CENTER FOR PUBLIC SAFETY MANAGEMENT, LLC

EMS OPERATIONS AND ALTERNATIVES ANALYSIS

CHARLEVOIX, MICHIGAN

EMS OPERATIONS

CPSM®

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CPSM's local government technical assistance experience includes workload and deployment analysis using our unique methodology and subject matter experts to examine department organizational structure and culture, identify workload and staffing needs, and identify and disseminate industry best practices. We have conducted more than 307 such studies in 41 states and 227 communities ranging in size from 8,000 population (Boone, Iowa) to 800,000 population (Indianapolis, Ind.).

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SECTION I: EXECUTIVE SUMMARY

The Center for Public Safety Management, LLC (CPSM) was commissioned to review the operations of the Charlevoix EMS Service. While our analysis covered aspects of the department's operations, areas of focus of this study include: identifying appropriate staffing of the department given the workload, the effectiveness of the organizational structure; and efficiency and effectiveness of processes.

A forensic analysis of the operations of the Charlevoix Ambulance Service was not conducted as part of this project. If the City merges with other Charlevoix Ambulance services or if it contracts with a private firm, CPSM would recommend the forensic analysis to determine benchmarks that would be met/exceeded in either of those situations.

Our study involved data review provided by dispatch, interviews with key operational and administrative personnel, focus groups with line-level department personnel, on-site observations of the job environment, and the development of alternatives and recommendations.

Based upon CPSM's assessment of the Charlevoix Ambulance Service, it is our conclusion that the department, overall, provides quality EMS service delivery. While time – call taking, dispatch, turnout, and travel – is often not critical in police response, it is very critical to providing successful outcomes in EMS. One measuring point often used to determine the effectiveness and efficiency of EMS is survival of sudden cardiac arrest patients. The American Heart Association research has shown that when times extend beyond ten minutes, the survival rate is reduced to nearly 0 percent. In other words, for every minute that passes following the onset of SCA, the chances decrease 10%. For this reason, most EMS services seek to respond within those time constraints. If they are not able to achieve that performance, local fire departments are often trained and assigned as Medical First Responders to achieve intervention within the 10 minute window.

Charlevoix EMS finds itself at a crossroads not dissimilar to others around the country. The use of volunteers becomes more difficult to achieve successful response times and volunteer availability is more limited due to training and education demands. The staff is professional and dedicated to the department. Through this report, we will strive to allow the reader to look inside the department to understand its strengths and its challenges. We sincerely hope that all parties utilize the information and recommendations contained herein in a constructive manner to make the agency even better.

Following are our General Observations that we believe identify some of the more significant issues facing the department. Additionally, we have included a master list of recommendations for consideration; we believe these recommendations will enhance organizational effectiveness. Oftentimes, these types of recommendations require a substantial financial commitment on the part of a jurisdiction. In the case of the Charlevoix EMS, many recommendations will require the addition of paid, regularly-scheduled staff.

The alternatives provided could best be evaluated as short term and long term. The recommendations are intended to form the basis of a long-term plan. It is important that we emphasize that this list of recommendations is common in our operational assessments of agencies around the country and should in no way be interpreted as an indictment of what we consider to be a fine department. As well, new leadership in the department creates an environment in which constructive change can thrive.

LONG TERM: Charlevoix County should look at the creation of a county-wide EMS system. Currently the county is provided service from four different agencies – all having administrative staffs as well as billing services and other overhead. In cases of multiple casualty calls, each supports the other through mutual and automatic aid so the outline of a county-wide ambulance service is possible. Employees regularly move between the various services.

A number of issues would have to be resolved prior to a county-wide system. Medical control is provided by two different hospitals, an authority would need to be created to administer the operations, a name along with mission, vision, and values would need to be created, and the governance structure established.

However, each of the four current entities are relatively small in the area of ~~coll~~call volume. Should Charlevoix take on additional non-emergency transports, it would do so by taking them from one of the four providers.

SHORT TERM: Short term, CPSM recommends that Charlevoix EMS move to a paid department. During interviews and focus groups held by CPSM, members of the current EMS expressed concerns that the service was under the auspices of the Police Chief. CPSM's team has looked at options to the current reporting structure and feels that continuing with the current practice best serves the department for several reasons:

1. The Charlevoix Ambulance Service will require considerable development of policy, procedure, rules and regulations to comply with existing medical control. The existing police department's policy, rules, and regulations are likely to provide a good basis to develop additional protocols from EMS. All of these policies, rules, and regulations should be the basis of onboarding new personnel as well as ensuring existing personnel and responders are meeting applicable guidelines, law, and medical control requirements. CPSM recommends a training program be developed to ensure that all personnel (both new and incoming) are familiar with all of the ~~protools~~protocols, rules, regulations, and policies.
2. The police department patrol is likely to reach the patient side in more critical calls for service (Sudden Cardiac Arrest, breathing, beating, and bleeding). Police personnel should be trained in CPR, automatic electronic defibrillation (AED), and advanced first aid, perhaps to the level of Medical First Responder (MFR). The MFR program is 45-60 hours of training and would incorporate all of the mentioned assistance. By articulating the police and EMS, the patient will benefit by having intervention within ten minutes of observed incident. For SCA, this is critical to a successful outcome.
3. CPSM recommends that township fire service members also be trained to the Medical First Responder level and be dispatched only on the most serious medical calls (beating, bleeding, breathing). The personnel should not be dispatched to non-critical calls for service. The fire department members are likely positioned to reach the patient side faster than an ambulance dispatched from Charlevoix or one of the three surrounding services and within the 10 minute window associated with incidents like SCA.
4. If a unified Charlevoix County EMS could be developed, the police chief is likely to be the representative for the City in such transition and thus s/he needs to be familiar with the services offered. During individual and focus-group settings the worry was the police chief is not a medically trained individual; the additional training as Medical First Responder along with hiring a trained EMS Director that reports to him/her should resolve this complaint and assist the City Manager with the management of the service.

SECTION II: CHARLEVOIX EMS OPERATIONS ASSESSMENT AND RECOMMENDATIONS

Charlevoix EMS (CEMS) enjoys a long history of community trust and good service delivery. The Center for Public Safety Management (CPSM) reviewers were impressed with commitment of the staff and leadership of CEMS, as well as the City of Charlevoix. The current environment in Charlevoix, the EMS profession and the healthcare environment, represents some challenges, but also offers excellent opportunities for the City and CEMS.

Our assessment findings and recommendations reflect an exhaustive review of CEMS documents, personal observations and interviews with relevant stakeholders of the CEMS system. They are meant to be constructive in nature and represent our assessment of the current state of CEMS, and offer some logical possibilities for the future of CEMS.

Operations Review

Vehicles and Equipment

The vehicles and equipment available to the residents and visitors who rely on CEMS to be there when tragedy strikes appear to be excellent. CEMS enjoys state of the art vehicles that seem to be well maintained and cared for. The city recently placed in service a newly purchased "ECHO" unit, the emergency response vehicle operated by the on-duty paramedic covering the city. CEMS vehicles are maintained primarily by the city's maintenance shop and this process appears to be working well. The cardiac monitors/defibrillators used by CEMS are PhysioControl LifePak 12 monitors. These are relatively old, and although they are able to provide the basic necessary cardiac assessments and interventions, CEMS should consider replacing these units with newer generation cardiac monitors that offer enhanced diagnostic and interventional capabilities, along with enhanced quality assurance software and data platforms.

Recommendation:

CEMS should invest in new cardiac monitors to take advantage of current diagnostic and intervention technology, as well as quality assurance processes.

Medical Supplies

Medical supplies carried on the units are relatively standard for EMS agencies in Michigan and support the protocols used by EMS personnel. CEMS is part of a group purchasing organization (GPO) that helps to control costs related to medical supply purchases and drugs. While a GPO may be effective, CEMS should also consider a partnership with Munson Healthcare Charlevoix Hospital (Munson) to supply drugs for CEMS. Many agencies with low call volumes such as CEMS struggle with using medications prior to the drug expiration. Similarly, the nation is challenged with drug shortages for medications critical for EMS agencies.

Partnering with Munson may afford the opportunity for CEMS to mitigate both the medication expiration issue, as well as the drug shortage challenges.

Recommendation:

CEMS should investigate joining a Group Purchasing Organization for general EMS supplies and equipment, and potentially partnering with Munson for drugs.

Staffing

The core staff of CEMS share a strong sense of camaraderie and focus on the mission. They operate with a full-time paid paramedic 12 hours a day, with part time paramedics filling in nights and weekends. EMTs are generally "paid on-call", responding to the ambulance garage to staff the ambulance when a call is received. While this model is currently meeting the basic need for the city, it is not a model that is ideal over the long term. A review of response times for CEMS reveals an average response time of 10:53 seconds for Priority 1 calls and 12:25 overall (Figure 1), demonstrating that there are no currently pressing response time issues.

The current staffing model does has several challenges and is just adequately meeting the current needs. In the finance section, we will discuss call volume in more detail, however, community members indicate that CEMS is missing the opportunity for more billable transports, and one possible reason is the inability, or the concern about having staff resources to complete inter-facility calls, while maintaining emergency coverage for the community.

As community needs increase in the future, it is very likely that the needs will exceed the current system's capabilities.

Figure 1: Response Time Analysis

Time of Day	Response Priority	# of Calls	Activation	Travel	Response	Time on Scene	Total Task Time
07:00 - 10:59	P1	106	2:11	7:52	10:03	0:50:03	0:58:00
	P2	32	2:23	8:19	10:42	0:46:04	0:54:23
	P3	59	1:32	10:39	12:11	0:52:14	1:02:52
	Average	**197**	**2:02**	**8:56**	**10:58**	**0:49:27**	**0:58:25**
11:00 - 14:59	P1	126	1:58	7:24	9:22	0:54:14	1:01:38
	P2	41	2:11	8:46	10:57	0:47:21	0:56:07
	P3	68	4:04	15:14	19:18	0:47:50	1:03:07
	Average	**235**	**2:44**	**10:28**	**13:12**	**0:49:48**	**1:00:17**
15:00 - 18:59	P1	95	2:04	8:08	10:12	0:48:57	0:57:05
	P2	19	2:45	6:59	9:44	0:47:32	0:54:31
	P3	61	2:23	11:42	14:05	0:53:55	1:05:37
	Average	**175**	**2:24**	**8:56**	**11:20**	**0:50:08**	**0:59:04**
19:00 - 22:59	P1	93	2:58	7:49	10:47	0:48:58	0:56:47
	P2	28	2:19	9:47	12:06	0:58:40	1:06:26
	P3	44	1:40	12:09	13:48	0:42:58	0:55:06
	Average	**165**	**2:19**	**9:55**	**12:13**	**0:50:12**	**0:59:26**
23:00 - 02:59	P1	48	2:11	10:28	12:39	0:50:04	1:00:32
	P2	20	3:19	10:48	14:01	0:43:47	0:54:35
	P3	29	2:39	9:08	11:47	0:46:47	0:55:55
	Average	**97**	**2:43**	**10:08**	**12:49**	**0:46:53**	**0:57:01**
03:00 - 06:59	P1	54	2:11	10:09	12:20	0:43:25	0:53:34
	P2	17	2:00	10:16	12:16	0:51:31	1:01:46
	P3	19	2:05	15:20	17:25	0:55:27	1:10:47
	Average	**90**	**2:05**	**11:55**	**14:00**	**0:50:08**	**1:02:02**
Overall Average	P1	522	2:15	8:38	10:53	0:49:17	0:57:56
	P2	157	2:29	9:09	11:37	0:49:09	0:57:58
	P3	280	2:23	12:22	14:45	0:49:52	1:02:14
	Average	**959**	**2:22**	**10:03**	**12:25**	**0:49:26**	**0:59:23**

Staffing Model Considerations

Option 1: Dedicated ALS Unit – Peak Times

- Staffed with 1 EMT and 1 Paramedic 9a to 9pm.
- Paid on call staff as back up staffing for the second unit, and for slower call volume times (9p – 9a).
- During day shifts (8a – 5p), a full time, paid paramedic EMS Coordinator could operate the ECHO unit to provide rapid response in the event of a secondary call while the primary unit is committed on a call.
- During off-peak hours, the ECHO unit could be staffed by a paid on call paramedic, with one or two EMTs as paid on call. If two EMTs respond, the paramedic could be triaged off the call depending on patient acuity. In the event only one EMT is able to respond, the paramedic would staff the ambulance to complete the call.
- Estimated personnel cost for Option 1 – **$250,340**

Option 2: Dedicated ALS Unit – 24/7/365

- Staffed with 1 EMT and 1 Paramedic around the clock.
- Paid on call staff as back up staffing for the second unit for simultaneous calls.
- During day shifts (8a – 5p), a full time, paid paramedic EMS Coordinator could operate the ECHO unit to provide rapid response in the event of a secondary call while the primary unit is committed on a call.
- During off-peak hours, the ECHO unit could be staffed by a paid on call paramedic, with one or two EMTs as paid on call. If two EMTs respond, the paramedic could be triaged off the call depending on patient acuity. In the event only one EMT is able to respond, the paramedic would staff the ambulance to complete the call.
- Estimated personnel cost for Option 2 – **$444,746**

Recommendation:

The City of Charlevoix should complete a detailed financial analysis of the potential for shifting to full time paid staffing for the primary EMS unit, either during peak times, or full time 2/7/365.

Figure 2: Staff Model Options Estimated Costs

City of Charlevoix EMS		Ambulance Staffing/Personnel Cost Analysis						
	FY 2017-2018							
Current Fees and Per Diem	$ 240,639							
Staff	Hourly	Annual Unit Hours	Hours/FTE	Regular Hour Equivalents	FTEs	Annual Wages	Benefits @ 17%	Annual Cost
Option 1: ALS Unit - 12 Hours Peak Staffing								
Paramedic	$ 20.00	4380	2184	2288	2.01	$ 91,771	$ 15,601	$ 107,373
EMT	$ 13.00	4380	2184	2288	2.01	$ 59,651	$ 10,141	$ 69,792
Total Personnel Costs					**4.01**	**$ 151,423**	**$ 25,742**	**$ 177,165**
Reduction in **Paid Call Time**		Annual Calls	Calls Covered	Cost				
% of calls w/Primary Unit	60.0%	821	492.6	0				
% of back-up/on-call services	40.0%	821	328.4	**$ 22,988**				
Reduction in **On-Call/Shift Pay**								
On call Pay/Shift (2 providers)	$ 137.50							
Shifts Covered	365							
On Call Cost - **Proposed**	**$ 50,188**							
Cost per Call + Shift Pay	**$ 73,176**							
Net Personnel Cost - Option 1	**$ 250,340**							
Difference	**$ 9,701**							
Option 2: ALS Unit - 24/7/365								
Paramedic	$ 20.00	8760	2184	2288	4.01	$ 183,543	$ 31,202	$ 214,745
EMT	$ 13.00	8760	2184	2288	4.01	$ 119,303	$ 20,281	$ 139,584
Total Personnel Costs					**8.02**	**$ 302,846**	**$ 51,484**	**$ 354,329**
Reduction in **Paid Call Time**		Annual Calls	Calls Covered	Cost				
% of calls w/Primary Unit	30.0%	821	246.3	0				
% of back-up/on-call services	70.0%	821	574.7	**$ 40,229**				
Reduction in **On-Call/Shift Pay**								
On call Pay/Shift (2 providers)	$ 137.50							
Shifts Covered	365							
On Call Cost - **Proposed**	**$ 50,188**							
Cost per Call + Shift Pay	**$ 90,417**							
Net Personnel Cost - Option 1	**$ 444,746**							
Difference	**$ 204,107**							

Initial On-Boarding

CPSM reviewed the current initial new employee on-boarding process documents. The documents provided seem to reflect a time when Charlevoix operated a fire department, as the majority of the training and onboarding reference fire operations, with minimal reference to EMS operations. Since primary fire operations have been outsourced to the Township, the employee onboarding and continuing education program needs to be totally re-written to reflect the actual services being delivered.

The on-boarding process should be a combination of competency with CEMS policies and procedures, but also a formal local medical control credentialing process.

Recommendation:

CEMS should develop an EMS specific on-boarding and provider credentialing process, in conjunction with the Medical Director and City Human Resources.

Training, Education and Quality Assurance

Similarly, there did not seem to be a formal process for continuing education and training. A comprehensive continuing education program should be developed and implemented to assure patient care excellence and facilitate CEMS employee recertification with the State of Michigan, and/or the National Registry of EMTs.

According to documents received and personal interviews, it also appears there is minimal clinical quality assurance (QA) processes currently in place. CPSM was told that the daytime medic reviews patient care records for accuracy and completeness, but there is not currently a formal QA process for patient care/clinical issues. Clearly, the assurance of patient care quality if vital, not only from a quality of care perspective, but also from risk-reduction and continuing education perspective. Robust QA programs help identify gaps in clinical knowledge that can be bridged through continuing education programs developed based on findings from the QA reviews.

Recommendation:

CEMS should develop a robust quality assurance process and a continuing education program that helps improve patient care and prepare employees for recertification.

Policies and Procedures

The only policy and procedure manual CPSM was provided when we asked about these documents for CEMS was the manual developed for the Charlevoix Fire Department. Previously, EMS was provided through the fire department, however, now that the fire services have been outsources to a neighboring community, CEMS needs to develop their own EMS related policy and procedure manual. We understand this has been an on-going project by the current and former EMS Director, however, it is imperative that this project be completed as soon as possible.

Recommendation:

CEMS should complete the on-going project of writing and implementing a policy and procedure manual, specifically for EMTs, paramedics and related EMS staff.

Patient Care Reporting

CEMS currently documents patient encounters on paper patient care reports (PCRs). This has several inherent challenges:

- Security of written patient records
- Delay with the billing process
- Record retrieval and access
- Quality assurance through manual chart reviews
- Incomplete records being submitted that require manual processes

There are many cost-effective electronic patient care reporting systems available in the market that CEMS should evaluate for implementation. This will address many of the challenges listed above, and improve overall system efficiencies. It is CPSM's understanding that the State of Michigan uses ImageTrend® for their state-wide reporting processes. A potential first step in this process is to investigate integrating with the state ePCR system.

Recommendation:

CEMS should investigate the procurement and implementation of an electronic patient care reporting (ePCR) platform.

Health Insurance Portability and Accountability Act (HIPAA)

HIPAA is a federal rule that helps to secure data and prevent disclosure of protected health information (PHI) from people who are not directly involved with the patient's care. Violations of the rule could have significant consequences. CEMS and City staff may benefit from specific training related to HIPAA rules, as CPSM staff were handed documents from city staff that may have contained PHI. Training on the HIPAA rules, paired with comprehensive policies and procedures to help assure patient privacy would help prevent unintended releases of PHI.

Recommendation:

CEMS and City staff should undergo specific HIPAA training.

Ambulance Billing

CEMS, like most EMS agencies, bill for the ambulance services they provide. CPSM conducted an analysis of billed charges and cash collected from the CEMS billing agency from the billing records provided by the city's billing contractor, Parastar.

Figure 3: Revenue and Payer Mix Analysis

City of Charlevoix
Payer Mix Analysis
April 1, 2017 - March 31, 2018

	# of Trips	% of Total Trips	$ Billed	Billed per Trip	% of Total Billed	$ Collected	$ Collected per Trip	Payer Collection Rate	% of Overall Collected
Medicare	422	51.4%	$ 262,859	$ 623	50.4%	$ 158,719	$ 376	60%	55%
Insurance	243	29.6%	$ 161,561	$ 665	30.9%	$ 101,186	$ 416	63%	35%
Medicaid	114	13.9%	$ 74,235	$ 651	14.2%	$ 19,037	$ 167	26%	7%
Facility	5	0.6%	$ 3,028	$ 606	0.6%	$ 70	$ 14	2%	0%
Private Pay/Bill Patient	37	4.5%	$ 20,358	$ 550	3.9%	$ 12,080	$ 326	59%	4%
Total	**821**	**100.0%**	**$ 522,041**	**$ 636**	**100.0%**	**$ 291,092**	**$ 355**	**55.8%**	100%

Average Patient Charge: $ 635.86

$ 354.56 Average Collection per Trip

Overall Collection Rate: 55.8%

The payer mix for the services provided by CEMS is relatively consistent with national payer mix trends, with Medicare representing 51.4% of the ambulance trips, 50% of billed charges, and 55% of revenue collected. Parastar's overall collection rate of 55.8% is higher than many EMS agencies, and likely represents that Charlevoix charges an average of $635.86 per trip. This Average Patient Charge (APC) is relatively low. Many EMS agencies charge in excess of $1,000 per ambulance trip. As an example, a CPSM consultant provided details of the ambulance billing for the Metropolitan Area EMS Authority, a regional governmental agency serving Fort Worth and 14 other cities in north Texas.

Figure 4: Representative Revenue Analysis and Payer Mix Analysis, MedStar Mobile Healthcare

Metropolitan Area EMS Authority					
Payer Mix Analysis					
FY 2016 - 2017					
	Billed		**Cash Collected**		
	Amount	% of Total	Amount	% of $ Billed	% of Collected
Medicare	$ 59,834,107	37.3%	$ 16,337,301	27.3%	36.9%
Insurance	$ 21,917,831	13.7%	$ 17,887,771	81.6%	40.4%
Medicaid	$ 26,237,111	16.3%	$ 5,424,489	20.7%	12.3%
Facility	$ 3,749,830	2.3%	$ 2,902,047	77.4%	6.6%
Bill Patient	$ 48,758,240	30.4%	$ 1,723,086	3.5%	3.9%
Total	**$ 160,497,119**	**100.0%**	**$ 44,274,695**	27.6%	**100.0%**
		Cash Collected	**Billed**	**Rate**	
		$ 44,274,695	$ 160,497,119	27.6%	
		Amount Collected per Trip	**$ 491.94**		

While federal and state public payers (Medicare and Medicaid) generally pay a fixed amount based on a fee schedule, many 3rd party payers (commercial insurance) and patients without insurance, pay a percentage of billed charges. Consequently, CEMS could increase the amount collected from ambulance fees by increasing the rates charged. The net effect of the rate increase on individual patients will generally be minimal, as only 4.5% of CEMS ambulance trips result in the patient actually receiving the full bill. Most of the rest of the patients will either be covered by Medicare, Medicaid, or commercial insurance. While there will likely be some balance billed amounts for the commercially insured patients, this will be a minimal occurrence.

According to the FY 2017-2018 CEMS financials provided to CPSM, the total agency expense for the fiscal year was $452,815. This means their expenditure per trip is $551.54 (452,815/821 trips). Under the current billing process, CEMS collects $354.56 per trip. If CEMS were to implement a rate increase to yield an average amount collected closer to their cost of service, this would reduce the taxpayer burden for their services.

Billed Charges by Payer

Reviewing the APC by payer reveals a potential anomaly. The Medicare APC is $623 as compared to the Private Pay/Bill Patient APC is $550. Generally, Medicare regulations require that no payer be billed less than Medicare for similar services. CEMS and Parastar should do further analysis to assure that Private Pay patients are not being billed less than CEMS bills to Medicare for similar services.

Ambulance Subscription/Membership Program

Many EMS agencies offer membership or subscription programs to defray the cost of unpaid balances for medically necessary ambulance service. Generally, the funds raised through the paid annual subscriptions help cover the cost of waiving the uncovered balance of the ambulance fee, after insurance. Examples of these subscription programs in Michigan include:

- **Michigan Ambu-Care Membership – American Medical Response**
  - http://www.ems-education.com/?page_id=428

- **Life Care Plus Membership – Life EMS**
  - https://www.lifeems.com/life-care-plus-membership/

- **EMSPlus – Emergent Health Partners/Huron Valley Ambulance**
  - http://emergenthealth.org/community-programs/emsplus

Ambulance Billing Contract with Parastar

The City of Charlevoix has a contract with Parastar, Inc. for ambulance billing services. It is not unusual for low call volume EMS agencies to outsource billing services. Parastar is charging 6% of cash collected, which is not unusual for EMS billing services. The contract has been in place since 2009, which is a long time for a billing agreement and the City should develop and publish an RFP for billing services. This process would reveal if there are enhanced services or rates for billing that alternate agencies may be willing to offer under a new agreement.

The contract contains a generally accepted provision that CEMS not employ staff who have been convicted of insurance fraud, or excluded from participation in federal reimbursement programs. There is no provision in the agreement that Parastar comply with this same provision.

Under the terms of the agreement, the City must remit payment to Parastar within 20 days of invoice. This is a much tighter time frame than generally expected. Most healthcare fees are due in 45 days, and enhanced agreements generally offer a discount if fees are paid within 20 days. This provision is also inconsistent with a sample billing services invoice provided by the City, which indicates that the bill is "Net 30", meaning the charges are due with 30 days of the invoice.

Finally, the agreement states that Parastar will provide billing reports "*as requested*" by the City. Parastar should be required to provide standard reports (billed and collected amounts, aging account records and payer mix reports) with each invoice, every month.

Recommendations:

- *Charlevoix should implement a process to increase ambulance rates to increase the amounts collected by ambulance service provision to reduce the need for taxpayer subsidy.*

- *CEMS and Parastar should conduct a detailed review of ambulance billing for Medicare and Private Pay patients to assure that Private Pay patients are not being billed lower fees than are being billed to Medicare for similar services.*

- *Charlevoix should investigate the implementation of an ambulance subscription program to mitigate the impact of the higher ambulance fees on individual patients and families.*

- *Charlevoix should develop and publish an RFP for ambulance billing services to see what enhancements are available in the market for billing services.*

SECTION IV: CULTURE AT CEMS

EMS Director Turnover

In small agencies, such as CEMS, the direct supervisor/Director plays a very important role in developing the culture and work environment for the organization. During interviews with numerous CEMS internal and external stakeholders, several themes were commonly expressed. Virtually everyone interviewed cited the camaraderie and commitment to excellent patient care and service delivery as the core value for all employees and leaders. However, many internal stakeholders feel that the lack of dedicated leadership, specifically at the EMS Director level, was a significant obstacle to the advancement of CEMS. Since this project began, a new Director has been hired to oversee the department. CPSM was impressed with his knowledge and dedication during interviews on and after our visit.

Recent frequent turnover in the Director's position has cast a shadow on the morale of the current employees.

Further, CPSM consultants were advised past employees could be creating conflict between the ambulance service and the hospital to which a majority of patients are evaluated. It is believed (although not empirically demonstrated) that these relationships are effecting operations at CEMS in two ways.

First, it is believed by CEMS that this has negatively affected non-emergency transports. If true, this clearly has an economic impact on CEMS through lost revenue for inter-facility transports out of Munson Hospital.

Second, it was stated during interviews that former employees may provide unauthorized "first response" services in Charlevoix, using their own medical supplies and equipment. It was stated some non-employees listen to public broadcasts of dispatch radio traffic and self-dispatch to EMS calls. If true, this not only could impact the CEMS employees on the response, but could represent serious patient care, HIPAA and liability risks to both the provider and the city. It may also be a violation of state EMS rules regarding scope of practice.

Recommendations:

- *The City should take steps to formally select and appoint a dedicated EMS director as soon as possible. CPSM understands this negotiation and on-boarding has taken place and was impressed with the candidate selected.*

- *Based on call volume and overall workload, this position could be a part time, or shared role as a primary paramedic, however, given the significant and time consuming work that needs to be accomplished in a relatively short period of time, it may be beneficial to make this a non-shared responsibility position.*

- *The City should work with the leadership at Munson Hospital to investigate the allegation that certain Munson Hospital leader(s) are purposefully calling neighboring ambulance agencies to transport patients from Munson Hospital and take any action the hospital deems appropriate based on the findings of the investigation.*

- *CEMS, the City and the EMS Medical Director should investigate non-employees responding to EMS calls in Charlevoix.*

- *If determined to be true, a complaint should be filed with the proper authorities for appropriate action.*

Reporting Relationship

During interview with internal stakeholders, some expressed the belief that the reporting relationship with the Police Chief is currently less than effective. They feel that the chief may be too involved in the day-to-day operations of the EMS department, but lacking the specific knowledge of EMS service delivery to be effective at that level. Some felt that the chief may have too many responsibilities and direct reports. Reviewing the City of Charlevoix table of organization, provided by the City, the number of responsibilities and direct reports for the chief seem reasonable. In fact, the city manager seems to currently have 12 direct departmental reports. The reporting relationships seem reasonable and it is likely that with the selection and appointment of the correct EMS Director, the police chief will be able to turn much of the day-to-day operational involvement to the EMS Director.

SECTION V: ALTERNATE SERVICE DELIVERY OPTIONS

As part of this engagement, CPSM considered the possibility of alternate service delivery models for EMS in the City of Charlevoix. The options are described below, with advantages and challenges for each option. The order of these options do not reflect any hierarchy of recommendation.

Option 1: Continue Current Model

The current service delivery model, dedicated daytime paramedic in a "ECHO" unit supplemented by paid on-call staffing, is generally working today. However, current staffing challenges will likely exacerbate over time with changing EMS workforce and community demographics. Further, medical skills such as patient assessment, critical clinical decision making and low-frequency/high risk skills, such as advanced airway placement and even intravenous access, require frequent practice to maintain proficiency. The current average patient contact volume of just over 2 patients per day makes it difficult to maintain those skills, unless the provider is actively working somewhere else with a higher patient contact volume.

Advantages:	**Disadvantages:**
➢ Known model ➢ Inexpensive	➢ Staffing challenges due to P/T on-call pay arrangement and changing community demographics ➢ Limited capacity for additional call volume such as inter-facility transports ➢ EMS skills maintenance and proficiency

Option 2: Full Time/Dedicated Peak Staffing/On-Call Off-Peak Staffing

Under this model, the city would hire four FTEs, two paramedic and two EMTs to staff 12 hour peak demand shifts. It would add capacity to the system to enhance revenue through increased inter-facility call volume. It would also reduce the number of hours for paid on call and provide a more stable workforce.

Advantages:	**Disadvantages:**
➢ Added capacity for more paid call volume ➢ Dedicated workforce for peak call volume ➢ Reduced reliance on paid on call staffing for peak times	➢ Marginally more expensive (*see financial analysis*) ➢ Skills retention issue for the paid full time staff ➢ Still relies on paid on-call services for non-peak times

Option 3: Full Time/Dedicated Staffing 24/7/365

Under this model, the city would hire eight FTEs, four paramedic and four EMTs to staff units around the clock. It would add capacity to the system to enhance revenue through increased inter-facility call volume. It would significantly reduce the number of hours for paid on call and provide a more stable workforce.

Advantages:	Disadvantages:
➢ Added capacity for more paid call volume ➢ Dedicated workforce for around the clock ➢ Reduced reliance on paid on call staffing	➢ Significantly more expensive (*see financial analysis*) ➢ Skills retention issue for the paid full time staff ➢ May require modifications to facility sleeping arrangements to comply with co-ed guidelines

Option 4: Form a Regional Service Delivery Model with Neighboring Communities

Under this model, the city would approach neighboring cities, townships and the county to develop a regional service delivery model across multiple jurisdictions. There would need to be a single point of dispatch and likely a first response augmentation for potential response delays due to geography and call volume. This structure could be highly effective and efficient, but would require significant cooperation between multiple elected bodies and current EMS agencies. The agencies would have to either agree to share resources and cross jurisdictional boundaries, or disband the current providers in lieu of a single regional provider. It is also a legally and financially complex model that would be created through interlocal, joint powers agreements and a funding matrix based on either population or annual call volumes for each jurisdiction.

Advantages:	Disadvantages:
➢ Economically efficient due to shared resources and revenue from call volume and a single organizational structure ➢ Operationally effective by covering a larger, seamless geographic area, regardless of geopolitical boundaries ➢ Clinical skills more likely to be maintained due to higher call volumes and patient contacts	➢ Legally and financially complex to create and maintain ➢ Requires a high degree of trust between the jurisdictions ➢ Will result in the consolidation of current providers and merging of workforces ➢ Would likely require coordinated First Response system due to large coverage area and response volume ➢ Would require agreement on a single call taking and dispatch process for EMS calls

Option 5: Contract with a Private Ambulance Provider

The city could develop an RFP for ambulance services for contracting with a private ambulance provider. The city would likely need to do it for a dedicated unit within the city, as there are currently no local private providers who would be able to do this service part-time, sending an ambulance from other areas as needed. Much like the dedicated peak or 24/7 options, this option would likely require a significant subsidy from the city, since the call volume would generally not economically support a dedicated unit. There would be additional advantages through contracting vs. providing the services.

Advantages:	**Disadvantages:**
➢ Ease of contracting vs. providing services ➢ Skill retention issues may be minimized as provider could rotate personnel to busier systems	➢ Would likely require a tax subsidy to maintain ➢ Might displace many of the current providers ➢ Contractor may not provide back-up services for simultaneous calls, requiring a local secondary resource option

Option 6: Create a Public Safety Organization (PSO) Model

Some communities combine police, EMS and fire service delivery into one model, called a Public Safety Organization (PSO) model. Personnel are cross trained and certified as a police officer, EMT/Paramedic and fire fighter. Most of the time the personnel are performing law enforcement duties, but when an EMS or fire call occurs, the ‘shift gears’ and perform those duties. Their patrol vehicles carry medical and firefighting gear to be ready for any type of call. In these models, the ambulance or fire truck responds from a central location, rendezvous with the on-scene public safety officers, to create the resources necessary to handle the emergency. This could be a workable option for Charlevoix. The city would hire a few additional police officers and cross certify them as EMTs, paramedics or firefighters. It is a cost effective model that covers most public safety needs with a single resource.

A potential challenge with the model is reduced police protection during an ambulance or fire call due to the police officers being committed to that task. However, given the demographics of Charlevoix during most of the year, that may not be a substantial hurdle. Further, fire services are already outsourced to a neighboring community, so the PSOs in Charlevoix would provide the primary firefighting duties until the neighboring jurisdiction arrives.

This model could also work with the EMS service provision, with neighboring jurisdictions providing the ambulance and Charlevoix PD providing the first response. If that were done, the city would lose the venue from ambulance transport, however the city could contractually require the ambulance provider to fund some of the cost for the first response PSO model as a condition of the contract.

Advantages:	Disadvantages:
➢ Uses existing resources more effectively ➢ Adds police resources to the city ➢ Makes effective use of existing organizational and supervisory resources o Including reallocated equipment and supplies from the "ECHO" unit ➢ Builds on existing community trust of the police department ➢ If ambulance retained in house, retains billing revenue for ambulance services	➢ Adds to personnel costs due to additional required certifications, multi-roles ➢ Could cause role clarity issues for multi-role incidents such as vehicle crashes o Some PSOs would be primary EMS on scene and others LEO roles ➢ May require renegotiation of an existing collective bargaining agreement ➢ May require additional costs for equipment if more than one paramedic used as part of the system o Should only require 1, and that equipment could be reallocated from the "ECHO" unit

Option 7: Partnership with Munson Healthcare Charlevoix Hospital (Munson)

Under this option, Munson would contract for, or directly hire the EMS personnel to work in the hospital emergency department (ED) as staffing augmentation in supportive patient care roles, either during peak staffing times referenced as Option 2, or full time 24/7/365 under Option 3. The ambulance would be kept at the ED and in the event of a medical response, and would respond from the ED to the medical call. The EMS personnel would be able to maintain critical patient care skills and procedures, while potentially reducing personnel costs for Munson. This would also build relationships with the hospital staff and help assure CEMS is used for ambulance transports from the hospital.

In this option, Munson could use the CEMS personnel for post-acute follow-up home visits for recently discharged patients to reduce bounce back ED visits and preventable readmissions. Since Munson is a Critical Access Hospital, their unique reimbursement from Medicare could cover a significant portion of the cost of employing or contracting for the EMS personnel working in the ED. If Munson employs the EMS personnel directly, or even assumes responsibility for the ambulance service completely, any revenues derived from the ambulance service provision could go to Munson to offset any costs associated with the arrangement.

Further, if Munson also operates a home health or hospice division, CEMS could serve in a support role for those agencies after hours, or during peak demand, reducing costs to Munson for on-call home health or hospice services.

Advantages:	Disadvantages:
➢ Uses existing resources more effectively ➢ Augments ED staffing, potentially reducing personnel expense for Munson's ED staffing ➢ EMS personnel use skills/procedures regularly, attaining better assessment and procedural proficiency ➢ Enhances relationships between ED and EMS personnel ➢ Helps assure inter-facility transfers are handled by CEMS through the relationship building and ease of contact, since they would be 'in-house' ➢ Costs of this model may be reimbursable under the Critical Access Hospital reimbursement model	➢ May be a complex contractual arrangement if EMS staff not directly employed ➢ If Munson assumes control and/or ownership of CEMS, it would likely require a contractual service delivery arrangement with the City ➢ May require modifications to the ED facility to accommodate ambulance parking, especially during inclement weather ➢ Munson would either contract for the billing services, or take those 'in house' o If taken in house, some billers may not be aware of the nuances of ambulance billing and some revenue could be potentially lost