

Beaver Emergency Medical Services 2024 Annual Report



Wes Baerg, Advanced Care Paramedic

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Our Vision: *To excel as the leading provider of emergency medical services throughout Alberta. We will promote a workplace where staff are supported, and we will commit to safe and innovative clinical improvements.*

Beaver Emergency Medical Services
is built upon the CORE VALUES of:
Integrity, Professionalism, Accountability, Teamwork
and Respect

Our Mission is to provide compassionate, professional, and effective emergency medical services in our communities. We will uphold the public trust with integrity, through the delivery of respectful and accountable treatment of those placed in our care.

Board Chair: Norm Martineau - Town of Tofield

Board Vice-Chair: Barry Bruce, Beaver County

Board Member: Cindy Lefsrud, Town of Viking

Board Member: Cathy Brown, Member at Large

Board Member: Lyndie Knockleby, Village of Ryley

Board Member: Milt MacGregor, Village of Holden

Wes Baerg, Executive Director, Board Secretary Treasurer

Crystal Stevenson: General Manager, Board Recording Secretary

Amber Carson: Office Administrator

WE BELIEVE:

- Everybody matters
- In the highest level of care through exceptionally skilled professionals and state of the art equipment
- In exceeding standards of care
- In strong working relationships, internally between board and staff, and externally with other health care professionals

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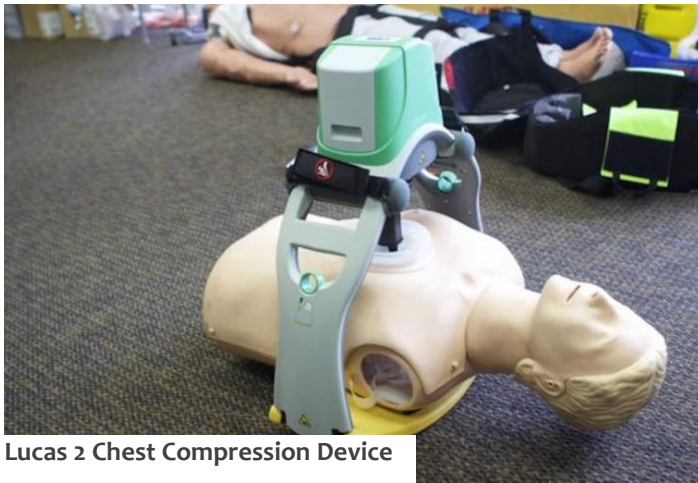
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Service Summary

Beaver Emergency Medical Services is the provider of paramedic services to Beaver County and the encompassing communities of Tofield, Ryley, Holden, Viking, and the hamlets of Bruce and Kinsella. We provide ambulance services to approximately 10,300 residents in addition to those who we interact with from other hospitals and communities.

Operating out of 2 stations within Beaver County, Beaver EMS provides pre-hospital advanced medical care, trauma care and the transport of patients from emergency incidents to health care facilities.



Lucas 2 Chest Compression Device

As a rural ambulance provider, several years ago we noted the potential benefit of mechanical assistance with CPR since manual CPR outcomes are not optimal and back-up ambulance crews are often not available for assistance. A mechanical chest compression LUCAS 2 machine would have significant advantages to patient care and outcomes in a cardiac arrest event. CPR done by this machine is much more consistent in terms of

depth, regularity (no periods of no-CPR), and the machine does not get tired or fatigued. According to a study conducted by ScienceDirect, during CPR “*cortical cerebral blood flow in the group treated with LUCAS compressions reached a level of approximately **65% of baseline blood flow** that was stable throughout the whole CPR period. Comparatively, conventional manual CPR achieved **only 20-30% of baseline blood flow** to the brain (with optimal manual chest compressions).*” With the assistance of funding grants, we were able to purchase the **LUCAS 2** chest compression system for each ambulance. This has been a “game-changer” in terms of efficiency during resuscitation efforts, anecdotally the patient outcomes have been much better, and our paramedics are highly supportive of their use.

Now the original LUCAS CPR machines are reaching “end of life”, and we are looking to replace them. Each LUCAS 3 machine costs approximately \$19,500, so we are actively exploring various funding and granting options. Claystone Waste Ltd, a leading waste management company in central Alberta has generously provided grant funding of \$9,000 towards the purchase of a LUCAS 3. We are very grateful for their contribution to improved patient outcomes and emergency medical care in our area.

This type of equipment would never have been available or considered even a few years ago. We are proud of these advancements and look forward to other new initiatives and progressions in our profession, knowing that if we can make a difference in people’s lives, we are doing what we have set out in our mission; **“to provide compassionate, professional, and effective emergency medical services in our communities. We will commit to safe and innovative clinical improvements and maintain a workplace where staff are encouraged and supported.”**

This AHS Stroke truck met up with our Advanced Life Support ambulance on the side of a highway to do a CT scan of a stroke patient.



This past year our paramedics responded to 1694 ambulance calls



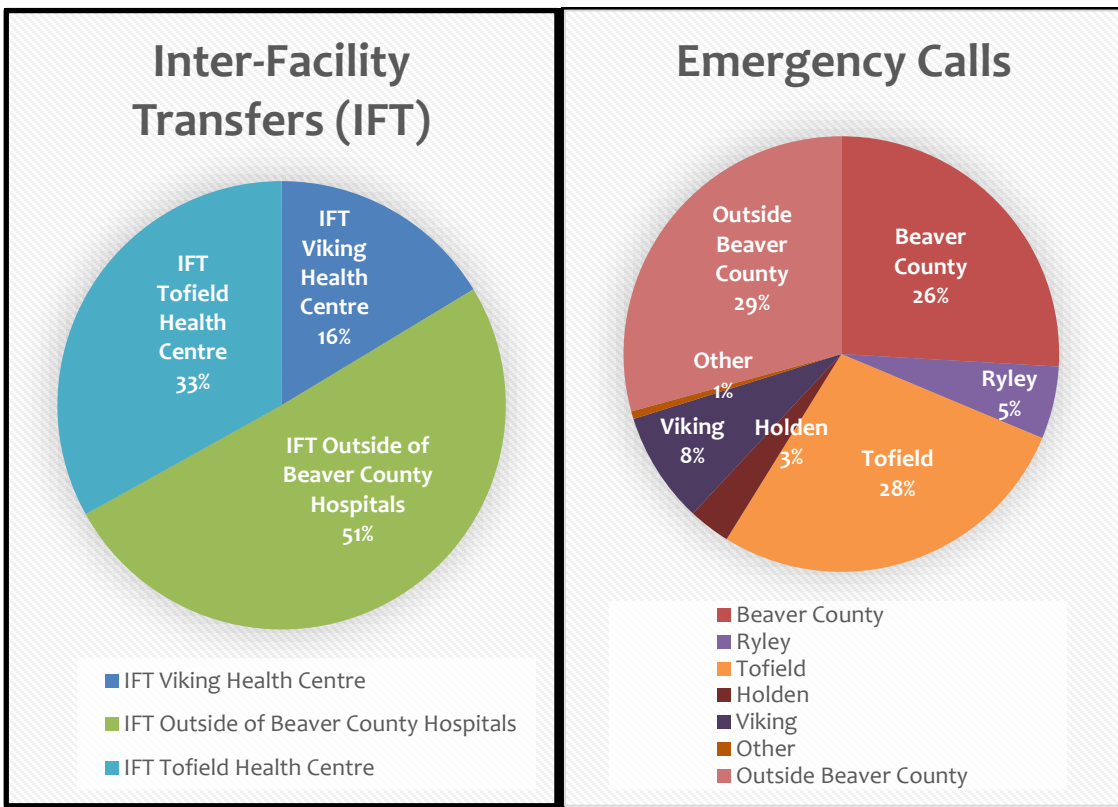
AHS Fixed Wing Air Ambulance transporting a patient to Edmonton



Activity Synopsis

Beaver EMS has two Advanced Life Support ambulances stationed in Tofield, and one Advanced Life Support ambulance stationed in Viking, plus a back-up unit at each station.

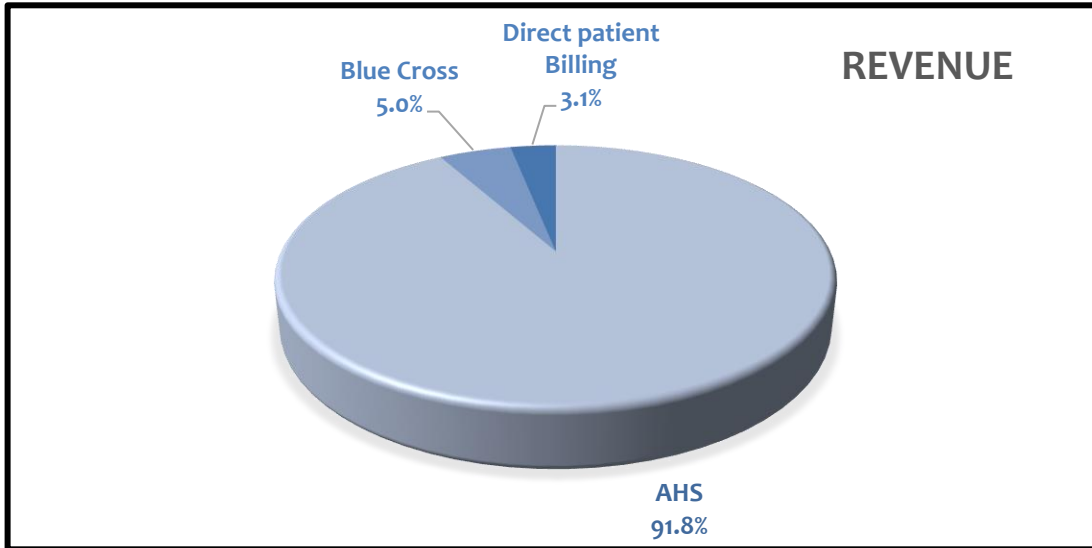
The total number of ambulance calls for Tofield and Viking in 2023 was 1694. The Viking ambulance responded to 486 events, and the two Tofield ambulances responded to a total of 903 events. Of those 1694 calls, 787 were inter-facility transfers from one hospital to another. In 2023 our Tofield and Viking ambulances responded to 399 inter-facility transfers from hospitals located outside of Beaver County.



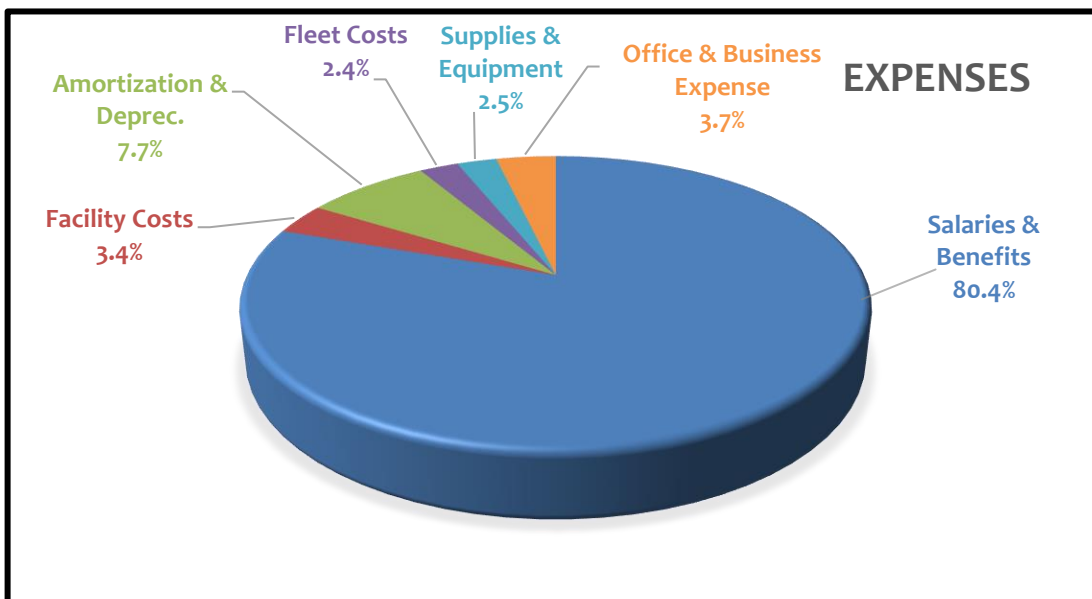
Financial Summary

Beaver Ambulance Society operates as a not-for profit charitable society and receives funding from three main sources. Accountability and reporting occurs monthly to our Board of Directors and quarterly through our provincial contract reporting to Alberta Health Services. Our full financials are available upon request to administration.

Our Funding Sources



Our Service Costs



Community Statistics Summary

Tofield Community Profile and Data Summary Comparison

Note: "**Tofield Area**" encompasses the western half of Beaver County, and includes Tofield, Ryley, and Holden.

Information Indicator	Tofield Area 2019	Tofield Area 2022/23
Population Increase (or decrease) (Alberta increased by 46% from 2001-2021)	Increased by 13.3% (from 1998-2018)	Increased by 7.7% (from 2001-2021)
Current Population	7,887	7,755 (average age 43.6 yrs)
Life Expectancy	79.8 yrs.	80.3 yrs.
Largest Age group	35-64 (40.2% of population)	35-64 (40.7% of population)
Hosp. emergency visits on a regular weekday	59	down 31% since 2018
Most frequent cause of death	diseases of circulatory system	
Most common reason for emergency room visit	acute upper respiratory infection	
Three main reasons for in-patient admission	1. Diabetes	1. Diabetes
	2. Ischemic Heart Disease	2. Ischemic Heart Disease
	3. Pneumonia	3. COPD (Chronic Obstructive Pulmonary Disease)
Percentage of family physician visits outside the patient's local geographic area	60.2%	51.0%
Walk-in hospital visits outside local geo. area	75.2%	49.4%
# of Family Physicians/1000 pop. (AB average = 1.2)	0.4	0.4
Three most common causes of death (10 years)	Circulatory system (32.9%)	Circulatory System (32.5 %)
	Neoplasm (cancer)	Neoplasm (cancer)
	Respiratory System	Injuries (external)
Most prevalent chronic disease	Hypertension (24.3%)	Hypertension (24.5%)
Immunizations by age 2	DTaP: 79.3%	DTaP: 76.1 %
	MMR: 90%	MMR: 87.1%
Influenza vaccine for those over 65 yrs.	44.4%	52%
Population growth/change throughout Alberta	Rural Areas: decreased by 2.7%	
	Urban Municipalities: Increased by 6.3%	
	Beaver County: Decreased by 0.6% (2016-2021)	
	All Alberta: Increased by 49.1% from 1998-2018	

- Residents 65 and older accounted for **19.5%** of Tofield's overall population, 5.4% points higher than the corresponding provincial proportion.
- The volume of emergency visits for patients residing in Tofield area decreased by 31.5% between 2018-2021

Viking Community Profile and Data Summary Comparison

Note: **"Viking Area"** encompasses the eastern half of Beaver County not including Holden, but includes Bruce, Viking, and Kinsella

Information Indicator	Viking Area 2019	Viking Area 2022/23
Population Increase (or decrease) (Alberta increased by 46% from 2001-2021)	Decreased by 9.9% (from 1998-2018)	Decreased by 9.7% (from 2001-2021)
Current Population (Population peaked in 2009 at 2,706)	2,397	2,355 (average age 49.4yrs)
Life Expectancy	80.2 yrs.	80.1 yrs.
Largest Age group	35-64 (38.6% of population)	35-64 (37.4% of population)
Hosp. emergency visits on a regular weekday	25	Down 21% since 2019
Most frequent cause of mortality	diseases of circulatory system	
Most common reason for emergency room visit	acute upper respiratory infection	
Three main reasons for in-patient admission	1. Diabetes	1. Hypertension
	2. Mental/behavioral disorder due to substance abuse	2. Ischemic Heart Disease
	3. Heart Disease	3. COPD (Chronic Obstructive Pulmonary Disease)
Percentage of family physician visits outside the patient's local geographic area (AB percentage is 53.2%)	27.6%	22.3%
Walk-in hospital visits outside local geo. area	48.1%	41.7%
# of Family Physicians/1000 pop. (AB average = 1.2)	2.5	2.5
Three most common causes of death (10 years)	Circulatory System	Circulatory System
	Neoplasm (cancer)	Neoplasm (cancer)
	Respiratory System	External causes (injury)
Most prevalent chronic disease	Hypertension (23.3 5)	Hypertension
Immunizations by age 2	DTaP: 76%	73.4%
	MMR: 95%	85.8%
Influenza vaccine for those over 65 yrs.	52.7%	59.3%
Population growth/change throughout Alberta	Rural Areas: decreased by 2.7%	
	Urban Municipalities: Increased by 6.3%	
	Beaver County: Decreased by 0.6% (2016-2021)	
	All Alberta: Increased by 49.1% from 1998-2018	

- Residents 65 and older accounted for **26.1%** of Viking's overall population, 12.0 percentage points higher than the corresponding provincial proportion.
- The volume of emergency visits for patients residing in Viking area decreased by 21.9% between 2018 to 2021

Accomplishments

Quality Improvement Initiative – Analysis of Cleaning and Disinfection

One of the quality improvement projects that we have embarked on recently is to examine and improve processes for cleaning and disinfection. We had been using health care industry-approved products and cleaning processes to clean and disinfect our ambulances and medical equipment. However, we had not established a way of scientifically determining whether the bacterial disinfection was effective, and if there were any improvements that could be made to our processes. It is possible that routine cleaning products and practices were not adequate to reduce the spread of pathogens and bacteria, and we want to be a leader in best practices. We worked with Dr. Dustin Smith to evaluate and improve our disinfection measures - enhancing safety for the paramedic and the patient.

Dr. Dustin Smith PhD. at the University of Lethbridge is the founder and CEO of dsBioscience. He and his team of researchers had developed a system of analyzing surfaces and areas to determine the bacterial load, down to the molecular level. They provided us with a self-sampling kit in which we took samples of surfaces on multiple locations and equipment in the ambulances. We then cleaned the ambulance with the approved products and processes, followed by additional sampling of the same locations. The samples were then sent to the lab at the University of Lethbridge and were analyzed, and we received an extensive comparative summary of the findings.



The overview showed that our cleaning practices were in the top 10% as compared to other EMS departments. In most locations we saw a very significant decrease in bacteria after cleaning the surfaces. We were particularly interested in the presence or absence of some high-risk bacteria such as MRSA (methicillin resistant staphylococcus aureus), E. coli (Enterobacter cloacae), or Strep (streptococcus pneumonia or pseudo-pneumonia). The MRSA bacteria is a leading hospital-acquired infection and is linked to approximately 500,000 infections and 50,000 deaths per year in the USA. One 10cm x 10cm surface had approximately 2.4 million varied bacterial cells on it prior to cleaning, and after cleaning this had been reduced by 96%, indicating very effective cleaning and disinfection.

Within the report that we received, there were recommended improvements to our cleaning practices. They recommended *“supplemental incorporation of ultraviolet (UV) disinfection systems. By cross referencing bacteria which were found on your evaluation with UV treatment, additional bacterial disinfection will supplement physical wiping of antibacterial products.”* We have since then obtained UV lamps for use inside the ambulance and we are testing the effectiveness and best process for utilizing them.

Accomplishments

Quality Improvement Initiative – “Return to Service” Initiative by AHS

Over the past few years, especially during and following the COVID-19 pandemic, there had been a drastic increase in offload delays in giving patient care over to the hospital staff, especially in larger urban hospitals. EMS crews would bring their patient to the emergency department of a hospital and would experience more than 6 hours waiting time at the hospital, waiting for a bed and waiting for a physician to accept their patient for assessment or admission. This greatly impacted the rural crews, since waiting in an Edmonton (or Calgary) hospital meant that their local response area was without an ambulance or had fewer ambulances available to respond to local calls. It also meant that rural ambulances were in the cities doing their ambulance calls while the city ambulances were waiting at the hospitals. The impact on paramedics of offload delays are significant, including decrease in morale, inability to take meal breaks or work-breaks, decrease in community coverage, and increased response times to other emergencies.

Alberta Health Services was not unaware of this problem but finding solutions was a much larger issue. Ultimately, in March of 2023 they set a benchmark of 45 minutes for EMS crews to arrive, give over patient care, complete necessary reports, and leave the hospital. From November of 2022 to May of 2024, the **average** time paramedics spent in hospital before returning to service reduced from 6 hours to 1.4 hours in the Central Zone (which is where Beaver EMS is located).

Return to service progress

- Average time spent by paramedics in hospital before returning to service / zone by month
- All times in hours
- Benchmark times from November 2022

Zone	Nov 2022	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024
North	1.8 hours	1.1 hours	1.0 hours	0.9 hours	0.9 hours	1.0 hours	0.9 hours	0.8 hours
Edmonton	3.1 hours	2.1 hours	2.1 hours	1.7 hours	1.6 hours	1.5 hours	1.5 hours	1.5 hours
Central	6.0 hours	2.1 hours	2.2 hours	2.1 hours	1.4 hours	1.5 hours	1.8 hours	1.4 hours
Calgary	4.7 hours	1.8 hours	1.7 hours	1.6 hours	1.3 hours	1.4 hours	1.4 hour	1.6 hours
South	1.9 hours	1.9 hours	1.7 hours	1.4 hours	1.5 hours	1.3 hours	1.4 hours	1.3 hours
PROVINCIAL	3.6 hours	1.9 hours	1.9 hours	1.6 hours	1.5 hours	1.4 hours	1.4 hours	1.5 hours

This initiative has brought about significant change, and it is clear that improvement has been made. We have noted much less waiting time for our BEMS crews, decreased overtime, and shift over-run and fatigue has decreased over the past 18-24 months. We applaud AHS for taking this issue seriously and making tangible changes to hospital intake processes, and changes to dispatch and deployment.

Accreditation

Accreditation Completion – December 2023

We have again successfully completed the Qmentum Survey from Accreditation Canada this past



December of 2023. We have previously successfully completed the process in 2015, 2019, and now again in 2023. This process involved reviewing nine key areas of quality and safety, and the areas of improvement that are addressed by identified action plans.

Ultimately system-wide improvements in teamwork, safety, and quality improvement are managed and measured. These nine areas include Leadership, Patient Safety, Integrated Quality Improvement, Safe and Healthy Workplace, Information Management, Physical Environment and Equipment, Medication Management, Infection Prevention and Control, and Safe and

Appropriate Service Delivery. This time we are **Accredited with Commendation**, and a mark of **97% compliance** with the 399 standards of excellence.

Accreditation Canada continues to provide annual quality improvement initiatives which we participate in as much as possible, and when we are reassessed again in December of 2027, all new standards will be measured as well as evaluation of progress in the nine main areas. It is important to maintain the standards and systems which ensure safety as a priority, and quality improvement is a part of our culture.

Alberta's EMS Operations (as of June 2024)

4900 Paramedics who respond to:

1350 911 calls/day

724,288 events per year

453 ground ambulances, **224** EMS stations

5 Dedicated Rotary Wing Air Ambulances

11 Fixed Wing Air Ambulances

3 Dispatch Centres (*4 Dispatch Centres effective June 2024)

174,000 Interfacility Transfers (IFTs) per year

Stories from our patients and their families.....

I EXPERIENCED A BADLY FRACTURED LEG A FEW MONTHS AGO, AND I WANTED TO SAY THAT YOUR EMS WHO TOOK ME TO THE EDMONTON HOSPITAL WERE AMAZING PEOPLE. THEY TOOK REALLY AWESOME CARE OF ME AND HELPED ALLEVIATE THE PAIN. YOU GUYS AND GIRLS ARE THE BEST!

A big thank-you to the staff, 911 operators, and paramedics who attended my residence on the morning of September 16 and took me to the Grey Nuns Hospital in Edmonton. I have no memory of making this call because of how sick I was; respiratory failure and cardiac failure, but I thank you. I spent 8 days on ECMO (heart/lung bypass), open heart surgery, dialysis, 3 chest tubes, a tracheotomy, and 6 weeks in intensive care plus more. I'm sure you've heard of it before but thank you for saving my life.

I am writing to express my sincere appreciation for the exceptional performance by two of your staff paramedics during a recent trip. Their ability and skills exceeded my expectations of ambulance staff and I want to recognize their efforts. The professionalism started with their introductions and explanations of the process of transport, continued with the partnership with all hospital staff, displaying a mutual respect and understanding with them. Their care for me was focused and impressive, especially when I could barely walk, and they stayed at my side at all times. This is not my first experience with BEMS, and I would like to congratulate your organization for the outstanding performance every time I called an ambulance, which reflects well on the entire organization.

Community Initiatives

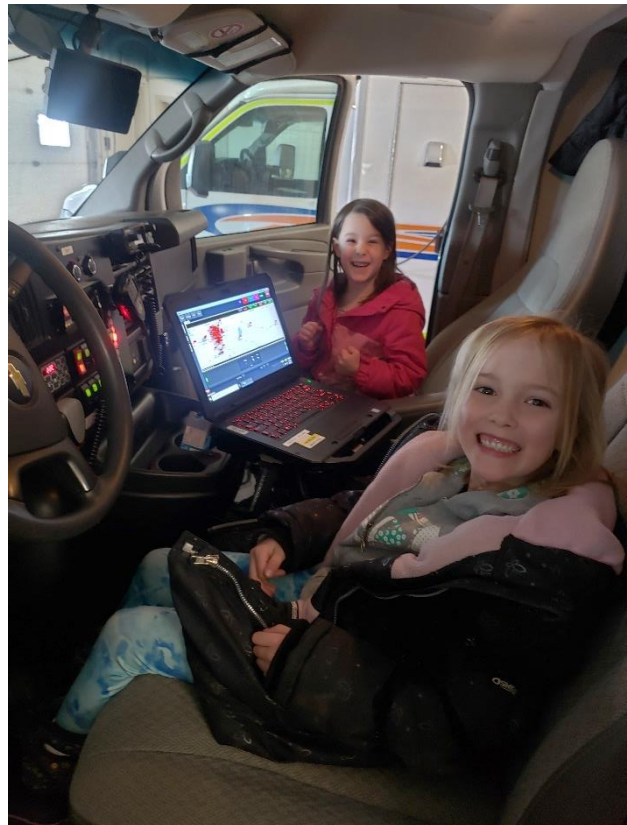
Paramedic Services Week

The last week of May in each year is Paramedic Services Week, which is set aside to recognize the value and the accomplishments of emergency medical services providers and promote the fact that emergency medical services is a vital public service. Paramedic Services Week honours the paramedic profession and recognizes the men and women of Emergency Medical Services (EMS) providing this key public service. It is also an opportunity for the public to better understand the important role EMS has within both the health care system and our communities.



In recognition of these professionals and to elevate the public awareness of what EMS does, Beaver EMS puts on a breakfast and Open House at Tofield and in Viking for the public to attend. There are presentations by the Beaver EMS paramedics, and several displays on the professional responsibilities and roles of paramedics. The paramedics demonstrate equipment, give tours of the ambulances, answer questions, and provide literature that would explain relevant information. Many people have attended over the years, and the donated money or funds raised from the breakfast are donated back to charitable organizations. This year we were able to donate over \$2500 to the Tofield and Viking area food banks.

Whether directly, or indirectly, every Albertan has felt the importance of the service paramedics provide. Paramedics are trained health care professionals who stabilize and treat patients before and during transport to hospital. In some areas, paramedics are working side-by-side with nurses and physicians, their health care colleagues in hospitals and long-term care facilities.



Promoting and Recruiting EMS in the Community



“Take Our Kids to Work Day” is the most recognized career exploration event in Canada, in which Grade 9 students experience a day in the life of various professions, careers, and industries. In November of 2023, several of the Grade 9 students came to our station to see demonstrations and participate in hands-on learning, alongside their parents (who are paramedics). We acquired the airways, lungs, and heart of a cow from the local meat processing facility and the students were able to see what ventilating the lungs looks like, and then dissected the heart and lungs to visualize the inside anatomical structures. They also participated in lifting and moving each other with the equipment used in an ambulance.



Challenges and Opportunities

For the future, we see several issues and opportunities that will require the focus and attention of Alberta Health in the future. A significant role for EMS as an industry is not just to address the problems of today but solve the problems coming over the horizon. We continue to advocate for Beaver EMS within all ambulance services in Alberta, but also desire to discuss and consider improvements for the future.

- Changing Hours of Work (HOW) requirement for paramedics: moving away from core-flex (96 hour) tours of four – 24-hour shifts in a row. This is a grueling schedule in which paramedics have no ability to turn off the dispatch radio for 4 straight days and nights. Historically this was a schedule that had been used for decades but with the changing times and expectations of staff, and significant increases in call volume, a vital change is needed. A reasonable work/life balance cannot be maintained with a 96-hour work schedule, and attraction and retention of staff becomes a significant issue.
- To enhance and expand non-ambulance transport for non-emergent transport of patients to scheduled appointments and reassessments. Many patients do not necessarily require the care and attention of a paramedic for these appointments; but do require a reliable and scheduled mode of transport to their appointments.
- Determine optimum level of ambulance resources in a geographic area and balance out the resources (ambulances) remaining in a community vs. providing borderless response to other communities. Sending our ambulances to adjacent communities when we are depleted within our own communities puts significant strain on our own hospitals and physicians and puts our own residents at risk.
- We would like to see the enhancement of an initiative started in Edmonton called Virtual Home Hospital. A team of physicians, nurses, pharmacists etc. provide virtual care using technology with video calls and remote patient monitoring and if needed, in-person visits. There are regular check-ins, medication management, treatment education to the patient, and other initiatives as needed. This is a wonderful non-EMS option for patients, and early feedback shows high patient satisfaction, and it lowers the patient's risk of complications such as hospital-acquired infections and illness. Coincidentally, it also frees up the ambulances to respond to true emergencies when needed.



Final Thoughts

It has been said that the quality of your impact correlates to the quality of your relationships. Our own goals and ambitions matter but taking time and energy to invest in others and collectively share and help others, you and others win bigger and more together. High performing people have the ability to cultivate strong relationships with others and through others generate collective and individual success. If we want to succeed, we need to invest in our relationships, both in the workplace and personally. Some people may think that being successful means having the biggest house or the newest car or the largest bank account, however, real success is totally different.

In *Born to Win! Find Your Success Code*, motivational speaker and author Zig Ziglar shared his winning philosophy—that you have to plan and prepare to win, to succeed—and the strategies to go with it.

In this excerpt, I quote a list of eight characteristics that he says comprise personal success:

What Success Is:

1. *Success is knowing that you did a great job when you close the door to your office at the end of each workday and head for home.*
2. *Success is having a home and people around you to love who love you in return.*
3. *Success is having the financial security to meet your obligations each month and the knowledge that you have provided that security for your family in the event of your demise.*
4. *Success is having the kind of faith that lets you know where to turn when there seems to be no place to turn.*
5. *Success is having an interest or hobby that gives you joy and peace.*
6. *Success is knowing who you are, and Whose you are.*
7. *Success is taking good care of you and waking up healthy each day.*
8. *Success is slipping under the covers at the end of the day and realizing with gratitude that, “It just doesn’t get much better than this!”*

I have had the privilege of being a part of this wonderful organization and experienced workplace success and personal success, especially as Zig Ziglar defines it. It has been so great to work alongside many dedicated people for so many years. This December of 2024 I plan to retire and hand over the



leadership of Beaver Ambulance, and I have full confidence in the succession plan that is in place. With the high-performing committed people in our workplace, I know that there will be a continuation of excellence and striving for the highest of standards.

I offer my thanks to our Board members (past and present) and all our staff members, paramedics and administration, for your commitment and dedication in ensuring that the Beaver EMS continues to be the finest ambulance service. I have had the privilege of working with Beaver EMS for 33 years as a paramedic and as a leader, and I will always be grateful for being a part of this organization.

Wes Baerg, Advanced Care Paramedic, Executive Director