EMERGENCY MEDICINE: CHANGE AND CHALLENGE

The Canadian Association of Emergency Physicians’ Submission to the Commission on the Future of Health Care in Canada

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November 15, 2001

Commissioner Roy J. Romanow, Q.C.
Commission on the Future of Health Care in Canada
P.O. Box 160, Station Main
Saskatoon, SK S7K 3K4

Dear Commissioner Romanow;

“There’s no doubt the Canadian health care system is straining to meet increased demands and rising expectations. Clearly we need to find ways to better integrate the work of health care providers and improve our ability to measure results.” Your speech to the Canadian Federation of Nurses’ Unions in June of this year well voices the concern of all Canadians, especially of those who witness the effect of this strained system on a daily basis.

The Canadian Association of Emergency Physicians wants to contribute to your mandate to bring new meaning to the principles that support our health care system. To this end, we have prepared a series of essays that expound the crisis existing in emergency departments across Canada, and our recommendations to ensure the future of health care in Canada does not continue to be threatened.

Surveys conducted by the Canadian Medical Association show Canadians place great value on emergency services. However, these services only receive a ‘C’ grade from the public, as recent polls indicate. This low grade reflects the Canadian health care system in general, for emergency departments act as a safety net, while health care changes from being institution-based to community-based.

There is an acute need for the issues of overcrowding, emergency department information systems, and national standards for hospital emergency services to be addressed during your Commission on the Future of Health Care in Canada. The following submission has been prepared by leaders in emergency medicine. We respectfully request the opportunity to meet with you and discuss our recommendations further.

The Canadian Association of Emergency Physicians congratulates you on your appointment, and commits Emergency Medicine: Change and Challenge to your worthy consideration.

Sincerely,

Douglas Sinclair, MD
President
Canadian Association of Emergency Physician
SUMMARY OF RECOMMENDATIONS

The Canadian Association of Emergency Physicians respectfully recommends to the Commission on the Future of Health Care in Canada:

Universal Health Care
- No dilution of the universal nature of health care in Canada as defined in the Canada Health Act, and no development of a parallel or private system.
- Consideration of extension of current coverage as the fiscal climate permits.

Urban Emergency Care
- Legislation to ensure urban emergency care providers has the resources available to care for the sick.
- ED information systems to capture data to characterize and solve problems in EDs.
- More resources opportunities for EM researchers.

National Standards for Hospital Emergency Services
- Development of national standards for hospital emergency services under the auspices of CAEP and appropriately resourced by the federal government.
- Evidence- or best-practice-based national standards.
- Provincial and regional health authorities implement the standards through mandated provincial policy and/or legislation.
- Commitment to supporting regular review and updating of the national standards.
- Federal transfer payments for health care services tied to provincial compliance.

Emergency Department Overcrowding
- Performance indicators and benchmarks for measurement of ED overcrowding as a key component of a national health system monitoring.
- Investment in information technology in EDs to collect relevant data and establish ED performance indicators and benchmarks.
- Implementation of the Canadian Triage and Acuity Scale (CTAS) in all Canadian EDs.
- Federal and/or provincial governments funding to evaluate components of the expanded scope of ED care.
- Performance indicators, data collection, CTAS, and ED and regional/provincial system-wide collaboration as key elements of any initiative to establish national standards for hospital emergency services.

Human Resources in Emergency Medicine
- A comprehensive human resources Canadian study for emergency medicine.
- Increase residency positions in emergency medicine in both the CFPC and FRCP programs.
- Mandatory pre-licensure training in emergency medicine for all family physicians designated to work in non-urban areas.
- Canadian study of the role of alternate health care providers in low acuity areas of EDs.
- Enhanced support for continuing medical education programs in emergency medicine for rural physicians.

Clinical Practice Guidelines
- Creation, implementation, adoption and evaluation of CPGs in health care practice and culture.
- A transparent and explicit CPG process that includes development of a formal rating system.
- Federal and/or provincial funding for CPG development, dissemination, implementation and evaluation.
Emergency Department Information Systems

- Recognition of the critical need of emergency departments for electronic data collection.
- Federal and provincial government support of Canadian Emergency Department Information Systems (CEDIS).
- Implementation of electronic information systems in all Canadian emergency departments. Implementation of CEDIS as first step towards a comprehensive information system.
- A central data repository of collected ED data, using CEDIS standard data elements set and performance reports.

Research in Emergency Medicine

- Placement of EM research higher on the Federal Minister of Health’s agenda, with sufficient funds and initiatives.
- Creation of an Emergency Medicine Institute in the Canadian Institute of Health Research (CIHR).
- A separate CIHR grants competition for emergency medicine, critical care, trauma, and EMS.
- Improvement of electronic data collection and informatics applications in Canadian EDs.

Paediatric Emergency Care

- Postgraduate fellowship slots for Paediatric Emergency Medicine.
- Implementation of telehealth programs, internet learning and electronic portals for paediatric emergency care practitioners.
- Definition of minimum standards of care and adherence to by all departments delivering care to children.
- National implementation of PaedCTAS.

Rural Emergency Care

- Recruitment and retention initiatives for rural health care providers.
- Improvement of initial training and continuing medical education for the rural emergency health care provider.
- Standardization of facilities, equipment, diagnostic capabilities and communications technology.
- Improvement of transport capabilities through the national expansion of the Shock Trauma Air Rescue (STARS) program.
- Study and development of regionalized models for the delivery of emergency care in the rural context.
- National implementation of CAEP Recommendations for the Management of Rural, Remote and Isolated Emergency Health Care Facilities in Canada.

Pre-Hospital Care and Emergency Medical Services

- The basis of scope of practice for paramedics upon a local needs analysis.
- Adoption of the National Paramedic Competency Profiles as the national standards for the terminal competencies for each level of paramedic.
- Medical direction and oversight to ensure appropriate certification and quality assurance programs.
- Provincial coordination of medical directors, and federal government support of the development of a National EMS Directors forum.
- Integrated pre-hospital care services.
- Development of local, regional and provincial policies to address a systems approach to bypass issues.
Emergency Medicine And Universal Health Care: A Call For Compassion

A bicycle tries to make it through an intersection on an amber light. A vehicle turning left collides with the cyclist, who hits the windshield of the car and lands heavily on the pavement. He does not move. Witnesses use a cell phone to call paramedics who arrive in minutes. The young man is seriously injured, with multiple fractures, a head injury and possible internal organ injuries. Quickly the paramedics act to stabilize and ready him for transfer. The victim, barely conscious, gestures to the paramedic who leans closer to hear him whisper, “I have no insurance!” Now the paramedics face a dilemma. The nearest hospital, “St. Avarice” has excellent emergency and surgical programs, but the patient later dies of treatable injuries while waiting for an operating room.

Farfetched scenario? “Dumping”, defined as “the denial of, or limitation of emergency medical care, usually for financial reasons, and referral elsewhere” was until recently a widespread practice in the US. It was estimated that 250,000 patients were dumped in 1986 alone, leading to passage of federal anti-dumping legislation; COBRA (Consolidated Omnibus Reconciliation Act) and EMTALA (Emergency Medical Treatment and Active Labor Act). The economically motivated transfers, or dumps, were responsible for significant unnecessary mortality. Patients who were dumped were predominantly young, male, uninsured, minority members. Dumping was described as a practice “which appears to reinforce racial and class inequities of access to medical care.”

The co-existence of private and public health care in one society can provide other cautionary tales if we look to the U.S. emergency medical experience. “Denial of care” entered the lexicon for emergency providers in the 1990’s when managed care organizations began to require advance authorization (“gatekeeping”) to provide coverage to patients seeking emergency care. Decisions on the need for emergency care are often made by telephone (sometimes by non-clinical staff) working from protocols. Patients often face the dilemma of the emergency staff warning them they are at risk if they left, while the gatekeeper warns them the visit is not warranted and will not be covered. The emergency department staff then faces a dilemma of their own—under EMTALA they must provide care by law, but the gatekeeper’s decision means they will not be paid. One published report from California found that 516 of 545 patients denied care by telephone gatekeepers left the ED, but 9 of these later returned with life-threatening diagnoses such as pulmonary embolus, myocardial infarction, respiratory failure and sepsis.

Voluntary delay of care for financial reasons is a phenomenon familiar to every American emergency physician, sometimes with tragic results. Patients may also fail to make recommended follow-up visits or lack access to primary and preventive care due to a lack of adequate insurance. Private hospital emergency departments may be well-appointed, well-staffed, and generating profits from annual census as low as 15, 25,000 patients. They may offer amenities such as valet parking and waiting times superior even to our “walk-in” clinics. Physicians need see only 1.5 to 2 patients per hour to earn their income. Down the road the county hospital is seeing 100,000 patients per year or more. Patients may wait up to 24 hours for an assessment. Physicians burn out quickly due to the burden that includes a need to process double or triple the patients per hour of the private department. As a result of their experiences, American emergency physicians have led the call for comprehensive, universal health insurance.

Emergency departments provide care to all those who cannot access it anywhere else. Commonly referred to as “the canary in the coal mine” of health care, Canadian EDs have been in the news due to overcrowding, delays in care, hallway care, delayed offloading of patients arriving by ambulance and other problems. When a crack develops in the system, the patients who fall through it end up in the ED. Across the country deficiencies in acute care beds, or long term care, or community care, predictably lead to further pressures in the ED. Social policy as well as health policy affects EDs as patients that are homeless, or with diminished social supports turn to us for whatever comfort or relief we can provide.

However, one fact that the Canadian public has depended on till now, is that whatever the limitations and deficiencies, every citizen is treated equally in our EDs. Patients may purchase privacy and amenities on the wards, but in the ED patients are chosen for the hallway based on their clinical needs (patients needing oxygen, suction, monitors etc. cannot go to the hall) and not economic circumstance.

The Canadian health care experiment was based to a great extent on the fundamental idea that each of us, regardless of income, status, etc. is treated the same if we are the one laying bleeding on the pavement. As humans we all face the prospect of illness or injury, pain and suffering. At those times we suffer equally, therefore we should be treated equally. This fundamental principle, which has led to the most popular government program in Canadian history, is under attack. Voices are being raised saying if we are able to purchase more or better of life’s other

Emergency Medicine:  Change and Challenge  Canadian Association of Emergency Physicians
necessities, including food, clothing and shelter, why not health care? Some claim the private sector can provide care more cheaply or effectively, though evidence is lacking. Others feel secure in their own well-being and economic circumstances and resent being taxed to support the care of strangers.

Although the U.S. situation may seem distant to us now, we are faced with “reforms” that hack away at universal coverage through delisting, allowance of co-payments, or creation of private alternative clinics, hospitals, imaging centres etc. Each step in this direction creates wider cracks that more people fall through into our overburdened EDs. Our country is more affluent now than when Medicare was conceived, our fiscal situation is better now than in decades—only our will to care for our fellow humans when they are bleeding on the pavement is deficient.

As emergency care providers, we are the voice of the patients in our departments. We urge you to maintain the universality of the Canadian system, to enhance rather than diminish the comprehensive nature of the care our system provides, and to close the cracks through which so many of our citizens are falling. If you, or someone you love, lay bleeding on the pavement, how would you wish to be cared for?
Emergency Medicine’s Mission: Emergency departments serve their communities, providing rapid diagnosis and treatment for most medical emergencies, as well as resuscitation and stabilization of patients with critical injuries and illnesses. Urban EDs are staffed by specially trained physicians committed to emergency care. They work 24-hours per day, 365 days per year and treat all comers—notably people without family physicians and those who have been turned away by others because of a lack of valid health care coverage. And while many still view the ED as merely an access point to hospital-based care, it is important to point out that emergency physicians provide definitive management for most problems, admitting only 10-15% of patients for in-hospital treatment. Emergency physicians also perform vital roles in the pre-hospital care system, serving on Emergency Medical Services (EMS) advisory boards, as EMS system directors, as base station physicians, and training and testing paramedics.

Emergency Medicine’s Expanding Role: Hospital closures and bed reductions, without a corresponding increase in long term community care facilities or home care resources, have reduced our system’s acute care capacity. Long wait times for specialists and poor access to ‘elective’ hospital beds force family physicians to refer their sick patients directly to EDs. Surgical and diagnostic test delays drive many more to emergency departments—some because of medical deterioration and others to ‘jump the queue.’ Fee for service remuneration has fueled rapid growth in the “mediclinic industry,” where fiscal incentives encourage physicians to ‘skim’ easy cases and refer difficult ones to the ED. But when sick patients reach the hospital, there are no beds to admit them to and they remain in the ED. Emergency physicians have truly become gatekeepers to the hospital, and emergency departments are providing more care—more complex care and more prolonged care than ever before—with fewer available resources.


What’s going wrong? Health leaders and administrators view the ED as something apart—a place where admitted patients come from but not an important department with a mission of its own. This is evidenced by two phenomena that are apparent in hospitals nation-wide. First is the information vacuum: Canadian hospitals collect extensive inpatient data but have little interest in ED data. Most cannot track or describe their ED case mix, care processes, workloads, utilization, efficiency or outcomes. Without data, we cannot characterize our problems or solve them. Second is the failure of hospitals to maintain functional emergency care environments. In these difficult times, hospital administrators struggle to keep vital systems functioning. They might cut OR staffing, but would never close all their operating rooms. They might reduce critical care beds, but would never shut down their ICU. There is no hesitation, however, to close entire emergency departments by filling every ED stretcher with admitted patients from other services.

If there are more cardiac patients than a hospital can manage, they are cared for in the ED, not on cardiac wards. If there are more psychiatric patients than a hospital can manage, they too are cared for in the ED. In a hospital with 12 inpatient nursing units and 24 supernumerary patients, one solution would be to send two patients to each ward. An alternate solution would be to send one patient to each ward and hold 12 in the ED. Sadly, the solution invariably chosen by Canadian administrators is to hold all 24 in the emergency department.

Administrators would not allow large numbers of off-service patients to paralyze their operating rooms, their CCU, or any other service; but every day, emergency care providers are left with no stretchers and no functioning department—no place to provide care. Emergency patients are relegated to hallways and waiting rooms, where they cannot be treated humanely or adequately. Hospitals are not providing the basic needs for emergency care and EDs cannot fulfill their mission to the community.

Solutions: The Canadian Association of Emergency Physicians and the National Emergency Nurses Affiliation have proposed a series of solutions. Emergency departments have introduced outpatient programs for patients with blood clots and severe infections. We have expanded procedural sedation techniques so patients requiring painful procedures can have these performed in the ED rather than the OR. We have developed short stay diagnostic and treatment units to treat asthma, overdoses and cardiac emergencies. All of these reduce the need for hospital admission, and these types of programs can and should grow in the years ahead.

Opportunities: Adversity breeds opportunity. Emergency medicine has, arguably, been hardest hit, and this provides the impetus for positive change. Rules, habits and systems that evolved when we had ample hospital beds and staff no longer work today. Emergency departments must re-engineer care paths, increase efficiency and develop
solutions rather than waiting for external solutions to be imposed. Caring for more patients within existing system constraints means an organized attack on admission rates and ED lengths of stay. Streamlining care paths, eliminating redundancies, expanding nursing roles, rapid testing and increased use of ED short stay units will help us treat more patients in fewer hospital hours. Business models have much to offer. We must identify important ED-related outcomes, including access to care, disease-specific process measures, pain and symptom relief, patient satisfaction and system utilization. Given clear objectives, we can measure performance, provide feedback and monitor improvement.

Recommendations:

1) Above all, urban emergency care providers need a place to work. Hospitals that hang an ‘Emergency’ sign above the door must have mechanisms of assuring that ED stretchers are available when sick patients arrive. For several years, ED directors have tried and failed to achieve this basic need. It may be that nothing short of legislation will lead to necessary change.

2) Emergency departments need information. ED information systems should capture patient demographics, triage acuity levels, presenting complaints and ED diagnoses. They should provide critical process data; including waiting times for nurses, physicians and ED stretchers, as well as delays from admission to ward transfer. They should generate information regarding admission rates and resource utilization, stratified by care provider and case mix group, and they should be capable of generating standard reports to monitor department performance.

3) Emergency medicine needs research—especially research into emergency care delivery. There are few opportunities for EM researchers, and the well-supported scientists in other disciplines have neither the interest nor the knowledge to address our problems. It is important to support scientists who work with test tubes, but more important to look at where the rubber hits the road—our emergency departments!
Over the last decade, the health care system in Canada has undergone significant change. Most notable is the shift in focus from institution-based care to home and community-based care. In many provinces, the pace of change has occurred too rapidly for adequate community-based infrastructure to be put into place.

These changes have had a tremendous impact on hospital emergency departments across the country. Overcrowding in EDs, which first attracted media attention in the late 80’s and early 90’s has continually worsened leading to heavy reliance in urban centers on ambulance redirect or bypass because EDs simply have no room to accommodate additional patients. The ED “crisis” has become a regular feature in national newspaper and television reports.

Overcrowding is largely attributable to the outcomes of systemic change--hospital restructuring, hospital closures, reductions in acute care hospital beds and shortages of long term care (LTC) facilities, community and home care resources. The nursing shortage across all health care sectors further exacerbates the problem by effectively “closing” beds that cannot be properly staffed. Delays in surgical and diagnostic testing, and poor access to elective hospital beds contribute to the overloading of emergency departments.

In this milieu, hospital emergency departments have evolved beyond their traditional acute care role to become key players (gatekeepers) in determining how patients move through the health care system. The scope of this new role includes some or all of the following, depending on the hospital size, location, population served, clinical programs offered, etc.

- Shortages of acute care beds and nursing staff coupled with the move away from institution-based care now require that every ED patient being considered for admission (currently constituting 12-20% of all ED visits and 50-70%+ of overall hospital admissions) be carefully screened and assessed by not only ED staff, but by other health professionals who are now routinely affiliated with the ED--community-care case managers, social workers, discharge planners, LTC planners, etc.--with a view to managing the patient in the home or community rather than admitting them to an acute care bed.

- Patients who ARE ultimately deemed candidates for admission often wait in the ED for many hours or days for an acute care bed to become available. These patients require inpatient care in the ED.

- Patients who could potentially go home, but require further stabilization of the acute phase of their illness (e.g. flare-up of asthma), are now kept in observation beds or observation units (clinical decision units) in the ED for up to 24 hours of treatment prior to discharge. In the recent past (10 years), most of these patients would have been admitted to hospital.

- Some hospitals have set up specific types of observation units, such as Chest Pain Clinical Decision Units, to reduce the need for admission to a high intensity, higher staff-patient ratio Coronary Care Unit bed.

- Patients who require crisis placement in LTC beds are often admitted to such beds directly from the ED or have to be admitted to in-house acute care beds, again requiring multi-disciplinary ED team assessment.

- Patients who are discharged from acute inpatient beds and patients waiting to be transferred to another facility for admission may be sent to the ED to wait for transfer or pick-up. Many EDs have established staffed discharge or holding units for such patients.

- Many hospitals have set up fast track (walking wounded, worried well) areas within their ED or urgent care centers off-site to handle the less urgent and non-urgent caseload, who continue to present to the ED because after hours primary care services, or time and work pressures are best met by the unscheduled convenience of the ED.

- Street kids and the homeless are increasing in numbers. This population relies heavily on hospital EDs for all of their primary and emergency care needs, to the extent in some instances, that the hospital has set up special areas within or adjacent to the ED to specifically deal with this patient population.
With the closure of many psychiatric hospitals and the move to manage mental illness in the community (despite lack of community infrastructure and shortages of psychiatric health professionals), the need to provide ED crisis management services and arrange follow-up for day programs and other community psychiatric programs has risen dramatically.

Clearly, the status of EDs across the country now acts as a barometer for the overall status of the health care system itself. The ED is best positioned to undertake this new role in the restructured health care system. Emergency medical care must be available 24 hours a day as an essential component of all health care delivery systems. It exists to provide access for all unplanned but needed health care, the safety net for the health care system. Yet, the degree to which an individual hospital supports its own ED in maintaining efficient 24-hour access is highly variable.

Service levels, staffing, policies and procedures for EDs vary greatly across provinces, regions and cities, and between rural and urban areas. Many hospitals still have not recognized that problems in their ED reflect hospital-wide and often region- and system-wide problems that require broad-ranging actions and policies. Multiple hospitals serving a particular patient population often do not work together to examine issues that bridge across facilities and require regional initiatives and collaboration. Coordination with the pre-hospital care (ambulance, fire), the primary care and the long-term care systems is also lacking.

In an effort to establish an organized and consistent approach to providing hospital emergency services, there have been several past initiatives to define minimum requirements for these services. All have in common the conditions necessary to meet public and professional expectations with regard to the safe and efficient delivery of emergency care:

- service operating and accessible to the public 24 hours/day, 365 days/year;
- administrative structure to facilitate an effective and clinically accountable delivery of emergency care;
- defined minimum basic skill set for all health professionals within the department;
- standardized minimum equipment and drug formulary.

These initiatives included the National Health & Welfare (HWC) Guidelines for Emergency Units in Hospitals (1981, 1988). The HWC guidelines also attempt to categorize emergency units based on differing ability to deliver emergency services, taking into consideration geographic location, population served and availability of other medical services within the community at large. These guidelines recognize the emergency unit as an intrinsic part of the hospital and functions within an overall emergency health services system, and therefore should not be considered in isolation but as a component of an integrated system of care delivery.

In 1987, the Ontario government undertook the development of emergency unit guidelines primarily in response to recommendations from inquest juries and complaints from the public. The Guidelines for Hospital Emergency Units in Ontario was released in 1989. They include operational requirements to ensure the unit is capable of providing prompt and effective care.

These guidelines also articulate clearly the responsibility of a hospital board to ensure that the scope and capability of the emergency unit are stated in the hospital mission statement and that supporting policies and management practices are in place to ensure that the unit is operational and accessible to the public at all times. These include:

- admission, discharge and bed management policies;
- responsibilities of attending medical staff;
- delegation of medical acts;
- manpower planning, deployment and qualifications;
- ambulance access policies;
- data collection;
- quality management.

The Canadian Association of Emergency Physicians' own initiative Recommendations for Management of Rural, Remote and Isolated Emergency Health Care Facilities in Canada (1997) sets out 5 levels of rural ERs, each with an identified list of necessary equipment, drugs, diagnostics and protocols, but called for all rural physicians to have the same basic emergency procedural skills. It also calls for regionalization of rural health care services and facilities in a systematic way to ensure adequate patient access.

As with all guidelines, these efforts lacked administrative clout. A standard articulates a mandated and necessary achievement of performance objectives and an expectation of compliance within a reasonable time frame. A standard also requires the government to fund enhancements to allow compliance.
Given the burden of problems and expectations presently facing hospital emergency departments, there has never been a greater need for an organized and integrated emergency health services system. Our EDs are providing more care—more complex care and more prolonged care than ever before—with fewer available resources. An essential first step in creating such a system is the development of national standards for hospital EDs, which set out a blueprint and a framework for the provision of hospital emergency services in Canada. The standards should be evidence-based where possible or alternatively, best-practice-based and patient-centered. They should draw from the more positive aspects of previous initiatives by building on their strengths, avoiding their weaknesses, and addressing in a clear and comprehensive way the expanded role of hospital emergency services today. Categorization of hospital EDs based on a “levels of care” approach is acknowledged as the initial step towards the effective regionalization of emergency services and must be a critical component of any standards-setting endeavour. Regionalization is essential for the development of a seamless system of care for the acutely ill and injured patient. The standards should speak to the key elements of regional coordination—system planning, patient care activities, utilization and quality management, data collection, performance evaluation and research.

The standards must provide direction to hospital Boards, administrators and staff, as well as local and regional health planners in ensuring that:

- hospital EDs are capable of providing rapid assessment, resuscitation, stabilization and treatment of patients with emergent or urgent problems that may threaten life, limb, or function, and where indicated, arranging timely admission or safe and expedient transfer to a hospital offering a higher or definitive level of care, or discharge to an appropriate community-based health care service;
- emergency patient care, operation of the emergency unit and utilization and deployment of hospital and ED resources are optimized with respect to efficiency, effectiveness and access;
- the ED is accessible to the public 24 hours/day, 365 days/year;
- hospitals operating at similar levels and within networks of hospitals achieve greater consistency in providing quality emergency care with improved patient outcomes;
- hospitals commit to a systems approach for the delivery of emergency care within a region including integration with the pre-hospital care, primary care, long term care and community-based care sectors;
- consumers are made aware of and informed regarding the level of care capabilities of hospitals providing emergency services in their area, as well as other appropriate sources of after-hours care (where available);
- consumers are enabled to use emergency services more effectively;
- where appropriate, consumer self-care is supported and facilitated.

Equally important, the standards must acknowledge that emergency medicine and emergency departments are specialty areas of medicine.

**Recommendations:**

1) The federal government should undertake the development of national standards for hospital emergency services as an immediate priority for improving the Canadian health care system. Such an endeavour would finally ensure the provision of emergency services is comprehensive, universal, portable, and accessible--key principles of the Canada Health Act.

2) This initiative should be conducted under the auspices of CAEP and appropriately resourced by the federal government.

3) The standards should be evidence- or best-practice-based and address day-to-day as well as extraordinary and pressing emergency services issues (e.g. ED overcrowding).

4) The federal government should require provincial and regional health authorities to implement the standards through mandated provincial policy and/or legislation and to monitor and evaluate compliance through comparative peer group performance indicator reporting.
5) The federal government should commit to supporting regular review and updating of the national standards.

6) Federal transfer payments for health care services should be tied to provincial compliance with these and other national health care standards.

The development and implementation of national standards for hospital emergency services, if supported by the federal government, could represent a major step toward the creation of a comprehensive, seamless emergency services system in Canada.
Emergency Department Overcrowding

Emergency Department overcrowding has become a national problem and is now a chronic state in many departments. Although ED overcrowding is an obvious concern for emergency medicine health care professionals, it truly is a health system issue. ED overcrowding is a measure of health system performance and the monitoring of overcrowding should be part of a focus on measurement of quality in health care.

Definition

ED overcrowding is defined as a situation in which demand for service exceeds the ability to provide care within a reasonable time, causing physicians and nurses to be unable to provide quality care. It can be measured by monitoring waiting times--time to be seen by the ED physician, time to be seen by a consultant, time it takes to move the admitted patient to an inpatient bed.

Causes of Overcrowding

ED overcrowding is a multifactor problem, but most of the causes are found outside the emergency department. They include:

- lack of beds for admitted patients
- lack of access to primary care and specialist physicians
- shortage of ED nursing and physician staff
- increasing complexity and acuity of patients in the ED
- lack of alternative advanced diagnostic testing and treatment facilities

The perception of the public and media is that large numbers of non-urgent patients utilizing the ED for minor complaints is the major cause of overcrowding. It must be emphasized, that although waiting times for this group of patients can be very long, they utilize a small proportion of ED resources and concerted efforts to divert these patients to other settings will not solve the overcrowding problem and will add costs elsewhere in the health care system.

Effects of overcrowding

Recently there has been a renewed interest in patient safety and the effect of medical error in the health system. Numerous international studies have shown that on retrospective chart review the rate of medical error resulting in an adverse patient outcome is from 3-16%, with at least half of these events potentially preventable. An overcrowded emergency department is an environment with enormous potential for medical error because of the intensity of decision making, inadequate facilities when patients are cared for in hallways and waiting rooms, and the increased stress on caregivers.

One of the most visible signs of ED overcrowding is the problem of ambulance diversion, which has been documented to have negative effects on the quality of health care.

The final outcome of overcrowding is its effect on health care professionals. The challenge over the next few years will be to retain our experienced staff, and chronic overcrowding has a significant effect on ED staffing.

Recommendations:

1) Establish performance indicators and benchmarks for prospective ongoing measurement of ED overcrowding as a key component of a national health system monitoring.

2) Invest in information technology in emergency departments in order to collect relevant data to track patient flow, determine workload (volumes, acuity) and facilitate the establishment of ED performance indicators and benchmarks.

3) Implement the Canadian Triage and Acuity Scale (CTAS) in all Canadian emergency departments to enable local, provincial, and national bodies to review actual waiting times for care and monitor the effect of health system changes.
4) Federal and/or provincial governments should provide funding to evaluate components of the expanded scope of ED care (e.g. point-of-care testing, observation units; use of nurse practitioners or other physician assistants, etc.).

5) Performance indicators, data collection, CTAS, and ED and regional/provincial system-wide collaboration should be included as key elements of any initiative to establish national standards for hospital emergency services.

Quality management should be a new principle to be added to the Canada Health Act. Ongoing monitoring and measurement of the effect of health system innovations on ED overcrowding will be a key tool in an effort to bring a focus on quality to Canadian health care.
Human Resources Issues In Emergency Medicine

The emergency physician is a physician trained to engage in:

1) The immediate recognition, evaluation, care and disposition of patients in response to acute illness and injury;
2) The administration, research and teaching of all aspects of emergency care;
3) The direction of the patient to appropriate resources for continuing care, in or out of hospital as may be required;
4) The management of the Emergency Medical Services (EMS) system, including medical response to disasters, for the provision of community, emergency and disaster care.

How many emergency physicians are there in Canada? There are two routes to certification in emergency medicine in Canada. The College of Family Physicians of Canada has offered a certificate of special competence in emergency medicine (CCFP-EM) since 1982. This credential requires an additional year of training in the emergency medicine beyond the two-year training program in Family Medicine. There are currently 1,074 emergency physicians with this designation. In the year 2001, 86 physicians will graduate from the 16 EM training programs in Canada.

The Royal College of Physicians and Surgeons of Canada has had recognized training programs in emergency medicine since 1983. Certification (FRCP) requires the successful completion of a five-year training program. There are only 334 specialist emergency physicians in Canada, of which approximately 20 have retired from practice. In 2001, 25 physicians will complete specialty training in emergency medicine following graduation from the 11 RCPS training programs across Canada.

Certified emergency physicians often assume leadership positions in emergency departments, administration, EMS development, teaching or research. Without them, the excellent systems-based approach to the delivery of emergency care that currently exists in Canada would be reduced to a few mere islands of excellence in a vast sea of mediocrity.

Unfortunately, the trained emergency physician on entering the specialty inherits a legacy of stress, burnout, frustration and a shortened career span. A recent Canadian study revealed that a significant number of Canadian emergency physicians suffer from depersonalization and depression. The attrition rate of emergency specialists is not currently known.

How many emergency physicians are needed? Simply put, nobody knows the answer to this question. Estimating the emergency physician workforce can be a complex undertaking. The industry standard would suggest that one full-time equivalent emergency physician (1,500 hours of service annually) is required for every 5,000 patient visits. In Ontario in 1999, there were five million patient visits to the province’s emergency departments; this would require the equivalent of 1,000 certified emergency physicians in this one province alone.

Short of the CAEP manpower survey of the early 1990’s, there have been no comprehensive studies of the human resources requirements for the development and maintenance of the emergency medical care system. To make matters worse, the specialty was completely ignored in previous human resources documents including the national Barer-Stoddart report, and, in Ontario, the McKendry and George reports.

What is the role of the family physician? With a national shortage of trained emergency physicians, most Canadians will continue to have their emergency care delivered by family physicians who staff their community’s emergency departments. It was estimated in the early 1990’s that approximately 5,000 family physicians work casually in their community’s EDs.

In many ways the involvement of family physicians in emergency care is a positive development. Canadian family physicians are well trained in the provision of high quality primary care, which represents 90% of the workload and acuity of some rural and smaller community EDs. They also bring enthusiasm and a unique ability to negotiate a patient through an increasingly complex health care environment and thus insure continuity of care.

There is, however, no guarantee that the family physician staffing a community ED will have adequate training in the management of actual emergencies or in resuscitation.

In 1992, The Working Group in Emergency Medicine of the College of Family Physicians of Canada and the Royal College of Physicians and Surgeons of Canada recommended that all family physicians receive two months of adult
and one month of paediatric emergency medicine during their postgraduate training. To date, no licensing body has adopted this recommendation.

The current practice of credentialing community-based family physicians for the most part involves the successful completion of several two-day life support courses. Although excellent educational initiatives, these courses do not ensure competency in emergency medicine. There is disturbing evidence in the literature that many family physicians, on completion of their training, do not feel comfortable in the emergency department setting.

Furthermore, the pool of family physicians may be shrinking. There is incontrovertible evidence in the literature to suggest that many family physicians, particularly those in rural communities, are withdrawing from service in their hospital’s emergency departments.

In a 1991 survey of Small Hospital Medical Services in Ontario, 44% of hospitals reported a shortage of local GP’s willing and able to staff their community EDs. Seventy-one percent (71%) predicted a shortage of local GP’s willing to staff the ED in the next five years.

A 1994 Ontario Hospital Association ED survey reported that 54 of 169 hospitals surveyed were having difficulty operating their EDs. Forty-six (46) were paying MD’s extra to be on-call, 46 were under threat of withdrawal of services and 16 had reduced emergency services.

A 1999 OHA survey revealed that 35% of hospitals in Region #2 (Central Ontario) were having difficulties ensuring adequate FP coverage in emergency departments, 29% were using hospital operating funds to compensate emergency physicians and 9% were using purchased services to provide emergency coverage.

Is there a role for alternate health care providers? In the United States, the use of physician assistants (PA’s) and nurse practitioners has long been utilized, with success, within the emergency department. In Canada, the concept of using nurse practitioners to assist in the low acuity areas of an ED is garnering interest. There can be little doubt that the use of physician extenders may be helpful in dealing with low acuity patients, but it is clear that they will never be able to function independently in that setting and cannot replace an emergency physician. This issue requires further study.

**Recommendations:**

1) A comprehensive human resources study for emergency medicine should be undertaken.

2) Residency positions in emergency medicine should be increased in both the CFPC and FRCP programs based on the results of the human resources study.

3) Mandatory pre-licensure training in emergency medicine should be required of all family physicians designated to work in non-urban areas. The recommendations of the 1992 Working Group in Emergency Medicine of the College of Family Physicians of Canada and the Royal College of Physicians and Surgeons of Canada should be reviewed and, if still appropriate, implemented in all family practice training programs.

4) The role of alternate health care providers, as an adjunct, but not a replacement for emergency physicians, should be studied further in the Canadian context.

5) There should be enhanced support for continuing medical education programs in emergency medicine for rural physicians.
Every Canadian has a right to a defined minimum standard of emergency care. A heart attack victim is entitled to receive the same benefit from recent advances in acute coronary care whether he be in Sydney, NS, or Saskatoon, SK.; a child with breathing difficulties from acute asthma, in Kelowna, BC or Kingston, ON, should be treated in accordance with a common current understanding of the disease process and effective available therapies. Where there exists good evidence for a clinical management approach for a given disease state, there should be no variability of quality of care on the basis of postal code.

Unfortunately, there is clear evidence that such variability exists. Barriers to national uniform standards of care include the abysmal lack of standardization of our nation’s emergency departments and a chronic, critical shortage of certified emergency physicians. In the short term, it should be acknowledged that the vast majority of emergency care in Canada will be delivered by family physicians, working casually in their community’s emergency departments, which may not have the benefit of optimization.

Therefore, in order to more efficiently give patients the benefits of recent advances in acute medical and trauma care, the Canadian Association of Emergency Physicians favors the development, introduction and promulgation of Clinical Practice Guidelines.

Clinical practice guidelines (CPGs) set out standard directions and approaches that assist clinicians to provide appropriate care for specific clinical conditions. There are between 1,200 and 2,500 CPGs available in Canada. CPG activities have proliferated nationally and internationally. Their nature, quality and impact are poorly understood. CPGs are expensive and time-consuming to develop, implement and, most importantly, evaluate.

CPGs can play a major role in improving the quality, effectiveness and efficiency of health services and the health care system. For example, the development of a simple examination tool for acute ankle injuries (Ottawa Ankle Rules) was demonstrated to improve both the quality and timeliness of care to the individual patient. The rules had the added benefit of a potential reduction in excess of $60 million dollars annually in health care expenditures in Ontario through the avoidance of the ordering of unnecessary ankle x-rays.

While their potential is great, barriers to their realization are also great. Overcoming the barriers will require careful strategic analysis and creative collaborations.

CPG use in the United States is greater than in Canada. This may be a result of a more supportive environment for their development in the United States. The greater use in the U.S. may be attributed to organizational, legal and external management factors. Funding of clinical services may be tied to health provider use of CPGs in many U.S. managed-care systems. The greater professional autonomy of Canadian physicians makes the development and implementation of national CPGs difficult. The importance of local leadership and local buy-in are key to successful implementation.

There is also skepticism amongst Canadian physicians. Some physicians believe that CPGs are intended to simply save money, especially when different clinicians, based on the same evidence, develop different guidelines. It will be important to educate key stakeholders how to deal with this issue. Otherwise it may be assumed that the existence of conflicting guidelines is reason to ignore all guidelines. This key barrier to the uptake of CPGs needs to be addressed in medical schools and continuing medical education programs.

Another major barrier to implementation is funding. Some professional bodies rely on funding and assistance from the pharmaceutical industry for guideline development. This rightly lessens their credibility with a significant number of Canadian physicians. Whenever funding is obtained, the great proportion of funding is aimed at production and dissemination; funding on implementation and evaluation is often sporadic at best. When comparing the impact on practice to costs of production and dissemination, the return on investment is very high. Lastly, it is important to understand that guideline development is a dynamic, not static, process that requires funding and commitment to evaluate their use, usefulness and to revise as medical knowledge advances.

For there to be trust and subsequent buy-in for CPGs, CPG development should involve multi-disciplinary stakeholders, including consumers, and be based on careful reviews of existing evidence. There should also be a
formal rating system developed for CPGs. Medical education (under and post-graduate) should address CPG development, dissemination, utilization and monitoring.

**Recommendations:**

1) The process to create, implement, adopt and evaluate CPGs should be viewed as an integral component of health care practice and culture and not as a stand-alone process to aid local clinical decision-making.

2) The CPG process should be transparent and explicit and include development of a formal rating system.

3) Explicit federal and/or provincial funding should be established for CPG development, dissemination, implementation and evaluation, in collaboration with the faculties of health sciences and federal/provincial research institutes.

In conclusion, CPGs need to be more than disposable tools that are used on an intermittent basis for the occasional patient. They should be the embodiment and distillation of collaborative, system-wide thinking and evidence-based reviews, and become part of the fabric of health science education and practice.
Informatics and the Electronic Health Record

The emergency department is both the window to the hospital and the window to the community. There is perhaps no other place where there is such an immediate need for access to information than the emergency department where decisions are made on a continuous basis and at times with limited information. The electronic transfer of information to and from the ED, the community family physician, and other institutions is vital and perhaps the greatest priority. In fact we would suggest that without the initial implementation of electronic information systems in EDs, the link between the community and the hospital will not exist and the integration of hospital and community cannot occur. Almost 95% of all hospital medical admissions and 50% of surgical admissions are from the ED. There is also the large number of unscheduled ED visits that often require follow up, yet there is no good way to transfer the visit information back to the family physician. By volumes of visits and information generated, the emergency department has perhaps the greatest need for access to and transfer of information.

It is for this reason that the Canadian Association of Emergency Physicians brought together leaders in emergency department information in March 2001 and again in June 2001, and formed a National Working Group on Canadian Emergency Department Information Systems (CEDIS). The major goals of this group were to address the issue of electronic information systems for EDs, and to develop a comprehensive emergency department data set. We recognize the importance of EDIS and promote their implementation in EDs across the country. We support a single comprehensive set of data elements that are a standard for all EDs. We also support a standard set of ED performance reports that allow us to compare institutions and regions across the country.

The National Working Group on CEDIS has representation from CAEP, the National Emergency Nurses Affiliation (NENA), l’Association des médecins d’urgence du Quebec (AMUQ), and the Emergency Section of the Canadian Paediatric Society. The first major goal of this group was to develop a comprehensive set of data elements for all emergency departments. This data set will be used by all EDs, for both quality improvement and clinical research.

The collection of this comprehensive information set requires electronic information systems, which is the initial step in emergency departments moving towards a full electronic ED information system and patient health record. There are now 4 major hospitals in Canada that have implemented these electronic information systems and a larger group of 10 hospitals in Ontario working with the Ontario Hospital Association to do the same. CAEP has met with the federal government (Bill Pascal), and the Ontario Minister of Health to discuss the importance of EDIS and they have been supportive of our initiative.

It is important to note that emergency department information systems can be and have been directly linked to both laboratory and imaging services within institutions and with outside institutions. This same connectivity is available to physician offices through the internet, but we are not aware of any institutions that have done this yet. Experience has shown that to implement an electronic health record (EHR) for physician use is a complicated and difficult task. The implementation of an EDIS prior to the total patient health record allows physicians and nurses to become familiar with the use of electronic information systems and would likely allow a smoother transition to the EHR. CAEP views the implementation of EDIS as the number one priority in the implementation of a comprehensive information system that includes the electronic patient health record.

There are a number of institutions currently collecting emergency department information, but there is no central data repository of this information. There are statistical reports that have been generated but they are at this time institution specific. This information has been used by individual institutions to implement process improvements in their EDs. It is one of CAEP’s goals to be able to have all institutions collecting a common standard set of data elements and reporting on their performance with useful national benchmarks for comparison.

We as an organization feel that the emergency department needs for information should be the highest priority and hope that the Romanow commission recognizes this as well.

Recommendations:

2) Federal and provincial government support of Canadian Emergency Department Information Systems (CEDIS).

3) Implementation of electronic information systems in all Canadian emergency departments.

4) Implementation of CEDIS as first step towards a comprehensive information system (including patient health record).

5) A central data repository of collected ED data, using CEDIS standard data elements set and performance reports.
Research in Emergency Medicine in Canada

Research in emergency medicine plays an important role in conserving resources and improving the delivery of health care. For example, researchers in Canada have been instrumental in establishing criteria for x-rays of the ankle, knee, and neck following injuries. In nearly every case, these decision rules have been shown to reduce the use of radiographs, reduce total costs to the health care system, and improve patient satisfaction. Clearly, these are important outcomes for the health care system to achieve.

As another example, most medical personnel and patients would strongly endorse the use of evidence-based diagnostic and treatment guidelines that represent the acknowledged standards of care across the country. Researchers in Canada and elsewhere have shown that the care provided for a common problem such as asthma is not consistent within or between hospital emergency departments (and this is not restricted to care provided by emergency physicians). As a result, emergency airway researchers in the past 10 years have successfully created, synthesized and disseminated this evidence so that care can be standardized. The involvement of emergency physicians in this clinical practice guidelines process has lead to a collaborative national consensus guideline for asthma, and helped to improve care across the country.

Emergency medicine as a professional field is young and evolving. The need to better understand, document, and monitor the events encountered in the “bellwether” environment of the emergency department have resulted in the development of new research programs and initiatives. However, the progress has been slower than the need for a variety of reasons. Some of these reasons cannot be changed. For example, research in our setting is a Herculean undertaking compared to other specialties because patients present 24 hours a day, seven days a week, every day of the year. In addition, the critical nature of their presentations poses more problems with respect to ethics and consent. While these issues create challenges for conducting research, we have learned to accept and overcome them. Still, there are several issues hampering a more timely resolution to the important problems facing us.

Firstly, the lack of trained researchers has slowed the development of a core of interested clinicians to address our own unique problems. Secondly, emergency medicine researchers are frequently conducting research without the infrastructure support of other specialty groups. There is no “Heart and Stroke” foundation for EM and many researchers do not receive governmental or university support for their research. We frequently compete with full-time researchers who have the time and resources to compete successfully. This inhibits research more than a lack of training.

Thirdly, while we know much about patients who die or are admitted to hospital through information databases maintained at the Canadian Institute of Health Information (CIHI), there is a paucity of data in existence on the majority of patients seen in the emergency department who are discharged (90% in most EDs). We have an embarrassingly unsophisticated collection of local, unlinked, non-standardized data repositories on which to document what we are seeing in the ED, assess the impact of care and quantify eventual outcomes. Without standardized data collection and linkages, much time is wasted and surveillance is virtually impossible.

Fourthly, much of our research focus does not fit into traditional domains. For example, one focus of our research is how the current lack of resources such as beds, staff, and diagnostics impairs our ability to manage patients in a timely and effective manner. We can all offer anecdotal evidence of how delays have resulted in poor patient outcome but we need to show the numbers and determine where the greatest problems lie. If provincial and federal governments intend EDs to function as universally accessible, efficient, and evidence-based sites of care, they need to provide the research resources to evaluate the current system and the vision to apply the results to improve the services provided.

Finally, there has been a lack of coordination within the specialty for the development of research. Each individual emergency department conducts small-scale research that is often underpowered to solve the issues that face us. While these local efforts are commendable and their research interest is necessary, a nationally focused research agenda to solve the most pressing needs of the profession has not existed.

The news is not all doom and gloom; solutions to these problems have been emerging. For example, more and more emergency specialists are graduating and seeking additional training in research methods. From the funding perspective, recently through the Canadian Institute for Health Research (CIHR), the Canada Research Chairs (CRC), and the Ministry of Health in Ontario, EM researchers have been recognized for their excellence in research and have been given the opportunity to compete with other established researchers. The playing field has been leveled to a certain extent, but there is still much to do.
Most importantly, many EM researchers have been successful with grants and research projects that have made significant impacts on the care of our patients. Consequently, funding opportunities have been improving. For example, in Ontario, the establishment of a separate granting system for Emergency Health Services through the Research Advisory Committee (EHS-RAC) has enabled researchers in EM to secure grants and receive awards for training in research. However, despite its rather meager funding and incredible success, threats to its viability are currently creating considerable angst in the EM community. Finally, multi-centered research is being coordinated through the CAEP Research Consortium. Research established in this manner should quickly, efficiently and validly solve some of the more pressing and common questions facing emergency physicians.

Recommendations:

1) Emergency medicine research should be placed higher on the Federal Minister of Health’s agenda, and supported with sufficient funds and initiatives to make it successful. We propose the creation of an Emergency Medicine Institute in the CIHR. At the very least, CIHR should consider an enhanced link between the current CIHR Institutes and EM. One option would be to ensure EM representation on the key CIHR Institutes relevant to our work (Cardio-respiratory, Infectious diseases, Public Health, etc).

2) A separate CIHR grants competition for emergency medicine, critical care, trauma, and EMS should be developed. The success of the Ontario EHS-RAC model would suggest this is a cost-effective method to enhance the productivity and interest in emergency research. The solutions to the problems plaguing EM cannot be easily answered by researchers from other disciplines. We need the ability to ask the questions and solve the problems that are important to us.

3) The electronic data collection and informatics applications in the emergency departments of this country should be improved. Computer based patient records, point-of-care testing, templated charting, clinical practice guidelines and other computer solutions all have the potential for enhancing the delivery of care in our overcrowded EDs and assisting with patient flow. Computerization will also enhance the capabilities of the EDs to collect relevant and timely surveillance data about changing patterns of ED presentation.

The emergency medicine community will play an increasingly important role in the future of health care delivery and research in Canada. However, we need assistance from local, provincial and federal governments to move forward and solve the problems that exist in the system. Without research and surveillance, the current crisis in emergency medicine will escalate and become an even more dangerous situation. We cannot afford to let this happen. The proposals outlined above represent some possible solutions for our acute care future.
Emergency Care for Children

Emergency care for children in Canada is an area that requires significant additional resource input. At the present time, the majority of care to children is delivered in general emergency departments outside of the tertiary care centres. This care is delivered by general practitioners, family physicians, paediatricians, and emergency medicine specialists. In the tertiary centres much of the care is delivered by paediatric emergency physicians, working in collaboration with other paediatric sub-specialists and EM sub-specialists.

The level of care to children in the emergency setting is extremely variable throughout the country. There have been ongoing attempts to improve that care through various educational experiences, both in a postgraduate setting as well as ongoing Continuing Medical Education. However, there remains a critical shortage of many of the resources required for appropriate paediatric emergency care.

As outlined in the paper Critical Paediatric Equipment Availability in Canadian Hospital Emergency Departments published in Annals of Emergency Medicine, many emergency departments in Canada remain unprepared for paediatric emergencies for various reasons. They often don’t have appropriate or adequate equipment for children. Many of these areas have a low percentage of paediatric visits and the physicians do not develop the level of expertise required to deliver optimal care. Attempts to provide education are limited in the sense that the physicians often have difficulty getting away from their practices to get additional training and/or experience. There is also a lack of paediatric on-call coverage both in rural and tertiary centers.

There has only recently been recognition of the subspecialty of Paediatric Emergency Medicine by the Royal College of Physicians and Surgeons of Canada (May 2000). Funding must be forthcoming for these new fellowship programs. The individuals entering these fellowship positions would be instrumental in improving the emergency care delivered to children across the nation by being the teaching faculty for all of the other physicians. Because of the current limited educational slots for these fellowship positions, many of our Canadian graduates seek positions in the United States where there are many other opportunities with enhanced academic support. There are more job opportunities in the U.S. with a higher financial reward and less job stress. We need these people in Canada. Therefore, we need to make it attractive for them to stay.

There are major financial issues involving paediatrics and paediatric emergency care. Dealing with children takes more time but requires fewer procedures than adult visits. Thus, physicians are not remunerated for the complexity of care involving patients and their families. Massive fee inequities in all of the paediatric areas make taking care of children less desirable from a financial perspective.

Public expectation is also an area that requires significant management especially when it comes to paediatric emergency care. Parents and families need to understand when to seek emergency services and need to feel the care they are obtaining in their local area is appropriate, with access to tertiary care when required.

Emergency departments across the country require additional resources ranging from paediatric equipment to additional paediatric education for those delivering care to children. Efficient ED management requires a team of providers capable of correctly identifying patients’ needs, setting priorities, and implementing appropriate treatment, investigation and disposition. The Canadian Paediatric Triage and Acuity Scale (PaedCTAS) was developed by representatives from CAEP, The Canadian Paediatric Society (CPS), the National Emergency Nurses Affiliation (NENA) and l’Association des médecins d’urgence du Québec (AMUQ) to assist health care workers with the triage of children.

Centralization or regionalization of paediatric care may be useful in some circumstances in order to take advantage of significant expertise in a particular area. However, that expertise must be available to all areas of Canada in some form, whether it is in transport arrangements or remote consultation.

Recommendations:

1) In order to enhance the educational component, additional postgraduate fellowship slots should be made available for Paediatric Emergency Medicine.

2) The practitioners delivering paediatric emergency care need to have the time to obtain appropriate education and the necessary experience. Educational opportunities through telehealth programs, internet (web-based)
learning and electronic portals should be explored and implemented by federal and provincial governments through collaborative processes.

3) The PaedCTAS should be implemented in all Canadian emergency departments to assist health care workers with the circumstances and unique conditions of children.

4) Minimum standards of care should be defined and adhered to by all departments delivering care to children.
Rural Emergency Care

The emergency department is of particular importance to the 30% of Canadians who choose to live and work in a rural environment. Qualitatively, the rural ED represents a vital and integral component of the health care social safety net on which rural Canadians rely. Quantitatively, the rural ED carries a substantial burden of care. Indeed, approximately half of all emergency care in Canada is delivered in the rural (towns with populations < 15,000) or small-urban (cities with populations <100,000) settings.

A disproportionate number of traumatic deaths occur in rural environments; 70% of traumatic deaths in Canada occur in rural areas though 30 % of Canadians live in rural areas. Studies have shown that the mortality rate of a given traumatic injury in rural Canada is twice that of a similar injury in urban Canada.

It is a simple truth that many Canadians die because of the cumulative effect of weather, geography, and time and distance to definitive care. Some Canadians, however, die because of a lack of emergency medical expertise in the rural emergency department. A number of studies have demonstrated a preventable death rate of 15 to 20% in ED care provided in rural American states. These patients die because of a lack of adherence to standard resuscitation protocols. Though no such studies have been performed in Canada, preventable deaths certainly occur. As a society we must strive to minimize such unfortunate outcomes.

The provision of emergency care in rural environments presents its own unique challenges as the following anecdote illustrates:

Somewhere in rural Canada, a 22 year old male is ejected from his car at 2 a.m. and is brought to the local rural emergency department by volunteer paramedics who have only completed their industrial first aide training. He is unresponsive and the single nurse covering the emergency room that night assesses him to be critically injured. She calls the family physician on-call to come into the hospital from home and until the MD arrives, the nurse and 2 ambulance attendants are all that's keeping this man from dying. Once the MD has arrived, the resuscitation team increases from 3 to 4 people. It is quickly clear that this man's injuries are beyond the capabilities of the local hospital. The physician makes a call to the nearest referral center, but is told that there are no ICU beds available and that they cannot take the patient. The next closest referral center has no specialist available that night (as they have just recently lost 1 of their 2 neurosurgeons to the States) and also cannot take the patient. Finally, the third call finds both an accepting physician and a bed, but because of the distance, the patient must be flown by air ambulance. Unfortunately, the air ambulance won't be available for another 5 hours as it is understaffed. The rural physician, his nurse and paramedics must continue to care for this critically injured patient for another 5-6 hours even though they do not have the expertise. This unfortunate scenario is hardly the exception but is, in fact, a common occurrence throughout much of rural Canada.

What are the lessons learned? Significant injuries are encountered in rural Canada and the rural ED must be prepared. There are unique patterns of injury encountered in the rural workplace be it the farm, the forest, the mine or in fishing outports. In road accidents, bad weather, poor roads, lack of vehicle maintenance and inadequate use of restraint systems all contribute to the increased mortality rates.

The rural ambulance attendants may be poorly trained and inadequately equipped. The rural ED may have insufficient human and technological resources to manage acute medical illness and trauma. Nurses may not be trained in resuscitation. The departments may suffer from lack of standardization of equipment and the diagnostic resources may be minimal.

In rural Canada, the ED relies heavily on the community-based family physician. Of the 6,000 physicians who practice emergency medicine in Canada, only 1,000 are certified emergency physicians. Family physicians, however, may not be adequately trained in EM. In most jurisdictions in Canada, there is no mandated exposure to EM prior to obtaining a general license to practice. Furthermore, a number of Canadian studies have revealed that graduates of Family Medicine training programs do not feel comfortable in the ED environment.

It is also exceedingly difficult for rural family physicians to maintain competence or develop new skill sets in emergency and resuscitative care given the low volumes of critically ill patients encountered. The obstacles to accessing meaningful continuing medical education in rural environments has been well documented.
Beyond this problem of skill, there is an even greater problem of a marked reduction in the number of family physicians even willing to consider working in the rural ED. Nationwide, many rural hospitals have had to either close or reduce hours of service in the ED because of a lack of physicians.

The necessary infrastructure for a regionalized system of care is often inadequate. There are difficulties accessing the resources of secondary or tertiary hospitals. In this era of remarkable advances in communications technology, the rural physician is often restricted to the use of the telephone. The ability of receiving hospitals to assist and support the rural hospital is threatened by a lack of specialists or beds. The inter-hospital transport of patients often proves to be a logistical nightmare.

There are potential solutions. The Rural Committee of the Canadian Association of Emergency Physicians published a framework for the provision of emergency care in the rural environment. Entitled Recommendations for the Management of Rural, Remote and Isolated Health Care Facilities in Canada, the document identifies important, necessary components for the provision of high quality emergency care in the diverse environment that is rural Canada.

**Recommendations:**

1. Recruitment and retention initiatives for rural health care providers should be aggressively pursued.
2. The rural emergency health care provider should be supported through improved initial training and innovative continuing medical educational initiatives.
3. Facilities, equipment, diagnostic capabilities and communications technology should be standardized and enhanced to meet the unique challenges of the rural health care environment.
4. Transport capabilities should be improved. The Shock Trauma Air Rescue (STARS) program of Alberta should be expanded nationally.
5. The study and development of regionalized models for the delivery of emergency care in the rural context is a pressing need.
6. The national implementation of Recommendations for the Management of Rural, Remote and Isolated Health Care Facilities in Canada.

Rural Canadians have poorer outcomes from acute medical illness and injury. Though much of this increased mortality is from non-medical factors such as weather and geography, Canadians are an innovative people and can develop strategies to minimize these factors. Where medical variability is a contributing factor, it is clearly within our collective power to effect positive change. Rural Canadians deserve nothing less than our total efforts to deliver timely, effective and compassionate emergency health care.
Pre-Hospital Care And Emergency Medical Services (EMS)

To ensure the delivery of high quality patient care the provision of pre-hospital care, as delivered by Emergency Medical Services (EMS), is an essential link in a comprehensive medical care model. Aside from providing a transport system, EMS enables us to reach out into the community so that medical assessment and care can begin prior to the arrival at a medical facility. It is truly a multi disciplinary approach as it involves public activation of the system through 911, dispatching through central ambulance communication centers, first response teams, tiered response with fire services, air ambulance paramedic services, land ambulance paramedic services and medical oversight/direction.

The medical assessment and care that paramedics deliver is the cornerstone to pre-hospital care. Across Canada there is a wide spectrum of medical care that the paramedics can deliver. The care varies from advanced first aid by first responders to the numerous Delegated Medical Acts (DMA) that Critical Care Paramedics (CCP) perform.

With respect to the scope of practice, local needs must be taken into consideration through a needs analysis. Where possible, the medical care that the paramedics provide should be evidence based. Paramedic skills should not be added on because it appears that the skill would be useful. The process for certification, re-certification and maintenance of skills must be taken into consideration.

A national classification of paramedic competencies describing the levels of paramedics based upon a specified skills set should be adopted to ensure standardization of the different levels of paramedics and the skills sets they possess. This allows for a common approach for patient assessment and treatment as well as portability of these skills from province to province. It is recommended that the recent National Paramedic Competency Profiles, developed by the Canadian Paramedic Association and adopted by the Canadian Medical Association for accreditation of paramedic training programs, be used as the standard for the paramedic competencies.

Another key component to pre-hospital patient care is the medical direction and oversight that is provided by physicians. To undertake Delegated Medical Acts the paramedic must initially be certified by a physician for a specific DMA. Furthermore, an ongoing quality assurance program is required to monitor the care provided by the paramedic for specific DMA’s.

Ideally, there should be provincial coordination of the medical directors. This allows for standardization of protocols and policies associated with pre-hospital patient care. The federal government should take the initiative to create a national body of Pre-hospital Medical Directors for the purposes of standardizing medical oversight on a national basis.

An overall systems approach is required to ensure efficient and comprehensive patient care. Each link in the Heart and Stroke Foundations’ chain of survival must not only be strong but there must be coordination of the links. It is essential to integrate all pre-hospital care services and have them communicate with each other so one service knows the capability and scope of practice of another service. This is essential for Public Access Defibrillation (PAD) programs and in communities where tiered response with fire services is present.

The other aspect of a systems approach is to coordinate the land and air ambulance services to take the greatest advantage of the specialized services that they offer. Where trauma centers are identified, local, regional and provincial policies should be developed for transport of the patient to the most appropriate facility realizing that hospital bypass will occur. With respect to land ambulance services, local and regional policies are required to agree upon criteria for ambulance redirect and Critical Care Bypass (CCB).

**Recommendations**

1) The scope of practice for paramedics should be based upon a local needs analysis and where possible should be evidenced-based.

2) The National Paramedic Competency Profiles should be adopted as the national standards for the terminal competencies for each level of paramedic.
3) Medical direction and oversight is required to ensure appropriate certification and quality assurance programs.

4) Medical directors should be coordinated provincially and the federal government should support the development of a National EMS Directors forum.

5) All pre-hospital care services should be integrated with open communication between the services. This is particularly important for Public Defibrillation Programs and Tiered Response services.

6) Local, regional and provincial policies should be developed to address a systems approach to bypass issues related to trauma and critical care bypass.
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READING LIST

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