



# Emergency Medical Services

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Intermediate Care Paramedic



## The Past...

- In Winnipeg, Emergency Medical Services were provided by privately owned organizations, providing very basic life support and mainly rapid transportation of medical and injured patients to hospitals



## The Present...

- Today, Emergency Medical Services provide advanced skills within the community such as defibrillation, pacing, cardioversion, endotracheal tubes, thrombolytic administration and Paediatric Advanced Life Support



## •Winnipeg Fire Paramedic Service

•Simply stated, the mission statement of the Winnipeg Fire Paramedic Service is “to serve and safeguard the community by protecting life, property and the environment through prevention, education, medical and fire services and to provide optimum emergency and stable patient pre-hospital care to the citizens of Winnipeg”

## Winnipeg Fire Paramedic Service

- Responds to approximately 75,000 calls annually, serving a population of approximately 740,000 citizens
- These calls primarily consist of medical and trauma concerns
- Most common complaint is 'Shortness of Breath'
- WFPS is an amalgamated service consisting of a Fire Suppression side and an Emergency Medical Services division
- These two departments work together in an effort to provide the safest and best care possible for the citizens of Winnipeg
- At any given time, there are approximately 50 Fire apparatus and 18 EMS units available for call





## Firefighter Paramedics

- Firefighter Paramedics serve the purpose of providing First Responder skills within the City of Winnipeg. Their roles include assisting Paramedics with obtaining vitals, provide Basic Life Support skills such as Cardiopulmonary Resuscitation along with defibrillation, and provide symptom-relief medication



## **Primary, Intermediate, and Advanced Care Paramedics**

•This group of individuals provide an array of skills and experience to the City of Winnipeg's citizens. From Basic Life Support and symptom-relief, to those that provide Advanced Cardiac Life Support, and life-saving skills such as Chest Decompressions, Endotracheal Tube placement, Cardioversion, Pacing and Cricothyrotomy

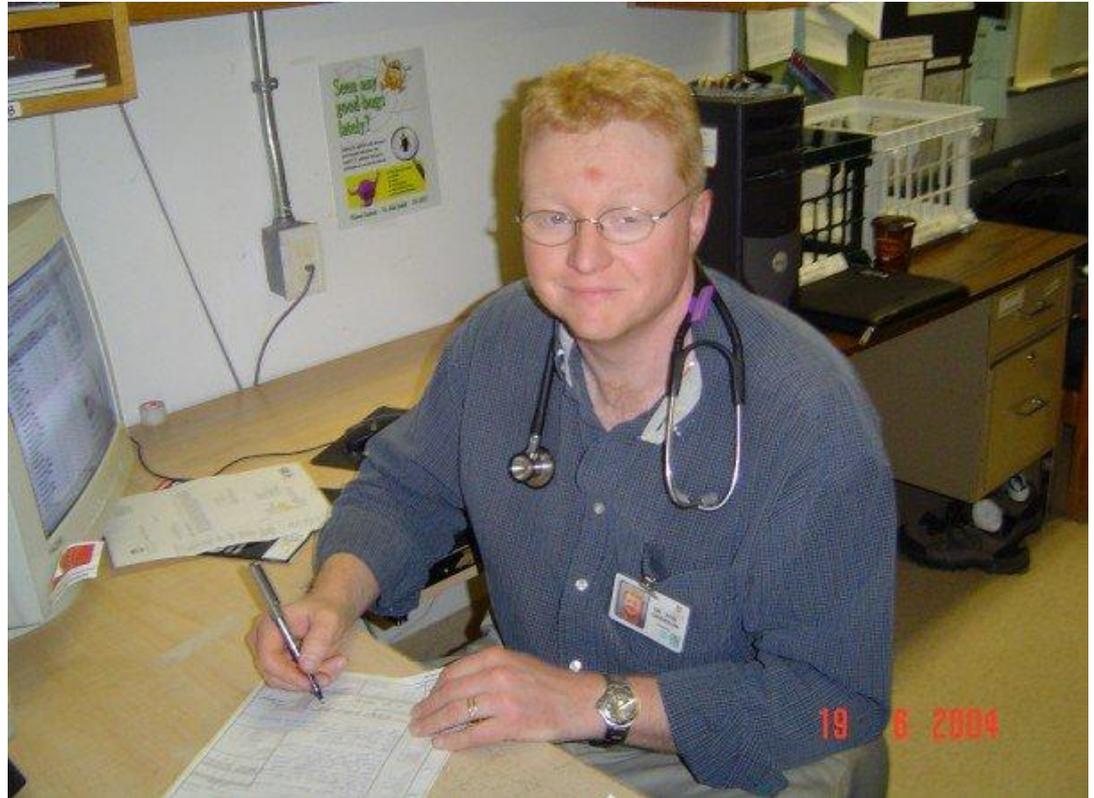


## Medical Supervisors

- This specialized group provides Paediatric Advanced Life Support to the citizens of Winnipeg along with Neonatal Resuscitation and oversee those patients requiring administration of Thrombolytics. This group is the 'backbone' of the Organization, assisting Firefighter Paramedics and Paramedics alike

## Medical Direction and Oversight

- Provides an extension of medical accountability, clinical leadership, and quality improvement over the entire EMS system
- Medical accountability is the process by which the medical community ensures that pre-hospital procedures and the actions of the providers are in accordance with acceptable medical practice
- An example of this is the Medical Advisory Committee which consists of the Medical Directors, Medical Supervisors, Paramedics, Police, Emergency Physicians
- This group decides on treatment protocols, providing a standard of practice for the entire EMS system by which we are all held accountable



## Destination Policies

- Triage Protocols specify the hospital to which patients should be transported
- Specialty Centers exist within the City of Winnipeg, hence patients are transported to a definitive care center
- These Centers include: a Cardiac, Vascular, and Stroke center such as St.Boniface Hospital; a Trauma, Vascular and Stroke Center in Health Sciences Center; an Obstetrics center such as St.Boniface Hospital and Women's Hospital; Orthopedic center such as Concordia Hospital, Grace Hospital and Seven Oaks Hospital
- EMS just recently received approval to transport patients with non-life threatening conditions to Misericordia Urgent Care center, in an effort to relieve pressure on the Specialized and Tertiary hospitals



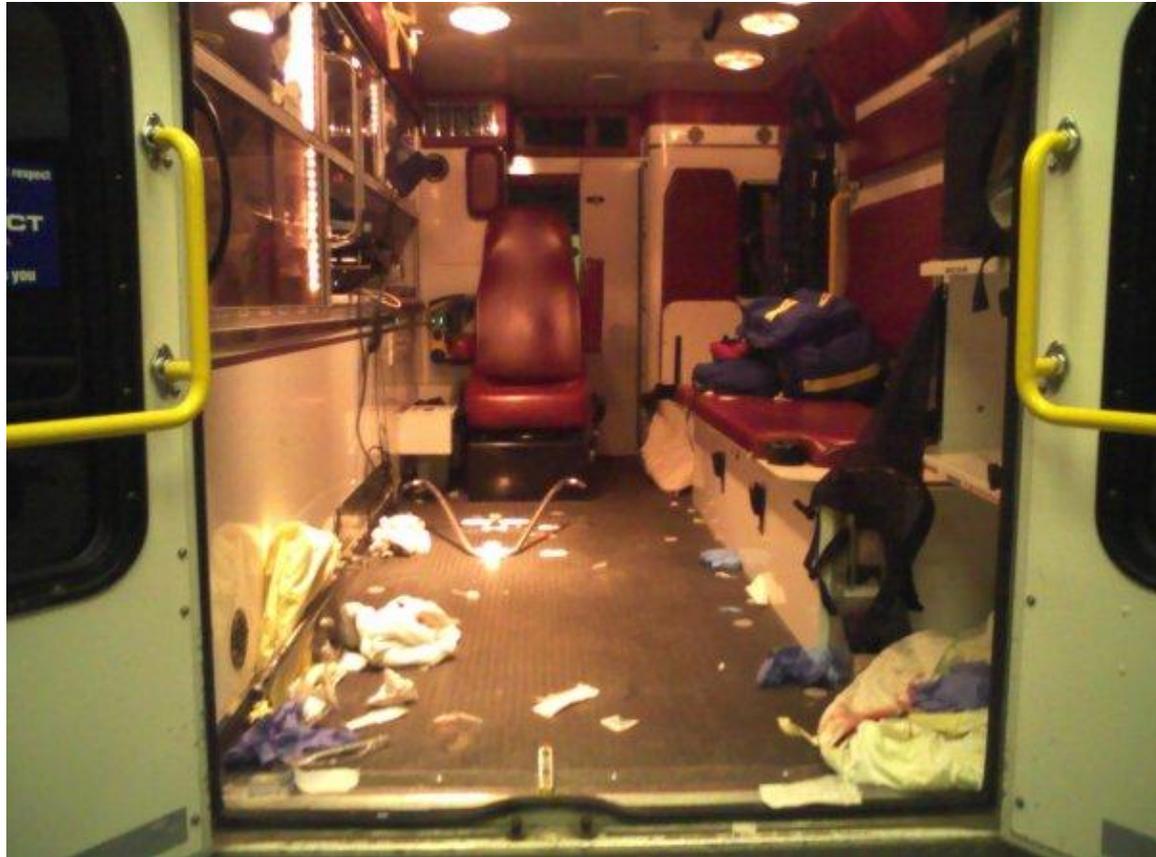


## Medical Control

- Medical treatment within the City of Winnipeg is provided without direct, online medical direction. The exception to this when a patient is identified to have an Acute Myocardial Infarction, in which case consultation with a Cardiologist will determine the treatment and transport needs of this type of patient

# Preparation of Equipment and Ambulance





## **The Cleanup...the day you hope you're attending**

- The patient compartment is quite small in itself, at times providing very little room for Paramedics and First Responders to move around or perform interventions



## The Sequence of Events

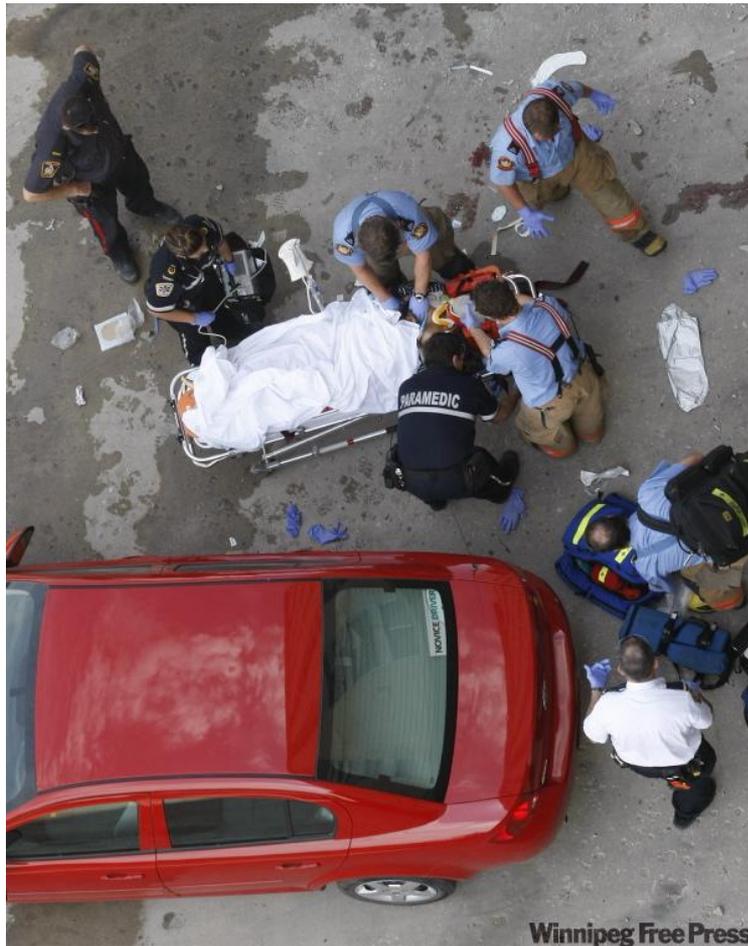
- Emergency Medical Services Dispatch receive calls from an individual requesting an Ambulance or Fire apparatus for a traumatic or medical emergency. Dispatch, in turn, places a call out for an EMS unit to respond. The calls received are prioritized and a decision is made for the appropriate resources and skill level needed for each call



## The Response

- Based on Dispatch's information, EMS units are sent either emergent or non-emergent to incidents. Safety is of paramount importance with EMS adhering to the rules of the Highway Traffic Act

# The Scene



## The Scene

- Scene safety is of paramount importance for the patient, bystanders, other rescuers and ourselves
- Regardless of the nature of the call, we perform a scene size-up on each and every call
- Examples of dangers can include weapons, domestic disputes, alcohol or drug-related issues, calls involving mental health issues, and domestic pets
- Calls of unknown nature or when violence is suspected often involve assistance from the Winnipeg Police Department



# Patient Assessment and Treatment

**Myth**



**Reality**



# Patient Assessment and Treatment

- Each patient has a thorough assessment performed along with a set of vital signs
- Depending on the patient's condition, a decision is made whether to transport the patient immediately or to treat on-scene
- A small number of patients are treated on-scene and then refuse transport. An example of this is Diabetic patients treated with dextrose and when alert enough, have the right to deny transport
- EMS also has the ability to declare a death in the 'field' after following all Advanced Cardiac Life Support interventions with no return of pulse
- Identifying life-threatening conditions is of high importance





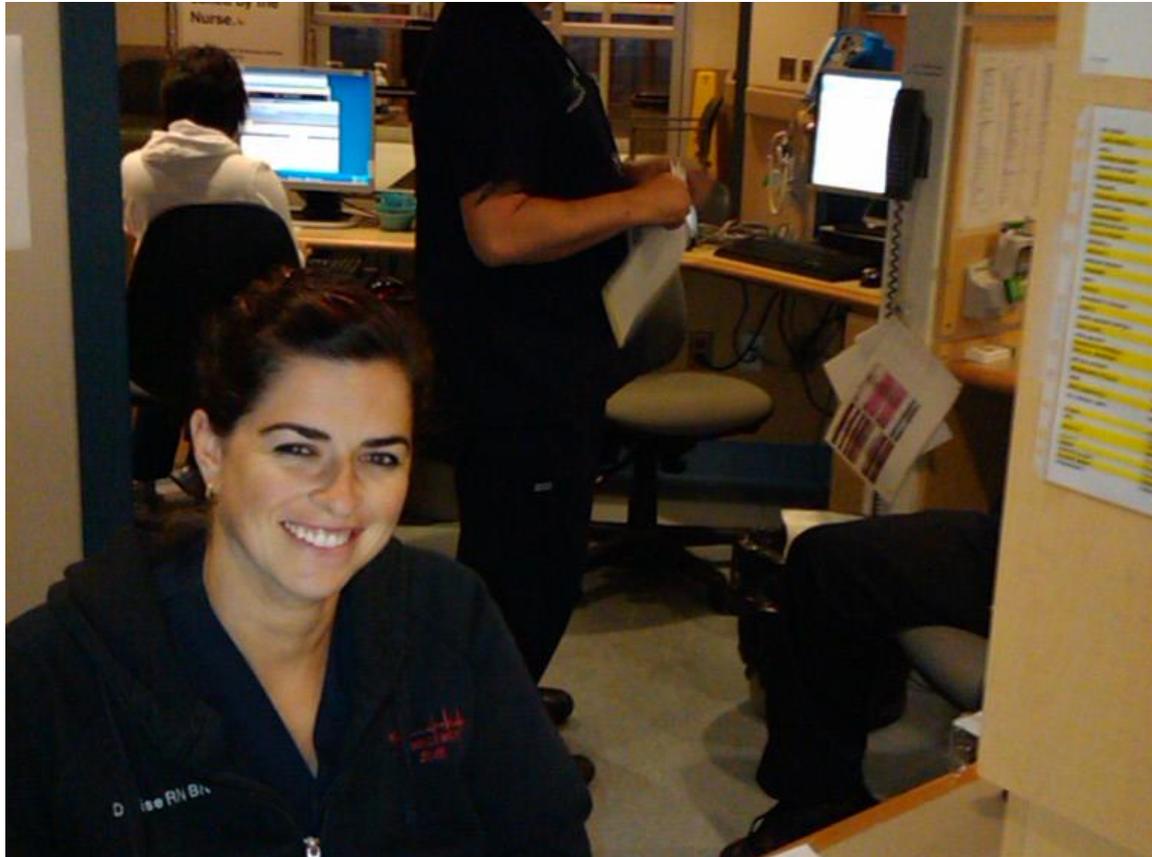
## Transport

- Patients identified as critical in nature, such as a trauma cardiac arrest, generally have Advanced Cardiac Life Support interventions performed enroute to hospital as these patients require a definitive care center such as a Trauma Center



## Enroute

- Enroute, patients are continually monitored with interventions reassessed. Decisions are also made to transport these patients to the appropriate facility. Life-saving measures such as Endotracheal Tube placement, Cricothyrotomy and Advanced Cardiac Life Support often take place during this time



## Facility Triage

- EMS patients are triaged according to the Canadian Triage Acuity Scale, determining their 'score' based on the patient's presenting complaint as well as their condition. Those patients deemed unstable or critical are generally forwarded directly to a stretcher bay or the Resuscitation Room

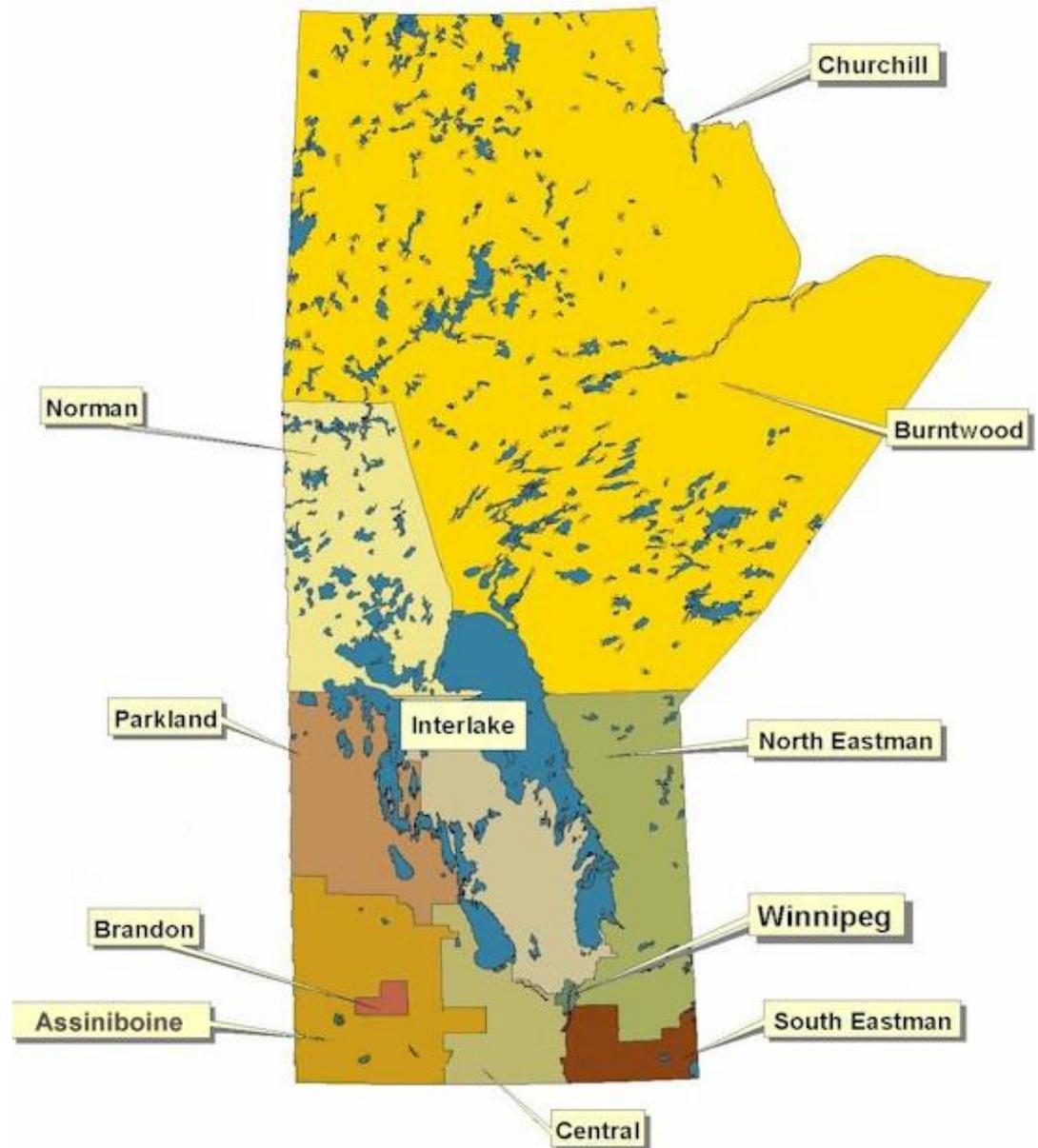


## Challenges Facing EMS

- Manitoba is for the most part, a vast and sparsely-populated province. Due to remote regions, health care is limited and these people from northern communities are often transported by aircraft to an urban center such as Winnipeg

## Other Challenges Facing EMS

- Similar to the Physician shortage crisis, rural EMS has had a difficult time recruiting and retaining staff
- Often, these Paramedics would prefer to practice out of a large urban center such as Winnipeg, where wages and benefits are more favourable than rural regions
- Drawing Paramedics to the large urban centers is the opportunity to work closer to their residences along with the training which is provided by these larger centers
- Unfortunately, due to the inconsistency in training province-wide, there is a significant gap in the level of experience and treatment that is offered to the citizens of Manitoba
- It is not uncommon for rural EMS sites to shut down either temporarily or permanently due to shortage of staffing



## The Threat of Violence

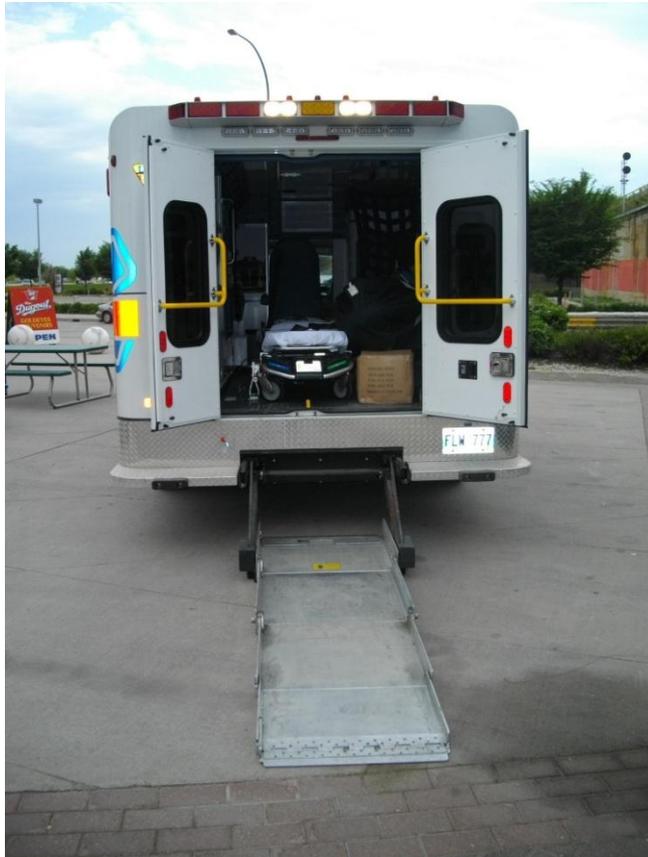
- Winnipeg, over the last several years, has been identified as the leading city in the country for violent crimes and homicides
- Along with this increased crime, the need to be more vigilant and cognizant of our surroundings and the scene is of utmost importance
- Alcohol and street drugs are often associated with these calls
- Increased gang presence within the city of Winnipeg is evident with the increase in shootings and stabbings, often attributed to the street drug and prostitution industry
- Winnipeg Police are often involved with EMS, insuring everyone's safety
- These incidents give way to new protocols such as the 'Excited Delirium Protocol'





## Protecting EMS

- The Winnipeg Fire Paramedic Service has addressed Paramedic safety by offering self-defence training and a 'Staging' policy which does not allow EMS into a potentially volatile scene until secured by Winnipeg Police. The department is also looking at the idea of Soft Body Armour for the future



## **Bariatric Unit**

- With one third of North America's population identified as overweight and with one of the highest rates of heart disease in the world, the organization identified the need for specialized equipment such as the Bariatric Unit to offer service to the city of Winnipeg



## **Chemical, Biological, Radiation, Nuclear (CBRN)**

•The Winnipeg Fire Paramedic Service recognizes the need for special training in dealing with potentially small to large-scale events involving the threat of weaponized or non-weaponized purposes of Chemical, Biological, Radiation, and Nuclear threats. A special group of Paramedics and Medical Supervisors are sent for annual training and assume command at these events



## **Pandemics**

•With the World Health Organization declaring a pandemic crisis with the H1N1 virus, this created a fear within the general public, and as a result, a burden on the entire health care system. Within Canada, several other outbreaks within recent years including the Avian Bird Flu and the West Nile Virus have created pressure upon the entire health care system

# Our opportunities within EMS during the H1N1 Pandemic





## **Primary Treatment and Referral Service(PTRS)**

- In anticipation for system pressures with the expected second wave of H1N1 influenza, a concept from the United Kingdom was adopted in Winnipeg. This allowed for a single Paramedic to respond to low priority calls, assess, provide primary treatment and refer patients to appropriate resources

## **Exciting Ventures within EMS...ST Elevation Myocardial Infarction(STEMI)**

- Winnipeg has joined several other Canadian cities in pre-hospital management of Acute Myocardial Infarctions
- The goal of the program is to provide expedited emergency care in an attempt to restore cardiac perfusion in patients identified as having an Acute Myocardial Infarction
- When EMS identifies a patient experiencing an AMI, a chain of events begins to unfold
- EMS will begin treatment of the AMI with oxygen, IV fluid, Aspirin, and potentially Nitroglycerine
- A 12-lead ECG is obtained based on the patient's chief complaint and/or presentation
- At this point, a decision is made whether the patient is experiencing an Acute Myocardial Infarction



## STEMI Protocol Continued

- The EMS crew will ask EMS dispatch for the on-call Cardiologist at that time
- The 12-lead ECG and 15-lead ECG are then sent by Bluetooth technology from the Zoll ECG monitor to the Cardiologist's cell phone(Blackberry)
- EMS contacts the on-call Cardiologist several minutes after the initial transmission as there can be a delay in the transmission to the Cardiologist
- EMS first provides a patient name and age to verify that the ECG the Cardiologist is reading is in fact the correct one
- EMS provides a brief history of the patient's chief complaint, past medical history, vital signs and treatments up till this point
- EMS should have the Thrombolytic checklist completed prior to contact with the Cardiologist as this could influence the treatment and destination decision



## STEMI Protocol Continued

- Once consultation with the Cardiologist is complete, a decision is made by the Cardiologist on what treatment will be initiated by EMS
- Several factors weigh into their decision whether EMS should provide Thrombolytics (Tenecteplase), provide anti-coagulants and anti-platelets and transport directly to the Catheterization Laboratory, or to simply transport to the closest hospital for further care and evaluation
- Factors weighing into the Cardiologist's decision on treatment and destination include: transport times to the Cath Lab; whether the studio is currently occupied; time of day; and maybe the ECG is inconclusive
- Based on consultation with the Cardiologist, EMS continue to treat the patient's pain/symptoms enroute





## **STEMI Protocol Continued**

- A majority of patients identified as experiencing an Acute Myocardial Infarction are transported directly to the Catheterization Laboratory to have a Percutaneous Coronary Intervention(PCI) performed. Patients that received Thrombolytics are generally a direct admission to the Intensive Care Unit

## Paramedics Working Within The Community

- The Winnipeg Fire Paramedic Service along with the Winnipeg Police Service and Regional Health Authority have started a new initiative providing Paramedic staffing to the Main Street Project, a shelter for the homeless and disadvantaged in Winnipeg
- This offers an opportunity for those less fortunate to receive dental and medical checkups as these clients are then referred to walk-in clinics
- These referrals are made by the Paramedics working within the facility
- This not only fosters relationships between the client, often Aboriginal in ethnicity, but also builds a trust and rapport within the medical community with Physicians, Dentists and Specialists
- Paramedics also provide wound care to these clients, alleviating some pressure from the EMS Service as normally these patients would be transported by ambulance to hospitals to have their wounds or medical concerns addressed



## Paramedics Working Within The Community

- The Winnipeg Fire Paramedic Service began a program several years ago called 'Paramedic Active in Community Education and Response', or PACER
- Two Paramedics are teamed up to provide medical services at outdoor functions such as the Teddy Bear Picnic as well as providing daily medical care to the downtown region of Winnipeg
- Each bike contains medical supplies to provide from basic wound care to management of a cardiac arrest, including a defibrillator and Advanced Cardiac Life Support medications
- At times, this allows for quicker response times within the downtown core as Fire apparatus and Ambulances may be delayed due to traffic and construction
- Provides a presence within the community from a public relations point of view



# Preparedness



# Major Incident Response Vehicle(MIRV)





## MIRV Unit

- The MIRV Unit was introduced to address those needs should a Mass Casualty Incident arise. It's purpose is to provide treatment and stabilization until Ambulances are available to transport the sick or wounded. This unit is deployed to large structure fires, Hazardous Material incidents, motor vehicle collisions and assists during a State of Emergency, such as flooding



## Public Education

•Public education is an important part of Emergency Medical Services, whether it is to create a non-threatening environment for children, or to educate the public in first aid training and Cardio Pulmonary Resuscitation. With the public educated in early access, quality CPR or first aid and early defibrillation prior to EMS arrival, the more likely a favourable outcome

## How EMS Can Affect Change

- Through pre-hospital care studies, EMS can affect change throughout the health care system. For example, a pre-hospital double blinded study occurred within Winnipeg comparing the effects of Morphine versus Fentanyl and as a result, most of the hospitals in the Winnipeg RHA have adopted Fentanyl for treatment of cardiac and musculoskeletal pain
- The effect of the ST Elevation Myocardial Infarction Study will most likely produce changes in not only pre-hospital care of these patients but also in-hospital care where access-to-balloon times can occasionally exceed EMS times
- Partnerships can be developed between EMS and community health care agencies with the goal of improving a patient's access to medical care and at the same time relieving pressure on the hospitals





## Exciting Ventures In EMS Await

- With the announcement of a new delivery model of EMS within the Province of Manitoba in the near future, the citizens of Winnipeg and Manitoba can expect a quicker access to definitive medical treatment and the delivery of a highly trained and experienced medical team consisting of Physicians, Nurses and Paramedics



**Questions?**