

Improving Access to Emergency Department Care: Emergency Department Overcrowding Solutions Framework

**Report of the
BC Medical Association, BC Section of Emergency Medicine and
Ministry of Health Services
Emergency Department Overcrowding Solutions Collaboration**

**Presented to
Collaboration Committee**

March 27, 2009



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ACRONYMS:

ALC	Alternate Level of Care
BCMA	British Columbia Medical Association
CHF	Congestive Heart Failure
COPD	Chronic Obstructive Pulmonary Disease
CTAS	Canadian Triage Acuity Score
ED	Emergency Department
EDPWG	Emergency Department Protocol Working Group
EDOSC	Emergency Department Overcrowding Solutions Collaboration
FHA	Fraser Health Authority
GLE	Government Letter of Expectation
GPAC	Guidelines and Protocols Advisory Committee
GPSC	General Practice Services Committee
HAD	Health Authorities Division
HAD EDWG	Health Authorities Division Emergency Department Working Group
HIF	Health Innovation Fund
HOC	Health Operations Committee
HSPD	Health Systems Planning Division
LMIIF	Lower Mainland Innovation and Integration Fund
LOS	Length of Stay
MoHS	Ministry of Health Services
MSC	Medical Services Commission
NHA	Northern Health Authority
OCP	Overcapacity Protocol
P4P	Pay-for-Performance
PHSA	Provincial Health Services Authority
SEM	Section of Emergency Medicine
TIA	Transient Ischemic Attack
UBC	University of British Columbia
VIHA	Vancouver Island Health Authority
VCHA	Vancouver Coastal Health Authority

EXECUTIVE SUMMARY:

Emergency department (ED) overcrowding is not unique to British Columbia. It is a long-standing healthcare access challenge that has spanned over the past two decades. Although the terms ED overcrowding and ED congestion are inter-related and used interchangeably, they are distinct concepts. “**ED congestion**” refers to the condition or state of an ED when patient flow has slowed to the point that patients are waiting excessive periods of time to access triage and/or treatment. “**ED overcrowding**” is an access block where ED patients, who are assessed as requiring an inpatient bed, are unable to be moved to an inpatient bed in a timely way and therefore experience extended waits in the ED. ED overcrowding is considered to be the primary cause of ED congestion. In BC, ED overcrowding has been escalating resulting in prolonged wait times, adverse patient outcomes, and strained working conditions for staff.

ED overcrowding is not a problem that has its primary causes concentrated within the ED itself; rather it reflects a system-wide problem with access to care that requires system-wide solutions. The key causes of ED overcrowding are threefold: primarily, a lack of functional acute care bed capacity; secondarily, a lack of integration between community and hospital healthcare resources that results in ineffective patient flow; and, thirdly, system efficiency issues that do not optimize the care provided during inpatient and ED stays.

In order for BC’s healthcare system to be sustainable and patient-centred, EDs have to be primarily a service for dealing with emergencies. Currently, EDs are functioning without protected stretcher space for ED patients, which increase the clinical risk for ED patients who require a stretcher for emergency care. From a quality of care and patient safety perspective, patients should not be treated and kept in ED corridors or other informal ED spaces due to overcrowding. Plans that promote best use of inpatient wards need to be developed to minimize clinical risk rather than retaining admitted patients in the ED when hospital capacity is reached.

Implementing system- and hospital-wide solutions requires engagement, and coordination at all levels of the health care system. The Emergency Department Overcrowding Solutions Collaboration (EDOSC) supports a province-wide approach based around ED performance targets and accountability. Appropriate ED performance targets are required in order to determine the extent of delay in accessing ED care, and to evaluate the impact of interventions to improve access to ED care. Targets must be well-defined, measurable, comparable, and be linked to the collection of quality data.

ED length of stay targets also have to be linked to system support and coordination. Strong administrative and clinical leadership is needed to drive a cultural change that instills commitment, ownership, and accountability in all players involved with ED overcrowding (e.g., health authority administration, inpatient services, outpatient services, community services, physicians and ED staff). Furthermore, local solutions need to be fostered and supported from the top-down.

This report recommends a nine-point framework to help address and reduce ED overcrowding. These recommendations may be applied at the provincial, health authority and local levels. It is important that the nine-point framework is implemented as a collective package; a system wide problem cannot be remedied by selecting only portions of a system wide solution. Some recommendations may require implementation in the long-term while others should be implemented or expanded upon as soon as possible. At the same time, local sites and HAs will need to tailor solutions for ED overcrowding that best meet their own specific needs.

Access to emergency care is a fundamental system issue that should be considered in planning and funding decisions at the provincial, health authority, or local level. Ensuring timely access to care for emergency patients is the responsibility of all the players in the healthcare system, and it will require the concerted commitment of all involved.

Recommendations:

1. It is recommended that the government, health authority, and physician commitment to solve ED overcrowding be continued and maintained.
2. It is recommended that emergency stretchers be protected for emergency patients.
3. It is recommended that ED capacity requirements be determined by robust modeling.
4. It is recommended that ED overcrowding data definitions and measurement are standardized across the province.
5. It is recommended that support and coordination to reduce ED overcrowding is provided through resources and incentives.
6. It is recommended that Health Authority Government Letter of Expectations are modified to include performance measures to reduce ED overcrowding.
7. It is recommended that a system-wide approach is required to solve ED overcrowding.
8. It is recommended that an ED overcrowding lens is applied to new initiatives and programs.
9. It is recommended that accurate feedback loops are developed whereby troubleshooting may occur collaboratively. At the provincial level this may be facilitated through an emergency service round table that shares knowledge, disseminates best practices, and proposes solutions.

1. INTRODUCTION:

In October 2008, the Emergency Department Overcrowding Solutions Collaboration (EDOSC) was launched to work through a series of physician engagement activities outlined in the proposal “*Update on Proposed Action Plan on Proposed Project with BCMA Emergency Medicine Section to Collaborate with Government and Health Authorities on Emergency Department Congestion and Improved Care for Patients*” presented to the Collaboration Committee on September 4, 2008. The goal of the physician engagement activities was to collaboratively explore system-wide approaches for addressing emergency department (ED) overcrowding. The core membership of the EDOSC included representatives from the Section of Emergency Medicine (SEM), the British Columbia Medical Association (BCMA) and the Ministry of Health Services (MoHS).¹

The purpose of the EDOSC was to meaningfully engage the SEM and BCMA and utilize their insight and experiential knowledge of ED overcrowding and decongestion activities as well as provide input on related initiatives currently underway. This report summarizes the EDOSC physician engagement activities, and identifies key themes and recommendations to address ED overcrowding.

2. BACKGROUND:

ED overcrowding and ED congestion have been identified as significant patient safety and quality of care concerns.² Although the terms ED overcrowding and ED congestion are inter-related and used interchangeably, they are distinct concepts. “**ED congestion**” refers to the condition or state of an ED when patient flow has slowed to the point that patients are waiting excessive periods of time to access triage and/or treatment. “**ED overcrowding**” is an access block where ED patients, who are assessed as requiring an inpatient bed, are unable to be moved to an inpatient bed in a timely way, and therefore experience extended waits in the ED.

Access block is generally a function of high inpatient ward occupancy, though bed management processes can also contribute to unnecessary waits in the ED. Prolonged ‘boarding’ of admitted patients often leaves the ED with a reduced number of diagnostic and treatment stretchers and nurses for arriving emergent and urgent patients.³ In some BC hospitals, more than one-third of patients who require hospitalization wait more than ten hours to be transferred to an appropriate inpatient hospital bed after a decision to admit has been made.⁴

¹ EDOSC was co-chaired by Dr. William Cunningham, SEM ED Overcrowding Taskforce, BCMA Board Member, Emergency Physician; and Nichola Manning, Director of Physician Collaboration & Priority Projects, Medical Services Division. See Appendix A for complete list of members.

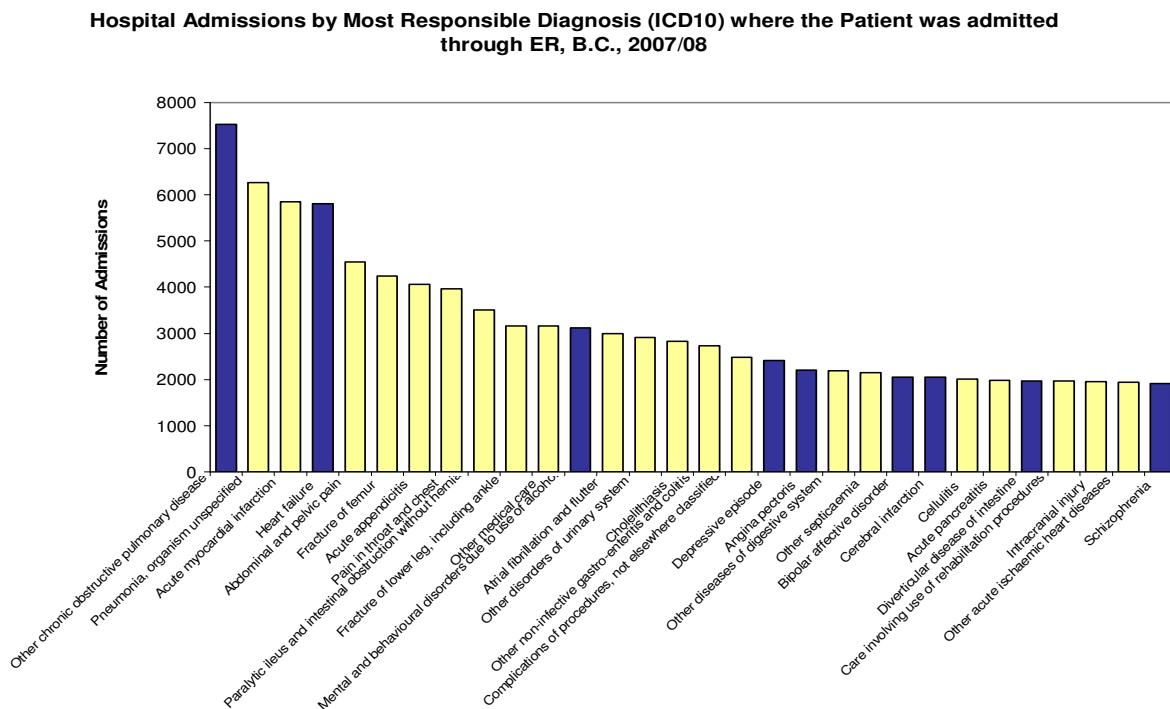
² Canadian Association of Emergency Physicians and National Emergency Nurses Affiliation, Joint Position Statement. Access to acute care in the setting of emergency department overcrowding. *Can J Emerg Med* 2003; 5(2): 81-6.

³ *ibid.*

⁴ Fraser Health Authority. FH Emergency Decongestion Initiatives Presentation. January 2009.

The underlying causes of ED overcrowding and congestion are system-wide, which reflect the ED's role as an important hub that interacts directly with primary care, inpatient hospital care, and community care services. Often when various sectors of the health care system reach capacity, the automatic default or contingency plan is for patients to return or remain in the ED. For instance, acute care bed capacity shortages are a significant cause of ED overcrowding.⁵ Other contributors that block ED outflow include limited residential care and associated support services to accept and manage discharged hospital patients. Hospital staff shortages also contribute to an increase in ED demand and workload. Furthermore, the inability of patients to access family physicians in primary health care settings, especially those with chronic diseases (e.g., COPD, CHF, depression, stroke) or mental health/addiction issues has been linked to ED overcrowding. Hospital admissions through EDs occur most frequently for patients with chronic conditions such as a chronic obstructive pulmonary disease and congestive heart failure (see Figure 1).

Figure 1:



ED overcrowding and excessive ED length of stay can be associated with sub-optimal care, which has negative impacts on clinical outcomes and leads to longer inpatient stays.⁶ Research shows that a lengthy period of time from presentation to treatment can be detrimental for patients with certain time-critical conditions such as stroke, acute myocardial infarction, fractured neck or femur, compound/open and long bone fractures, sepsis, pneumonia, meningitis, and major head injury.

⁵ An insufficient supply of acute care beds contributes to unsustainable occupancy rates in BC hospitals (e.g., over 100% capacity) making regular bed shortages, periodic bed crises, and hospital overcrowding inevitable. This, in turn, leads to delays in admitting patients, especially from emergency departments (Bagust A, Pace M, Posnett JW. Dynamics of bed use in accommodating emergency admissions: Stochastic simulation model. *BMJ*. 1999; 319: 155-8).

⁶ Working Group for Achieving Quality in Emergency Departments. *Recommendations to Improve Quality and the Measurement of Quality in New Zealand Emergency Departments*. 2008. Wellington: Ministry of Health.

3. SUMMARY OF PHYSICIAN ENGAGEMENT ACTIVITIES:

Since October 2008, a series of physician engagement activities were undertaken by the EDOSC:

Collaboration Committee Physician Engagement Commitments:		
Engagement Activity	Intent	Outcome
1. Acute Care Modeling	Health Systems Planning Division (HSPD) & Health Authorities Division (HAD) review of BCMA's <i>Improving Access to Acute Care Services</i> & discussion of MoHS & HA acute care modeling work.	Met Nov. 18/08 – Dr. Les Vertesi presented on the principles & framework of the acute care bed model which is feeding into the government long-term capital planning process. BCMA/SEM support this work and see an opportunity to apply similar techniques for ED stretcher capacity modelling
2. Expert Panel on Emergency Department Decongestion	Health Operations Committee (HOC) establishment of time-limited Expert Panel on ED Decongestion.	Dec .12/08 – Endorsement for formation given. Panel to be comprised of HA appointed administrators & physicians, ex-officio BCMA member. Mandate is to prepare a report that outlines a system-wide, comprehensive, and long-term plan for achieving and maintaining access, wait times, and quality of care for ED patients. First meeting scheduled for April 8, 2009 with expected 4-month duration. Final report to be submitted to the MoHS via HOC.
3. Health Operations Committee	EDOSC presentation to HOC on ED Overcrowding progress to date & preliminary recommendations.	Met Dec. 12/08 – HOC provided constructive feedback on the EDOSC's preliminary recommendations such as emphasizing the use of acute care capacity recovery initiatives (e.g., iCare) to decrease length of stay (LOS), including demand side measures, and the need to clarify the objectives of the preliminary recommendations. The ED systems flow map was circulated to HOC members for feedback.
4. FHA & VIHA ED Data Drill Down and Action Planning Day	ED data drill down and presentation of results related to ED decongestion initiatives underway in the FHA & VIHA. FHA focused on all ED sites, VIHA focused on Cowichan District Hospital.	FHA – Jan. 7/09 meeting provided an opportunity for BCMA/SEM leadership to understand and provide input into FHA's ED decongestion initiatives started under projects such as ActionNow, LMIF, IMPACT, ED P4P, capital development, physician human resource planning, and clinical integration for regional ED services. Presentation well received and the EDOSC was supportive of the direction of FHA's initiatives. FHA requested BCMA/SEM assistance in communicating to physicians about these initiatives. VIHA – Between January and March 2009, VIHA will be implementing a drill-down project at Cowichan District Hospital to understand the barriers to patient flow specific to community hospital EDs. Short-, medium-, and long-term solutions for ED congestion, and appropriate incentive models to optimize performance will be recommended. Upon completion, VIHA will present its findings and recommendations to the EDOSC.
5. GPSC	Presentation to discuss GPSC's role and potential for increased collaboration and shared care between GPs & emergency room physicians, improved care for patients, prevention of the need for ED visits, and alternatives to ED visits.	Met Dec. 4/08 – Commitment made to continue the dialogue between GPSC and BCMA/SEM regarding initiatives in primary health care that will help reduce ED overcrowding.

Collaboration Committee Physician Engagement Commitments:		
Engagement Activity	Intent	Outcome
6. Provincial Stroke Strategy	BCMA/SEM invited to participate in Provincial Stroke Strategy, building on existing ED stroke protocols.	Dr. W.Cunningham, who is also the chair of the PHSA Emergency Department Protocol Working Group, was involved in the development of the GPAC Stroke/TIA guideline. Guideline was approved by the MSC on Mar.11/09 and will be released in Spring 2009. Dr. Cunningham is committed to linking with BCMA/SEM to apprise them of ongoing work with the Provincial Stroke Strategy. ⁷
7. Ministers Meeting	BCMA/SEM & Minister to meet to update on activities underway related to ED overcrowding.	Met Dec 4/08 – Minister Abbott responded to preliminary 9-Point Plan for ED overcrowding by offering support in principle. Minister encouraged SEM to develop innovative pilot proposal to address ED overcrowding and to the ongoing collaboration between government and the BCMA/SEM. The Minister also encouraged additional collaboration between the MoHS, BCMA/SEM and HAs. Minister requested quarterly update meetings - next meeting scheduled for March 30, 2009.
Further Engagement Activities Stemming from Learnings of Physician Engagement Activities:		
8. ED Performance Measures	Discussion with HSPD, HAD, MSD of ED performance measures.	Met Nov 13/08 – Provided input on the three existing GLE required ED performance measures. Ongoing discussion for 2010/11 GLE to occur. Met Dec 16/08 – Started discussions on HSPD performance measurement framework related to ED performance measures. Consultation with BCMA/SEM will be ongoing as framework develops. Next meeting scheduled for April 9, 2009.
9. ED Pay-for-Performance	Presentation of how P4P works within an ED.	Met Nov. 08 – Presentation by Dr. Les Vertesi made to BCMA/SEM. Vertesi provided insight on how the VCHA’s P4P ED pilots were structured and reviewed after one year in operation.
10. ED System Flows Mapping	ED input, throughput, and output diagram.	A comprehensive ED systems flow map was developed and circulated for external review (throughout MoHS, to SEM ED Taskforce, HOC, HAD ED Working Group). The map illustrates the input, throughput, and output processes for the ED, Health Innovation Fund ED-related projects, perceived issues areas, and proposed solutions for ED overcrowding (see Figure 2).
11. SEM Presentation to HAD ED Working Group (HAD EDWG)	EDOSC presentation to HAD EDWG on ED Overcrowding progress to date & preliminary recommendations.	Met Jan.15/09 – HAD EDWG is a consultation group consisting of administrators from all HAs for the HAD ED Decongestion Strategy. HAs expressed interest in engaging with physician leaders on their ED initiatives and would like to partake in an ED data drill down and action planning days similar to the one exercised with FHA. Commitment for ongoing communication made.

⁷ Since 2006/07, the British Columbia Stroke Strategy has received \$2.8 M to support implementation in five priority areas:

- **Rapid TIA Assessment** - ensuring that individuals who have experienced a Transient Ischemic Attack (TIA or mini stroke) and are discharged from emergency rooms are rapidly followed-up on in the community
- **ER Stroke/TIA Protocols** –reinforcing the understanding and uptake of these critical treatment protocols by all health care providers in all emergency rooms across the province
- **Telestroke** – applying state of the art telehealth applications to stroke care in order to serve rural and remote communities better, especially in the areas of stroke diagnosis and treatment
- **Rehabilitation and Community Integration** – utilizing rehabilitation experts to develop a comprehensive provincial plan to improve and expand rehabilitation services across the province
- **Measurement and Evaluation** – developing measures and methods for evaluating the performance of BC’s overall stroke care system as well as the results of the above priority initiatives.

Commitments Made by Minister during Dec 4/08 Meeting with BCMA/SEM		
Engagement Activity	Intent	Outcome
12. SEM Pilot Proposal	Minister invited BCMA/SEM to develop a proposal for innovative pilot on ED overcrowding.	BCMA/SEM have been working with HAD on developing proposals based on the proposed 9-point framework, which are expected to be ready for review in the new fiscal year.
13. Modeling	Minister encouraged continuation of ED modeling (acute care bed / ED stretcher / workload / provincial ED inventory) and definition standardization work currently underway.	Commitment made to initiate ED stretcher modeling work. HSPD is working with the BCMA/SEM on developing a provincial ED inventory document. This document will attempt to capture standardized data elements from HAs required for ED stretcher modeling. Acute care bed modeling and workload modeling are ongoing initiatives being undertaken by MoHS.
14. ED Roundtable	Minister encouraged collaboration between the MoHS, BCMA/SEM and HAs for ongoing discussions and problem solving at the provincial level.	Minister instructed the roundtable formation be delayed pending the direction and advice of the Expert Panel on ED Decongestion. BCMA/SEM to make presentation on draft terms-of-reference to Panel with suggested membership comprising of BCMA/SEM, MoHS and HA representatives. In principle, BCMA Board endorsed the ED Roundtable concept in February 2009. Continued work to develop the roundtable's draft terms of reference will be undertaken by the BCMA.
15. Quarterly Meetings between Minister & BCMA/SEM	To continue the dialogue on ED Overcrowding.	Minister Abbott proposed quarterly meetings for regular status updates on ED issues. The next meeting is scheduled for March 30, 2009.
16. Revised ED performance measures for GLE	Minister showed interest in exploring revision further but measurement & modeling needs to be established.	Consideration for 2010/11 GLE inclusion or other accountability mechanism. HAD and HSPD have begun exploring the development of an ED stretcher model that will inform decisions on the protection of ED stretchers. The model will be built and run by MoHS. SEM representatives will be consulted over the course of the development of the model.

4. KEY THEMES FROM PHYSICIAN ENGAGEMENT ACTIVITIES:

There has been, and will continue to be, a strong desire amongst MoHS, HAs, BCMA, and SEM to work collaboratively to improve the utilization and effectiveness of the emergency services, and reduce ED overcrowding in BC. The following key themes surfaced from the EDOSC physician engagement activities:

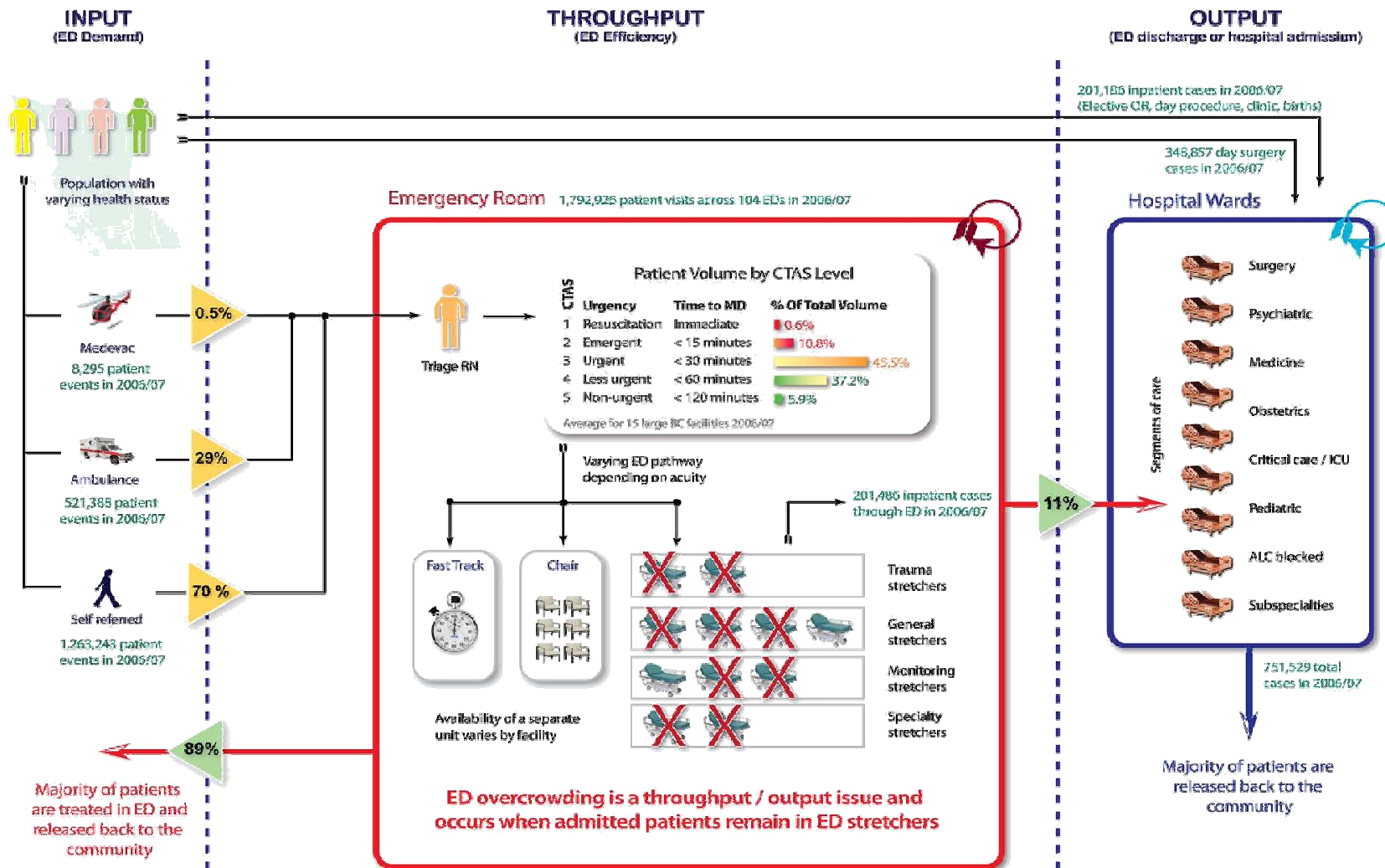
A. Developing a common understanding of ED overcrowding is essential.

The EDOSC fostered a collaborative approach towards understanding what enables the reduction of ED overcrowding across the province. Developing the ED systems flow map (see Figure 2) was an important step towards understanding the key barriers to optimal patient flow through the ED. The flow map provides a high level description of the emergency services process, its components, inter-relationships, and perceived issue areas. Possible solutions were identified in the input (ED demand), throughput (ED efficiency), and output (ED discharge or hospital admission) components of the ED flow process. The flow map identifies bottlenecks contributing to ED overcrowding, and current ED decongestion initiatives targeting ED input and throughput that have been successfully undertaken.

Figure 2: Emergency Department Systems Flow Map

Please note*** The figure below is a very simplistic and modified version of the ED Systems Flow Map. The original flow map is so detailed that it is unable to fit legibly into a Word document.

MOHS/BCMA ED Overcrowding Solutions Collaboration



B. Standardization and robust ED performance measures are necessary.

Robust performance measures linked to quality data are critical for performance management and action planning.⁸ The current three ED decongestion performance measures contained in the Government Letter of Expectation (GLE) for HAs include:

- **10 Hour** - Percentage of patients admitted from an ED to an inpatient bed within 10 hours of the decision to admit. The long-term target is to have 80% admitted within 10 hours.
- **Triage** - Time interval from ED triage to physician assessment according to level of urgency. The long-term target is to have 90% of patients assessed by physician within Canadian Triage Acuity Score (CTAS) guidelines.
- **Patient Satisfaction** - Percentage of ED patients reporting satisfaction with their ED experience. The long-term target is to have 90% of patients reporting satisfaction.

These ED performance measures assess inputs to, and outputs from EDs; however, there currently is no direct measurement for ED overcrowding. Common definitions across the sector are necessary to ensure that ED performance data is consistent and comparable to the greatest extent possible. Commitment has been made to continue discussions with BCMA/SEM regarding the improvement GLE ED performance measures for the 2010/11 fiscal year.

In addition, the Health Systems Planning Division is developing a health system performance measurement framework which will be a comprehensive set of performance measures spanning all components of the BC health care system. The purpose of the framework is to support decision making aimed at improving performance at strategic and operational levels. It will provide a context for GLE and Ministry Service Plan performance measures and targets. HSPD has committed to ongoing consultation with the BCMA/SEM in developing performance measures for all aspects of the ED system, including accessibility, as part of the framework.

ED clinical decision support tools (e.g., patient care guidelines, order sets) for a prioritized set of high-volume or high risk cases (e.g., pneumonia and antibiotics, thrombolytics and management of chest pain) help ensure best practices within EDs are applied consistently across BC.

Generally, clinical decision support tools helps to ensure that patient care is appropriately provided across the continuum. The recent approval of the Guidelines & Protocols Advisory Committee (GPAC) Stroke/TIA guideline is a step in the right direction. It is important that the implementation of best practices and protocols receives the required attention and support in order to be successful.

C. Successful initiatives, principles, and concepts for ED overcrowding need to be consistently applied, built upon, and shared throughout the province.

Numerous ED system improvement initiatives have been, and are being, implemented, monitored, and evaluated across BC.

⁸ Dramatic reductions in emergency department wait times have been achieved in the United Kingdom following the implementation of a four hour or less total wait time target coupled with an extensive government financial commitment linked to accountability measures. (Working Group for Achieving Quality in Emergency Departments. *Recommendations to Improve Quality and the Measurement of Quality in New Zealand Emergency Departments*. 2008. Wellington: Ministry of Health)

Since 2007, the government’s ED Decongestion Strategy and the Health Innovation Fund (HIF) have funded projects in three key areas: Emergency Department Decongestion, Primary Health Care, and Pay-For-Performance (P4P) concepts. Fifteen of the major HIF initiatives addressed the issue of ED congestion in hospitals across the province with the overall goals being to reduce wait times for treatment and admissions, reduce length of stay, and decrease re-admissions while improving quality of care and increasing patient satisfaction. While the specific approach varied for each of the ED decongestion projects, they generally fell into one of the following three categories:

- Revised practice models that streamline care without compromising patient safety or quality of care (process redesign and workflow studies)
- Physical restructuring and renovation including the creation of specialized areas devoted to alternative care delivery to specific groups of patients
- Regional integration and better patient tracking through the implementation and/or expansion of better technology

Of all the HIF ED decongestion projects, it appears that the following locally built initiatives had the most direct impact on ED overcrowding:

Initiative	Description
VCHA Real Time Acute Bed and Patient Flow Management	This project implemented bed management technology at Richmond and Vancouver General hospitals with the goals to standardize patient flow processes, and to integrate best practices to maximize process efficiency and bed turnover. The technology incorporates new data indicators including: time from discharge to time bed is cleaned, and time bed is cleaned to time patient is placed in the bed.
Pay-for-Performance (P4P)	<p>Comprising a series of smaller sub-projects that collectively assist to improve patient transit times through the EDs at Lion’s Gate, St. Paul’s, Richmond, and Vancouver General hospitals. Some of these sub-projects include: redesigning workflows to reduce and/or eliminate duplication or wasted efforts; better staff utilization; and moving diagnostic and other consults closer to the ED. In January 2009, the LMIF continued to fund the initial P4P pilot and expanded to four FHA hospital EDs: Royal Columbian, Burnaby, Surrey Memorial, and Abbotsford Regional.</p> <p>The premise of the project is having facilities receive payments proportionate to the number of ED patients exceeding the established baseline for transit times. Hospitals invest performance payments into further infrastructure and process redesign to improve patient flow. Early performance data indicates that overall improvements in patient transit times have been achieved both for admitted patients and for discharged patients of all CTAS levels despite increases in visit volume, admission and acuity. MoHS is currently evaluating the effectiveness of this type of incentive based concept.</p>
iCare	<p>iCare, or integrated care, refers to the redesign of traditional hospital processes that streamlines patients’ hospital journeys. Under iCare, all patients have a comprehensive care plan that is updated every day, and follows them through their hospital stay. Teams of interdisciplinary care providers – from the specialist surgeon, to physiotherapist, to the discharge nurse – all collaborate, to work towards the best outcome for each patient. Patients benefit from improved team communications, efficient decision-making, reduced congestion, and timely discharge.</p> <p>Since 2007, the implementation of iCare has led to significant reductions in overall length of stay for patients at hospitals in Fraser and Vancouver Coastal Health Authorities, including Burnaby, Chilliwack General, Lions Gate and Powell River Hospitals. Both health authorities continue to revisit current iCare programs to assess and support teams, and to further improve their effectiveness and address any barriers to flow. They are also expanding iCare to other units and facilities throughout the region.</p>

The following HIF ED Decongestion project was primarily targeted to ED congestion:

Initiative	Description
Streaming & Rapid Assessment Zones	<p>Streaming is a significant redesign to the flow of ambulatory emergency department patients (CTAS level 3, 4 and 5) who require medical attention. Upon arrival, a very short triage assessment is performed (90 seconds or less). Suitable patients are directed to a separate streaming area where a nurse and/or physician assessment is performed in an expedited manner. Stretchers are only used for assessment and treatment. At all other times, streaming patients wait in chairs within the department (not in the general waiting area) for test results to return and/or minor interventions (i.e. IV therapy) and/or during observation periods.</p> <p>A Rapid Assessment Zone (or RAZ) involves a very similar redesign of ED processes. Patients no longer “own” their stretcher or room but rather move from stretcher to chair depending on their assessed needs and clinical status. RAZ leads and patient flow coordinators provide leadership and work to facilitate flow, maximize efficiency and reinforce the cycling process.</p> <p>Streaming was first piloted in B.C. at Kelowna General Hospital where it successfully reduced patient wait times in the ED for ambulatory ED patients (CTAS 3, 4, and 5), and in turn has stimulated further acute demand. It is now being tested in multiple facilities across the province, including Nanaimo Regional General and Victoria General. Concurrently, Rapid Assessment Zones have been developed in Vancouver General, St. Paul's and Richmond Hospitals. Leaders from these and other interested sites across the province have been brought together to share challenges and lessons learned, and to provide peer support in testing streaming initiatives in other sites.</p>

The FHA action planning day was an excellent opportunity for the EDOSC to learn about FHA ED decongestion initiatives including those started under ActionNow, IMPACT, Lower Mainland Innovation & Integration Fund, Pay-For-Performance, ED Capital Development, and Physician Human Resource Planning. FHA is making steps towards addressing their significant acute care bed gap (e.g., iCare, IMPACT, new critical tower at Surrey Memorial Hospital), and improving emergency care access despite their growing population and acuity. Other HAs have expressed interest in holding ED data drill down and action planning days as a way to engage physician leadership in their work.

The EDOSC is supportive of all the current ED decongestion initiatives being undertaken by the HAs, especially those that have a direct impact on ED overcrowding. The EDOSC encourages continuous monitoring and evaluation of these initiatives so that successful concepts and ideas may be disseminated and built upon. One key aspect of any initiative is to allow for adaptation so that local empowerment and decentralized decision-making is encouraged.⁹

D. A system-wide, collaborative approach is required to reduce ED overcrowding.

EDOSC has successfully initiated the relationship building process required between physicians, government, and administrators to address ED overcrowding. ED overcrowding is not a problem isolated in the ED, but is a system problem that requires all players in the health care system to be actively engaged and to cooperate in any efforts to improve emergency service delivery. Looking inward at actions hospitals can take to ensure that an adequate number of emergency stretchers are protected for use by emergency patients would assist greatly in alleviating ED

⁹ At the December 4, 2008 meeting with Minister Abbott, the BCMA/SEM was encouraged to develop a pilot proposal to address ED overcrowding. Although still in the planning phase, this pilot is an opportunity to continue concepts originating from earlier ED decongestion initiatives (e.g., ED modeling), and implement the proposed 9-point framework.

overcrowding. Looking outward at actions community health services can take such as nursing home protocols, proactive elderly intervention, falls prevention strategies and primary care delivery redesign would ensure that ED visits are appropriate, help to reduce re-admissions, and ensure that patients can return home when medically appropriate.

The EDOSC presentation to the GPSC helped generate useful discussions about system-wide approaches to reduce ED overcrowding, and the potential of meeting the care needs of orphan patients through the GP Divisions of Family Practice initiative. In addition, BC's Primary Health Care Charter and HIF supported the implementation of integrated health networks, which are targeted to those populations who utilize the most health care resources and who can benefit significantly from a more proactive, planned approach to care (e.g., patients with multiple chronic conditions, frail elderly). Chronic conditions such as a chronic obstructive pulmonary disease and congestive heart failure are the top reasons for admission of patients to hospital through EDs and for scheduled admissions. Proactive chronic disease management strategies, attaching patients to family physicians, and advanced access can effectively reduce pressure on both the ED and acute care settings.

5. RECOMMENDATIONS:

Based largely on the experiential knowledge of ED physicians and findings from the EDOSC physician engagement activities, the EDOSC has developed a framework that includes the following nine recommendations. These recommendations may be applied at the government, health authority, and hospital levels. It is important that the nine-point framework is implemented as a collective package. Some recommendations will require implementation in the long-term while others should be implemented or expanded upon as soon as possible. At the same time, local sites and HAs will need to tailor solutions for ED overcrowding that best meet their needs, and complement their ED initiatives currently underway.

1. It is recommended that the government, health authority, and physician commitment to solve ED overcrowding be continued and maintained.

ED overcrowding is not a problem that has its primary causes concentrated in the ED itself; rather, it is part of a system-wide problem that requires system-wide solutions. Implementing such solutions requires engagement and coordination from the highest levels of the health care system. The EDOSC supports an approach based around targets and senior management accountability.

Cultural change is a necessary component to solving ED overcrowding, and strong leadership is necessary to drive cultural change within the entire hospital. ED staff and administrators traditionally do not have full control over a patient's entry or exit from the department. Therefore, clinical and administrative leadership needs to instill commitment and accountability for ED overcrowding in all players including HA administration, inpatient services, outpatient services, community services, physicians, and ED staff.

2. It is recommended that emergency stretchers be protected for emergency patients.

At all times, EDs should have a minimum number of “protected” stretchers that are not blocked by an admitted patient and are, therefore, functional. The number of “protected” stretchers required in each ED may be determined by conducting an inventory of existing ED stretcher capacity, and using stretcher modeling techniques to understand patient flow and capacity requirements.

The most obvious contributor to access block is inadequate acute care bed supply, which can reflect either a lack of physical beds, and/or inadequate bed management. Until an adequate supply of acute care beds is available, uncapped overcapacity protocols (OCP) may be needed to mitigate the effects of access block when a hospital reaches full occupancy. When an OCP is in effect, admitted patients may have to be cared for in “buffer zones/pods” on the inpatient care floors/wards of the facility until admitted ward patients can be discharged and inpatient beds are available. Inpatient wards need to create operational algorithms that allow for the prompt movement of admitted patients from the ED to an inpatient bed, while facilitating expedited discharge of admitted ward patients. Inpatient wards may require additional support and/or resources to ensure that the number of OCP spaces is uncapped. OCP thresholds should be determined by the local site using ED stretcher requirement modeling, and its implementation and compliance should be monitored.

Admission processes for ED patients can also be important factors in access block. Hospital culture needs to reflect that the ED is not the appropriate care space for patients requiring admission, and that patients requiring specialist consultations should be seen in a timely manner. In addition, discharge processes can unnecessarily delay the release of patients who are able to leave inpatient care, either to go home or to an alternate level of care. Ultimately, a cultural change is required for hospitals to proactively managing their patient loads in order to optimize patient care, and minimize the clinical risk that arises from ED overcrowding.

3. It is recommended that ED capacity requirements be determined by robust modeling.

Robust modeling techniques can be used to help plan and determine future capacity needs in situations when demand is random and capacity is fixed. Modeling can support decision making and resource allocation by allowing decision makers to predict the waiting that will occur and choose how much may be tolerated.

For EDs, modeling may be used to calculate true stretcher requirements – the number of stretchers needed at any one time to meet the variable demand. These models may predict the level of protected stretcher space needed so that ED staff may provide care to patients in a timely manner. An inventory of current provincial ED capacity (e.g., stretchers, chairs, IV rooms, trauma rooms, psych rooms, etc.) will need to be conducted first. Modeling EDs’ flow and capacity will allow sites to make operational adjustments while simultaneously accommodating anticipated fluctuations of inpatients within hospital setting (i.e., buffer). Local ED physician staffing hours may also be determined through workload modeling.

Modeling hospitals' acute care bed capacity has been underway for several years and is expected to inform the MoHS and HAs on how to improve patient flow and reduce access block. Such models consider the need for timely access to inpatient care for all streams of access (e.g., scheduled admissions, ED admissions, hospital transfers).

4. It is recommended that ED overcrowding data definitions and measurement are standardized across the province.

The ED decongestion measures contained in the GLEs are steps towards setting targets for ED service delivery. A provincial definition of ED overcrowding, and additional standardized performance measures linked to quality data are needed to comprehensively quantify ED overcrowding (e.g., maximum wait time benchmarks for total ED length of stay, percentage of ED stretchers occupied by admitted patients).

Common definitions across the sector are necessary to ensure that ED performance data is consistent and comparable to the greatest extent possible. Data elements that require common definitions include time of presentation, decision to admit, time of admission from ED, and ED stretcher. Measures that are well-defined and standardized are likely to minimize unintended outcomes and behaviours.

5. It is recommended that support and coordination to reduce ED overcrowding is provided through resources and incentives.

Support for innovation and process redesign to reduce ED overcrowding should include the close involvement of both clinical staff and senior administration. Meaningful and sustainable change requires buy-in at the health authority and the local level. Providing resources and positive incentives targeted for innovation and process redesign can create opportunities for leaders to facilitate meaningful and sustainable quality improvement.

6. It is recommended that Health Authority Government Letter of Expectations are modified to include performance measures to reduce ED overcrowding.

The setting of targets and collection of data related to those targets is rendered all the more powerful by linking them to an accountability framework that supports incremental, sustainable performance improvement. The three ED decongestion performance measures contained in the current GLEs should be expanded or replaced so that ED overcrowding can be fully measured and monitored in a standardized manner (e.g., maximum wait time benchmarks for ED length of stay indicators). GLEs could be used as a tool to assess incremental improvements in performance by defining milestones for performance achievement. Ensuring a robust GLE framework for ED performance will facilitate the MoHS' role as stewards of the healthcare system.

7. It is recommended that a system-wide approach is required to solve ED overcrowding.

A systems approach to solving flow problems is necessary. The hospital and community healthcare settings have generally functioned as two separate entities that communicate and coordinate independently thus creating inefficiencies in health care delivery. The resulting problems with access to care can manifest itself in ED overcrowding, which requires a whole-system view when developing solutions.

A robust primary health care system helps ensure that patients receive their care in the right place at the right time. Firstly, community based resources are needed to appropriately manage common chronic conditions (e.g., chronic obstructive pulmonary disease, congestive heart failure, and type 2 diabetes), to address mental health issues, and to provide palliative care. These strategies should provide appropriate access to primary care services, specialist services, diagnostic resources, and community care services. In essence, the greater the level of service that can be provided for patients who can be safely managed in the community, the less pressure there is for acute care. Secondly, strategies need to be explored to better integrate primary and acute care to ensure an effective range of health service options outside of the hospital for certain patients that would otherwise need a hospital visit or stay. Such an approach will have the effect of streamlining the caseload of the ED to those patients for whom ED care is the most appropriate choice, primarily emergencies. Options may include:

- advanced home care teams to support higher acuity patients in the home;
- enhanced ability to assess and manage patients in residential care facilities;
- placement of chronically ventilated or other high need medically stable patients to alternate level of care settings;
- integrated discharge planning;
- robust follow-up care for discharged hospital patients; and,
- agreed upon clinical pathways of care between primary care and specialists.

8. It is recommended that an ED overcrowding lens is applied to new initiatives and programs.

A system-wide approach for addressing ED overcrowding also requires considering the impact on EDs when introducing new initiatives, agreements, or contracts. Attention needs to be paid to the upstream and downstream effects of change (i.e., changes in one area and the effect it may have on another). New initiatives, programs, projects and/or contracts may potentially increase specific ED volumes, or slow ED throughput especially at sites where ED overcrowding has not been minimized.

- 9. It is recommended that accurate feedback loops are developed whereby troubleshooting may occur collaboratively. At the provincial level this may be facilitated through an emergency service round table that shares knowledge, disseminates best practices, and proposes solutions.**

The collaborative nature the EDOSC process should continue in the form of a provincial roundtable that communicates, shares knowledge and best practices, and problem solves for all ED related issues. A provincial roundtable would provide a linkage between MoHS, HAs, and BCMA for emergency services reform that would strive to improve care and accessibility for emergency patients in a systematic manner (see Appendix D). The roundtable should consist of MoHS, HA and BCMA/SEM members who are system thinkers and problem solvers, and linkages to other relevant stakeholders would occur at a sub-committee or advisory level.

Emergency Department Overcrowding Solutions Collaboration Members:

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Section of Emergency Medicine
Emergency Room Physician

Nichola Manning – Co-Chair
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Consultation Members:

Dr. Rob Street - SEM ED Overcrowding Taskforce, Emergency Physician – Royal Columbian Hospital
Dr. Andrew McPherson - SEM ED Overcrowding Taskforce, Emergency Physician – Royal Jubilee Hospital
Dr. Riyadh Abu-Laban - SEM ED Overcrowding Taskforce, Emergency Physician – Vancouver General Hospital
Dr. Eric Grafstein – Emergency Physician, St. Paul’s Hospital
Dr. Les Vertesi - Emergency Physician, Royal Columbian Hospital
Nancy South - Project Director, Health Authorities Division
Martha Burd -Director, Health Econometrics & Accountability, Health Service Planning Division
Juanita Arthur - Director, Business Intelligence, Health Service Planning Division

TIMELINE OF EDOSC PHYSICIAN ENGAGEMENT ACTIVITIES:

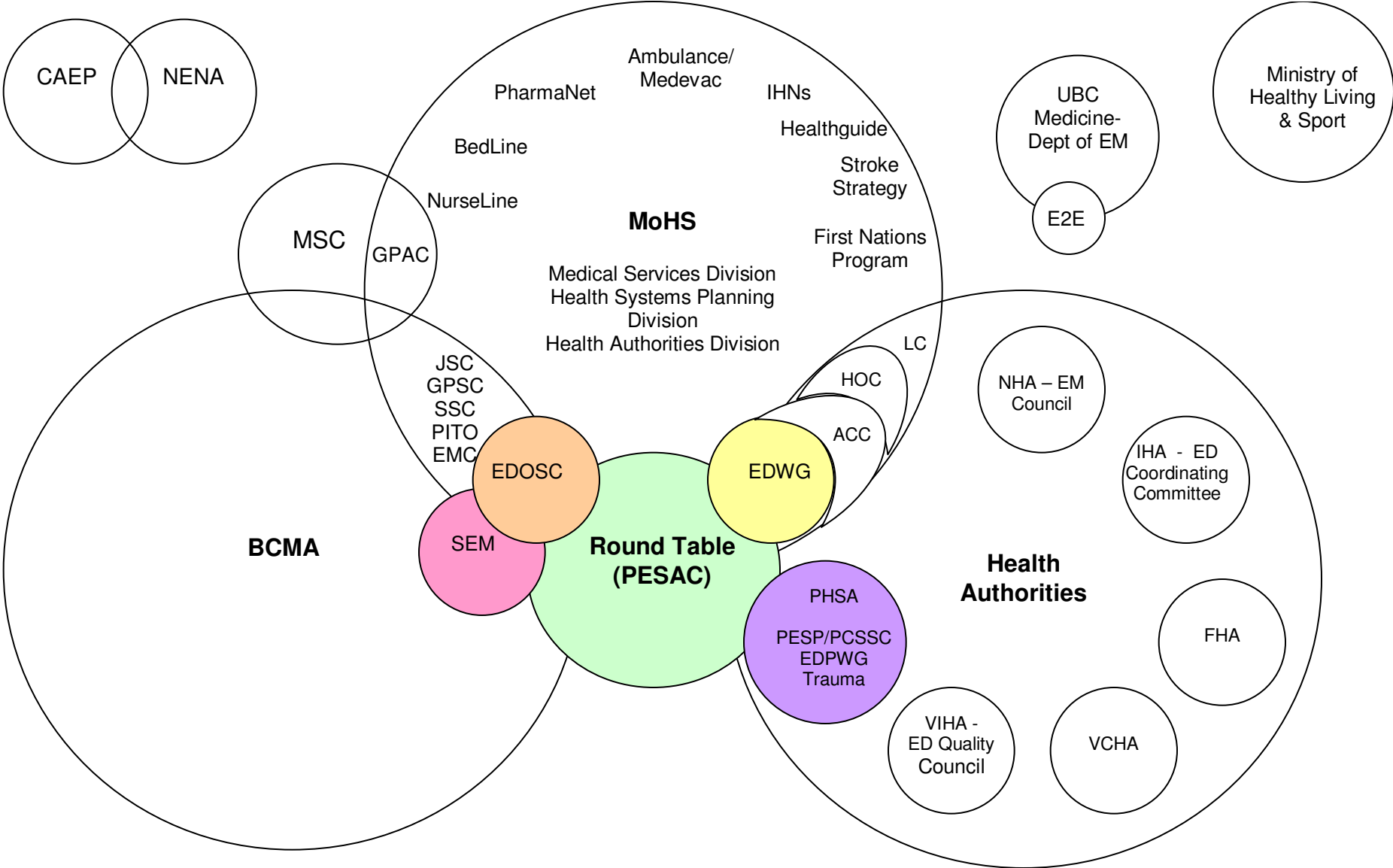
- **April 1, 2008** – SEM/BCMA meeting with Minister to discuss concerns with ED Overcrowding
- **April 11, 2008** – issue referred to the Physician Services Committee which delegated authority to the Collaboration Committee to address issue and propose recommendations
- **Spring/Summer 2008** – ADM, SEM & BCMA meetings to discuss existing ED activities & projects (e.g., those in FHA & ED Decongestion Strategy)
- **September 2008** - S. Brown proposal to Collaboration Committee to meaningfully engage SEM/BCMA. Packaged approach outlining 7 key physician engagement activities.
- **October 2008** – establishment of the joint “SEM/BCMA & MoHS ED Overcrowding Solutions Collaboration” to work through physician engagement activities
- **October 15, 2008** – Full day orientation and discussion of Government initiatives to date
- **October 23, 2008** - Follow up to orientation meeting
- **October 29, 2008** – Systems Approach to Addressing ED Overcrowding meeting
- **October 31, 2008** – GPSC presentation discussion and preparation meeting
- **November 4, 2008** – ED Collaborative presentation at GPSC
- **November 5, 2008** – Mapping ED Flow meeting
- **November 13, 2008** – ED Measurement meeting
- **November 18, 2008** – Royal Columbian ED Tour and Data Review
- **November 18, 2008** – Vertesi Presentation on Acute Care Modelling Work meeting
- **November 24, 2008** – ED Flow Revisions and SEM 10 point plan meeting
- **December 2, 2008** – EDOSC Status Check in meeting
- **December 4, 2008** – mid-point progress report meeting with Minister
- **December 8, 2008** – Minister Meeting Debrief
- **December 12, 2008** - Health Operation Committee Presentation
- **December 16, 2008** – Review SEM/BCMA Pilot Proposals meeting
- **December 16, 2008** – Review of ED Measures meeting
- **January 7, 2009** – Fraser Health & ED Decongestion Initiatives presentation
- **January 13, 2009** – Measure and Matrix Discussion pre HAD EDWG presentation
- **January 15, 2009** –Meeting with Health Authority ED Working Group

- **January 23, 2009** – Pilot Proposals Discussion with HAD meeting
- **January 26, 2009** – Royal Jubilee Hospital Evening Shift Experience
- **January 28, 2009** – ED Roundtable Discussion meeting
- **March 27, 2009** – Collaboration Committee Meeting. EDOSC report due

BC's Emergency Departments and Diagnostic & Treatment Centres:

Fraser Health Authority	Mount Saint Joseph Hospital
Surrey Memorial Hospital	U.B.C Health Sciences Centre Hospital
Royal Columbian Hospital	Powell River General Hospital
Burnaby Hospital	St. Mary's Hospital (Sechelt)
Eagle Ridge Hospital & Health Care Centre	Squamish General Hospital
Matsqui-Sumas-Abbotsford General Hospital	Pemberton and District Health Centre
Chilliwack General Hospital	R.W. Large Memorial Hospital
Langley Memorial Hospital	Bella Coola General Hospital
Peace Arch District Hospital	
Ridge Meadows Hospital and Health Care Centre	Northern Health Authority
Delta Hospital	Prince George Regional Hospital
Mission Memorial Hospital	Fort St. John General Hospital
Abbotsford Regional Hospital and Cancer Centre	Dawson Creek and District Hospital
Fraser Canyon Hospital	Prince Rupert Regional Hospital
	Mills Memorial Hospital
Interior Health Authority	G.R. Baker Memorial Hospital
Kelowna General Hospital	Bulkley Valley District Hospital
Royal Inland Hospital	St. John Hospital
Penticton Regional Hospital	Kitimat General Hospital
Vernon Jubilee Hospital	Lakes District Hospital and Health Centre
Shuswap Lake General Hospital	Chetwynd General Hospital
Cariboo Memorial Hospital	Fort Nelson General Hospital
East Kootenay Regional Hospital	Wrinch Memorial Hospital
Kootenay Boundary Regional Hospital	Stuart Lake Hospital
South Okanagan General Hospital	Mackenzie and District Hospital
Kootenay Lake Hospital	Fraser Lake D&T Centre
Creston Valley Hospital	Houston Health Centre
Invermere and District Hospital	Valemount Health Centre
Nicola Valley Health Centre	Tumbler Ridge Health Care Centre
Castlegar and District Community Health Centre	Queen Charlotte Islands General Hospital
100 Mile District General Hospital	McBride and District Hospital
Boundary Hospital	Northern Haida Gwaii Hospital and Health Centre
Elk Valley Hospital	Hudson's Hope Gething D&T Centre
Queen Victoria Hospital	Stikine Regional Health Centre
Golden and District General Hospital	Stewart General Hospital
Princeton General Hospital	Atlin Health Centre
Chase and District Health Centre	Nisga'a Valley Health Centre
Arrow Lakes Hospital	
Lillooet Hospital and Health Centre	Vancouver Island Health Authority
Sparwood Health Centre	Royal Jubilee Hospital
Ashcroft and District General Hospital	Victoria General Hospital
Dr. Helmcken Memorial Hospital	Nanaimo Regional General Hospital
South Similkameen Health Centre	West Coast General Hospital
RC Outpost Edgewood	Cowichan District Hospital
Slocan Community Health Centre	Campbell River and District General Hospital
St. Bartholomew's Hospital	St. Joseph's General Hospital
Logan Lake Health Centre	Saanich Peninsula Hospital
Elkford and District D&T Centre	Ladysmith Community Health Centre
Barriere and District Health Centre	Lady Minto Gulf Islands Hospital (The)
Victorian Community Health Centre of Kaslo	Port Hardy Hospital
RC Outpost Alexis Creek	Port McNeill and District Hospital
RC Outpost Blue River	Tofino General Hospital
	Chemainus Health Care Centre
Provincial Health Services Authority	Gold River Health Clinic
Children's & Women's Health Centre of BC	Tahsis Health Centre
	Cormorant Island Community Health Care Centre
Vancouver Coastal Health Authority	Port Alice Hospital
Vancouver General Hospital	RC Outpost – Bamfield
St. Paul's Hospital	RC Outpost – Kyuquot
Richmond Hospital (The)	
Lions Gate Hospital	
Whistler D&T Centre	

APPENDIX D



CAEP = Canadian Association of Emergency Physicians
 NENA = National Emergency Nurses Affiliation
 MSC = Medical Services Commission
 GPAC = Guidelines and Protocols Advisory Committee
 PITO = Physician Information Technology Office
 PESAC = Provincial Emergency Services Advisory Committee
 EDWG = Emergency Department Working Group
 PESP = Provincial Emergency Services Project
 HOC = Health Operations Committee

JSC = Joint Standing Committee on Rural Issues
 GPSC = General Practice Services Committee
 SSC = Specialist Services Committee
 EMC = Emergency Medicine Committee
 SEM = Section of Emergency Medicine
 EDOSC = Emergency Department Overcrowding Solutions Collaboration
 EDPWG = Emergency Department Protocol Working Group
 PCSSC = Provincial Critical Services Steering Committee
 ACC = Acute Care Council LC = Leadership Council E2E = Evidence to Excellence