



Paramedic Chiefs of Canada

Year in Review
2012–2013



Paramedic Chiefs
of Canada

Chefs Paramédics
du Canada

Year In Review

Paramedic Chiefs of Canada

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All rights reserved. This document reports the years 2012-2013 of the Emergency Medical Services Chiefs of Canada's activities, highlights and committee work. The Emergency Medical Services Chiefs of Canada was incorporated in 2002 as a national forum for information gathering, policy development, and coordinated action by the leaders of Canada's EMS systems. Its membership consists of a variety of EMS leaders representing EMS systems across Canada.

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President's Message

Darren Sandbeck, *President*

This past year has been one of transition for the Paramedic Chiefs of Canada. This time of change has provided a rare opportunity for the Executive and the Board of Directors to pause and reflect on our activities over the past number of years. During these quick leadership transitions, I believe that it is important to return to the basics and reprioritize our efforts.



The Executive committee met in January of 2012 and purposely focused on the next five months, allowing us the time to meet in June in Saint John, New Brunswick, reconvene the Board and membership, and begin strategic planning. Our goal is to determine life after the EMSCC White paper released in 2006.

4. Monthly webinars produced on behalf of the Membership Services Committee, an international platform for sharing of information
5. Branding—Emergency Medical Services Chiefs of Canada officially become 'Paramedics Chiefs of Canada'

The Paramedic Chiefs of Canada values our relationships at the international, national and provincial levels. We will continue to foster these relationships and will explore opportunities to build new, productive partnerships. We will remain diligent in our ability to focus on achievable and realistic goals.

I urge you to continue your support of the Paramedic Chiefs of Canada. We also need to hear from you to advance and align EMS in Canada. I invite you to participate in many of our existing committees, and as always welcome your feedback. I would like to thank our many volunteers, who conduct this great work on the corner of their desks. I would also like to thank the founding sponsors of our association, Ferno, Zoll, Physio-Control, Crestline and Demers ambulance who make significant contributions to our mission of advancing and aligning EMS in Canada.

I look forward to working with all of you in the near future.

Priorities

1. Remain invested in the process of establishing the Paramedic Community of Practice and the development of the Paramedic Liaison Officer. This federally funded project is in partnership with the Paramedic Association of Canada (PAC) and under the leadership of Canadian Safety and Security Program (CSSP)
2. Continue our work with Canadian Standards Association (CSA) in the development of a National Standard for EMS
3. Continue our work with the Tri-Service Chiefs to advance public safety initiatives, and mutually beneficial relationships

Accomplishments

1. Release of the National Research Agenda
2. Produce a National Research Database
3. Successful government relations week in Ottawa November 2012



Executive Director's Message

Kelly Nash, Executive Director

While this past year has been a time of change, the Paramedic Chiefs of Canada continues to prevail and provide a national platform for sharing of information. I frequently ask members of this association what they deem to be biggest value for membership. The answer is a common one—the ability to reach out to other EMS services across the country and discuss issues, initiatives, and challenges on a national scale.



The membership services committee has done an outstanding job of providing venues for discussion, via webinars, a list serve, newsletters, and utilizing our website to house a virtual library, containing invaluable information that can be accessed by all members with ease.

We have accomplished great things in research. In January of 2012, the Paramedic Chiefs of Canada in partnership with the Paramedic Association of Canada (PAC) released the National Research Agenda, published in the Canadian Journal of Emergency Medicine. We look forward to continued discussion on the nineteen recommendations derived from this document and sharing that information with you.

Our leadership development committee continues to work to establish a leadership framework that identifies a range of EMS leadership roles, support and inspires the development of tools, procedures, forums, research, and partnerships to enhance the development of EMS leadership in Canada.

Our national awards committee worked diligently to review an overwhelming response of nominations for the Paramedic Chiefs of Canada Awards of Excellence Award. All submissions received were for diverse, skilled individuals and groups across the country working on some remarkable, innovative projects in the EMS

community. It is exciting to see the original and collaborative work taking place across the country.

We have aligned with our emergency services partners, the Canadian Association of Fire Chiefs (CAFC) and the Canadian Association Chiefs of Police (CACP) to form a national tri-services emergency management committee. This committee focuses on national emergency management issues directly related to first responders, providing the opportunity for all of us to speak in a unified voice. In addition, the Executive Directors and Presidents of Paramedic Chiefs of Canada along with our counterparts at Fire and Police will form an official committee and join forces on common issues. While this committee is in its infancy, this partnership is invaluable and I am confident we will achieve success on our deliverables and goals.

Our Board of Directors will conduct a strategic planning session concurrent with our conference in Saint John. We have achieved success with many of the milestones dictated in the White Paper, and need to celebrate those successes. Now it is time to ask ourselves 'what is next?.' I look forward to sharing the future direction with you.

There are numerous other committees you will have the opportunity to read about throughout this document. It is imperative that we recognize the work of our many volunteers, who ensure our goals are achieved. This work is conducted off of the corner of their desks and done in addition to their 'regular job.' These are the worker bees who have contributed to the success of our association. They are Chiefs, middle management,

front-line medics, sponsors and partners. They are all leaders, and I applaud them for their dedication.

I encourage anyone who wishes to become involved in any of our committee work to contact me. We are always looking for feedback, and how we can better serve our membership.

I would like to thank our Board of Directors for their leadership and commitment, and look forward to working with all of you in the coming year.

Sincerely,



Kelly Nash
ed@emsc.ca



Executive

Darren Sandbeck, *President*



Darren Sandbeck is currently the Executive Director, EMS Operations, Calgary & Central Zones—Alberta Health Services. Prior to this role he was the Director—Regional EMS and Emergency Preparedness for Peace Country Health in north western Alberta, one of two Alberta Health and Wellness “EMS Discovery Projects” transitioning ground

ambulance funding and governance into Regional Health Authorities. During this role, Darren was assigned to co-lead the provincial transition of EMS from municipal responsibility to the health system. Prior to joining Peace Country Health, Darren served as the Executive Director of the Foothills Regional Emergency Services Commission, a multi-municipality regional EMS and 911/Communications delivery model in Southern Alberta.

Darren holds a Master of Arts degree in Leadership from Royal Roads University as well as a Health Care Administration diploma from the University of Saskatchewan. He also remains provincially registered as an Emergency Medical Technologist—Paramedic. Darren has served in Board and Executive capacities on numerous provincial and national organizations including:

- Paramedic Chiefs of Canada (formerly EMSCC) (President)
- Alberta Ambulance Operators Association
- Fire etc (formerly Alberta Fire Training School)
- STARS Chain of Survival Committee
- Alberta E911 Advisory Association
- Alberta College of Paramedics
- Calgary Regional EMS Partnership
- Calgary Regional Partnership

Paul Charbonneau, *Vice President*



Paul has had a distinguished career serving in urban, rural and remote EMS systems over the past 34 years in the Province of Ontario. Paul began his career with the Department of Emergency Services in Toronto in March 1975 and worked at various stations including a stint with the first group of “ESU 5 (Toronto’s original

ambulance bus)” drivers before moving on to work for Beaverton and District Ambulance north of Toronto.

In January 1990, Paul decided to move further north; the remote James Bay coast became Paul’s first management opportunity. In James Bay Paul managed remote ambulance services and first response teams in several First Nation communities and the air ambulance operation that bound the communities together for health care in Moose Factory and answered call in Ontario, Quebec and the Northwest Territories. In November 1997 Paul moved “south” to Nipigon, near Thunder Bay, where he became the Director of Ambulance Services for the hospital which managed several small rural ambulance services as well as the urban ambulance service in Thunder Bay. During downloading Paul oversaw the amalgamation of ten (10) rural services into one (1) region of Superior North EMS and became the first Eastern Region Manager for Superior North EMS. In August 2004 Paul finally made it back to the south where he currently leads the County of Frontenac Paramedic Service.

Paul has held positions both locally and provincially with the Ontario Paramedic Association, the Paramedic Association of Canada – Benevolent Society, is a current member of the Tema Conter Memorial Trust Advisory Board and the Past President of the Association of Municipal Emergency Medical Services of Ontario. Paul and his wife Heather live in Canada’s “First Capital”; Kingston Ontario (AMEMSO).

Bruce Farr, *Past President*



Former Chief of Toronto Emergency Medical Services, Bruce K. Farr led the largest EMS service in Canada, responding to 250,000 calls per year.

Bruce had a distinguished career as a Paramedic, Supervisor, Manager, Deputy Chief and Chief of Toronto EMS spanning more than 36 years—he retired March 1, 2011.

During his tenure as Manager of EMS Education, Toronto EMS implemented one of Canada’s first Advanced Life Support Paramedic Programs.

As Deputy Chief of EMS Operations, he oversaw his Team through major events affecting EMS in Toronto, including the G7 Summit, the Papal Visit and World Youth Days. Bruce has spoken at international emergency service conferences about Toronto EMS and its successful management of the SARS Crisis, the Molson Toronto Rocks Concert, the 2004 Blackout, and the 2005 Air France Crash.

Chief Farr received the Canadian Governor General’s EMS Award for exemplary service and St. John Ambulance Priority Award in recognition for his contributions to EMS.

Chief Farr was honoured to represent EMS services across Canada as President of the EMS Chiefs of Canada (EMSCC) from 2006-2010.

Trevor Maslyk, *Treasurer*



Trevor Maslyk is the Operations Director for the North/Edmonton Zone within Alberta Health Services (AHS). In his career of nearly 20 years, Trevor has practiced as a paramedic within both air and ground ambulance operations.

He has also been very active as an EMS educator in Alberta

and continues to be involved as a contract instructor in the NAIT Paramedic Program and as the chair of the NAIT Prehospital Care Advisory Committee.

Trevor’s EMS leadership career has included multiple positions from Field Supervisor, Operations Superintendent, Team Leader, Project Manager, Manager of Contract Operations for AHS and most recently the Director of Operations for the AHS EMS North/Edmonton Zone.

Trevor has a passion for leadership and for life-long-learning. That said, he is currently completing his second year of studies in the Royal Roads Masters of Arts in Leadership program.

Executive

Alan Stephen, Secretary



Alan Stephen was appointed President and Chief Executive Officer of Ambulance New Brunswick (ANB) in July 2009, the public company responsible for providing land and air ambulance services throughout the province. He is also the Chief Operating Officer of New Brunswick Emergency Medical Services (NB EMS), which has a

long term contract to manage the ambulance service in New Brunswick on behalf of Ambulance New Brunswick.

Mr. Stephen has extensive experience in senior leadership roles. He was the Director of the ORNGE Communications Centre (OCC). ORNGE is an Ontario organization that coordinates all aspects of the aero-medical transport system. Prior to this role, he was Project Manager at SNC-Lavalin PAE. He also held various positions in the public sector as the General Manager Infrastructure and Emergency Services with the City of Greater Sudbury, as Director/Dean of the School of Transportation for the Centennial College of Applied Arts and Technology, and as Director Business Development, Marketing and Sales for the Crowe Group.

Mr. Stephen started out in his career with the Canadian Forces and has held various senior level command and staff appointments in Canada, Europe and on United Nations duties including as Commandant Canadian Forces School of Administration and Logistics, Chief Logistics Officer (G4 Operations) for the Canadian Army and as Commanding Officer for the United Nations Protection Force Logistics Battalion.

Mr. Stephen graduated from Acadia University with a Bachelor of Science and has a Professional Logistics designation from Canadian Professional Logistics Institute. He also attended the Canadian Forces Command & Staff College. Mr. Stephen is married to Jacky Stephen, a teacher and has two children, Cameron and Christopher.

Kelly Nash, Executive Director



Kelly Nash serves as the Executive Director for the Paramedic Chiefs of Canada and is responsible for the day to day operations of the association as a whole and its Board of Directors.

Ms. Nash provides strategic leadership and direction to the EMSCC Board of Directors, consistent with the mission

and values of the association. Ms. Nash maintains the constitution of the association, leads the annual conference and fall business meetings conducted on a yearly basis. Ms. Nash is the liaison for all sub-committees of the EMSCC. She is accountable to the Board of Directors, comprised of twenty Emergency Medical Services Chiefs and/or Directors across Canada.

Ms. Nash holds a degree in English Communications with a minor in Psychology obtained at the University of Victoria and a business administration degree. She worked as a manager in telecommunications for over eight years. Most recently she has worked in the Emergency Services in Calgary, Alberta for seven years. Ms. Nash is in her sixth year as Executive Director of the PCC.

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when utilized by good samaritan and professional first responders.

We believe that partnering with and supporting the Canadian Chiefs of Paramedics is of paramount importance as they execute their exemplary vision and strategy for the industry. We look forward to

working with and supporting all who work in the paramedicine community for many years to come.

Steve Reed
President
Medical Data Carrier

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Board of Directors

Anthony Di Monte



Anthony Di Monte is the Chief of the Ottawa Paramedic Service that provides emergency medical services coverage to our Nation's Capital. Chief Di Monte has been involved in EMS for the past 29 years and began his career as an Advanced Care Paramedic in 1979 in Montreal.

Chief Di Monte has held several senior positions in numerous EMS services starting as Regional Director for Urgences Santé. In 2000 he assumed the responsibility of York Region Emergency Medical Services and was the first General Manager of EMS.

Under his leadership he structured and amalgamated the previous operators into one municipal government organization. In 2001 he became the first Chief of EMS for the newly amalgamated City of Ottawa and once again, coordinated and implemented the delivery of an EMS service for the municipal government of our Nation's Capital.

Chief Di Monte has faced numerous events of significance. These events include being the EMS Incident Commander at the Central Station bombing in Montreal in 1984, the Papal visit in Montreal in 1984, the shootings at University of Montreal in 1989, and the shootings at Concordia University in 1992.

During his career, he has also earned numerous commendations including receiving the Governor General's EMS Exemplary Service Medal in 2002, being decorated by the Montreal Fire Department with the Bronze Medal of Bravery for heroic conduct at Francon Quarry in 1983, and receiving commendation from the Ontario Provincial Police for an accident on Highway 401 in the City of Port Hope in 1981.

Christian Schmidt



Assistant Chief, Winnipeg Fire Paramedic Service—Christian Schmidt serves as an Assistant Chief with the Winnipeg Fire Paramedic Service (WFPS) where he is responsible for providing leadership and strategic direction within the emergency medical services, fire suppression and communications divisions. He began

his career in 1993 with the City of Winnipeg and has since worked in many roles during his career with the service including Paramedic, Communications Officer, Staff Inspector, Project Manager and Superintendent. In November of 2007 Christian was appointed to the position of Assistant Chief.

The Winnipeg Fire Paramedic Service provides EMS service to the citizens of Winnipeg under a contract agreement with the Winnipeg Regional Health Authority (WRHA), Christian is a co-chair on the WFPS/WRHA Joint Operations Committee (JOC) that guides the high quality care and programs delivered by the members of the service. In addition, he also co-chairs a JOC group with the Winnipeg Police Service and is a member of the EMS Network of Manitoba which represents all EMS services in the Province of Manitoba. Recognizing the importance of strong relationships, he works toward building and fostering strong and productive relationships with partner agencies and community groups.

Christian has participated as a member of the EMSCC Leadership Development committee and has previously served as a member and board member sponsor on the EMSCC Performance Measures committee.

Christian holds a Bachelor of Arts Degree from the University of Manitoba and has completed the department CMA accredited Advanced Care Paramedic Program and NFPA Fire Fighter certification.

Corey Banks



Corey is an Advanced Care Paramedic and a Registered Nurse. He started his career as a paramedic in 1991 in rural Newfoundland. Since then he has worked in five different Canadian Provinces that took him as far west as Calgary, Alberta and he spent a year in the United States for part of his education.

He has attained a Diploma in Health Administration and a Certificate in Adult Education, as well as, is near completion of a Diploma in Emergency Health Management, and a Bachelors Degree in Health Administration. Corey has worked across the Country in a combination of various clinical, educational and managerial roles.

Highlights of his career have been in prehospital and in-hospital clinical settings of emergency medicine, critical care, and transport medicine. He has worked ground and air ambulance operations and in rural and urban EMS systems, as well as, a college instructor for paramedicine. Prior to his current role he worked in operations management for Frontenac Paramedic Services in Kingston, Ontario.

In 2006 he returned to his home province of Newfoundland and Labrador to accept his present position as Manager and EMS Chief for Paramedicine & Medical Transport with the Eastern Health Authority out of St. John's, NL. Within his current role he has a large mandate which includes:

- Metro Paramedic Services
- Med Flight NL
- Medical Communications Center
- Regional Services
- Provincial Medical Oversight

Corey has been a member of the EMS Chiefs of Canada since 2003 and was voted to the Board of Directors in 2009.

Dave Dutchak



Born and raised in Blaine Lake, Saskatchewan, Dave was following in the footsteps of his father (Mike) when he started his career in emergency medical services. He has been involved in EMS in Saskatoon since 1979 and is currently President and CEO of M D Ambulance Care Ltd.

Throughout his career, Dave has been involved in a number of professional associations. His past involvement with the Saskatchewan Emergency Medical Services Association includes serving a term as president. He is also a board member of Canadian EMS Chiefs of Canada.

In May of 2007 became president of the Saskatchewan Chamber of Commerce. Active in community affairs and committed to working within his community to improve the economic position of the province, Dutchak has played a significant role in the past as a board member for the Saskatoon Chamber of Commerce where he supported his Team in the launch of the Heart Safe Program involving the establishment of over 200 Business sites in the Saskatoon area.

As well, he served a term as president of the Saskatoon Chamber of Commerce. He was also the past chair of the Saskatoon Planning Commission and was a board member on Saskatchewan Prevention of Handicaps and was a board member of the Saskatoon Prairie-land Park. He currently resides in Saskatoon with his wife, Shannon, and their 5 children, Reilley, Kaela, Joshua, Katie and Jordan.

Board of Directors

Doug Socha



Doug Socha is the Director of Emergency Services for Hastings County and Chief of Hastings-Quinte EMS since its inception in 2003. Starting his paramedic career in 1994 he has worked both land and air ambulance in Ontario and still maintains his provincial certification.

Doug was the program coordinator for primary care paramedics for Southeastern Ontario. Moving from this position to Operations Manager for Hotel Dieu Hospital Regional EMS, and then into his current position. He is also the community emergency management coordinator responsible for disaster management for his municipality.

Doug is very active in the promotion of paramedic driven research and recently established the Ontario Paramedic Research Consortium, and currently is the Chair of this Provincial committee. He has been working with the EMSCC and other partners in a joint effort to help establish a National research framework.

Doug has a Bachelor of Science Degree in Biology from the University of Western Ontario. He remains an advocate for system improvements and paramedic driven research.

Gerard Dinn



Gerard Dinn is currently the Clinical Operations Manager for Yukon Emergency Medical Services. In his current position he oversees the medical competence of the service. This spans medical protocols, quality assurance, communications, EMS response standards etc.

During his twenty year career he has held positions as EMS Educator at QEII Health Science Center in Halifax and Clinical Coordinator with Holland College in PEI. He has held positions as a frontline ACP, Quality Control Medic and Medical Death Investigator.

He has served on many committees and boards with in EMS across Canada. In 1999-2001 Gerard played a key role in the development and implementation of EMS education for EHS Trinidad and Tobago.

Gerard holds a Bachelor of Science degree in math and physics and Engineering diploma from St. Frances Xavier University and has completed both ACP and CCP programs. Gerard is still an active ground and flight medic with Yukon EMS.

Jeff Fraser



Jeff is the Director of Operations for Emergency Health Services Ambulance Operations Management for the Province of Nova Scotia. His key responsibilities are Field Operations, Medical Communications and Deployment, Special Operations, and Community Paramedicine. He began his career as a Street Paramedic

outside of Halifax in 1989 and has worked progressively through the ranks as a Ground Operations Supervisor and Manager of the Medical Communications Center for the Emergency Health Services System. He was formerly recognized in 1998 by Premier John Hamm for his work on the Swiss Air Flight 111 crash and again in 2004 by Health Minister Angus MacLlssac for his work on the Emergency Health Services Legislation act that was passed through the NS Legislature. In the summer of 2011 he received the EMS Exemplary Service award presented by the Honorable Myann Francis Lt. Governor of Nova Scotia. In addition to being a Paramedic Jeff holds a Diploma in Management from St. Mary's University in Halifax NS. , he is a graduate from the National Academy of Emergency Dispatch / Fitch & Associates Communications Center Managers Program in Kansas City MO.

Currently he has the privilege of working closely with the Nova Scotia Dept. of Health and Wellness as "The Better Care Sooner" principals are being applied in all aspects of Health Care delivery across the province creating a new Provincial mandate for EMS delivery for Nova Scotians.

When not at EHS...Jeff can be found coaching football programs in his community and spending time with his wife Jill and children Kyle, Alex and Abby in the beautiful Annapolis Valley.

John Cunnane



Started his EMS career in the UK as an Ambulance Officer and a Control Officer (dispatch). After immigrating to Canada in 1975, he spent 23 years working for the Ontario Ministry of Health (Emergency Health Services Branch) in a variety of EMS positions, including Paramedic, Regional Training Officer, Supervisor and District

Manager for Niagara Region.

In January of 1998 the Province transferred responsibility for Land Ambulance Service in Ontario to Upper Tier Municipalities. He was hired by the Regional Municipality of Niagara, Public Health Department in January 1998 to oversee the Land Ambulance Transition from the Province to the Region. The Region commenced operational responsibility for EMS in Niagara on January 1, 2000, at this time he was appointed as Director, Emergency Services Division, responsible for EMS, Emergency Management/Preparedness, CBRNE, and administration for the Regional Fire Coordinator Program.

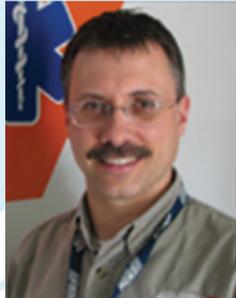
He has served on many boards and agencies, including being a founding member and seven year board member of the Association of Municipal Emergency Medical Services of Ontario (AMEMSO). He has also served on a number of Provincial committee's dealing with the transfer of EMS from the Province to Upper Tier Municipalities.

He is active on a number of community organizations, including the YMCA, a 27 year board member with Heart Niagara, which is a Community Coronary Care organization that promotes Healthy Lifestyles, including teaching community CPR and PAD programs.

Outside of professional interests, he enjoys golfing and family.

Board of Directors

Ken Luciak



Ken Luciak serves as the Director of Regina Qu'Appelle Health Region - Emergency Medical Services and is responsible for eleven emergency medical services and the regional emergency communication centre. During his twenty-five years of emergency medical service, he has served on, and led a number of committees

and boards. His most recent activity includes being a board member to the Paramedic Chiefs of Canada, chair of the association's Membership Services Committee, member of the Saskatchewan EMS Working Group, and member of the newly formed Canadian Paramedic Community of Practice.

Matt Crossman



Matt is the General Manager and Chief of Island Emergency Medical Services and Medacom Atlantic. Matt is responsible for overseeing and providing leadership and establishing service direction, as well as building staff capabilities to improve service levels throughout its ambulance operations and the Emergency Services

Communications Centre on Prince Edward Island (PEI).

Matt has been involved in Emergency Medical Services for over 10 years and has held various positions ranging from Safety, Fleet, and Operations to Clinical Quality and Learning. Matt joined the Medavie EMS Group of company's team in 2008.

In 2009 Matt was awarded the EMS Safety Foundation Leadership Award, and in 2010 Matt was the recipient of the EMSCC Award of Excellence for Injury prevention and public safety for his work within the Medavie EMS group of companies.

Matt has studied Health Services Administration at Dalhousie University and is now planning on completing a Master Degree in Business Administration.

Mike Michalko



Mike Michalko is currently the Executive Director for Rural Operations with the British Columbia Ambulance Service. The program is responsible for all ground operations within the Province of BC outside of the metro operations in Vancouver and Victoria. This large geographic area encompasses multiple jurisdictions,

and health authorities, and borders Alberta, North West Territories, Alaska, Idaho, Montana and Washington States. With approximately 1800 staff based out of 145 stations Rural Operation responds to approximately 250,000 responses per year. These areas of service share similar delivery models, diverse populations, and similar challenges in response, service and long transport times.

Mike began his career with the BC Ambulance Service in 1984 as a paramedic in the community of Bella Coola on the West Coast. He was inspired by his father and three other family members who also stepped up to support pre-hospital care in a very remote community. Moving on to University and eventually following a career path in EMS, Mike has spent the last 22 years in Northern British Columbia.

Leadership, quality, paramedic safety, and continuous system improvements have been the driving focus in his career. Supporting the frontline paramedics to provide the very best patient care with the tools, systems, education and resources has brought continuous gratification.

Nicola D'Ulisse



General Manager and Chairman of the Board, Urgences-santé Corporation, Montréal and Laval areas Nicola D'Ulisse is the General Manager and Chairman of the Board of Urgences-santé Corporation, which offers EMS services for the Montreal and Laval areas. His mandate began in May 2009 when he was appointed

to the position by the Quebec Minister of Health. He started his career at 18 as a volunteer First responder and ski patroller in Laurentian mountains and first joined Urgences-santé in 1988.

Formally trained in Vermont as a Advanced Emergency Medical Technician in 1986 and obtained a Certificate in Health and Social Services Management at McGill University in 1995. Subsequently he moved to the private sector occupying senior management positions in the Canadian Clinical Research and Pharmaceutical industry.

Before returning to the public sector and Urgences-santé, Nicola was the Vice President and General Manager for the largest Canadian publically held pharmaceutical company, based in Toronto. Urgences-santé is amongst the largest EMS services in Canada. With 820 Paramedics serving a population of 2.2 million citizens of Montreal and Laval. The dedicated Communications Center, with a staff of 100, handles close to 350,000 emergency calls annually.

Nicola continues to volunteer in his home community of Saint-Lazare, where he founded the First Response Unit. He is proud to represent the return of Urgences-santé on the Board of Directors of EMSCC.

Board of Directors

Paul Raftis



On March 1, 2011, Paul Raftis became Chief, Toronto Emergency Medical Services. Paul has been with Toronto EMS for 20 years, beginning his career as a Paramedic in 1991. As an Advanced Care Paramedic (ACP), he was one of the first ACPs assigned to the Emergency Task Force (ETF), tactical paramedic program.

Paul began his management career as an Operations Supervisor in 1999. Since then, he has earned promotions to several positions throughout Toronto EMS, including serving in both the Deputy Chief of Operations and the Chief's Office. He managed the Special Operations Unit as well as the Central Ambulance Communications Centre.

With each role, he broadened his understanding of the short and long-term issues facing the division and brought his keen intelligence and grasp of the issues to solve many organizational challenges. In January 2010, Paul became the Deputy Chief of Operations. As Deputy Chief, Paul oversaw the delivery of emergency and non-emergency medical care in the City of Toronto, leading a team of 930 staff with an operating budget totalling \$112 million. The professional team includes Primary, Advanced and Critical Care Paramedics.

He was also responsible for the Special Operations teams that provide paramedic service in unique and challenging environments. These teams include Critical Care Transport Unit (CCTU), Primary Care Transport Unit (PCTU), Emergency Response Unit (ERU), Emergency Support Unit (ESU), Public Safety Unit (PSU), Emergency Task Force (ETF), Heavy Urban Search and Rescue Unit (HUSAR), Chemical, Biological, Radiological, Nuclear, Explosive Unit (CBRNE), and the bike and marine units.

In his role as Chief, Paul will lead the largest municipal emergency medical service in Canada and provide world-class, pre-hospital emergency care to residents and visitors to the City of Toronto. Toronto EMS has

a staff of over 1,200 which includes Paramedics, Emergency Medical Dispatchers and Support Staff. They respond to more than 315,000 emergency medical calls per year supported by a fleet of 155 ambulances in 45 ambulance stations across the city.

Paul holds a Bachelor of Health Science Degree from Charles Sturt University and an Ambulance and Emergency Care Certificate from Fanshawe College.

Stéphan Scalibrini



Director of operations at Dessercom Inc, for the past five years, Stéphan Scalibrini is responsible for the Western division of the company. Entered into post May 20, 2008, there its load near 9 companies and about 250 paramedics. Our area of operations is very wide and covers the Eastern townships to Mauricie.

Stéphan began his career in health 25 years ago in a hospital, and in 1989 migrated to the emergency health corporation. During all these years, Stephan has been involved in his community in order to raise the level of care provided to the citizens of Quebec. He is co-founder of the first professional association (APPQ), contributed to the record of the advanced care in Quebec, and the enhancement of base training offered by Quebec paramedic.

Mr. Scalabrini did his initial training at the Cégep de Sherbrooke and took his emergency medical training at Ahuntsic College. Since then, he attended the University of Montreal and Trois-Rivières in health services management.

Stéphan is proud to be a member of the largest Quebec private company which provides emergency medical care in Quebec. Dessercom Company has about 21 divisions throughout Quebec in addition to having one of the largest fleet of ambulance transport for non-urgent transfer's vehicle.

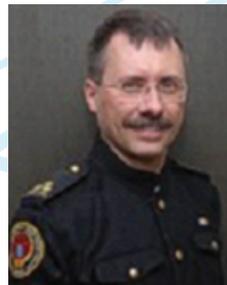
I am pleased to have the chance to represent my organization and Quebec on the paramedics Chiefs of Canada Board of Directors.

Committees

Membership Services Committee

Membership services committee has partnered with the EMS Leadership Development Committee and outside groups in the hopes of offering greater opportunities to encourage and nurture leadership development of frontline leaders.

Committee Chairperson, Ken Luciak



Committee Members

Todd Stout, Katelyn Gilligan, Kelly Nash, Lyle Karasiuk, Carrie Anderson, Dan Cottom, Sheryl Jackson, Bob Eastman, Sean Teed, Matt Crossman, Grant Brilz

Committee Co-Chairs

Craig Pierre, Nick Thain

Terms of Reference

Purpose

The committee shall provide value for membership.

Specific goals

The committee will work collaboratively with the Executive, the Board of Directors, and the various association committees to advance and align EMS Leadership in Canada by:

1. Being a repository of information for Best Practices
2. Supporting EMS Leadership Development and Networking
3. Leading in the Development and Advocacy of EMS Best Practices

Reporting structure

The Membership Services Committee reports to the Executive Director and the Board of Directors. In addition the Executive Director and the President receive copies of minutes.

Membership	Term
Chairperson (appointed by board)	ongoing
Co-Chairperson(s)	ongoing
EMS leaders interested in Membership Services	ongoing
Webmaster	ongoing
Ad hoc topic members	when needed

Meeting frequency, time and location

The team will meet every Tuesday at 1400 hrs MST.

Remuneration

The work of the Membership Services Committee is voluntary

Highlights

Webinars

- September 2012–EMS Leadership Development Open Mic: Personality Inventories
- October 2012–Building Strong Arguments and Persuasive Business Cases
- November 2012–The Future of EMS in Canada
- December 2012–EMS and Social Media: Facebook
- January 2013–A National Discussion: Transfer of Care Delays
- March 2013–Double Header: Alliance of Canadian EMS Honour Guards & E.V.E.N.T. Reporting
- March 2013–Double Header: EMS Week in Canada & LinkedIn for EMS Leaders
- May 2013–A National Discussion: Transfer of Care Delays Part II

Association Website is the membership portal to news, tools and resources relevant to EMS leaders in Canada

Virtual Library contains a valuable collection of documents that may be of interest to members researching “like-practices” of other paramedic services

EMS Week Working Group develops an annual Canadian EMS Week package that is available for download on the association website

Association list server where members can ask questions and quickly share information

Long Services Award certificates and pins are available and awarded on the request of Tier 1 members

Awards of Excellence awarded to those who have developed and implemented an EMS process, method or program in one of three categories

On-line Kit Shop (Store) is open for business

Social Media such as Facebook and Twitter are utilized to inform members of what is happening with the association, as it happens!

Committee Mandate

Founded in 1996, the committee’s mandate is to provide value for membership while advancing and aligning EMS leadership across the country.

The committee is committed to:

- Being a repository of information for Best Practices
- Supporting EMS Leadership Development and Networking
- Leading in the Development and Advocacy of EMS Best Practices

A large part of the committee’s work involves communication and sharing of ideas with its membership. It does this via the operation of the association website, facilitation of the association list server, maintenance of the on-line library, frequent webinars, and the use of social media such as Facebook and Twitter.

The EMS Week Working Group sub-committee is responsible for creating the annual EMS Week logo and related resources to help paramedic services celebrate this important week and educate others.

The MSC is responsible for the annual Awards of Excellence and the association’s long service awards program.

Membership services committee has partnered with the EMS Leadership Development Committee and outside groups in the hopes of offering greater opportunities to encourage and nurture leadership development of frontline leaders.

The virtual library is an information repository of documents that EMS leaders may reference when researching a topic or practice that they need to compare to or understand better. The relevance of that repository is dependent upon the contributions of member services. The MSC encourages every service to provide a primary contact person from their organization who will assist the association librarian with this task. Please send the name and email address of your primary contact person to msc@paramedicchiefs.ca.

The online Store (Kit Shop) is now open for business. Be sure to visit the store frequently to check for new items. Purchases may be made online with MasterCard or Visa.

Committees

Leadership Development Committee

Support and encourage the development of tools, processes, forums, research, and partnerships to enhance the development of EMS leadership in Canada.

Committee Members

Nicola D'Ulisse, Les Fisher, Trevor Maslyk, Michel Ruest, Christian Schmidt, Doug Soucha

Committee Chairperson

Ken Luciak/Collin Hartness

Terms of Reference

Purpose

Support and encourage the development of tools, processes, forums, research, and partnerships to enhance the development of EMS leadership in Canada.

Objectives

1. Develop, validate, and endorse a national leadership competency profile(s) for an EMS leader;
2. Collaborate with educational institutions to develop EMS leadership curriculum and programs that reflect the needs of EMS leaders;
3. Directly provide a variety of leadership education opportunities to EMS leaders;
4. Establish and promote executive and peer coaching networks as an effective way for EMS Chiefs to enhance their leadership capacity;
5. Encourage and support research in leadership development in EMS.

Reporting

This standing committee reports to the board of the EMSCC.

Membership

The membership of the Leadership Development Committee consists of current leaders of EMS systems in Canada who are members in good standing of the EMSCC.

Members of the Leadership Development Committee possess a strong working knowledge of leadership development methods and theories, along with leadership development experience in the strategic or operational environment.

Term of Membership

Members are expected to serve a two (2) year term, renewable depending on the needs of the Committee. Every two years the membership will be reviewed to ensure that it is representative of the diversity of EMS across Canada.

Appointment

A call for membership will be made to the membership of the EMSCC. The members are volunteers representing a wide variety of EMS services nationally.

Establish the EMS Leadership Framework

The committee will work to establish a leadership framework that identifies a range of EMS Leadership Roles. By clearly identifying these roles, the committee will then be able to create appropriate competency profiles that will be in alignment with the levels of responsibility.

Through validation of the competency profiles, clear academic needs can be established that can then be compared to current program offerings and determine what if any gaps exist in relation to curriculum availability. It is the committee's intent that EMS organizations will be able to recommend responsibility level appropriate programming for their personnel as they evolve as EMS leaders.

It is recognized that diverse leadership skills are needed for different levels of responsibility and at alternate points in the organizational life cycles. It is the Leadership Development Committee's desire to identify those

needs and create a means for organizations to access the right resources for the right people at the right time, in order to meet their organizational demand. Through establishing the framework aspiring leaders will be able to assess career path options and access information to assist them in determining their developmental and educational needs.

Organizations will have assistance in assessing for potential future leaders in order to assist in succession planning and build the capacity of their people.

The Leadership Development Committee will work towards establishing mentorship programming in order to support current leader transition and future leadership development.

Challenges

The Leadership Development Committee has been challenged by the availability of its members to participate in the demanding and exciting ground breaking tasks of the committee. We are working to revise membership criteria and engage members to the fullest extent to move forward in our mandate.

Highlights

Webinars

- October 2011–Leadership Development Committee open Mic: How to Communicate with Staff Successfully
- Fall 2012–Leadership Open Microphone

Next Steps

- Establish EMS Leadership Framework
- Build Role Appropriate Leadership Competency Profile
- Provide mentorship opportunities for EMS leaders and aspiring leaders
- Continue to support EMS leadership research

Founding Sponsor

ZOLL

ZOLL Canada is once again pleased to be a Gold sponsor for the Paramedic Chiefs of Canada. This has yet again been an exciting year for ZOLL Canada, but more importantly for some of our staff. First and foremost, we would like to take this opportunity to mention some notable changes within the ZOLL Canada organization. Neil Johnston, former Director of Canadian Operations has been promoted and is now based out of our Corporate Head Office as Vice President of US Hospital Sales. Adam Dawson, whom most of you know very well in the East as a Regional Sales Manager, has been promoted to Director of Canadian Operations. Carl Bouchard, former Territory Manager in Eastern Quebec has been promoted to Canadian Sales Manager. Along with these promotions ZOLL Canada has also seen expansion in various departments such as Sales, Technical Support, Logistics and Marketing. These changes have all been implemented in an effort to adequately support the growth of our business and maintain superior customer service.

We are also equally excited to officially launch the X SeriesR monitor/defibrillator in the Canadian market. At less than 12 pounds (6 kilograms), the X Series is about half the size and half the weight of competitive full-featured monitor/defibrillators-but a lot more powerful.

It's compact without any compromise in display size, capability, or performance. Designed specifically for EMS<<http://www.zoll.com/medical-markets/EMS/>>, the X Series offers everything you could ever want in an EMS device. And because it's based on a platform developed for the military and air medical operations, the X Series rises to a new standard in ruggedness and durability. We look forward to showing you the X Series at our booth, so be sure to stop by.

Mila Majdoub-Olumogba
Marketing Manager (Canada)
Directrice au Marketing (Canada)
905 629-5005 ext 256 phone
647 448-8166 cell
905 629-0575 fax

Canadian Tri-Services Emergency Management Committee



CITIG
CANADIAN INTEROPERABILITY TECHNOLOGY INTEREST GROUP
GROUPE D'INTERET CANADIEN EN TECHNOLOGIE DE L'INTEROPERABILITE

The CTSEM is governed by the three national tri-service Chiefs Associations through their designated co-chairs and supported administratively by CITIG. Each specific co-chair will continue to be accountable to his/her own Association's Executive Board.

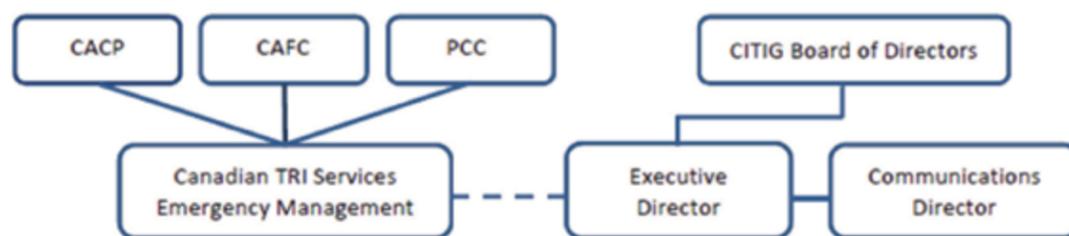
The newly formed Canadian Tri-Services Emergency Management Committee (CTSEM) seeks to champion integrated, interoperable and unified emergency management. From its origins in 2007 as the CACP Emergency Management Committee, a tri-services format has always been a feature of this alliance, providing an opportunity for first responder agencies to speak nationally with a common voice on emergency management issues. This new format and governance structure formalizes each Association's commitment.

This committee is about strategic level, functional interoperability amongst first responders across Canada. It serves a unique niche, focusing on national emergency management issues relevant to first responders from the tri-services, providing an opportunity for these agencies to speak with a unified voice.

Whereas, the Government of Canada's focus on emergency management appears to be moving toward mitigation and away from preparedness for response; response capability does still remain a key component of the emergency management cycle. The need still exists to advocate for responders' concerns with long-term sustainability of emergency management training and assets; such as the Recommended Equipment List, the Targeted Capabilities List (Capabilities Based Planning), Incident Command/Management Systems, HUSAR and CBRNE training, etc. :

COMMITTEE PRIORITIES INCLUDE:

- Serving as a conduit to recognized sources on emergency management related research, policy, plans and standards.
- Promoting interoperability and alignment amongst the tri-services, in collaboration with other emergency management partners and committees.
- Exploring tri-service training opportunities and requirements to enhance emergency management capabilities and capacity.
- Engaging with other emergency management partners and agencies across Canada to pursue opportunities for synergy across the broader responder community.
- Examining federal, provincial/territorial, and municipal emergency management legislative and policy issues, and to provide informed tri-service representation on critical and emerging issues.
- Improving understanding of the current state of Canadian emergency management



Founding Sponsor



“It is important to Demers to be an active Partner with EMSCC so we can listen to your needs and concerns which will enable us to meet your needs now and in the future. It is with this type of input that allows Demers Ambulances to be a leader in the industry.”

Demers Ambulances has over 50 years in Ambulance Manufacturing being number one in providing state of the art ambulances that are innovative and robust. We are continually striving for improvements in order to meet the ever changing needs of the EMS industry and are focused on the Health and Safety concerns of the Paramedics in order that they may perform their duties safely.

Demers Ambulances is a leading manufacture not only in Canada but North America and internationally. Demers Ambulances is ISO certified as well as BNQ, MOHLTC, KKK, Ford, GM and Mercedes QVM. In 2011 Demers Ambulances received several prestigious awards for our innovation and designs:

- 2011 New Product & Innovation Awards from JEMS for our MXP 150 Ambulance
- Top Innovation Award from EMS World for our Demers EcoSmart System
- Top Innovation Award 2010 EMS Word for our Mirage EX Sprinter
- 1st place in Productivity Improvement at Les Mercuriades 2011.

These awards prove our ongoing commitment to vehicle improvements in design and safety.

Alain Brunelle

President & General Manager



A Certified Mechanical Engineer with Management degrees from universities in North America, Europe and Asia, Alain Brunelle has more than 25 years' experience in the vehicle manufacturing industry, with Bombardier Recreational Products Inc., Camoplast Inc., and today, Demers Ambulances. As President and General

Manager, Alain brings to Demers Ambulances his solid, extensive experience in both strategic development and product development. He reduced costs and increased productivity, contributing to a better strategic positioning of the company. He is recognized as an industry

leader in strategic planning, team building and notably for his integrity. His experience in other highly technical and unique vehicle construction endeavors has further improved Demers Ambulances' overall production capabilities and quality control. Alain leads the company's projects from quotation to final delivery of the last unit, while ensuring compliance with all aspects of customer requirements. His committed goal is to consistently exceed customer expectations in all areas of their relationship with Demers Ambulances.

Government Relations

Paramedic Chiefs Of Canada Government Relations Week In Ottawa

The Paramedic Chiefs of Canada held a two day government relations event in Ottawa. On Monday November 20th and 21st, Paramedics, industry partners, and Chiefs filled the corridors of Parliament Hill to inform Canada's political leaders of our keys issues in Paramedicine.

The week began with a government relations education session provided by Summa Strategies, the Paramedic Chiefs advocacy firm. In just one day over 45 meetings were scheduled with senior government officials.

The following 3 key messages were discussed;

- The federal government should study the Community Paramedic model as a way of reducing the burden on the overwhelmed primary care health system in Canada
- The federal government should make automated external defibrillators mandatory in all public buildings
- The federal government should designate the remaining 10 mhz of spectrum for public safety use

The principal message shared with government was that Paramedics are the first line of defense for Canadians in emergencies, disasters and pandemics, and that Paramedics are a reliable and constant force in communities across the country. Each meeting facilitated open discussion and debate solidifying support for our industry requests of government officials. Following the meetings, a reception was held at a venue on Sparks Street across from Parliament. The event was a resounding success, with Members of Parliament, Ministers, staffers and Paramedic Chiefs in attendance throughout the evening who had the opportunity to network with guests, and interact with local Paramedics who provided demonstrations with equipment and vehicles on site.

Adjacent to the government relations event, the Paramedic Chiefs of Canada, in partnership with the

Paramedic Association of Canada (PAC) joined together for the Queens Jubilee medal ceremony, held on Parliament Hill. The Honourable Leona Aglukkaq, Minister of Health and Parliamentary Secretary Colin Carrie awarded the medals to 30 deserving members of our profession. The Paramedic Chiefs of Canada would like to thank the Paramedic Association of Canada for their collaboration in the presentation of these significant awards. The Paramedic Chiefs of Canada would like to congratulate to the following recipients; Bronwyn Barter, Lyle Blumhagen, F. Eugene Boles, William (B.J.) Chute, Alan Craig, Bruce Farr, Dwayne Forsman, Ronald Forsman, Eric Glass, Sherman Hillier, Christopher Hood, Donna LeFurgey, Wiliam Leverett, Bryon Longeway, Terrance MacPherson, Doug Major, Tom Manz, Michael McKeage, Ernie Mothus, Michael Nolan, Craig Pierre, Pierre Poirier, Steve Rapanos, Grant Ross, Roberta Scott, John Strohmaier, Robert Theriault, Michael Thomas, and Dianne Verreault.



The Safest Hill Reception of the Year!

The **Paramedic Chiefs of Canada** invite you and your staff to a reception with the only emergency health care professionals who still make house calls.

Join us for complimentary food and beverages and learn about Paramedic Care in your community.

With paramedics from coast to coast providing vehicles and equipment tours on site, **there's never been a safer Hill reception!**

Date: November 20th 2012

Time: 5:30-8:00pm

Location: Centretown Tavern, 152 Sparks St.

RSVP to Laura at lsequin@summa.ca or 613.235.1400





Partnerships

Legends of the Call Award 2012



“When paramedics arrive at an emergency, they often only have a few seconds to gather information before making a call on how to proceed. MedicAlert provides instant access to critical information which is why we encourage paramedics to follow Look, Read, Call protocol during every emergency. We salute Robert Wilson for effectively using MedicAlert to help save a life.”

Michael Nolan, Former president Paramedic Chiefs of Canada

The Legends of the Call award recognizes a Paramedic who has demonstrated outstanding performance during an emergency by effectively using the LOOK. READ. CALL procedure.

Look: to see if your patient is wearing a MedicAlert ID.

Read: the engraving on the back of the emblem to learn vital information about your patient's medical conditions and allergies.

Call: each MedicAlert ID has a customized number that connects you to a live agent at the MedicAlert 24/7 emergency hotline. You'll have access to your patient's full medical history in less than five seconds flat.

The award is presented to a new Paramedic every quarter. In June each year, one top performer is selected from all recipients to receive a free trip to attend the annual Paramedic Chiefs of Canada conference. This year's conference is being held in Saint John, New Brunswick.

Are you making the most of medicalert?

Earn a certificate identifying the successful completion of one hour of Continuing Medical Education credit.

MedicAlert is your tool during emergencies – developed to provide emergency responders and health care providers with immediate access to patient information.

Our goal is to ensure that health care providers are aware of the services that MedicAlert Foundation provides and are using them to benefit patient outcomes and save lives, which is why we developed the online MedicAlert Continuing Education Course.

The course is free and open to all health care professionals who are interested in learning more about and making the most of the MedicAlert system and services.

For more information, please visit www.medicalert.ca/education



Left to right, John Szold, Board Chair, Canadian MedicAlert Foundation; Robert Wilson, Legends of the Call Award winner, Ottawa Paramedic; Michael Nolan, Former President, Paramedic Chiefs of Canada.

Congratulations to all 2012 Paramedic Recipients

Robert Wilson
[Ottawa Paramedic Services](#)

Brent MacDonald
[Island EMS](#)

Dave O'Shaughnessy
[Ottawa Air Ambulance](#)

Sean Vesak
[Alberta Health Services](#)

Partnerships

Paramedic Community Of Practice

Communities of Practice

Their primary purpose is the exchange of knowledge. Their membership is self-selected. They are held together by the passion of their members and their identification with the group. They last as long as the interest of their members. (see table below)

	Community of Practice
Purpose	Exchange of knowledge
Membership	Self Select
Glue	Passion, identification with group
Duration	As long as the interest lasts

Canadian Safety and Security Program

CSSP Communities of Practice

- A group of subject matter experts
- In a specific domain and problem space
- Leveraging and applying their collective knowledge
- To develop and disseminate knowledge
- For CSSP outcomes and enhanced public safety and security

Communities of Practice mandate

- “The overarching objective of these Communities of Practice is to facilitate knowledge management and collaboration.”
- “To foster the exchange of ideas and innovation by providing an advanced collaborative workspace through a web portal and by coordinating or encouraging participation in meetings, workshops, conferences, exercises and other activities.”

<http://www.drdc-rddc.gc.ca/drdc/en/centres/drdc-css-rddc-css/about-apropos/fostering-collaboration/communities-of-practice/>

Canadian Safety and Security Program

Current Communities of Practice

- Biological Threats
- Chemical Threats
- Radiological-Nuclear Threats
- Forensics
- Psycho-Social Factors
- Emergency Management Systems and Interoperability
- Biometrics/Human Identification Systems
- Border and Transportation Security
- E-Security
- Critical Infrastructure Vulnerability, Resiliency, and Interdependency
- Paramedic (new)
- Police (new)
- Fire (new)

<http://www.drdc-rddc.gc.ca/drdc/en/centres/drdc-css-rddc-css/about-apropos/fostering-collaboration/communities-of-practice/>

Paramedic Objective

- To provide a mechanism for the paramedic community to partner with the Canadian Safety and Security Program
- To allow the paramedic community to align its priorities (i.e., National Research Agenda, Standards development, Research Gap analysis, 2006 White Paper) with

- the Canadian Safety and Security Program objectives
- To support successful project sustainability (‘evergreening’), i.e., Recommended Equipment List for CBRNE
- To maximize access to Canadian Safety and Security Program research opportunities and funding
- To provide a mechanism for the paramedic community to partner with the Canadian Safety and Security Program
- To allow the paramedic community to align its priorities (i.e., National Research Agenda, Standards development, Research Gap analysis, 2006 White Paper) with the Canadian Safety and Security Program objectives
- To support successful project sustainability (‘evergreening’), i.e., Recommended Equipment List for CBRNE
- To maximize access to Canadian Safety and Security Program research opportunities and funding

Membership (organizations)

- Paramedic Chiefs of Canada, <http://www.emscc.ca/>
- Paramedic Association of Canada, <http://paramedic.ca/>
- Canadian Emergency Health Services Research Consortium
- Canadian Paramedicine Magazine, <http://www.emsnews.com/>
- Association of CBRNE Technicians, <http://www.acbrnt.ca/english/>
- Canadian Standards Association, <http://www.csa.ca/cm/ca/en/home>

Membership (individuals)

1. Pierre Poirier, Leader, Paramedic Association of Canada
2. Darren Sandbeck, Co-Chair, Paramedic Chiefs of Canada
3. Kelly Nash, Paramedic Chiefs of Canada
4. Doug Socha, Paramedic Chiefs of Canada
5. Gerrard Dinn, Paramedic Chiefs of Canada
6. Ken Luciak, Paramedic Chiefs of Canada
7. Matthew Crossman, Paramedic Chiefs of Canada
8. Chris Hood, Paramedic Association of Canada
9. Greg Furlong, Paramedic Association of Canada
10. Jodi Possia, Paramedic Association of Canada

11. Dave Deines, Paramedic Association of Canada
12. Rene Bernklau, Association of CBRNE Technicians
13. Ian Blanchard, Canadian Emergency Health Services Research Consortium
14. Lyle Blumhagen, Editor, Canadian Paramedicine Magazine
15. Jeanne Bank, Canadian Standards Association

Business Plan development

- Paramedic Chiefs of Canada to provide contracted secretariat services.
- Create a library of existing resources:
 - National Occupational Competency Profile for Paramedics (2001, 2011), <http://paramedic.ca/nocp/>
 - White Paper (2006), <http://www.emscc.ca/docs/EMS-Strategy-Documents.pdf>
 - National Research Agenda (2012), <http://paramedic.ca/wp-content/uploads/2013/01/Canadian-National-EMS-Research-Agenda-Jan2012.pdf>
 - National Research Gap Analysis (2013)
 - Paramedic Standards Framework (2013)

References

White Paper (2006)		
National Research Agenda (2012)	National Research Gaps Analysis (2013)	Paramedic Standards Framework (2013)

Meeting #1 Priority Setting (March 2013)

- Review Paramedic Chiefs of Canada White Paper priorities
- Review evidence based projects including National Occupational Competency Profile for Paramedics, National Research Agenda, Research Gap Analysis, Paramedic Standards Framework
- Review relevant Federal priorities including Centre for Security Science, Canadian Safety and Security

Partnerships Paramedic Community of Practice, continued

Program, and Public Safety Canada
www.publicsafety.gc.ca/prg/em/index-eng.aspx

- Understand the Canadian Safety and Security Program
 - Organizational structure
 - Communities of Practice:
 - Discipline specific
 - Collaborative
- Understand the Canadian Safety and Security Program process
 - Call for Proposals
 - Targeted Investments
- Develop and confirm Paramedic Community of Practice
 - Mandate
 - Terms of Reference
 - Membership
 - Budget
- Develop Paramedic Community of Practice Priorities
- Identify opportunities to link with other Communities of Practice

Meeting #2 (collaborative) Action Plan (June 2013)

- Develop Action Plan based on priorities
- Incorporate priorities into strategic plan for both Paramedic Chiefs of Canada, Paramedic Association of Canada, and the Association of Canadian CBRNE Technicians
- Assign proposal development including
 - Project Charter
 - Funding streams
 - Timelines

Meeting #3 Proposal Review (September-October 2013)

- Develop and Review Proposals
- Solicit/acquire internal Community of Practice endorsement (Association sign off)
- Engage broader research community

Straw Man Proposal (targeted investment) Community Paramedicine Research

- Alignment to Paramedic Chiefs of Canada and Paramedic Association of Canada priorities
- Determine research question(s)
- Assess partnerships (other Communities of Practice, Federal or Provincial agencies)
- Determine pathway from research to standards
- Standards proposal
- Charter and Action Plan development
- Proposal submission

Proposed Community of Practice Research Ideas

- Assess evidence based training
- Create CBRNE training/standards
- Develop a National Paramedic Database
- Develop a National Human Resource Database (Canadian Institute for Health Information, www.cihi.ca/CIHI-ext-portal/internet/EN/Theme/spending+and+health+workforce/cihi010658)
- Develop a National Paramedic Registry
- Develop a National Ethics Board/Panel
- Publish a Peer Review Research Journal (online)
- Create Deployment modelling standards
- Create an exercise design (i.e., PAN AM Games)



Silver Sponsor

PHILIPS

EMSCC Submission

“As a recognized leader in cardiac care, Philips provides the broadest portfolio of emergency care and resuscitation solutions, including training, services, and support. Our continued relationship with the EMS Chiefs of Canada has allowed us to combine our clinical expertise with human insights to develop meaningful innovations that help improve the quality of people’s lives in Canada.”

As a global leader in defibrillation technology, Philips Healthcare solutions support today’s emergency responder in the field, during transport and in hospitals with rugged, advanced solutions. Our best professional-grade AED yet; the HeartStart FR3 is designed to make lifesaving faster, easier, and better. The new HeartStart MRx monitor/defibrillator is built tough with clinical decision support tools that can have a real impact on patient care, workflow and financial outcomes. Because it is built on a scalable platform, the MRx can evolve with your needs. It’s the power of Philips solutions working together that simplifies care delivery

and helps medics and clinicians save more lives and return people to active living.

Iain Burns, CEO and President of Philips Canada

Since joining Philips Electronics Limited in 1980, Iain Burns has made a significant impact on the Canadian division of the leading global health and well-being organization, Royal Philips Electronics. He has gained vast knowledge of the organization by applying his leadership and expertise in a series of senior management positions within the Components, Semi-Conductors, Data Systems, Consumer Electronics, Domestic Appliances, Consumer Lifestyle and Healthcare businesses.

In addition to building exceptionally strong teams, Iain has sustained an impeccable track record of delivering strong sales growth and profitability. He has led Philips Canada in the role of President and CEO since 2001, and has played a critical role in elevating the organization’s profile globally and ensuring its continued success.



Partnerships



Overview

One of the basic premises of healthcare is to do no harm. Paramedics and EMTs across Canada and the U.S. respond to an estimated 40 million emergency medical calls for assistance every yearⁱ. Unfortunately the very system designed to save lives also causes harm and death to patients and providers and yet little is known about how to keep these unintended consequences from occurring.

Paramedics and EMTs are exposed to extremely high-risk profession on par with the risk of death that police officers and firefighters faceⁱⁱⁱ. The study found 114 EMTs and paramedics died in the line of duty with a fatality rate of 12.7 fatalities per 100,000, twice the average rate for other workers. With almost one million paramedics (and EMTs) in Canada and the US should we simply anticipate 127 fatalities every year in the profession? While we know these deaths are due to ambulance crashes, assaults, hazardous materials exposures, and infectious diseases, we must aggressively work together to understand how they happen and implement ways to prevent these avoidable deaths.

The U.S. national Institute of Medicine (IOM) studied medical errors in hospitals and reported that between 44,000 and 98,000 people die each year as a result of medical errors, preventable mistakes, oversights and omissions^{iv}. Similarly, the Institute for Healthcare Improvement (IHI) estimated that 15 million medical mistakes occur in U.S. hospitals each year^v. If we extrapolate these figures into the Canadian and U.S. EMS arena, where 17.9 million people are transported to emergency departments each year^{vi}, 6.7 million medical errors may occur and as many as 39,000 people die due to unintended medical errors in the care of paramedics and EMTs. Regardless of the accuracy of this number, it is unacceptable that anyone is harmed due to avoidable error.

The Emergency Medical Error Reduction Group (EMERG) is the first organization of its kind, focused on

Key stakeholder organizations currently supporting EVENT

- National EMS Management Association
- National Association of EMTs
- Paramedic Chiefs of Canada
- National Association of EMS Officials
- National Organization of State Offices of Rural Health
- National Volunteer Fire Council
- American College of Emergency Physicians
- National Association of EMS Physicians
- National Registry of EMTs
- Continuing Education Coordinating Board for EMS
- Commission on Accreditation of Allied Health Education Programs
- National EMS Memorial Fund
- Committee on Accreditation of Educational Programs for EMS Professions
- Oregon EMS Association
- Pennsylvania Emergency Health Services Council
- National Academies of Emergency Dispatch
- South Carolina EMS Association
- North Dakota EMS Association
- Iowa Emergency Medical Services
- Humboldt General Hospital
- New Hampshire Department of Safety Emergency Medical Services



improving the culture of safety for both patients and providers. It jointly serves the U.S. and Canada and its work spans the entire emergency medical continuum, from 9-1-1 to emergency departments. It has been built from a grassroots effort that began as an anonymous error reporting system called the EMS Voluntary Event Notification Tool (EVENT). Since the launch of EVENT in 2009 it has expanded to include:

- Patient safety events
- Near Miss events
- Line of Duty Death events
- Violence event

None of the work to date could have been done without key partners (see chart above). With the evolution of EMERG, the future of systematically improving the safety of the emergency medical continuum for providers and patients is possible. We need your involvement to make this a reality.

Mission

The Mission of the Emergency Medical Error Reduction Group (EMERG) is to facilitate a cultural shift within the emergency medical community to embrace a fully integrated, rapid and continuous improvement effort that reduces the occurrence and impact of accidents and preventable errors on providers, patients and the populations served.

Vision

The Vision of EMERG is to enable providers, industry and patients to work together to find, implement and sustain improvements that make the care and delivery safer, more effective and ultimately without any preventable error. This will be done by sustainable partnerships through the:

- Collection and transparency of data
- Assimilation and sharing of knowledge
- Understanding of importance, opportunity and impact
- Engagement and empowerment of individuals and organizations across the delivery systems
- Implementation of systemic and process improvement efforts
- Facilitation of continuous learning

Background

- Culture of Safety improvement initiative focused on patient and provider safety
- Developed specifically for EMS providers and all elements of the emergency medical continuum within the context of healthcare and the public

safety environments

- Geographic coverage: U.S. and Canada
- Corporate home: Center for Leadership, Innovation and Research in EMS, a 501(c)3 non-profit organization
- EMS Voluntary Event Notification Tool (EVENT), anonymous, event reporting system established in March 2009 (pre-cursor to EMERG)
- Emergency Medical Error Reduction Group (EMERG) developed out of a need for full reporting, root cause analysis and training for providers. Federally listed as a component Patient Safety Organization (PSO) in November 2012 (PSO# P0133)
- First and only PSO focused on the emergency medical continuum
- Successful and sustainable track record in unifying international improvements in EMS
- Data system:
 - Custom designed by Palomar Data Services specific to the needs of the EMS Culture of Safety initiative
 - Includes data element capabilities for:
 - All EVENT reporting fields
 - Patient safety events
 - Near Miss events
 - Line of Duty Death events
 - Violence event against EMTs and paramedics
 - All NEMSIS data fields
 - All AHRQ Common Formats
- No other PSO has the capability to capture, analyze and protect data in 100% of these areas
- Partnered with the North Carolina Quality Center PSO (NCQC PSO), one of the most established and trusted PSOs for hospital safety
- Active engagement with other PSOs through membership in the Alliance for Quality Improvement and Patient Safety (AQIPS)



Partnerships EMERG continued

- Lobbying and educational efforts specific to emergency medical continuum
- Collaborative effort to complete understanding of how medical outcomes are impacted by work in the emergency medical continuum
- Working to partner with manufacturers and vendors to include and incorporate them in proactive and aggressive Culture of Safety effort

Services

- Collects and analyzes data on all elements that have the potential to cause harm to patients or providers, including but not limited to:
 - Adverse event reporting
 - Near miss and unsafe practices reporting
 - Line of Duty Deaths
 - Violence against providers
 - Opportunities for improvement
- Deploys and facilitates harm reduction mechanisms such as:
 - Safety alerts
 - Gathering of lessons learned hearing of best practices
 - Safe tables, incident debriefing and after action reporting
 - Development and utilization of toolkits
 - Specialized educational offerings
 - Working directly with manufacturers to change design, labeling, and education
- Assists emergency medical provider services, agencies and organizations in development of appropriate policies, procedures, training and support through the various stages of Patient Safety Evaluation System (PSES) development
- Provides full mobile access to (on any internet capable device)*:
 - Mobile report initiation (Time stamp, GPS and basic information upload to tag an event)
 - Full reporting capabilities
 - Policies & procedures and process checklists embedded in reporting tools

- Reminders sent for report completion or follow-up by email and text messages
- Assessment and analysis tools
- Notifications / broadcasts to individuals and/or groups
- Reporting analytics

*Additional mobile functionality available for Android and Apple devices through customizable “apps”

- Enables participating service, agency or organization to share their experiences and learning with others about how to prevent these events and thus improve healthcare quality and promote a culture of safety
- Collaborates with other PSOs to develop educational offerings on current patient safety topics
- Facilitates and provides access to on-going Educational Workshops and Webinars
 - Event Reporting
 - TeamSTEPPS (basic and Train the Trainer)
 - Creating a Fair and Just Culture
 - Leading a Culture of Safety revolution: Leadership essentials
 - Management’s role in creating and supporting a Culture of Safety
 - Root Cause Analysis (provider and safety expert levels)
 - Understanding Human Factors to Improve Safety
 - Lean Transformation
 - Designing Reliable Processes
 - Coaching for Results: Giving Feedback, Mentoring and Role Modeling
 - Improving medication safety practices
 - Basic Safety in Patient Handoffs
 - Involvement in Transitions in Care Improvement Efforts
 - Driving safety
 - Ergonomic Improvement
 - Situational Awareness
 - De-escalation tactics and techniques
 - Health and wellness training and initiatives

Other Initiatives

- Working with multidisciplinary team of national leaders to develop basic set of outcome measures that have indicators through the entire emergency medical continuum that can be tracked and analyzed for a better understanding of system performance
- Building relationships in EMS product manufacturing to engage them in a preventative and aggressive approach to identifying opportunities for improvement

Cost of Participation

- Espouse a belief that there should not be a financial barrier to participation
 - Financial support through partnership with manufacturers and vendors
 - Sliding scale payment and donations from member organizations
 - Philanthropic and other donations accepted (501(c)3)

Data and protection

- EMERG hosts a secure, multi-national (U.S. and Canada) emergency management data collection through contract with Palomar Data Services
- EMERG contracts with emergency medical agencies (9-1-1, first responders, fire departments, emergency medical services (ambulance), air medical agencies, hospitals including but not limited to emergency departments) to collect and analyze data on events
- Data are used to explore patterns and trends related to patient and provider safety
- All data collected locally and that which is uploaded to the PSO is part of Patient Safety Work Product (PSWP) and is protected from legal discovery through the PSO and the Patient Safety Act (2005)
- EMERG analyzes PSWP for performance measurement, comparative data aggregation and analysis using a patient safety and adverse event software system.
- EMERG compares and aggregates PSWP from all participating providers to create reports accessible by each health care provider for purposes of comparative and performance comparison purposes and improvement of safety of care.

- The reports include de-identified aggregate reports that can be used for benchmarking and comparison
- All participating providers have access to their full data set

^fFederal Interagency Committee on Emergency Medical Services (FICEMS), *2011 National EMS Assessment*, U.S. Department of Transportation, National Highway Traffic Safety Administration, 2012, on the Internet at http://www.ems.gov/pdf/2011/National_EMS_Assessment_Final_Draft_12202011.pdf (Accessed February 12, 2013) and

^gCanadian Patient Safety Institute (CPSI) *Patient Safety in Emergency Medical Services: Advancing and Aligning the Culture of Patient Safety in EMS* (2010) <http://www.patientsafetyinstitute.ca/English/research/commissionedResearch/patientSafetyinEMS/Documents/Patient%20Safety%20in%20EMS%20Full%20Report.pdf>

^hMaguire, “Occupational Fatalities in Emergency Medical Services: A Hidden Crisis,” *Annals of Emergency Medicine*, December 2012

ⁱCrossing the Quality Chasm: A New Healthsystem for the 21st Century, ISBN-13: 978-0-309-07280-9

^j<http://www.ihl.org/IHI/Programs/Campaign/>

^kBurt, McCaig, Valverde, “Analysis of Ambulance Transports and Diversions Among US Emergency Departments,” *Annals of Emergency Medicine*, Vol 47, No. 4, April 2006, pg 317-326



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Partnerships

Canadian CBRNE Recommended Equipment List Project Final Briefing for Partner Organizations



REL Project Participants

The Project Technical Committee (TC) includes seven national associations representing police, fire and emergency medical services: the Canadian Association of Chiefs of Police (CACP), the Canadian Association of Fire Chiefs (CAFC), the Emergency Medical Services Chiefs of Canada (EMSCC), the Canadian Police Association (CPA), the International Association of Fire Fighters Canada (IAFF), the Paramedics Association of Canada (PAC) and the Association of Canadian CBRNE Technicians (ACCT). The Canadian Standards Association (CSA Group is also a member of the REL Technical Committee).

REL Project Background

The REL complements earlier government sponsored work with the US National Incident Management System (NIMS). The REL (Project 08-105RD) was funded and supported by the Canadian Safety and Security Program (CSSP) of the CSS.

REL owes much to the full support of the US InterAgency Board (IAB). The REL Project recognized the potential value in “Canadianizing” the US IAB’s Standard Equipment List (SEL) and the Department of Homeland Security’s Authorized Equipment List (AEL). IAB support to facilitate Canadian use of their existing material has been outstanding.

REL Project Description

The final product of the REL is a CBRNE-focused web resource aimed at assisting Canadian tri-service responder organizations to increase response capability where needed and reduce the related risk. It guides the analysis of equipment needed to respond to CBRNE terrorism and offers a listing of CBRNE equipment.

Key related outputs also include: facilitating increased standardization and interoperability, enhancing responder

safety, ensuring increasingly critical compliance with standards and in planning effective training and exercises. The REL resource offers a framework that will enable Canadian communities to more effectively conduct local risk assessment and to interpret that information. Informed use of the REL will assist with effective allocation of limited resources to address primary CBRNE risk priorities.

REL Final Progress Report (Reporting Period–March 2012 to March 2013)

The REL Technical Committee held meetings in April 2012, June 2012, November 2012, January 2013 and a final meeting in March 2013 during this reporting period. These meetings followed up on previously reported work through 2010 and 2011.

REL efforts during this final year have focused on finalizing the development of the accompanying risk assessment documentation, cross referencing applicable Canadian standards and verifying the accuracy and applicability of the CBRNE equipment listings included on the actual recommended equipment list.

The original objective of the REL was to provide a paper-based catalogue type resource for Canadian first responder communities who were looking to build some capability to respond to potential CBRNE events. In January 2012, members on the REL TC made a critically important decision to upgrade the original goal and to commit to deliver the REL through a fully interactive website.

Work throughout this past year saw the completion of a risk assessment resource that is considered foundational to the list. Users can find assistance with developing and conducting a risk assessment and then with the critically important process of interpreting risk assessment data. Further, the resource documentation

of the REL can provide assistance with fiscal planning; it being a guiding principle that any purchasing of CBRNE related equipment must be as a result of identified need and not random in any way. Sound business practice is outlined.

Web developers were then engaged to create a site that would include the above described base content, as well as, the applicable equipment list in a fully interactive format. The virtual Public Safety Partners Resource Centre was the result. The URL for the website is: psprc-crpsp.ca; all base materials being available in French and English. The REL recognizes that approaches to risk assessment vary across Canadian first responder organizations. Offering assessment guidance, the REL addresses risk assessment first in an all-hazards context. A belief that is fundamental to the working beliefs of REL is that the CBRNE threat would be part of the data revealed by many all-hazards based risk assessments carried out in Canada. REL offers assistance in analyzing the CBRNE threat by looking at potential targets along with local geographic realities and their related history through a set of questions.

Using a Capability Based Planning approach, Canadian resource type criteria are provided to help identify what capability an organization should have to respond to a CBRNE event. A data-based reflection on the CBRNE threat in Canada suggests that full “capability” might not be a requirement for many Canadian first responder organizations. But, that should not keep Canadian first responders from preparing for real and present CBRNE threats. How can we begin the planning and preparation in an environment where some threat exists but does not sit first in an all-hazards based list? The REL introduces the concept of building the level of capability that is warranted and is fiscally sensitive. It defines a subset of capabilities, reflective of the Canadian environment, called Levels of Service. The principle of sharing limited CBRNE resources across regions and across partner organization also frames REL messaging.

Going Forward

The funding and support for the REL sits in the Centre for Security Science (CSS) currently co-administered by

DND and PSC. The Technical Committee has identified concern about the sustainability of the REL resource. Additional REL work has also identified the need for a broader, all-hazards list; an undertaking that is being considered as a research and development initiative by the University of Regina in partnership with CSS.

A second related undertaking, the Communities of Practice initiative, currently being undertaken by CSS, is aimed at building a communication forum that is relevant and that can help address sustainability of key R&D projects and ensure wide access to the full responder community. The REL Project Technical Committee has strongly endorsed the need for a coordinating body to consistently represent the broad opinion of the tri-service community in Canada.

Prepared for: REL Technical Committee Partner Organizations



Pierre Poirier, Executive Director of the Paramedic Association of Canada at the United States InterAgency Board—March 20, 2013

Partnerships

PREMERGENCY

Paramedic Training Anywhere, Anytime

In the spring of 2011 Premergency Inc. was awarded funding by the Canadian Police Research Centre (now Centre for Security Science CSS) for two significant projects driving Paramedic investment forward. These projects contributed to the CSS investment priorities of developing standards, protocols, best practices and operational evaluations. Both these projects concluded in December 2012 with great reviews!

The first project included a “Introductory to Conducting Evidence Based Research” workshop in Montreal, Victoria and Regina. The attendees included emergency services professionals from Police, Paramedic and Fire personnel. The outcomes of these workshops were of great success. Premergency brought together these tri-services to enable interoperability between emergency service agencies by educating tri-service personnel in the best practices of evidence based applied science and increasing interaction with Canadian emergency services. Premergency Inc. continues to offer these workshops at a per person cost in cities near you.

The second project included a “Gap Analysis in EMS” which brought together paramedic practitioners and their collective knowledge of the gaps identified in EMS. We conducted an extensive literature search on current gaps in EMS, followed by a volunteer survey of over 1600 paramedics across Canada. The survey was specific in identifying gaps that exist in the paramedic profession. This process of exploration has resulted in a landmark document that will guide opportunities and priorities for further science and technology research for EMS in Canada for years to come. As a result of this work, opportunities have been identified prior to investment by institutions and individuals resulting in a more coordinated, rationalized approach to future research. Dean DiMonte of Premergency Inc believes that “Sharing the outcomes of this project with the Tri-Service organizations and the industry at large has created an opportunity to build upon concepts and questions that are exposed through this project to improve the overall quality of future research. The EMS gaps identified has the potential to transition into

operations through sound benchmarking and increased knowledge of research methodologies.” Premergency Inc. also believes that the paramedic profession have a greater understanding of research priorities and the opportunities to incorporate these into current operations. The establishment of current EMS research gaps will form future funding priorities within emergency services. This project has assisted the CSS as well as other allied agencies in moving the continuum of research agendas forward. For it is only through sound benchmarking, and evidence based practices, that will stand in meeting the operational requirements with public accountability. Premergency Inc. believes it is important that agencies understand the need to have sound robust research methodologies when making such recommendations. These gaps have identified the goals that paramedic services should strive to obtain in meeting the day to day operations. Without a clear and concise gap analysis on potential future research initiatives, the future framework for Science and Technology will not have a clear established direction. This model invites police and fire chiefs associations to adapt and adopt it as appropriate and feed into CSS annual gaps analysis process based upon a common and standardized methodology created by this project.

Dean DiMonte, President of Premergency Inc., is a former advanced care land and flight paramedic from Ontario. Premergency Inc. is a Canadian firm with a strong consultancy practice in EMS; provides learning management systems for paramedic services and conducts evidence based research workshops for professional emergency service organizations. Please visit our website at www.premergency.com

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GROUPE D'INTÉRÊT CANADIEN EN TECHNOLOGIE DE L'INTEROPÉRABILITÉ



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When first responders can't communicate during an emergency or major event, lives can be in jeopardy. In 2007, the Canadian Interoperability Technology Interest Group (CITIG) was created to improve Canadian public safety communications interoperability. Today, CITIG is made up of almost 1400 volunteers from the responder community, all orders of government, non-governmental organizations, associations, academia and industry dedicated to improving the safety and security of first responders, and the people and critical infrastructure of Canada.

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- ◆ works with industry as a bridge, often for free, between industry and first responders in the area of research and development;
- ◆ facilitates information sharing through the CITIG portal, news updates, social media, etc. to raise awareness about interoperability issues and best practices; and
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Brian Field MBA, AEMCA ACP
President

Mr. Field began his EMS career at Toronto EMS in the 80's where he trained in the first class of Advanced Care Paramedics in the city. During the next decade Brian filled several management, research (OPALS) consultant roles, with the majority of his time spent managing Base Hospital programs in Kingston and Toronto. During that time Brian met his current business partner Terence Kuehn where they collaborated on several small database projects that were intended to bring a common database to Base Hospitals. In the year 2000 Brian and Terry decided to join forces and develop a full enterprise level ePCR solution for EMS. 10 years later iMEDIC EMS is a leading ePCR technology in Canada.

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“Crestline is a proud partner of the Paramedic Chiefs of Canada and since its inception our focus has been on helping to develop and promote shared interests within the EMS community. The opportunity to learn and work alongside the industries best has been invaluable in advancing safety and innovative solutions not only in the industry but also within our organization, which is core to our values. Being involved with strategic initiatives such as the advancement of Community Paramedicine also brings a huge sense of pride to all the employees at Crestline and we are fortunate to play a small part in it. Crestline is committed to supporting PCC and the development of healthcare in Canada and abroad.”

Scott Sawatsky
Director of Sales, Service & Marketing

Crestline Coach Ltd.

“The year 2013 marks Crestline’s thirty-eighth anniversary in the EMS vehicle industry. In that time Crestline has firmly established itself as a reliable manufacturer of high quality ambulances. We’ve grown to become a recognized international supplier of emergency vehicles, producing more than 10,000 world class ambulances and specialty vehicles, supplied in over 30 countries around the world. We are very proud of our solid reputation for quality products, strong after sales, service and sound business ethics.”

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Over the years, Crestline has partnered with Manitoba Health on numerous specialty vehicle projects. Crestline is currently working with Manitoba Health to provide customized mobile clinics that will bring reliable healthcare to people in small, northern remote communities. The tailored design of these buses include a reception area, computer workstations, two sound-proof examination rooms and lockable storage areas for medical supplies. These Primary Health Buses will be equipped with a wheelchair lift, electronic medical records, an integrated diagnostic system and an X-ray machine. Primary care registered nurses and practitioners will provide services, such as physical exams, screening, chronic disease management and health education.

Crestline Gives Back To The Community

Crestline proudly sponsors many community events and initiatives that further advance EMS in Canada and abroad including the Toronto EMS Honour Guard and the Manitoba Paramedic Honour Guard, whose mission is to enhance the image and public awareness of EMS. Crestline also supports the program Drug Safety: Smart Choices for LIFE, presented by MD Ambulance Care and Community Safety Net, which provides young people in our community with effective tools for resisting drug use.

Scott Sawatsky, Director of Sales, Service & Marketing



Scott’s Sawatsky’s history with Crestline dates back to its beginning days when his father Ken Sawatsky founded the company with two other entrepreneurs. Joining Crestline in 1989, Scott has been successful in several different roles including Bus Division Leader and Ambulance Division Manager. As the Director of Sales,

Service & Marketing, Scott is a leader and contributor to the overall growth and success of the company.



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Canadian National EMS Research Agenda





Canadian National EMS Research Agenda

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Presidents' Address

EMSCC:

The Emergency Medical Services Chiefs of Canada is proud to have partnered with the Paramedic Association of Canada in the creation of this Canadian National Emergency Medical Services Research Agenda.

This foundational work is an essential artifact as we continue to support the ongoing need to gather reliable data, promote research education for Paramedics, foster research partnerships and ultimately promote a research culture with the Canadian Emergency Medical Services community.

Many thanks to Chief Socha, Chair of the Emergency Medical Services Chiefs of Canada / Paramedic Association of Canada Research Committee, committee members and the Emergency Medical Services community who have tirelessly worked to make the Canadian National Emergency Medical Services Research Agenda a reality.

Many thanks,

Chief Michael Nolan

President, Emergency Medical Services Chiefs of Canada



PAC:

On behalf of the Paramedic Association of Canada, I would like to congratulate Chief Doug Socha and his team on the completion of the Canadian National Emergency Medical Services Research Agenda.

The ongoing collaboration between the EMS Chiefs of Canada and the Paramedic Association of Canada on projects such as this, show what can be accomplished when we work together in areas of common interest. It is an exciting time in the paramedic profession, and the natural next steps of taking this agenda and turning it into additional research projects will help guide us now and into the future.

The Paramedic Association of Canada continues to support this and other projects which will move this profession forward. Thank you for the opportunity.

Chris Hood

President

Paramedic Association of Canada



Nineteen recommendations were found to be important for the future of Canadian EMS research:

Time, opportunities, and funding	1. Strategically market the importance of EMS research to other agencies, health groups and the public.
	2. Strengthen research partnerships between EMS academic centres, systems, regulators, educators and national associations.
	3. Increase funding opportunities for EMS research infrastructure and studies.
	4. Universities should consider EMS providers with graduate training for academic appointments, so they can engage in academic EMS research.
	5. Create opportunities for EMS providers to work in research positions. Review collective agreements if necessary.
Education and mentorship	6. Integrate research literacy and research competencies into EMS providers', managers' and EMS physicians' foundational and continuing education.
	7. Provide scholarships for EMS providers, managers and physicians to take research-based graduate degrees.
	8. Information should be purposefully disseminated to EMS providers about EMS research activities occurring in Canada.
Culture of Research and Research Collaboration in EMS	9. Increase multidisciplinary strategic partnerships to broaden the topics studied in EMS research.
	10. Engage EMS providers and managers early in the research process and include them on study teams.
	11. EMS systems administrators should budget for research projects during annual strategic planning.
	12. EMS researchers must undertake comprehensive knowledge translation initiatives, including delivering research results to EMS providers and administrators.
	13. Evidence-based decision-making should be encouraged in EMS systems. If evidence is lacking, further research should be undertaken.
Structure, Process and Outcome	14. The network of Canadians interested in EMS research should be formalized, possibly as a national EMS research organization or conferences.
	15. EMS researchers and administrators should better inform research ethics boards about the nature of EMS research and request EMS experts participate on review committees.
	16. Highlight EMS research in special issues or sections of the <i>Canadian Journal of Emergency Medicine</i> .
Future Directions for the EMS Research Agenda	17. EMS data should be linked with hospital and other datasets.
	18. Create a national EMS data dictionary of operational and clinical terms.
	19. The EMS Research Agenda needs to be viewed as an ongoing project. An implementation, evaluation and renewal plan should be designed and this process should include mapping gaps in EMS research.

To achieve changes suggested by the participants, strong leadership from national organizations that are stakeholders in Canadian EMS research is required. Developing national strategies will take careful planning and organization. While this agenda may provide important recommendations, the next step is to determine how best to implement the national level recommendations, and what support structures are needed to promote the implementation of local level recommendations. In local settings, EMS stakeholders and researchers should together review the recommendations in this agenda, determine which are most important for their setting, and strategize actions to effect change.

2.2 EMS RESEARCH IN CANADA

Reliable evidence is important to drive decision-making of all types in healthcare, including clinical care and system-wide policy decisions. A foundation of research is required to support an evidence-based approach to the traditional role that EMS has had in the community, as well as its new roles (5).

The research enterprise in EMS, like other health disciplines, is fraught with challenges (15,16). Studies are most often conducted by investigators employed by universities or hospitals. The research process is often slow; rigorously derived evidence often requires more time than is available when system decisions need to be made.

While challenges exist, there is progress occurring in EMS research in several locations. EMS research enterprises – active collaborations between researchers, EMS decision-makers and providers – exist which regularly produce high quality studies. While it is unusual for researchers to be employed directly by EMS systems in Canada, there has been increasing collaboration between research institutes and EMS systems to conduct studies, and EMS physicians and paramedics are increasingly taking the role of lead investigators in EMS studies. Similarly, in some locations local EMS research review committees have been implemented, as have some provincial research consortiums and a national EMS research committee of the EMS Chiefs of Canada. Much can be learned through sharing experiences and lessons learned from these success stories.

This is not the first time work has been done to develop a large-scale research agenda to guide EMS research (15,17), nor is creating a national research agenda unique to EMS (18–20). Research agendas can serve as roadmaps to guiding change to improve the quality and quantity of studies that are conducted, and foster the use of research evidence more effectively.

2.3 EMS RESEARCH AGENDAS FROM OTHER COUNTRIES

A scoping review was conducted to inform participants of the Canadian EMS Research Agenda on work done in other countries. Research agendas were found from Australia (17), the United Kingdom (21), the United States (7,8,15,22–24), and Ireland (25).

In 2002, the **Council of Ambulance Authorities (CAA)** in Australia hosted a national symposium to discuss the development of a national research agenda for EMS. The aims of the symposium were to: “identify gaps in the current research effort, discuss targets for future research, and describe mechanisms for encouraging industry cooperation and fostering the research effort” (p. 1). EMS stakeholders, which included state ambulance authorities and academics among others, convened for a two day symposium (17).

In 2005, the **Department of Health for England (DH)** commissioned a programme of work to build the evidence base for the provision of prehospital care in England. To undertake this work the DH engaged the 999 EMS Research Forum to undertake a study that will review the current evidence in prehospital care, identify gaps in the current evidence, and to prioritize topics for future study (21).

The **US National Research Agenda** was undertaken as a result of recommendations made in the EMS Agenda for the Future (26). The goals of the US National Research Agenda were to identify the impediments to scientific investigation in EMS and make recommendations to improve both the quality and quantity of EMS research (15,22,23,27). **The Pediatric Emergency Care Applied Research Network (PECARN)** is a national research network that performs pediatric emergency care research including prehospital care in the US. They report on the results of a **Pediatric Prehospital Research Agenda**, whose objective was to develop a pediatric-specific prehospital research agenda (24). The **Emergency Medical Services Outcomes Project (EMSOP)** was a US based project tasked with prioritizing conditions for outcomes study in EMS (7). Finally a summary of a workshop session from the **2007 Academic Emergency Medicine** consensus conference: “Knowledge Translation in Emergency Medicine: Establishing a Research Agenda and Guide Map for Evidence Uptake”, provides recommendations for future avenues to narrow the “gap between knowledge and practice in the delivery of emergency medical care in the prehospital setting” (p. 1052) (8).

The **Centre for Prehospital Research** created a **National Prehospital Research Strategy** for the **Prehospital Emergency Care Council (PHECC)** in Ireland. The goals of this strategy were to: gauge current levels of prehospital research activity in Ireland, ascertain the research strengths that exist in the Irish prehospital community, pinpoint the obstacles to high quality research in the prehospital arena, determine the building blocks for a national prehospital research culture, outline an implementation plan

“...there are very few EMS research labs and they are geographically disperse. So there's not great opportunities to mentor individuals that might be interested... So if there were a specific [funding] stream focused on EMS, I would strongly advocate that that needs to be a mentoring package.”

Interview Participant

“...is it important for Canada to move towards a national research agenda?... Yes, yes, absolutely... I mean if there are universal questions that need to be answered, and we can pool ideas and resources and expertise, we will get better science and better answers”

Interview Participant

for the strategy, and identify expected and measurable short and long-term outcomes of implementing this research strategy (25).

While these agendas have numerous commonalities, especially in the barriers to and recommendations for developing EMS research, generalizing results of a research agenda from another country to the Canadian setting requires interpretive caution.

2.4 THE NEED FOR A NATIONAL AGENDA

The identified international agendas described barriers to EMS research, identified opportunities, and made recommendations for the future. Several advances in EMS research in those countries have been credited towards an EMS research agenda. Deriving an agenda unique to the Canadian landscape is likely to stimulate similar advances.

While EMS research efforts in Canada are on the rise, both the quantity and rigour of research varies by region and coordinated advancement of the Canadian EMS research enterprise has been slow. Little is known about barriers and unique enablers that may impact on the growth and development of Canadian EMS research.

2.5 OBJECTIVES OF THE CANADIAN NATIONAL EMS RESEARCH AGENDA STUDY

The purpose of this study is to support and guide Canadian EMS research growth through the exploration of four study objectives:

1. Determine the existing barriers to Canadian EMS research;
2. Identify current strengths and opportunities to conduct and use research in Canadian EMS;
3. Make recommendations to facilitate the development of EMS research in Canada;
4. Identify suggestions of topics for future study.

2.6 MIXED-METHODS METHODOLOGY

To derive this agenda, a mixed-methods research project was employed. This study consisted of three phases:

1. Qualitative interviews of EMS stakeholders;
2. A roundtable session of participants from across the country and;
3. An online, multi-round consensus survey.

This approach of collecting both qualitative and quantitative data to answer one research question is growing in popularity among researchers and funding agencies (28). An essential component of mixed methods studies is effective integration of data; otherwise the project is essentially two independent studies of the same topic (29). In this project, each phase of the study will inform the next stage, and the results will be integrated using triangulation, a process that contributes to the validity of the results (30). During the design phase of this study, the study team established that the topic must be explored qualitatively, to learn more about the barriers and opportunities to Canadian EMS research - a previously unstudied topic. The qualitative data was analyzed, and the results informed the roundtable discussion. The topics discussed during the roundtable were subsequently entered into the Delphi consensus survey, which the participants quantitatively scored for importance to Canadian EMS research. This step-wise approach improves the rigour and trustworthiness of the data, compared to other study designs that could have been chosen.

2.7 STAKEHOLDER SAMPLING STRATEGY

Purposeful sampling was employed to recruit three to four EMS research stakeholders from *a priori* identified key categories from professional roles, organizations and geographical regions. Stakeholder categories based on professional roles were: paramedic researchers, EMS educators, EMS providers, EMS managers, EMS regulators, EMS physicians, and EMS physician researchers (Table 1).

Table 1 Key Stakeholder Groups Recruited to Participate

Stakeholder Group	Definition
Paramedic researchers	paramedics who have dedicated time for research, or are regularly involved in conducting research studies
Paramedic educators	paramedics who are employed by colleges, universities or EMS systems as educators of paramedic students or practicing paramedics
EMS providers	field paramedics/communication officers/flight staff or others who primarily work in the ambulance, air medical transport or other EMS clinical settings
EMS managers	those who supervise or manage the operations of an EMS system
EMS regulators	those who primarily work within a government organization that regulates an EMS system
EMS physicians	physicians who work in the role of medical director, overseeing clinical care in an EMS system
EMS physician researchers	physicians who have dedicated time for research, and their research focus is EMS research
One representative from each of the following organizations:	
<ul style="list-style-type: none"> • The Paramedic Association Of Canada (PAC), The Society For Pre-hospital Educators Of Canada (SPEC) • The Emergency Medical Services Chiefs Of Canada (EMSCC) • The Canadian Organization Of Paramedic Regulators (COPR) • The Canadian Association Of Emergency Physicians – EMS Committee (CAEP-EMS) • The National Association Of EMS Physicians – Canadian Relations Committee (NAEMSP-Can) 	

The term ‘paramedic’ in this research agenda is inclusive of all levels of practicing paramedics in Canada (i.e., basic and advanced life support). Where the term ‘EMS administrators’ is used, it is referring collectively to managers and regulators (i.e., EMS system decision-makers). ‘EMS system’ refers to a one or more than one paramedic service/EMS operations that delivers EMS response to a community or region.

One representative was recruited from each of the relevant national EMS organizations.

In February 2011, all potential participants were emailed a letter from the EMSCC and PAC, explaining the EMS Research Agenda project, and the upcoming opportunity to participate. Subsequent to that, all potential participants received a recruitment letter and were invited to participate in the Newfoundland Roundtable and consensus survey. Participants were recruited to participate in the interviews separately.

Figure 2. Distribution of Participants from Across the Country



2.8 RESEARCH ETHICS APPROVAL

The Capital District Health Authority research ethics board (Halifax, NS) approved the Newfoundland Roundtable session and Delphi consensus survey phases of the study. Written informed consent was obtained at the Newfoundland Roundtable session or via telephone and email for those who did not attend the roundtable. The St. Michael's Hospital research ethics board (Toronto, ON) approved the key informant interview phase of the study, and the sub-sample who participated in this phase provided verbal informed consent prior to the start of the interview. The methods have been published previously (31).

3.2.3 Data Analysis

Two investigators conducted the qualitative data analysis (KND and BLB). Both investigators independently read through each transcript as they were completed, in order to gain an understanding of the issues discussed, and to develop a preliminary coding scheme. New codes were added to the coding scheme as additional transcripts were reviewed and this approach resulted in a final coding scheme. All transcripts were then read a second time, and coded according to the final scheme. The two investigators compared their independent coding for the first four transcripts, and discussed and resolved any areas of divergence in their coding assignments. After this, each investigator coded half of the remaining transcripts. Encoding the information allows investigators to organize the data to identify and develop themes from within it (34).

Thematic analysis is a search for themes that appear to be important to the description of the phenomenon (35). Connecting or clustering of codes is the process of discovering patterns in the data (36), which then become identified as themes. After all transcripts were coded, the two investigators analyzed the data using descriptive thematic analysis methods and identified the major emergent themes (37).

3.3 RESULTS

Thirteen interviews were conducted between March and May of 2011. No further interviews were done, as thematic saturation had been reached and it was unlikely new information would be learned from additional interviews.

Participants included four EMS physician researchers, four EMS providers, two EMS physicians and three EMS educators with an average of 14 years of experience (range 7-29) in EMS and/or EMS research (APPENDIX A).

Four major themes emerged from the analysis.

3.3.1 Need for Education & Training in Research

Participants frequently expressed concern about the lack of a formalized system of research training for EMS providers and managers. Training in research methods and skills such as critical appraisal, are not topics which are covered in standard paramedic curricula so there is a lack of appreciation for the pursuit of research and inadequate preparation to conduct research within the ranks of EMS staff.

In addition, there is an assumption that EMS physicians have research experience or training, however participants suggested this might not in fact be the case. As EMS physicians are usually in leadership positions, this may contribute to a lack of appreciation or support for conducting and using research in EMS services, or for building it into the role of EMS front-line providers and managers. Participants felt that a key component of capacity building is formal education and training and capability at all levels.

3.3.2 Expanding Existing Opportunities

Participants identified that several “excellent shops” (referring to research programs) exist in Canada, which are known to conduct high quality EMS research. However, they perceived there are few formal connections with those programs to leverage research mentorship opportunities for EMS staff.

Theme #1:

NEED FOR EDUCATION AND TRAINING IN RESEARCH

“ I think part of it [a research agenda] needs to be not just education in school but education on research as part of a paramedic system, as part of an EMS system.

And that needs to include education for the medical directors. Because the assumption that the physicians have a grounding in research, coming through and coming into a service, is absolutely wrong.”

Interview Participant

Theme #2:

EXPANDING EXISTING OPPORTUNITIES

“ I would say there are pockets of the country that are doing some really good research. But most of the country, I would say, still is in its infancy.”

“And right from the beginning as well, we felt that the paramedics not only should be involved with research but should start to be the drivers of the research so they sort of take ownership of that”

Interview Participants

Theme #3:
DRIVING THE AGENDA

“I mean one is collaborations are important... we need to keep that collaboration side of things going and that needs someone to drive it. I mean if there are universal questions that need to be answered, and we need a way to pool ideas and resources and expertise, we will get better science and better answers.”

Interview Participant

The need was expressed for researchers to involve EMS providers and managers in studies at early stages, such as during hypothesis generation and study design, rather than just in “worker bee” roles like data collection and study operationalization. However, some participants discussed that it can be complicated to formally involve EMS providers in a study, identifying issues related to contracts, time, compensation and accountability expectations. This perhaps draws attention to how EMS strategic mandates should include research to give the EMS services a way to engage providers in research as part of service delivery without violating any contractual agreements.

3.3.3 Importance of Leadership to Drive the Agenda

The need for and importance of a formal, centralized body to drive EMS research was identified as a key enabler for moving a national research agenda forward. True pan-Canadian collaboration was identified as a requirement and national EMS research-oriented meetings and/or conferences, access to research resources for those working in EMS and an “engine to drive the work” were commonly mentioned. Linking such a centralized group with an existing national organization/association, or collaboration of organizations, seemed to resonate with the stakeholders.

Participants felt that one of the functions of this centralized group could be to improve the research-to-practice process through targeted knowledge translation activities, including increased spread of information about ongoing work and completed research, and guidance and discussion on evaluating and implementing evidence-based guidelines.

3.3.4 Considerations for a National Research Agenda

Participants expressed that establishing a research agenda specific to Canada is necessary to improve the conduct and use of EMS research in this country. Some felt issues unique to the Canadian setting are often not well represented in resources, such as textbooks and training materials. Participants often mentioned how diverse the EMS care and delivery is in Canada, including urban versus rural considerations and the varied patient population.

Participants strongly expressed the importance of ensuring true national representation as the research agenda is developed. They also emphasized how important it is to ensure that recommendations for change collected through this process are actually acted upon to improve Canadian EMS research. Some discussed that certain issues will be important nationally, while others will be more or less vital to local systems. Participants also suggested that the research agenda should not prioritize specific research questions, but rather identify more general topics that should be studied further.

3.4 DISCUSSION ON THE KEY INFORMANT INTERVIEWS

We conducted interviews with various stakeholders to provide a framework for the issues that will be important for the development of an agenda for Canadian EMS research. This baseline study was designed as a starting point for the larger consensus-driven methodology and provided important direction for a subsequent roundtable discussion and Delphi survey.

In the Canadian setting, EMS research has been conducted in pockets throughout the country, so the investigators felt the use of a qualitative methodology to explore perceptions and experiences was an important first step to building a comprehensive EMS research agenda for Canada. To our

knowledge, other EMS research agendas have not used such a mixed methods approach. Other strengths of this study phase include the rigorous approach to conducting the qualitative data collection, including the interviews and analysis being conducted by a non-participant researcher and the focus on analyzing emerging themes grounded in the data as opposed to following a pre-defined framework. The sample size for this study is small, however it was clear that thematic saturation was reached and therefore we are confident that it can be considered representative of the stakeholder population targeted for the purposes of defining initial directional cues. The sub-sample was selected from a larger group of individuals identified as being involved in EMS research and therefore the opinion of EMS providers/administrators who are not currently involved in EMS research would not have been captured. This was not felt to significantly influence the findings of the study phase as the latter group would likely not be able contribute effectively to the specific subject of the current state of EMS research in Canada.

Our findings were underscored by the identification of several key realities about the EMS research enterprise in Canada, which held true across all of the stakeholder groups. First, there is a very strong belief in the need for improved research training. Participants believe strategic supports are required for EMS research in Canada, and research is important to creating knowledge specific to the Canadian context. It appears that the service agreements that exist with the EMS service, their providers or the physicians providing the medical oversight, may not standardly include research as part of the mandate and this limits a paramedic’s ability to regularly participate in research or for EMS services to expend part of their operating budget to evaluate their provision of care. Making research part of the mandate for EMS services, providers and medical directors may provide opportunities for growth and training in EMS research across the nation. Additionally, a lack of collaborative and centralized research infrastructure is seen as a key barrier to ensuring the paramedic field and others who are eager to contribute to EMS science are given support from employers, learning institutions, and senior EMS researchers. Mentorship of budding EMS researchers is required from all levels of the EMS research community.



4. Newfoundland Roundtable



4.1 OBJECTIVE

The objective of the Newfoundland Roundtable was to conduct a face-to-face with all participants, to engage them in active discussion and consideration of the study objectives, prior to the start of the consensus survey. The data generated from the roundtable were evaluated quantitatively in the survey.

4.2 METHODS

June 2011 presented a unique opportunity in which many EMS research stakeholders would be gathering in St. John's NL for three conferences held in collaboration with each other: the *Canadian Association of Emergency Physicians annual conference*, the *EMS Chiefs of Canada annual conference* and the *Horizon Newfoundland and Labrador Transport Medicine annual conference*. An eight hour session was hosted, in which invited study participants gathered. Forty-seven (89% of all study participants) attended the roundtable (APPENDIX A).

Prior to the roundtable, participants received study information, which informed them of the four study objectives that would be discussed:

1. Determine the existing barriers to Canadian EMS research;
2. Identify current strengths and opportunities to conduct and use research in Canadian EMS;
3. Make recommendations to facilitate the development of EMS research in Canada; and to
4. Identify suggestions of topics for future study.

At the Newfoundland Roundtable, these objectives were discussed in small facilitated groups, followed by large group discussion, all moderated by a professional facilitator. Participants were purposefully placed into small groups so each had a mix of stakeholders and geographical regions (Table 3). Small groups were facilitated by members of the study team and by two invited international EMS researchers, Dr. Peter O'Meara (Australia) and Mr. Gary Wingrove (USA).

Table 3. Roundtable session Schedule

Time	Topic
1030 - 1100	Registration
1100 - 1110	Welcome and Introductions Jane Helleur Session Facilitator
1110 - 1125	Setting the Context and Greetings Jan Jensen Canadian National EMS Research Agenda Principal Investigator Chris Hood President, Paramedic Association of Canada Dr. Alix Carter Chair, Canadian Association of Emergency Physicians, EMS Committee Mike Nolan President, EMS Chiefs of Canada
1125 - 1150	Working Lunch: Experiences from the US EMS Research Agenda Lawrence Brown, Investigator, US EMS Research Agenda Results of Qualitative Interviews Dr. Katie Dainty, Qualitative Interviews Lead Investigator
1150 - 1200	Small Group Instructions
1200- 1320	Group Session: EMS Research Barriers In small groups, participants will identify the barriers to the development of Canadian EMS Research. Small groups reported back to large group.
1320 - 1440	Group Session: Strengths and Opportunities In small groups, participants will identify the strengths and opportunities that currently or potentially exist in the development of Canadian EMS Research. Small groups reported back to large group.
1440- 1455	Break

Table 3. Roundtable session Schedule (continued)

Time	Topic
1455 - 1615	Small Group Session: Recommendations for the Future In small groups, participants will formulate recommendations to overcome barriers and capitalize on strengths and opportunities. Small groups reported back to large group.
1615 - 1735	Small Group Session: Suggested Topics for Future Study In small groups, participants will suggest topics for future study in the following 6 research domains: Clinical, health services, health systems, education, professional development and safety. Small groups reported back to large group.
1735- 1815	Full Group Debrief As a large group, we will assess all group reports and identify topics & themes that have emerged. We will also discuss cautions and concerns that must be noted as work on achieving consensus on barriers, strengths and opportunities, recommendations and research priorities proceeds.
1815 - 1830	Session Wrap-up, Delphi Consensus Survey Instructions and Concluding Comments

Each participant was provided a binder that contained study materials, including informed consent forms and worksheets for each small group session. Participants were instructed to document statements they felt were important to each study objective on their worksheets. Small group facilitators recorded statements discussed by their group on flipcharts, and reported this back to the large group at the conclusion of each small group session.

Investigators collected worksheets from every roundtable participant and the flipcharts. Statements were recorded verbatim within each study objective. Duplications were removed. At the roundtable, 280 unique statements were generated (Table 4).

These statements formed the first round of the Delphi consensus survey.

Table 4 statements generated from Newfoundland Roundtable

Study Objective	Content Area	Number of Statements
BARRIERS	Time, opportunities and funding	10
	Education and mentorship	19
	Culture of research and collaboration	18
	Structure, process and outcome of research	14
	EMS and provider practice	8
	Other	4
	Total number of Barriers statements	73
STRENGTHS AND OPPORTUNITIES	Time, opportunities and funding	13
	Education and mentorship	10
	Culture of research and collaboration	1
	Structure, process and outcome of research	23
	EMS and provider practice	14
	Other	1
	Total number of Strengths and Opportunities statements	62
RECOMMENDATIONS	Time, opportunities and funding	4
	Education and mentorship	9
	Culture of research and collaboration	17
	Structure, process and outcome of research	7
	EMS and provider practice	0
	Other	0
	Total number of Recommendations statements	37
SUGGESTED TOPICS FOR FUTURE STUDY	Clinical	19
	Health services/system	23
	Education	20
	Professional development	18
	Safety	19
	Other	9
	Total number of Suggested Topics for Future Study statements	108

5. The Delphi Consensus Survey

5.1 OBJECTIVE

The objective of the Delphi consensus survey was to quantitatively measure participants' opinion of the importance of each statement to Canadian EMS. During this phase, new statements could be suggested and also scored for importance.

5.2 METHODS

5.2.1 Derivation of the Quantitative Delphi Survey Tool

The statements collected and collated from the Newfoundland Roundtable were organized within each study objective (barriers, strengths/opportunities, recommendations and suggested topics), and were then categorized by best fit by two investigators (IEB and LHB) to 6 content areas:

1. time, opportunities and funding
2. education and mentorship
3. culture of research and collaboration
4. structure, process and outcome of research
5. EMS and provider practice
6. other

When there was disagreement on the assignment, a third investigator served as adjudicator (AHT). The purpose of this categorization was to better organize the statements within each study objective into similar groups, to improve ease of use of the survey. The survey tool was pilot-tested by five researchers not associated with the study.

5.2.2 Scoring the Quantitative Delphi Survey Tool

Participants scored the importance of each statement to Canadian EMS research. Scoring was done on a 5-point Likert scale (Table 5).

Table 5 Delphi Survey Likert Scale

1	2	3	4	5
not important	not very important	possibly important	important	extremely important

Participants were also encouraged to suggest new statements and provide comments.

It was determined *a priori* that a statement would be declared "important" if it was rated as "important" or "extremely important" by at least 80% of participants who answered the question. Similarly, a statement was defined as "unimportant" if 80% of participants rated it as "not important" or "not very important" (38,39). Statements that achieved consensus were removed from the Delphi survey for subsequent rounds. For the second and third rounds, a Microsoft Access (2010, Redwood, CA, USA) report was generated for each participant showing the mean scores and the participant's own score for each statement from the previous round (Figure 3). Participants were then able to consider their scoring within the context of others' score and re-score each statement, or keep the score they originally assigned (40-42).

Figure 3 Example of respondent report

CANADIAN NATIONAL EMS RESEARCH AGENDA Delphi Online Consensus Survey - Results from Round 1			
Round 1 Respondent Report -			
Qnumber	Question	Score	Group Mean
1	Paramedics and/or paramedic unions seek compensation to participate in research.	4	3.44
2	Existing funding is only available for specific types of research (e.g., clinical studies).	3	3.48

Conducting the Survey

An electronic survey tool (Opinio Version 6.5.1 © 1998-2012, Objectplanet, Oslo, Norway) was used to deliver the survey. The first round of the survey opened August 1, 2011. Each survey was open for two weeks, with reminder emails sent to non-responders every four days, with a two-week gap between rounds to permit data analysis. The Delphi survey was designed to have a maximum of 4 rounds. Stopping rules were established *a priori*: evidence of respondent fatigue and a substantial decrease in new statements reaching consensus (38).

5.2.3 Data Management

Data was exported into Microsoft Excel (Redwood, CA, USA), and participant characteristics, free text coding, mean scores and percent consensus were calculated after each round of circulation to all respondents.

5.2.4 Data Triangulation

We employed methodological triangulation, which refers to the application and combination of multiple research methodologies in the study of the same phenomenon (30). Triangulation facilitates validation of data through cross verification from more than two sources. We applied this approach to data derived from the baseline qualitative interviews, the roundtable discussion and the Delphi consensus results. (JLJ, KND, IEB) (29,30).

5.3 RESULTS

5.3.1 Sample and response rate

Fifty-three participants from across Canada took part, representing 10/13 Canadian provinces and territories. Each self-identified his/her professional designation as: 36 EMS providers, 16 physicians, and one nurse. The participants represented a cross section of roles, including 20 researchers, 11 physicians and EMS providers (that is, identified their primary role as clinical care), nine educators, two EMS managers, two regulators, and one government emergency management administrator (APPENDIX A). The group had a mean of 19 years of EMS experience (SD 8.9).

Participation was good in all Delphi rounds: 50 (94%) people participated in round one 47 (89%) in round two, and 40 (75%) in round three.

5.3.2 Quantitative results

At the roundtable, 280 unique statements were generated. The Delphi rounds contained 280, 238 and 212 statements respectively; statements in which consensus was achieved were removed from subsequent rounds. Each round also included 9 free-text questions, in which additional statements could be suggested by participants. In round 1, participants provided 78 free text comments, from which 18 new statements were added to the Delphi. In round 2, participants made 53 comments, which resulted in 13 new statements being added to the Delphi. The Delphi consensus survey was terminated after three rounds after assessment of stopping rules.

Triangulation of qualitative interview, roundtable and Delphi phases revealed high data convergence between the initial qualitative findings and the subsequent data gathered during the roundtable and Delphi. Additional themes that were not identified during the baseline interviews arose during the roundtable discussion. These were found to be convergent with the consensus results, indicating high consistency across the data set as a whole.

One hundred and forty one statements achieved consensus as 'important': 20 barriers; 54 strengths/opportunities; 31 recommendations; and 36 suggested topics for future study. No statements achieved consensus as 'unimportant'. All individual statements that achieved consensus are presented in Appen

6. Barriers to Canadian EMS Research

“ I think that a formidable barrier is one of culture and the reluctance to change.

To endorse a research agenda means that you have to accept that research may validate practice or change it. For many paramedics and paramedic services, this represents a large leap in thinking.”

Survey Participant

Twenty statements pertaining to barriers to Canadian EMS research were found to be important. These were consolidated into 10 barriers (Table 6).

Two barriers were focused on *time, opportunities and funding*; specifically regarding a lack of research funding for EMS studies and few EMS research jobs. Three barriers on research *education and mentorship* addressed the lack of education on research in three different points in the career pathway of all those who work in EMS: foundational (entry-to-practice) education, graduate education, and mentorship to conduct research. Three barriers focused on the *culture of research and collaboration in EMS*. A lack of collaboration and effective relationships was found to be important, as was the prioritization EMS research receives. Finally, two barriers regarding the *structure, process and outcome* of EMS research were about obtaining consent from patients in the EMS setting, and the use of EMS and hospital data for research.

Table 6 Identified Important Barriers to Canadian EMS Research

Content Area	Delphi Statement Identifier*	Barriers
Time, Opportunities, and Funding	B-1 B-3	1. There are few funding sources for EMS research projects or for EMS systems to conduct research.
	B-2 B-4	2. There are very few EMS research jobs or research salary support, and there is a lack of dedicated time for EMS providers who are interested to conduct or assist in research.
	B-5 B-7 B-8	3. There is a lack of baseline research knowledge among people who work in EMS (providers, physicians and others). Entry-to-practice paramedic programs often do not include an introduction to research course, and research and evidence based literacy have not been part of the NOCPs.
	B-6	4. There are few opportunities for research mentorships, outside of fellowship programs for physicians.
Education and Mentorship	B-9	5. EMS services often do not support EMS providers to take graduate education in research related degrees.
	B-11 B-16	6. There is little or no relationship between EMS services and academia, and governments, hospitals, universities and EMS services often don't work together to conduct studies.
	B-10 B-12 B-13	7. EMS research studies compete with operational and other priorities within the system, but a clear strategic direction for EMS research doesn't exist, and EMS services do not include EMS research in their strategic planning.
Culture of Research and Research Collaboration in EMS	B-14 B-15	8. EMS providers and managers are often not part of the design and planning phases of research studies. EMS providers often don't understand the importance of studies, which can impact accurate data collection process.
	B-17	9. It can be difficult to obtain informed consent in clinical studies in the EMS setting.
	B-18 B-19 B-20	10. EMS data is sometimes not clean (e.g., data points not well defined, not all users understand what information to enter, etc.), and there are inconsistencies between how different services measure, collect and analyze their data. EMS datasets are difficult to link with hospital data to obtain outcome data and to conduct population/epidemiologic studies.

* The Delphi statements that achieved consensus can be found in Appendix B; NOCPs = National Occupational Competency Profile (participants were referring to the 2002 version)

7. Strengths and Opportunities for EMS Research

Fifty-four statements pertaining to strengths and opportunities were found to be important by participants. These were consolidated into 24 (Table 7).

Six strengths and opportunities focused on *time, opportunities and funding*, including that there are opportunities and successes for EMS research to be funded, including by government, there are many questions to ask in EMS and great opportunities for increased partnerships. Five strengths and opportunities were about *education and mentorship*, which, like the barriers, also focus on research education at different points in the career pathway. Three strengths and opportunities regarding *culture and collaborations* focus on the beneficial experiences and relationships that can be generated from involvement in research. Six strengths and opportunities on the *structure, process and outcome* of conducting EMS research largely focused on opportunities to improve data quality and availability, as well as identified some research structure successes, such as the implementation of local EMS research review committees. Four strengths and opportunities were identified about *EMS and paramedic practice*.

“ My perception is that there is an appetite for change amongst the practitioners and a huge patient population on which no formal research has been done.”

Survey Participant

Table 7 Existing Strengths or Potential Opportunities for Canadian EMS Research

Content Area	Delphi Statement Identifier*	Strengths and Opportunities	
Time, Opportunities and Funding to Conduct Research	S/O-2 S/O-3	1. Large EMS systems can leverage government support for EMS research. Regulators can include incentives and performance measures in operator contracts related to research.	
	S/O-4	2. Large EMS research studies have acquired stable research funding.	
	S/O-5 S/O-10	3. The field of health services research is growing; there is funding available to conduct research on health systems and policy. Existing partnerships can be capitalized on to do this type of research in EMS.	
	S/O-1 S/O-6 S/O-7 S/O-8	4. There are many research questions to ask in EMS: the EMS patient population is quite varied (such as age, location, illness or injuries), certain aspects of EMS have not been well studied (such as EMS communications centres), and the health system is under pressure, leading to re-evaluation of service delivery.	
	S/O-9	5. In some locations, partnerships between EMS services and universities have been established to conduct research.	
	S/O-11	6. Some EMS systems have a researcher on staff.	
	Education and Mentorship	S/O-14 S/O-16 S/O-17 S/O-23	7. A national standard for paramedic education exists, and an opportunity exists to leverage more research competencies in the NOCP and future national exam. EMS educators can be trained on the fundamentals of research, which they can teach their students. Colleges and paramedic training schools have the opportunity to encourage research.
		S/O-18 S/O-20	8. Paramedic training programs are increasingly collaborating with universities, and more degree programs are under development. Research programs and courses specializing in EMS exist in Canada.
		S/O-15 S/O-22	9. EMS providers are obtaining more training and higher education than ever before.
		S/O-12 S/O-19	10. High quality graduate research degrees are offered at Canadian universities, and student research grants are available.
		S/O-13 S/O-21	11. There are established EMS research leaders who provide an opportunity for research mentorship for EMS providers, managers, physicians and others (such as by obtaining grant funding to hire EMS providers to work on studies).

Table 7 Existing Strengths or Potential Opportunities for Canadian EMS Research (continued)

Content Area	Delphi Statement Identifier*	Strengths and Opportunities
Culture of Research and Research Collaboration in EMS	S/O-24	12. EMS research provides opportunities to collaborate with other disciplines (such as business, engineering and social sciences) and among existing EMS research centres and national organizations/associations.
	S/O-25	
	S/O-26	13. Positive experiences with one research study leads to other research studies.
	S/O-27	
S/O-28	14. EMS providers and physicians already have good interdisciplinary collaboration.	
Structure, Process and Outcome	S/O-31	15. There have been milestones in Canadian EMS research that have helped to move EMS research forward, such as success changing legislation restrictive to EMS and EMS research, large studies, and international EMS research consortiums.
	S/O-32	
	S/O-42	
	S/O-34	16. EMS research committees that evaluate and coordinate EMS research projects are becoming more prevalent.
	S/O-35	17. Some EMS systems collect data in the same way, including how data is defined and analyzed, and there is a movement to create a national set of standard data definitions. This allows for EMS datasets to be consolidated and stored in research registries to increase the statistical power of studies. Some EMS systems already have linkages with hospitals for some outcome data (such as ST-elevation myocardial infarction).
	S/O-40	
	S/O-45	
	S/O-36	
	S/O-37	
	S/O-30	18. Many EMS services use electronic charting including computer aided dispatching, patient care charting, and biometric monitoring, which can allow for real-time data analysis and reporting. Performance-based EMS contracts require EMS operators to collect data.
	S/O-33	
	S/O-38	
	S/O-39	
S/O-41		
S/O-44	19. EMS researchers can use existing uniform data sets (such as the Canadian Institute for Health Information).	
S/O-29		
S/O-43	20. EMS-specific evidence repositories exist and research articles can be found online through web-based databases.	
S/O-46		
EMS and Paramedic Practice	S/O-47	21. In many locations in Canada, EMS regulation is moving to a provincial or regional level, which increases standardization.
	S/O-48	22. EMS providers generally comply with protocols and can quickly adopt clinical research protocols.
	S/O-49	23. The EMS setting is unique: paramedics are some of the few health care providers that have direct access to patients in their home environments. The public generally considers EMS providers to be trusted professionals.
	S/O-53	
	S/O-50	24. As the identity of EMS providers evolves, evidence is needed to guide the development of EMS protocols and guidelines especially for new and alternative EMS programs and scopes of practice, such as community/extended care paramedic programs.
	S/O-51	
S/O-52		
S/O-54		

* The Delphi Statements that achieved consensus can be found in Appendix B; S/O = strengths and opportunities; NOCPs = National Occupational Competency Profile (participants were referring to the 2002 version)



8. Recommendations for the Future of Canadian EMS Research

Thirty-one important statements were consolidated into 19 specific recommendations for the future (Table 8).

Five were on *time, opportunities and funding*. They focused on raising awareness of EMS research, developing relationships for research, creating opportunities for those interested to work in research and called for increased funding. Three recommendations were about *education and mentorship*, stating more education should be available for all in EMS on conducting and using research, as well as the importance of funding for research education and providing the results of studies to those working in the field. Six recommendations on *culture and collaborations*, call for increased focus on research by EMS systems, and for researchers to include EMS in their study plans earlier, as well as strengthening of the EMS research network in Canada. The research *structure, process and outcome* recommendations focus on improving the quality of and access to data, EMS engagement of research ethics boards and dissemination strategy. Finally, one recommendation focuses on future direction for the *EMS Research Agenda*.



Table 8 Recommendations for the Future

Content Area	Delphi Statement Identifier*	Recommendations	
Time, opportunities, and funding	R-1	1. Strategically market the importance of EMS research to other agencies, health groups and the public.	
	R-2	2. Strengthen research partnerships between EMS academic centres, systems, regulators, educators and national associations.	
	R-3 R-4	3. Increase funding opportunities for EMS research infrastructure and studies.	
	R-5	4. Universities should consider EMS providers with graduate training for academic appointments, so they can engage in academic EMS research.	
	R-6 R-7	5. Create opportunities for EMS providers to work in research positions. Review collective agreements if necessary.	
	Education and mentorship	R-8 R-9 R-10 R-11 R-12	6. Integrate research literacy and research competencies into EMS providers', managers' and EMS physicians' foundational and continuing education.
		R-13 R-14	7. Provide scholarships for EMS providers, managers and physicians to take research-based graduate degrees.
R-15		8. Information should be purposefully disseminated to EMS providers about EMS research activities occurring in Canada.	
Culture of Research and Research Collaboration in EMS		R-16	9. Increase multidisciplinary strategic partnerships to broaden the topics studied in EMS research.
		R-17 R-18	10. Engage EMS providers and managers early in the research process and include them on study teams.
		R-19	11. EMS systems administrators should budget for research projects during annual strategic planning.
	R-20	12. EMS researchers must undertake comprehensive knowledge translation initiatives, including delivering research results to EMS providers and administrators.	
	R-21	13. Evidence-based decision-making should be encouraged in EMS systems. If evidence is lacking, further research should be undertaken.	
	R-22 R-23 R-24	14. The network of Canadians interested in EMS research should be formalized, possibly as a national EMS research organization or conferences.	
Structure, Process and Outcome	R-25	15. EMS researchers and administrators should better inform research ethics boards about the nature of EMS research and request EMS experts participate on review committees.	
	R-26	16. Highlight EMS research in special issues or sections of the <i>Canadian Journal of Emergency Medicine</i> .	
	R-27	17. EMS data should be linked with hospital and other datasets.	
	R-28	18. Create a national EMS data dictionary of operational and clinical terms.	
Future Directions for the EMS Research Agenda	R-29 R-30 R-31	19. The EMS Research Agenda needs to be viewed as an ongoing project. An implementation, evaluation and renewal plan should be designed and this process should include mapping gaps in EMS research.	

* The Delphi Statements that achieved consensus can be found in Appendix B

9. Suggested Topics for Future Study



This window of opportunity extends from pure clinical based research to more performance based as well.”

Survey Participant

Participants achieved consensus on the importance of 36 topics that require increased research efforts (see Appendix B), in the following content areas:

- **Clinical topics** n = 11
- **Health Services/Systems topics** n = 10
- **Education topics** n = 6
- **Safety topics** n = 6
- **Professional Development topics** n = 3

These topics were broad, including the study of time-sensitive interventions, resource utilization best practices, measuring competency, and improving both patient and provider safety through system engineering and cultural shifts.

Importantly, the list of suggested topics should not be viewed as exclusive: the absence of something from the list does not mean that it is unimportant or low priority. The list of suggested topics identifies areas of EMS in need of *additional* or *increased* research attention. It does not suggest that those areas of EMS already receiving research attention should receive less (or no) future attention.

10. Study Limitations

At the roundtable session, there were more participants with a primary role as EMS provider or administrator compared to physicians and researchers, which may have overrepresented those perspectives. This may have been compensated for in the Delphi process, which had improved physician representation and allowed participants to add statements. Certain provinces appear to be overrepresented (Ontario and Nova Scotia), likely a result of sampling bias on the part of investigators identifying potential participants. We suggest that the effect overrepresentation had on the conclusions of the agenda were small, and given how comprehensive the methods were the breadth of EMS research in Canada was likely addressed.

Some participants had difficulty applying the Likert scale to statements they felt were untrue in their local setting. Participants were reminded that the statement may be true somewhere in Canada, and were instructed to score the item as unimportant if they believed it was not true or possible. This approach might have limited the ability of local issues to achieve consensus. While this Agenda focuses on issues that are shared by many in the country, it does not suggest that local issues that did not achieve consensus are unimportant.

Finally, while every effort was made to select a purposeful sample of Canadian EMS research stakeholders, it is unknown how the conclusions were affected by the few participants who chose not to participate. It is possible that certain groups within the sample were more prone to favour the face-to-face discussion, whereas others may be more inclined to complete the survey, which may have influenced the final results of the study.



11. Summary of Findings



...having Canadian-based research in EMS would actually be very valuable since as a Canadian educated paramedic, all we ever see from textbooks, it all comes out of the US...So having Canadian-based research would actually benefit Canadians themselves because it would be more tailored to our reality.”

Interview Participant

11.1 SUMMARY OF CONTENT AREAS

In terms of *time, opportunities and funding*, participants perceive research education and EMS-specific funding opportunities are limited, as are research positions and opportunities for providers to develop their own research ideas. In some locations, strong collaborations between EMS systems and universities specializing in prehospital research exist, and there are some examples of success, such as obtaining funding for large studies and building incentives into EMS operations contracts to conduct research. The limited availability of EMS literature and the emphasis in Canada on evidence-based medicine and efficient health care resource utilization may create research opportunities for providers, systems and researchers.

For *education and mentorship*, participants identified that EMS providers often lack foundational knowledge on research and critical appraisal, which has not typically been taught in entry-to-practice paramedic programs. This has been addressed in the 2011 version of the National Occupational Competency Profile (2), with a specific competency on evidence-based practice (1.2c), which should lead to the delivery of research curriculum

in standard EMS provider training. However the NOCPs only address EMS provider education, and do not apply to managers, physicians or others. Few EMS providers or EMS physicians pursue specific research training or graduate studies, possibly in part because of a perceived lack of opportunities. However, participants identified that more providers are obtaining undergraduate degrees, and that some education institutions offer undergraduate paramedic degrees, which are accepted for entry to graduate programs. Participants also identified several universities with strong prehospital research programs and mentors, have led to several EMS researchers achieving university appointments, research grants and peer-reviewed publications. In some EMS systems, research mentorship has started at the individual project level, by hiring providers into research assistant or coordinator roles, and guiding them through the research process, essentially providing on-the-job training in research.

Related to the *culture of research and collaborations*, participants expressed the need for value to be placed on research when competing with other system pressures. A culture of appreciation for research is needed to ensure EMS operations strategic planning and funding includes resources and willingness to do research, and partnerships to pursue and facilitate high quality research. This type of culture may lead to improved research participation by providers, including enrolment, protocol compliance, and data quality and faster translation of evidence into practice.

EMS data was identified as important to *structure, process and outcome* yet was viewed to be of variable quality and be difficult to link to other datasets to measure outcomes. Data quality was seen as improving, with an increase in computerized dispatch and electronic charting systems, many of which can include biometric data uploaded from defibrillators. The challenge of obtaining consent in emergency settings was also identified. In several locations, EMS research committees that evaluate and coordinate EMS research projects are becoming more prevalent, which may help improve EMS research strategic planning, better study designs, reduce the time it takes to start projects and coordination of timing of similar studies, and foster collaborations.

Participants didn't identify any specific barriers or recommendations related to *EMS and paramedic practice*, but did identify several opportunities and current strengths that could foster Canadian EMS research. Participants felt the EMS setting is unique, and the fact that EMS providers access patients in their home environments can provide interesting research opportunities. EMS care is evolving, including movement from structured protocols to evidence-based guidelines. EMS providers are also working in new roles, such as community paramedicine, and in multi-disciplinary teams, the advancement of which requires research. Other items that were identified as strengths in conducting research included: in many Canadian locations, EMS delivery is regulated at a regional or provincial level, which increases standardization; EMS providers are generally trusted by the public, and EMS providers can quickly adapt to research protocols because they are good at complying with clinical protocols.

11.2 RECOMMENDATIONS FOR THE FUTURE

The most important output from the results of the Canadian National EMS Research Agenda study is the recommendations for the future. These recommendations can be acted on locally, regionally and nationally to improve Canadian EMS research.

Participants strongly supported evidence-based clinical practice and operations in EMS. While great advances have been made in Canadian EMS research, there is little evidence available to support or refute most established EMS practices, not to mention newly implemented interventions and evolving EMS programs. To improve this, participants outlined recommendations to increase the amount and rigor of Canadian EMS research. An important message that emerged from recommendations in the *time, opportunities, and funding* content area was the importance of **partnerships** in developing the EMS research enterprise. All recommendations arising from this content area involve fostering partnerships, or increasing the opportunity for linkages and teamwork across the spectrum of EMS research stakeholders (e.g., academic centres, systems, regulators, education institutions and national associations, etc). Another clear message, outlined from the *education and mentorship* recommendations, was the need for further research **education** for those that work in EMS. Providers, physicians, administrators and educators were identified as requiring more education on research literacy and process, starting at the entry-to-practice level and continuing throughout all career pathways. The importance of partnerships between EMS and academic institutions to design and conduct research was underscored in recommendations made from the culture of research and research collaboration in EMS content area. It was recognized that EMS systems and their staff are essential for study planning and implementation, and also as users of research results; participants recognized that EMS systems need to embed research within the organizational culture. Finally, the importance of EMS data was delineated in the *structure, process and outcome* content area. EMS data must be valid, reliable within individual systems and between areas of Canada, and linkages to patient outcome data must be routinely available to EMS administrators and researchers to enable data driven decisions.

These improvements are likely intertwined within EMS systems; as one area of EMS develops, it stands to reason that others would evolve as well (Figure 4). For example, if research education for providers, EMS physicians, and EMS administrators was improved, this knowledge might lead to a change in organizational culture, through which research is supported and participation becomes the norm. This change in culture may lead to a focused emphasis on fostering research partnerships, which may subsequently result in the strengthening of data collection and linkage processes.

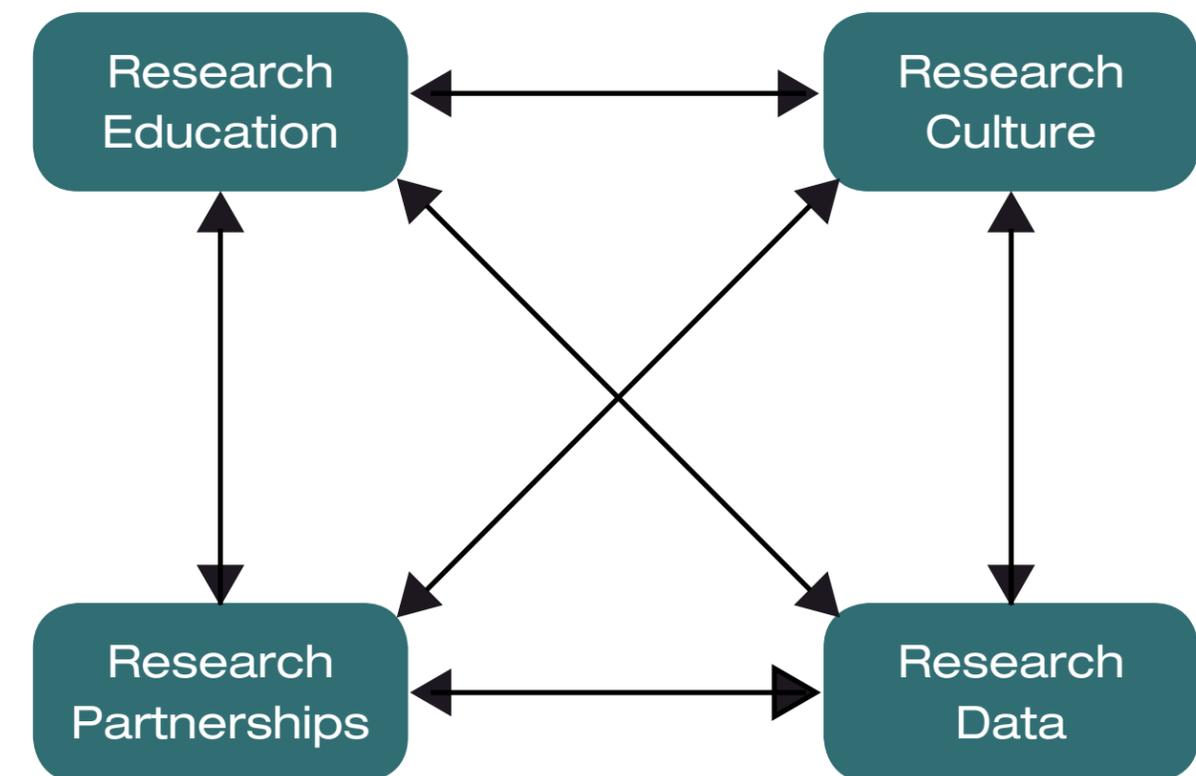
The key messages arising from the recommendations made in this Canadian study echo many of the recommendations made from the US, Australian, and Irish research agendas (15,17,21,25,31). Specifically, improving EMS data was listed in both the US and Irish agendas, enhancing research education was listed in the US, Australian, and Irish agendas, building a research culture was listed in the Irish agenda, and finally fostering partnerships to enhance the research enterprise, although not explicitly listed in the US, Australian and Irish agendas, would likely occur as a result of implementing recommendations.



“Paramedics don't have a clear direction... a lot of paramedics have excellent, excellent research ideas but they don't know where to go with them.”

Interview Participant

Figure 4. Major Themes for Canadian EMS Research



12. The Future

“But really, I think that we can overcome the fragmentation. There’s enough information and enough people, sort of a critical mass now to bring it together nationally and say, okay, here’s what we have, here’s how we should do business, here’s what we need, here’s what we think.”

Interview Participant

12.1 NATIONAL IMPLEMENTATION

To achieve changes suggested by the participants will require strong leadership from national organizations that are stakeholders in the EMS research process. Developing national strategies to strengthen the EMS research enterprise will take careful planning and organization. While this agenda may provide important recommendations, the next step is to determine how best to implement the national level recommendations, and what support structures are needed to promote the implementation of local level recommendations. This can only occur with a strong commitment from, and partnership between, national EMS research stakeholder groups.

12.2 LOCAL IMPLEMENTATION

Continued advancement of EMS research will depend on the actions of individuals and groups in response to these recommendations. No one group can enact all the recommendations set forth in this agenda; a coordinated and collaborative approach is necessary, both on a national and local level. Those

who make up local EMS research enterprises across the country, which include regulators, managers, medical leadership, academics, educators and providers should review the recommendations in this agenda, determine which are most important for their setting, and strategize priorities for action.

Figure 5. Suggestion for how to determine action for each Recommendation

Recommendation #15.				
EMS researchers and administrators should better inform research ethics boards about the nature of EMS research and request EMS experts participate on review committees.				
Is this important to our system/institution/association?				
Consider if this recommendation is relevant to your setting				
1	2	3	4	5
How feasible is it to put this in place?				
Consider resources, time and collaborations required.				
1	2	3	4	5

Each recommendation should be discussed relative to the local context, and scored first for importance (consider if the recommendation is relevant and if it is an issue that needs to be addressed or improved), and then for feasibility (consider resources required) (Figure 5).

12.3 PERFORMANCE OF THE RESEARCH AGENDA

Participants urged measurement of the implementation and effect of the recommendations, and suggested the agenda itself be revisited in five or ten years. Of the EMS research agendas reviewed from around the world, documents reporting measurement of the effect of the agenda on increasing EMS research were not located.



13. Conclusion

The purpose of this study was to identify current *barriers, strengths and opportunities* to the conduct and use research in Canadian EMS, in order to *make recommendations* to enhance the development of EMS research in Canada. The resultant consensus-based key messages should inform strategic direction locally, regionally and nationally to further advance Canadian EMS research.



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15. Appendices

APPENDIX A. Participant Demographics in Each Study Phase

	All Participants (n=53)	Interviews (n=13, 25%)	Roundtable (n=47, 89%)	Delphi round 1 (n=50, 94%)	Delphi round 2 (n=47, 89%)	Delphi round 3 (n=40, 75%)
Primary Professional Type	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Paramedic	35 (66.0)	7 (53.8)	35 (74.5)	35 (70.0)	30 (63.8)	27 (67.5)
Physician	16 (30.2)	6 (46.2)	10 (21.3)	13 (26.0)	15 (31.9)	11 (27.5)
Paramedic & Nurse	1 (1.9)	0 (0)	1 (2.1)	1 (2.0)	1 (2.1)	1 (2.5)
Nurse	1 (1.9)	0 (0)	1 (2.1)	1 (2.0)	1 (2.1)	1 (2.5)
Role	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
Researcher	17 (32.0)	4 (30.1)	14 (29.8)	16 (32.0)	16 (34.0)	13 (32.5)
Educator	9 (17.0)	3 (23.0)	9 (19.1)	9 (18.0)	9 (19.1)	7 (17.5)
Researcher & Educator	3 (5.7)	0 (0)	3 (6.4)	2 (4.0)	3 (6.4)	1 (2.5)
EMS Manager	10 (18.9)	2 (15.4)	10 (21.3)	10 (20.0)	10 (21.3)	8 (20.0)
EMS Regulator	2 (3.8)	0 (0)	2 (4.2)	2 (4.0)	2 (4.2)	2 (5.0)
Paramedic only	5 (9.4)	4 (30.8)	5 (10.6)	5 (10.0)	2 (4.2)	3 (7.5)
Physician only	6 (11.3)	0 (0)	3 (6.4)	5 (10.0)	5 (10.6)	5 (12.5)
Emergency Management Administrator	1 (1.9)	0 (0)	1 (2.1)	1 (2.0)	0 (0)	1 (2.5)
Province or Territory	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Alberta	7 (13.2)	2 (15.4)	5 (10.6)	6 (12.0)	7 (14.9)	7 (17.5)
British Columbia	4 (7.5)	1 (7.7)	4 (8.5)	3 (6.0)	4 (8.5)	2 (5.0)
Manitoba	1 (1.9)	0 (0)	1 (2.1)	1 (2.0)	1 (2.1)	1 (2.5)
New Brunswick	3 (5.7)	0 (0)	3 (6.4)	3 (6.0)	3 (6.4)	3 (7.5)
Newfoundland and Labrador	1 (1.9)	0 (0)	1 (2.1)	1 (2.0)	1 (2.1)	0 (0)
Nova Scotia	9 (17.0)	2 (15.4)	8 (17.0)	8 (16.0)	8 (17.0)	7 (17.5)
North West Territories	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Nunavut Territory	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Ontario	22 (41.5)	5 (38.5)	20 (42.5)	22 (44.0)	18 (38.3)	16 (40.0)
Prince Edward Island	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Quebec	4 (7.5)	2 (15.4)	3 (6.4)	4 (8.0)	3 (6.4)	3 (7.5)
Saskatchewan	1 (1.9)	1 (7.7)	1 (2.1)	1 (2.0)	1 (2.1)	1 (2.5)
Yukon Territory	1 (1.9)	0 (0)	1 (2.1)	1 (2.0)	1 (2.1)	0 (0)

APPENDIX B. Included Consensus Items from Delphi Surveys

Content Area	Delphi Statement Identifier	Statement
BARRIERS		
Time, Opportunities and Funding to Conduct Research	B-1	There are few funding sources for EMS research (both salary support and grants for projects).
	B-2	There is a lack of dedicated time for EMS providers interested in pursuing their own research, or to assist in research projects.
	B-3	Government/regulators don't give EMS services funding to conduct EMS research.
	B-4	There are very few EMS research jobs.
Education and Mentorship	B-5	There is a lack of baseline research knowledge among people who work in EMS (providers, physicians and others).
	B-6	There are few opportunities for research mentorships, outside of fellowship programs for physicians.
	B-7	Entry-to-practice paramedic programs often do not include an introduction to research course.
	B-8	Research is not well covered in the current NOCPs, especially important skills such as critical appraisal of the peer reviewed literature (evidence based literacy).
Culture of Research and Research Collaboration in EMS	B-9	EMS services often do not support EMS providers to take graduate education in research related degrees.
	B-10	EMS research studies compete with operational and other priorities within the system.
	B-11	There is little or no relationship between EMS services and academia (including universities, research ethics boards, methodologists, etc).
	B-12	A clear strategic direction for EMS research doesn't exist.
	B-13	EMS services do not include conducting EMS research as a part of their strategic planning.
	B-14	EMS providers often don't understand the importance of research studies, which can impact accurate data collection process.
	B-15	EMS providers are often not part of the design and planning phases of research.
	B-16	Governments, EMS services, hospitals and universities don't work together to conduct EMS research.
Structure, Process and Outcome of EMS Research	B-17	It can be difficult to obtain informed consent in clinical studies in the EMS setting.
	B-18	EMS datasets are difficult to link with hospital data to obtain outcome data and to conduct population/epidemiologic studies.
	B-19	EMS data is sometimes not clean (e.g., data points not well defined, not all users understand what information to enter, etc).
	B-20	EMS services measure, collect and analyze their data inconsistently.
STRENGTHS AND OPPORTUNITIES		
Time, Opportunities and Funding to Conduct Research	S/O-1	In Canada, the health care system is under pressure and re-evaluation is taking place (such as the upcoming 2014 Health Accord), which provides an opportunity for EMS research.
	S/O-2	Large EMS systems can leverage government support for EMS research.
	S/O-3	Regulators can include incentives and performance measures in operator contracts related to research.
	S/O-4	Large EMS research studies have acquired stable research funding.
	S/O-5	Funding/grants exist for research on policy and health systems, and partnerships between researchers and decision makers.
	S/O-6	An opportunity exists to increase the amount of research done in and on EMS communications centres.
	S/O-7	There are many research questions to ask in EMS.
	S/O-8	The EMS patient population is quite varied (such as age, location, illness or injuries).
	S/O-9	There are existing partnerships between EMS services and universities to conduct research.
	S/O-10	Health services research is growing as an important aspect of research.
	S/O-11	Some EMS systems have a researcher on staff.

Content Area	Delphi Statement Identifier	Statement
Education and Mentorship	S/O-12	High quality graduate research degrees are offered at Canadian universities.
	S/O-13	There are established EMS research leaders who provide an opportunity for mentorship.
	S/O-14	EMS educators can be trained on the fundamentals of research, which they can teach their students.
	S/O-15	EMS providers receive more training and continuing education than ever before.
	S/O-16	A national standard for paramedic education exists (the National Occupational Competency Profile).
	S/O-17	The opportunity exists to leverage more research competencies in the NOCP and future national exam.
	S/O-18	Paramedic training programs are increasingly collaborating with universities, and more paramedic degree programs are under development.
	S/O-19	Some grants exist that support research/graduate training.
	S/O-20	Research programs and courses specializing in EMS exist in Canada.
	S/O-21	Researchers have the opportunity to incorporate mentorship into their grant funding by hiring EMS providers as research assistants.
	S/O-22	More EMS providers are returning to school for higher education.
S/O-23	Colleges and paramedic training schools have the opportunity to encourage research.	
Culture of Research and Research Collaboration in EMS	S/O-24	EMS research provides opportunities to collaborate with other non-health sciences professions such as business, engineering and social sciences.
	S/O-25	Partnerships exist between EMS research centers.
	S/O-26	An opportunity exists for national organizations/associations to collaborate to conduct and support EMS research.
	S/O-27	Positive experiences with one research study leads to other research studies.
	S/O-28	EMS providers and physicians already have good interdisciplinary collaboration.
Structure, Process and Outcome	S/O-29	EMS researchers can use existing uniform data sets (such as the Canadian Institute for Health Information).
	S/O-30	Biometric monitoring is used more often in EMS systems (such as CPR monitoring).
	S/O-31	Some provinces have had success changing legislation that was restrictive to EMS and EMS research.
	S/O-32	There have been milestones in Canadian EMS research that have helped to move EMS research forward (such as the Ontario Prehospital ALS Study).
	S/O-33	Real-time data analysis and reporting is possible.
	S/O-34	EMS research committees that evaluate and coordinate EMS research projects are becoming more prevalent.
	S/O-35	There is a movement to create a national standard EMS data set.
	S/O-36	EMS datasets can be consolidated and stored in research registries to increase the statistical power of studies.
	S/O-37	Some EMS systems already have linkages with hospitals for some outcome data (such as ST-elevation myocardial infarction).
	S/O-38	Most EMS systems use computer-aided dispatching, so all dispatch data is collected electronically.
	S/O-39	A wealth of EMS data exists (dispatch data, patient records, etc).
	S/O-40	Some EMS systems collect data in the same way, including how data is defined and analyzed.
	S/O-41	Many EMS services use electronic charting.
	S/O-42	There have been multi-centre international EMS studies, and an ongoing EMS research consortium (the Resuscitation Outcomes Consortium).
	S/O-43	EMS-specific evidence repositories exist (such as the Dalhousie University Prehospital Evidence-based Protocols project).
	S/O-44	Performance-based EMS contracts require EMS operators to collect data.
	S/O-45	Many leaders in EMS are aware of the need for common data definitions across services.
	S/O-46	Research articles can be found online through web-based databases.

Content Area	Delphi Statement Identifier	Statement
EMS and Paramedic Practice	S/O-47	In many locations in Canada, EMS regulation is moving to a provincial or regional level, which increases standardization.
	S/O-48	EMS providers generally comply with protocols and can quickly adopt clinical research protocols.
	S/O-49	The public generally considers EMS providers to be trusted professionals.
	S/O-50	There is some movement in EMS practice from protocols to more evidence-based guidelines.
	S/O-51	EMS providers are increasingly working in interdisciplinary teams to provide non-traditional care.
	S/O-52	The evolving identity of EMS providers creates a role for research.
	S/O-53	The EMS setting is unique: paramedics are some of the few health care providers that have direct access to patients in their home environments.
	S/O-54	Evidence is needed to guide the development of new EMS programs, such as community/extended care paramedic programs.
	RECOMMENDATIONS	
Time, Opportunities and Funding	R-1	National associations, EMS systems and EMS research centres must strategically market the importance of EMS research to other agencies, health groups and the public.
	R-2	Partnerships between EMS academic centres, systems, regulators, schools and national associations should be strengthened to increase support for EMS research.
	R-3	National and provincial health granting agencies should have a special call for EMS research studies.
	R-4	EMS leaders and researchers should lobby provincial and federal governments for financial support to conduct EMS research.
	R-5	Universities should consider EMS providers with graduate training for academic appointments, so they can access university services (such as research grant accounts).
	R-6	EMS provider collective agreements should permit paramedics to take alternate positions so they can work in research, but remain part of the union.
	R-7	EMS systems should have an EMS researcher position on their staff.
Education and Mentorship	R-8	EMS systems should integrate research evidence into paramedic continuing medical education.
	R-9	Integrate research evidence into all aspects of EMS provider and physician training.
	R-10	Researchers should offer EMS providers, physicians, administrators and others workshops on conducting research and using research evidence.
	R-11	As paramedics progress through career training (PCP, ACP, CCP, management or other specialized roles), increasingly complex research competencies should be introduced.
	R-12	Upper level EMS administrators should increase their knowledge of research and critical appraisal.
	R-13	EMS research centres should create fellowship and graduate student opportunities focused on EMS research.
	R-14	EMS systems should provide scholarships for EMS providers, physicians, administrators to undertake graduate education.
	R-15	Information on existing EMS research groups in Canada should be disseminated to front-line paramedics
Culture of Research and Research Collaboration in EMS	R-16	EMS administrators and researchers should increase strategic partnerships with non-EMS groups to conduct research.
	R-17	EMS researchers should engage EMS providers and managers early in the research process (such as at the design phase).
	R-18	All EMS research study teams should include an EMS provider.
	R-19	EMS systems (regulators and operators) should budget for research projects during annual strategic planning.
	R-20	EMS researchers must take a more comprehensive approach to knowledge translation, including delivering the results of research to front-line staff.
	R-21	EMS physicians, managers and providers must encourage the use of evidence-based decision making in implementing a new program, device or drug in their system. If sufficient evidence is not available, a study should be conducted.
	R-22	National EMS associations should have a regular conference together.

Content Area	Delphi Statement Identifier	Statement
Culture of Research and Research Collaboration in EMS	R-23	Establish a national research conference for EMS research.
	R-24	The existing (somewhat informal) network of EMS researchers/people interested in EMS research should be strengthened and built upon, to increase collaboration and idea-sharing.
Structure, Process and Outcome	R-25	EMS researchers and EMS administrators should engage research ethics boards to educate them on the unique nature of EMS research, and ask them to have EMS experts on their review committees.
	R-26	The <i>Canadian Journal of Emergency Medicine</i> should have an annual special edition on EMS, or special section in each issue.
	R-27	EMS administrators and researchers should lobby provincial governments and health authorities to provide funding and expertise to link EMS, hospital and other datasets.
	R-28	A national EMS data dictionary must be completed and universally utilized.
Future Directions for the EMS Research Agenda	R-29	The gaps that exist in EMS knowledge should be systematically mapped out, to identify research priorities.
	R-30	A plan to renew the EMS Research Agenda in 5 or 10 years needs to be designed.
	R-31	A plan to implement the Canadian National EMS Research Agenda needs to be designed, along with an evaluation method to measure its effects.
SUGGESTED TOPICS FOR FUTURE STUDY		
Clinical	P-1	Links to clinical outcome data (including hospital, medical examiner).
	P-2	Implementation of evidence-based protocols (such as Canadian C-spine Rule).
	P-3	Clinical errors.
	P-4	Use of research evidence to create clinical protocols/guidelines.
	P-5	Clinical outcomes survival and other outcome measures.
	P-6	Sepsis
	P-7	Clinical prediction rules/decision rules.
	P-8	Paramedic clinical decision-making.
	P-9	Geriatric care.
	P-10	Respiratory distress (interventions such as continuous positive airway pressure).
	P-11	Data collection and definitions
Health Services/ Systems	P-12	Destination decisions non-transport and alternate referrals by EMS providers.
	P-13	Regionalization of care for specific conditions in Canada (e.g., stroke, ST elevation myocardial infarction, sepsis, trauma).
	P-14	Role of EMS in health protection and promotion.
	P-15	Cost effectiveness of specific EMS programs (such as helicopter EMS, community paramedicine, etc).
	P-16	Deployment/System Status Management.
	P-17	ED overcrowding and ambulance offload delay time interval standards, interventions.
	P-18	Extended scope/community paramedicine programs.
	P-19	Triage by EMS providers.
	P-20	Best placement of advanced/basic crews (rural vs urban).
	P-21	The role of the paramedic in various health settings.
Education	P-22	Advanced decision-making training.
	P-23	Evidence-based practice/critical analysis training.
	P-24	Knowledge translation in EMS.
	P-25	Communication skills training.
	P-26	High fidelity simulation.
	P-27	Competency assessment/testing.

Content Area	Delphi Statement Identifier	Statement
Safety	P-28	Most common errors, errors with biggest impact on safety & clinical outcome.
	P-29	Error, adverse event reporting (including never events that should never occur).
	P-30	Transfer of care/information loss in hand-over.
	P-31	System interventions to improve patient & provider safety.
	P-32	Ergonomics, lifting, equipment design.
Professional Development	P-33	Paramedic injury (including injury prevention programs).
	P-34	Maintenance of competence.
	P-35	How to conduct high quality research in EMS.
	P-36	Using research to inform policy and non-clinical decisions.



For more information, please contact:

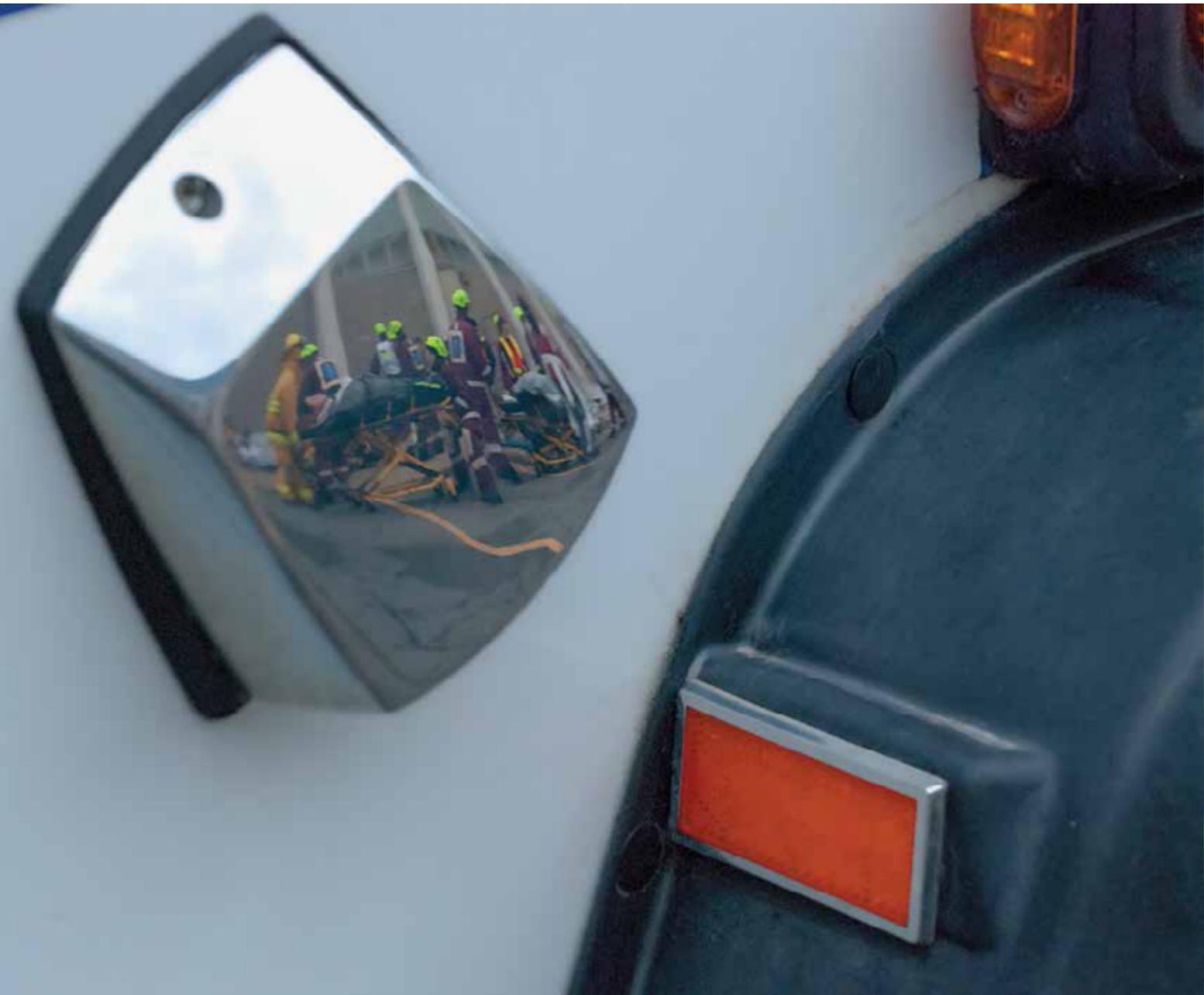
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