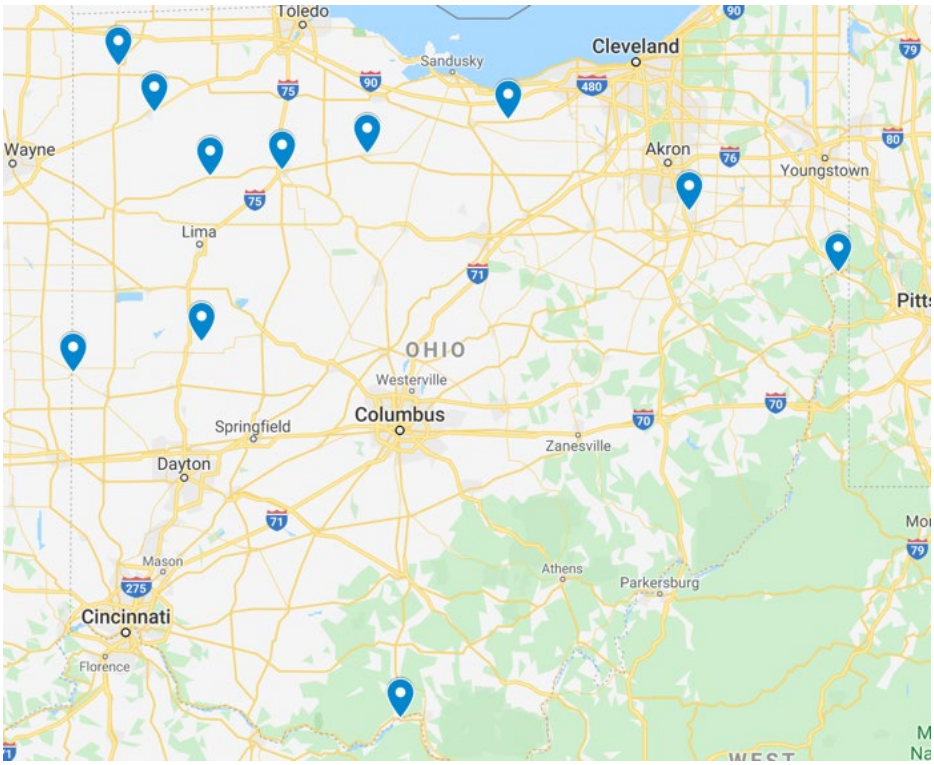
Table 11: Count of Reasons For Coverage Compromise

Coverage Compromise Reasons	Fire Based	For-Profit	Hospital	Non-Profit	Third Service	Total Count
Coverage for your primary service area is compromised due to lack of staffing (staffing shortages)	3	1			1	**5**
Coverage for your primary service area compromised due to lack of availability of vehicles	2			1		**3**
Having a crew on an IFT results in no coverage by your agency for your primary area						**0**
Having a crew on an IFT results in your agency relying on mutual aid for your primary area	2	1				**3**
Total Count	**7**	**2**	**0**	**1**	**1**	**11**

Twenty of the agencies responding to the survey rely primarily on paid staff, and 11 rely primarily on volunteers. Sixteen agencies do not have written call schedules for their staffing, and 16 have schedules. Eight agencies reported that their call schedule is not filled all of the time.

When asked if the agency could do more IFTs, four for-profit companies, three fire-based, one hospital-based and one non-profit said they would.

Locations of ambulance agencies that want to do more IFTs:



Agencies were also asked what data they collect for IFTs (See Table 11).

Table 12: Count of IFT Data Collection Practices of Agencies

IFT Data Collection Practices of Agencies	For-Profit	Hospital	Third Service	Non-Profit	Fire Based	Total Count
Day and time IFTs are requested	7	2	1	2	6	**18**
Day and time IFTs are declined	2	3	1	1	1	**8**
Day and time of all calls	7	2	1	2	6	**18**
Time on task for all calls (amount of time from time of call until the crew is clear of the call)	8	2	2	2	6	**20**

Day and time when your agency has multiple requests that overlap	4	2	1	1	3	**11**
Total Count	**28**	**11**	**6**	**8**	**22**	**75**

RECOMMENDATIONS

Issue 1: Coordination is lacking or non-existent between requests made for IFTs and providers who may be or may not be available to handle the IFT. Lack of coordination results in wait times most often greater than two hours, while some services say they are available to handle an increased number of IFTs.

> **Recommendation A**: At the most basic level, a simple system should be established to allow those seeking an IFT to be matched with agencies available to complete an IFT. **Organizations in Ohio have planned to create a portal known as MTResources that would match ambulance services with the capacity to CAHs that need transport. It will be an online system eventually funded by a small subscription fee paid by the participating ambulance services and CAHs. The project partners are currently seeking funding to create the platform. To the extent possible, the state should assist with the creation of this portal.**

Issue 2: The distance patients are transported for an IFT and the anticipated time to travel this distance, when compared to wait times experienced for an IFT needs attention. The average distance from the CAH to the hospital the patient is being transported to is reported to be 47 miles for the most frequent destination and a range of 13 to 105 miles for all transports. According to survey responses, wait time for an IFT is most often greater than 2 hours. This is excessive and dangerous to the patient's well-being, especially when the patient is experiencing a medical event that is known to kill tissue over a very short period. A similar comment applies to those trauma patients in need of immediate surgical and other interventions. With a maximum transport distance of 105 miles, the maximum travel time between the sending and receiving hospital is arguably in the range of 1 hour 45 minutes; results of those providing input tell us the patient is waiting at least as long at the sending facility as the "drive time" is between the sending and receiving facility.

> **Recommendation B**: Changes should be made to eliminate the "at least 2 hours wait" for an IFT. Convening a workgroup of stakeholders who can create solutions and implement them should occur as a top priority. Given the stark gravity of this result, a perfect solution is not needed; it is acceptable to try a proposed solution or two, measure the results, reconvene and adjust as necessary.

Issue 3: Seven ambulance agencies said they could do more IFTs. These services include the five agencies already doing 16 or more IFTs per month.

> **Recommendation C**: Analyze the facts behind the statement these services made indicating they can do more IFTs. When such capacity is determined by the day of week and time of day, a region or statewide intake center for IFT requests (a variation of a dispatch center) should serve as a clearinghouse for (3) establish a centralized clearinghouse to help match IFT requests with available resources

Issue 4: Nineteen of thirty-three ground ambulance agencies surveyed indicated they do NOT do IFTs. Anticipate the number of agencies that do not do IFTs to increase as other related factors add additional pressure to agency operations.

> **Recommendation D**: Begin planning to augment and replace local agencies that are unable or unwilling to handle IFTs. Several avenues of opportunity could be explored concerning this. Without endorsement, as each solution must meet the needs of the broader medical community, evaluation of solutions including the following (and others) should be made. (1) Utilize paid staff 24 hours a day to handle IFTs in identified areas of the region or state, (2) Consider integration of staff dedicated to IFTs into the workings of the CAH or other medical facility, (3) Lean on consolidation between neighboring services to assure local calls can be efficiently responded to while allowing staffing above the absolute minimum for a small agency to supplement staffing for IFTs in the region, (4)

Issue 5: Many of the problems and recommendations noted are based on anecdotal information. The survey respondents likely are providers that are most engaged in system thinking and issues and very likely provided the best estimate available to provide input. The problem remains that the totality of the matter is somewhat unknown. Without comprehensive and accurate region-wide (statewide) data, solutions may be less than fully effective.

> **Recommendation E**: Develop and conduct an in-depth QA study based on clearly defined measures that would accurately provide reliable insight into, but not limited to IFT related characteristics such as, (1) medical or traumatic condition of the patient requiring the necessity of the IFT, (2) time IFT was recognized as being needed, (3) time IFT was requested, (4) time IFT was provided, (5) outcomes for the patients.

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THE PARAMEDIC FOUNDATION

The Paramedic Foundation (TPF) is a Minnesota non-profit corporation. It is tax-exempt under section 501(c)3 of the Internal Revenue Code as an IRS designated 170(b)(1)(A)(vi) public charity. It has no employees but is overseen by five volunteer directors. Professionals from across the country are also able to be contractually engaged as needed for specific projects. The TPF headquarters is located in Duluth, Minnesota.

TPF has formed the project team and assignments based on the requirements of this project. Gary Wingrove, FACPE, CP-C, the president and chief innovation officer of TPF led the project.

TPF has a long history of performing statewide EMS, critical access hospital and rural EMS evaluations and consultations for dozens of EMS systems across North and South America, Australia, and the Near-East. TPF also completed an ambulance rate rebasing analysis for the North Dakota Medicaid agency, which resulted in the Governor, including enhanced reimbursement in his budget the following year. TPF is the only EMS consulting firm that has ever completed a Medicaid ambulance rate rebasing study in any state.

TPF specializes in evaluating integrated medical communities and is unsurpassed in our experience working with communities that rely on levies for program support. We know that each program, community, and system requires unique and thoughtful considerations that do not favor cookie-cutter solutions for obtaining superior, medically oriented, patient-centered outcomes. In this manner, TPF's sub-contractors are all seasoned EMS professionals averaging over 30 years' experience in EMS.

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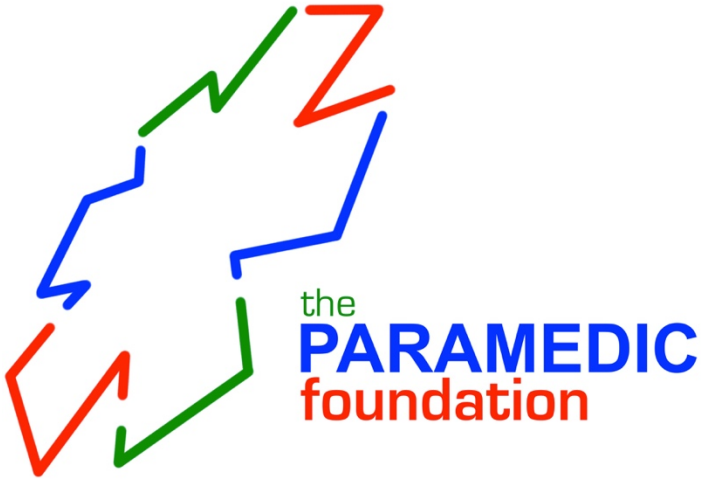
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