I. INTRODUCTION

The Massachusetts EMSC Program was established in 1993 and is part of the Injury Prevention and Control Program located in the Bureau of Community Health and Prevention at the Massachusetts Department of Public Health (MDPH). We respectfully request a new State Partnership Grant to support our mission in the state, which is to strengthen and further systematize emergency medical services for the 1.6 million children of Massachusetts. Through the efforts of prior State Partnership grants, the Program has made continued progress towards achieving national EMSC key performance measure targets. The Program Manager position is full-time and all the Manager's time is spent on EMSC-related activities. The Office of Emergency Medical Services (OEMS), which provides regulatory oversight for emergency medical services delivery statewide, is also located in MDPH, within the Bureau of Health Care Quality and Safety. The EMSC Family Advisory Network (FAN) Representative is a program manager in the Children with Special Health Care Needs Division within the MDPH Bureau of Family Health and Nutrition. The proximity of these key EMSC stakeholders promotes on-going and long-term collaboration. During the last 19 years, EMSC has had only two Program Managers, providing a stable environment for program activities. Over the years the major emphasis of the EMSC Program has been to integrate the unique needs of children into an EMS system of local ambulance systems, hospitals, providers and policies that has gradually become more centralized at MDPH. The EMS Acts of 2000, a set of sweeping statutory changes that went into effect in 2003, brought all agencies and EMS regions under the centralized oversight of MDPH. The detailed implementation of regulatory oversight continues nearly ten years later. EMSC played an active role in the inclusion of pediatric needs during the period of regulatory change, and at the same time, the program raised awareness of the importance of emergency readiness and planning among maternal and child health programs. EMSC participated in early state disaster/bioterrorism preparedness initiatives in Massachusetts, in collaboration with MDPH Center for Emergency Preparedness, highlighting the needs of children and their families in time of disaster.

The EMSC Program of Massachusetts has a rich history of childhood injury prevention activities in partnership with several other prevention programs of MDPH, including Poison Prevention, Suicide Prevention, Shaken Baby Prevention and Passenger Safety Programs. EMSC is closely aligned with the Statewide Child Fatality Review Program, (CFRT) which consists of one state CFRT and eleven local CFRTs. The Program Manager supervises the 0.5 FTE Child Fatality Review Coordinator and provides subject matter expertise to the State Team, as well as MDPH representation to the local teams.

PROFILE OF MASSACHUSETTS

In 2011 the U.S. Census estimated the population of Massachusetts at 6,587,000. Children under aged 18 years comprise 21.3% of the residents and children under the age of 5 years represent 5.6% of the population; these numbers are only slightly less than average for the U.S. census.[1] The state has 351 cities and towns and a population-density of 837 persons per square mile, in comparison with the average US population density of 87 persons per square mile. Seventy-five percent (75%) of the 1.6 million children in the state are white, 10% are Latino, 6% are African

[1] U.S. Census 2010, People Quick-Facts

American, 4% are Asian, and 6% are listed as other race/ethnicity. In Massachusetts, 15% of the total population is foreign-born. Primary languages in addition to English include Spanish, Portuguese, Haitian-Creole, Russian and Khmer.

Most of the state's residents, including children, live in the eastern part of the state, primarily in the Metro-Boston area, which has the highest population density. Other areas with large populations include the Springfield area in western Massachusetts, the Worcester area in central Massachusetts, the Lowell and Lawrence area, in the northeastern part of the state, and the Fall River-New Bedford area in southeastern Massachusetts. These high-population urban cities are also the areas of greatest childhood poverty in the state. The 2010 U.S. Census found that 14.3% of the state's children live in poverty, as compared with 21% of children nationally. Among White children, 9.2% live below the poverty line; however, a disproportionate number of minority children (38% Hispanic and 32% Black) reside in poverty.

Massachusetts landmark health care reform law has achieved almost universal health insurance coverage for all residents. Although the state still struggles with full implementation of the mandate, a 2011 review found that nearly 99% of children have some form of health insurance. At the present time, localized shortages of pediatricians, primary care physicians and ancillary supports persist. However, over time universal coverage will yield earlier and more effective preventive health benefits to help children avoid future illness and injury complications.

In Massachusetts, similar to other states, injuries are the number one killer of children over the age of 1 year. Massachusetts has a lower child death rate from injury (less than 5 deaths per 100,000) over the ten-year span of 2000-2009 than any other state.[2] However, each year more than 100 children die of unintentional injuries, such as motor vehicle crashes, falls, drowning and infant unsafe sleep environments, and intentional injuries such as suicide and homicide. According to our Injury Surveillance epidemiologists, in 2009 for every one child injury-death there were 40 hospitalizations and over 1,100 emergency-department visits. It is clear, then, that injury deaths represent only the tip of the iceberg and prevention activities remain critical in the state. In part the low (but still unacceptable) child injury death rate is due to the long-time existence (35 years) of the MPDH Injury Prevention & Control Program, prevention-related laws pertaining to young drivers, helmet use and gun control, more centralized regulatory oversight of EMS, improvements to the coordination and activities of designated trauma centers and inter-facility transfers, and greater availability of paramedics.

THE EMS SYSTEM

Massachusetts holds a formal designation as a "Commonwealth" which indicates its difference from most other states in the U.S. In general a Commonwealth is a 'home-rule' state. This means that each of the 351 cities and towns is enabled to carry out state mandates under a certain amount of local control. As such, there is no mandate for any type of county-wide system of governance; for example, there are over 280 school districts, 340 Boards of Health, 280 emergency dispatch centers; each municipality maintains its own fire department and governance system. There is no statutory requirement that a municipality provide emergency medical services (EMS) to its residents; however, all cities and towns ensure emergency response using a

[2] CDC Vital Signs April 2012

variety of configurations such as municipal, private, volunteer, hospital-based or municipal third-party service.

Massachusetts is divided into 5 EMS Regions that work cooperatively with OEMS to provide local support to hospitals and EMS agencies. OEMS, seated at the MDPH, has regulatory authority for nearly all aspects of the EMS system in the state. It does not oversee regulations that pertain to non-EMT First Responders, nor does it regulate 911 emergency dispatch centers. OEMS funds and coordinates the five Regional EMS offices and in its regulatory capacity it oversees all aspects of EMS training, certification and re-certification, continuing education, statewide treatment protocols, ambulance equipment and inspection, EMS agency licensure, data collection, policies pertaining to ambulance operations, and investigations. OEMS is a program of the Bureau of Health Care Safety and Quality, which allows it to coordinate activities related to hospital destinations, trauma centers and medical direction with the Hospital regulatory programs located in the same Bureau.

There are three levels of EMS provider: Basic EMT, Intermediate EMT and Paramedic. Basic EMTs and Paramedics are trained in the latest national Department of Transportation (D.O.T.) EMS curriculums; the EMT-Intermediates are trained to the 1989 D.O.T. standard. EMTs must receive their initial training at state-accredited training institutions. All levels of EMT in Massachusetts complete mandatory recertification requirements every two years. As of mid-2012 the state holds current certification records for over 24,000 EMTs.

At present there are 320 licensed ambulance services. EMS is delivered by a variety of organizations: Fire Departments, Other Municipal/Third Service, Private, Volunteer/Call, and Hospital-Based. For the purposes of disaster response and mutual aid, even a licensed 'transfer only/non-emergency' EMS agency must meet the same operational standards as all other agencies in the state. All EMTs are required to follow the same Statewide Treatment Protocols, which include clearly defined 'standing orders.' Pediatric Treatment Protocols are separated from the Adult Protocols and also contain clearly defined 'standing orders.' Fifty-eight percent (58%) of the licensed ambulance services are operated by local fire departments, 18% by private for-profit companies, 10% by cities and towns, 7% by private, non-profit companies, 4% by hospitals, and 3% by local police departments. Although licensed private for-profit services hold only 18% of the service licenses in the state, they have multiple service branch locations that account for 35% of the ambulance service locations and 70% of the over 1,000 licensed vehicles available. Statewide, the private for-profit ambulance vehicles provide the highest proportion of non-urgent and scheduled inter-facility transports. Emergency 911 response by fire department and private for-profit services is about equal. Massachusetts OEMS began collecting electronic data from ambulance services in 2010. Records indicate that in the most recent full year of data collection, there were 430,810 ambulance emergency transports to hospital emergency-departments, of which 29,222 were patients aged 0-17 years, representing 6.78% of emergency transports. (During this time period, between 22-25% of ambulance services were not yet submitting electronic data to OEMS)

There are 282 ambulance services licensed to operate at the Paramedic level, the highest level of pre-hospital care available. By regulation a paramedic-level ambulance must be staffed with a minimum of one paramedic and one basic EMT. From a population distribution perspective, the

majority of the urban and suburban populations are served by paramedics, either directly or via intercept capabilities. Four of the five EMS Regions approach or exceed 50% EMS agency licensing at the paramedic level. EMS Region I, encompassing the hill-towns of the western-most part of the state, has 55 licensed ambulance services, of which only 20 (36%) are paramedic-level.

The State EMS Medical Director, a practicing Emergency Department Physician, is the Chair of the Emergency Medical Care Advisory Board (EMCAB) Medical Services Committee and works with OEMS to oversee statewide clinical aspects of EMS care. Each of the five EMS Regions has a Physicians' Council, composed of regional Medical Directors, whose function is to evaluate local clinical issues and make protocol recommendations to the Medical Services Committee. Hospital legislation in 2009 set standards for Medical-Control-Designated Hospitals in order to strengthen clinical oversight of paramedics and to ensure consistent quality assurance programs; this legislation is still in the implementation phase.

Seventy-six hospitals have licensed emergency departments. By regulation, EMS can only transport emergency patients to these facilities. Massachusetts has had a trauma-center designation system in place for approximately 10 years. A hospital must be designated as a Trauma Center by the American College of Surgeons (ACS), and can then apply for state designation as a trauma center. The ACS will conduct a trauma system review, at the state's request, to identify gaps and goals for the future, in September 2012. At present there are 7 Level 1 Trauma Centers; Central and Western Massachusetts each have one Level I Center with the remaining 5 located inside Boston city limits. The southeastern section of the state, including Cape Cod and Islands, lacks Level I Trauma Center availability, with the nearest Level I located over the border in Rhode Island. However, a hospital in that region was recently upgraded from a Level III to a Level II facility. One other Level II Trauma Center is north of Boston. There are also 6 Level III Trauma Centers, primarily in the northeastern corner of the state and including one near the rural western border of Massachusetts. There are 4 Level I Pediatric Trauma Centers: 3 are in the Boston area and one in Central MA. There are also two Level II Pediatric Trauma Centers, one in Boston and one in Western MA. In general, injured children under the age of 15 years are treated at the Level I or Level II Pediatric Trauma Centers when possible, depending on destination proximity, aero-medical availability and triage protocols. Children older than 15 years are usually treated at adult Level I facilities for events meeting trauma triage protocols. Within the past two years, transport times and point-of-entry plans have been revised to reflect growing evidence that in certain situations, such as trauma, the rapid transport to a more distant but more appropriate facility may be of greater benefit to the patient. The opportunity for appropriate emergency transport to a pediatric specialty facility is now available in more circumstances, although there remain many areas of the state where pediatric patients, regardless of their condition, will be transported to local community hospitals first because of the distance from the scene of an emergency to a tertiary care facility.

Several geographic features in the state create challenges for EMS accessibility:

- The islands of Martha's Vineyard and Nantucket are accessible only by air and ferry boat.
- Cape Cod is accessible to the rest of Massachusetts by two bridges that are frequently tied up during the summer with automobile traffic.

- In western Massachusetts, pre-hospital care in the rural hill towns is generally provided by volunteer EMS agencies; patients may routinely face a 45-minute ambulance transport to a community hospital emergency department, with the closest Level I trauma center at least an hour away.
- Some of the towns in the western portion of Worcester County, around the Quabbin Reservoir, are not easily accessed by EMS and are not close to acute care hospitals.
- A major waterway, the Connecticut River, which bisects the western part of the state, creates weather patterns that often prevent EMS helicopter response from the two air transport agencies in the state. This necessitates the use of out-of-state air resources as available, and increases the likelihood that ground transport must be used, despite lengthy travel times.

In order to better understand our EMS system's strengths and challenges, we conducted a needs assessment to identify strengths and areas of improvement. Section II discusses those findings.

II. NEEDS ASSESSMENT

Massachusetts EMSC conducted needs assessment activities and collected data from EMS agencies and hospitals during the 2010-11 grant year. We evaluated the status of the EMSC Key Performance Measures as follows:

Performance Measure (PM) 71: The percent of pre-hospital provider agencies in the State that have on-line pediatric medical direction available from dispatch through patient transport to a definitive care facility.

We obtained a 61% response rate on this PM. Among responding BLS agencies, 100% reported having 24/7 access to on-line pediatric medical direction. The ALS agencies reported the availability of on-line pediatric medical direction 95.8% of the time. These responses exceed the 2011 national EMSC PM 71 goal of 90% or better; however, we did not achieve the required 80% response rate and will re-evaluate in grant year 2013-2014 (Grant year 1). Massachusetts EMS and hospital regulations require the 24/7 availability of on-line medical direction to affiliated EMS agencies (and EMS agencies must be affiliated with a hospital in order to hold a license to operate). Therefore, in theory the data for this PM should equal 100%. While it is likely that the individuals providing the data may have misinterpreted the wording, it is also possible that deficits may exist in the system. However, additional inquiry and an 80% response rate will provide a better picture.

PM 72: The percent of pre-hospital provider agencies in the State that have off-line pediatric medical direction available from dispatch through patient transport to a definitive care facility.

We again obtained a 61% response rate on this PM. BLS units indicated that off-line pediatric medical direction was available to them 82.9% of the time. ALS units reported that off-line pediatric medical direction was available 97.7% of the time, which exceeds the 2011 goal of 90%. It is important to note that MA state regulations require the knowledge and use of the Pediatric Statewide Treatment Protocols ("offline pediatric medical direction") but do not require that protocols be available on all ambulances, which was a condition for a 'yes' response to this performance measure.

The status of this PM will be re-evaluated in Grant Year 1 to obtain an 80% response rate.

PM 73: The percent of patient care units in the State that have the essential pediatric equipment and supplies as outlined in national guidelines.

Massachusetts was granted a partial waiver on this data collection because our state already mandates much of the equipment on the national equipment list and backs up the requirement with rigorous ambulance inspections. Agencies provided data on a small list of equipment (less than 5 items each for BLS and ALS patient care units) drawn from the national recommended list that does not appear on the MA ambulance equipment list. Although we again achieved only a 61% response rate on this PM, the data reflects the status of 639 patient care units, well over half of the approximately 1,000 licensed patient care units in the state. BLS agencies reported that 15.2% of BLS patient care units have all of the essential equipment/supplies; ALS units reported that 23.9% of ALS patient care units stocked all of the essential equipment and supplies.

PM 74: The percent of hospitals recognized through a statewide, territorial or regional standardized system that are able to stabilize and/or manage pediatric medical emergencies.

We did not collect data on this performance measure; however, we conducted a regulatory review and discussed hospital status at an EMSC Advisory Board meeting. At present there is no mandatory or voluntary standardized designation system for hospitals regarding their ability to stabilize or manage pediatric medical emergencies. In Grant Year 1 we will lay a foundation for efforts on this PM by supporting hospital participation in the National Pediatric Readiness Needs Assessment. The Needs Assessment tool will be available to Massachusetts hospitals for a three month period in Spring 2013.

PM 75: The percent of hospitals recognized through a statewide, territorial or regional standardized system that are able to stabilize or manage pediatric traumatic emergencies.

The Program compiled data on this PM by reviewing and verifying the most current list of designated pediatric trauma centers. Massachusetts uses the very rigorous American College of Surgeons designation system. In Grant year 2011 there were 5 Pediatric Trauma Level I or II Centers in the state. This represents less than 10% of the 76 hospitals; however, distribution appears to be population-based. The number of adult trauma centers, which often treat adolescents over the age of 15 years, was not reported by the Program. It is uncertain as to whether the system adequately meets the needs of the population, or if going forward some adjustments to trauma-center licensure and determination of need must be made. The state OEMS has contracted to conduct an analysis of the entire trauma center system in the state. The site visit by the American College of Surgeons will occur in mid-late September 2012 with recommendations to follow.

PM 76: The percentage of hospitals in the state that have written interfacility transfer guidelines that cover pediatric patients and the required components of transfer AND
PM 77: The percentage of hospitals in the state that have written interfacility transfer agreements that cover pediatric patients

The Program reviewed hospital regulations and conducted a needs assessment with the 76 hospitals with emergency departments in Massachusetts. We received data from 58% of the facilities, indicated that 25.6% of them had guidelines that included all of the components of transfer, and 97.7% reported having written interfacility agreements that cover pediatric patients. We will be collecting updated information, with a target of an 80% response rate, in the early part of Grant Year 1 as part of the National Pediatric Readiness Needs Assessment.

PM 78: The adoption of requirements by the State for pediatric emergency education for the license/certification renewal of BLS and ALS providers.

The Program reviewed relevant regulations, administrative requirements and state education guidelines to collect information about the status of this PM. Massachusetts is one of several states that does not require its EMTs to follow National Registry of EMT standards for recertification. Massachusetts mandates standardized D.O.T. refreshers for all EMT levels - Basic: 24 hours; Intermediate: 12 additional hours; Paramedic: 48 hours. Re-certification also includes a requirement for continuing education hours. Basic/Intermediate EMTs must complete 28 approved hours and Paramedics must complete 25 approved hours. Massachusetts does require the inclusion of minimal pediatric hours during the refresher portion of re-certification. Basic and Intermediate EMTs must complete a minimum of 1 hour of pediatric refresher education; paramedics must complete a minimum of 3 hours of pediatric refresher education. EMT Re-certification occurs every two years. There is no requirement for pediatric-specific continuing education hours at this time. The Program continues to build upon the issue of adding pediatric continuing education hours to recertification requirements during each grant cycle and will do so during the upcoming grant.

PM 79: the degree to which the States have established permanence of EMSC in the State EMS system.

The Program meets the yearly component requirements of this PM by ensuring the Advisory Board includes the required membership and meets four times annually. There has been a full-time EMSC Program Manager dedicated to the EMSC Program since 1993. Regulatory changes in 2003 (EMS Acts of 2000) mandate a voting pediatric representative on the state Emergency Medical Care Advisory Board (EMCAB), a role which is filled by Mary Chris Bailey, MD, pediatric emergency department physician and Chair of the EMSC Advisory Board.

PM 80: The degree to which the State has established permanence of EMSC in the State EMS system by integrating EMSC priorities into statutes/regulations

Massachusetts meets 6 of the 8 (75%) components that demonstrate permanence:

(1) There is a regulation for pediatric on-line medical direction
(2) There is a regulation for pediatric off-line medical direction
(3) There is a regulation for pediatric equipment for BLS and ALS patient care units
(4) There is a regulation for a hospital recognition system for identifying hospitals capable of dealing with pediatric traumatic injuries
(5) There is a regulation for written interfacility transfer agreements that cover pediatric patients

(6) There is a regulation for the adoption of requirements for continuing pediatric education during recertification of BLS and ALS providers

The two elements that are not yet met are:

(1) A statute or regulation for hospital recognition system for identifying hospitals capable of dealing with pediatric medical emergencies
(2) There is a statue/regulation for written interfacility transfer guidelines that cover pediatric patients and include specific components of transfer

The Program's data collection and information analysis in the prior grant cycle provides information about the strengths and needs of pediatric emergency care in the state. An updated review and analysis of all information, data, practices and challenges will help the Program to continue its mission of ensuring the strength and systematization of pediatric emergency care.

III. METHODOLOGY

All activities of the Program support its overall mission to ensure the strength and continued systematization of pediatric emergency care to reduce pediatric morbidity and mortality. In some instances we will conduct formal needs assessment and follow-up data collection; in other situations our activities will be focused on helping to shape future policy through advocacy and education, and finally for certain activities we will collaborate with our stakeholder partners to move as far 'upstream' as possible in working towards achieving our goals, for example, with childhood injury prevention activities. Greater detail on activities is outlined in Section IV, Work Plan.

Approach:

Grant Year 1

A. Needs Assessment/Data Collection and Related Activities Addressing PMs 71, 2, 73, 76 and 77.

The Program will begin the first quarter of Grant year 1 with the launch of the National Pediatric Readiness Project (Peds Ready). This needs assessment tool will include data collection from each hospital on PM 76/77. During the second quarter of Grant Year 1 the Program continues its attention to the results of Peds Ready and follow-through activities to ensure data dissemination and examine potential effects on policy. The needs assessment tool to evaluate PMs 71,72 and 73 is scheduled to launch in the third quarter of year 1. The majority of our efforts in October and November will be directed at achieving an 80% response rate.

B. Other Activities

The EMSC Advisory Board meets quarterly. The Program Manager and FAN Representative attend the Program Managers Meeting during the first quarter in the Washington DC area. The Program Manager attends a required NEDARC workshop annually, which is often in the third quarter. Other activities taking place during each quarter include State Child Fatality Review Team Meetings, EMS Medical Services, Executive, Operations and Education Subcommittee meetings; Gov. Task Force on Pediatric Disasters. Pediatric refresher training (3rd quarter) for

agencies by Program Manager. Injury-Prevention activity: Infant Safe Sleep Working Group, meets monthly.

Second and Third Quarter activities will include two School Nurse/EMT Pilot Trainings and SCOPE instructor training. The Program Manager will be part of a planning committee for the annual CFRT conference. Work on a Data Dissemination sheet for Peds Ready results takes place during the Second, Third and Fourth Quarters. The EMSC Advisory Board will review information from other states detailing pediatric education requirements and develop recommendation drafts on this issue for continued discussion.

Grant Year 2

Needs Assessment/Performance Measure Follow-up:
The EMSC Advisory Board will review data from the Year 1 EMS needs assessment (PMs 71,72, 73). The Program Manager will prepare a fact sheet for distribution to EMS agencies. The EMSC Advisory Board will review national Peds Ready Hospital results and activities with an eye towards aligning implementation of recommended activities in the state. The Advisory Board will research and review materials related to voluntary or mandatory pediatric emergency designation for hospitals and work to further this agenda at each meeting. Subcategories may include activities intended to improve awareness of the need for formalized (written) interfacility guidelines and components.

The EMSC Advisory Board will make a formal recommendation to OEMS that a category of pediatric education be added to the requirements for recertification. The Program will continue with training activities focusing on instructor development (SCOPE), and building partnerships (PEARS, School Emergencies for the EMT).

<u>Other Activities</u>

The EMSC Advisory Board meets quarterly. The Program Manager, FAN Representative and Advisory Board Physician attend the Annual EMSC Meeting during the first quarter in the Washington DC area. The Program Manager attends a required NEDARC workshop annually, which is often in the third quarter. Other activities taking place during each quarter include State Child Fatality Review Team Meetings, EMS Medical Services, Executive, Operations and Education Subcommittee meetings; Gov. Task Force on Pediatric Disasters. Printing or Translation project activities. Pediatric refresher training (3rd quarter) for agencies by Program Manager.

Grant Year 3

Needs Assessment status for PMs 71, 72, 73, 76, 77 will be conducted during grant year 3. Activities to support needs assessment will be the primary focus. Ongoing quarterly activities as previously listed (injury prevention activities, EMSC advisory Board meetings, EMS subcommittee meetings) and trainings will continue. The Program Manager and FAN Rep will attend the Annual Program Meeting during the first quarter. The Program Manager will attend a NEDARC Workshop.

Grant Year 4

Year 4 will be focused on follow-up activities from the Year 3 needs assessments. The Advisory Committee will compare Year 1 and Year 3 outcomes to identify progress/barriers and address accordingly. Quarterly activities will continue. The Program Manager, FAN Rep and Advisory Board Physician will attend the Annual Meeting during the first quarter. The Program Manager will attend a NEDARC Workshop.

Activities and estimated timelines for all Goals and Objectives are detailed in the next section.

IV. WORK PLAN

The Work Plan provides further details about goal-related activities, responsible staff, and estimated time frames for completion

Needs Assessment/Data Collection activities
Certain Key Performance Measures require initial and follow-up needs assessment activities. EMS-specific PMs 71, 72 and 73 and hospital-specific PMs 76 and 77 are addressed in this category.

Goal I: Assure that over 90% of ALS and BLS providers have 24/7 access to on-line and off-line pediatric medical direction. (PM 71, PM 72)

Objective 1: Conduct a needs assessment in Grant Year I, with a target response rate of 80%, to establish the current baseline of on-line and off-line pediatric medical direction availability.

Objective 2: Conduct a re-assessment in Grant Year 3, with a target response rate of 80%, to evaluate the status of on-line and off-line pediatric medical direction availability.

Timeline: Year 1: third quarter-fourth quarter
Year 2: first-second quarter (follow-up activities)
Year 3: third quarter-fourth quarter (estimated)
Year 4 first-fourth quarter, estimated, for follow-up activities

The Program Manager will:
Coordinate all activities.
Consult with NEDARC data analyst.
Update EMS contact lists (mail, email, phone).
Assure awareness of timeline by OEMS to avoid activities conflicts.
Update EMSC Advisory Board and coordinate their assistance.
Establish contact and follow-up with non-respondents.
Review results with NEDARC data analyst.
Coordinate with Advisory Board for follow-up activities.
Prepare data fact sheet for EMS agencies/website (years 2 and 4).
Continue distribution of Peds Reference Cards.

The FAN Rep will:

Collaborate with Program Manager.
Write a letter to EMS agencies explaining why medical direction and essential equipment (for Goal II, below) is necessary.
Update EMSC Advisory Board on progress.
Collaborate with Manager to develop/distribute data fact sheet.
Disseminate fact sheet to families constituency.

The EMSC Advisory Board will

Collaborate with Program Manager.
Reach out to EMS agencies in their area to encourage participation.
Review results and proposed data fact sheets.
Recommend actions (e.g. requiring protocols on all ambulances).
Assist in planning followup activities (ongoing).

Goal II: Assure that 90% of ALS and BLS patient care units stock all essential equipment and supplies, as recommended by the National Guidelines.

Objective 1: Conduct a modified needs assessment in Grant Year 1, with a target response rate of 80%, to assess the current status of recommended equipment/supplies not mandated by OEMS.

Objective 2: Conduct a modified re-assessment in Grant Year 3, with a target response rate of 80%, to evaluate the current status of recommended equipment/supplies not mandated by OEMS.

The Program Manager will:

Coordinate all activities.
Review existing equipment lists for differences.
Apply for partial waiver on needs assessment.
Consult with NEDARC data analyst.
Update EMS contact lists (mail, email, phone).
Assure awareness of timeline by OEMS to avoid activities conflicts.
Update EMSC Advisory Board and coordinate their assistance.
Establish contact and follow-up with non-respondents.
Review results with NEDARC data analyst.
Coordinate with Advisory Board for follow-up activities.
Prepare data fact sheet for EMS agencies/website

The FAN Rep will:

Collaborate with Program Manager.
Write a letter to EMS agencies explaining why medical direction and essential equipment (for Goal II, below) is necessary.
Write a support letter to National EMSC regarding partial waiver of equipment needs assessment.
Update EMSC Advisory Board on progress.
Collaborate with Manager to develop/distribute data fact sheet.
Disseminate fact sheet to families constituency.

The EMSC Advisory Board will

Collaborate with Program Manager.
Chair will write support letter to National EMSC for partial waiver.
Reach out to EMS agencies in their area to encourage participation.
Review results and proposed data fact sheets.
Distribute fact sheets and letter to medical directors (year 2 and 4).
Recommend actions (e.g. requiring protocols on all ambulances).
Assist in planning followup activities (ongoing).

Timeline: Year 1: third quarter-fourth quarter
Year 2: first-second quarter (followup activities)
Year 3: third quarter-fourth quarter (estimated)
Year 4: first-fourth quarter, estimated, for follow-up activities

Goal III: Assure that 90% of hospitals have written inter-facility transfer guidelines with necessary components, and that they also have written inter-facility transfer agreements

Objective 1: Ensure an 80% response rate by hospitals on the National Pediatric Readiness needs assessment in Grant Year 1

The Peds Ready Needs Assessment will launch in early March 2013 for our state's hospitals. Activities include telephone and email support by the EMSC Program Manager. The Program Manager is the primary point of contact for hospitals to assist with questions and clarifications. The Program has budgeted to contract for 10 hours of phone support by a healthcare provider. The phone support will be directed at hospitals that as of mid-April have not yet completed the needs assessment tool. The Program has Medication Guide, to all hospitals as the assessment tool opens, with an expression of our appreciation for their anticipated cooperation.

Objective 2: Conduct a re-assessment in Grant Year 3 to evaluate the status of hospital inter-facility transfer guidelines and agreements.

Policy Goal: Ensure all stakeholders are aware of the aggregate, regional Pediatric Readiness scores as a means to implement key support to community hospitals in the care of children.

Objective 1: By the beginning of Grant Year 2, EMSC will disseminate a fact sheet to stakeholders and the public that provides aggregated regional data and explains the significance of Pediatric Readiness.

Objective 1, 2, and Policy Objective 1 Responsibilities:

The Program Manager will:

Coordinate all activities.
Consult with NEDARC staff.
Update hospital contact lists.
Review needs assessment questions.
Coordinate with state stakeholder leaders (ENA).

Update Advisory Committee.
Ensure delivery of Medication Guides (incentive) to hospitals at start of process in Year 1.
Establish contact with hospitals.
Oversee contracted phone support to hospitals.
Send Thank you letters at completion of assessment.
Consult with NEDARC on the development of data fact sheet.
Develop/distribute Fact Sheet in collaboration with Advisory Committee and FAN Rep.
Oversee follow-up activities as determined by Advisory Committee.

The FAN Rep will:

Coordinate with Program Manager.
Write letter to hospitals encouraging participation.
Send thank-you letters at completion of assessment.
Review aggregate data findings.
Participate in follow-up activities.
Assist in drafting Data Fact sheet.
Distribute fact sheet to family constituency.

The Advisory Board will

Encourage hospital participation by personal contact, support letter.
Review aggregate data findings.
Assist in drafting and distributing Data Fact Sheet.
Plan follow-up activities depending on findings.
Identify opportunities for pediatric medical emergency designation.

Timeline: Year 1 First-Second Quarter (Objective 1)
Year 3 Second-Third Quarter (Objective 2)
Support activities: throughout

Goal IV: By the end of Grant Year 4, pediatric continuing education will be under active consideration as a requirement for recertification of EMTs.

Objective 1: By the end of Grant Year 2, the Program will provide relevant proposed written language to MDPH for the next opening of regulations.

Objective 2: During the Grant Period, EMSC will organize and support instructor-training opportunities in pediatric subject matter, specifically, Special Childrens' Outreach for Pre-hospital Education (SCOPE) training.

The Program Manager will:

Coordinate all activities.
Review regulatory/statutory language related to education requirements for MA and other states.
Engage stakeholders (EMS, Agencies, OEMS, Education Committee) by distributing information sheet about the need for pediatric-specific education and comparing Massachusetts' requirements to other states.

Collaborate with OEMS on recently-stated goal of moving towards a National Registry Model, to ensure inclusion of pediatric-specific education requirements.
Draft suggested language for advisory or regulatory change.
Coordinate instructor training development (SCOPE (Special Childrens Outreach for Prehospital Education training, effective communications training).
Develop and maintain an on-line instructor bureau as a resource for agencies seeking topic instructors.

The FAN Rep will:

Provide ongoing support for this goal with personal outreach and by collecting letters of support from families of children with complex medical needs.
Assist in drafting suggested language for advisory or regulatory changes.
Provide resources for instructors in specialty topic areas from her program stakeholders.
Assist with development of and provide presentation at SCOPE trainings to enhance instructors' understanding of need to emphasize family involvement in emergency care.

The Advisory Committee will

Review and suggest draft language for advisory/regulatory change.
Engage stakeholders by distributing educational information.
Propose language for pediatric educational requirements.
Propose/Support activities directed at implementation.

Timeline: Instructor training: ongoing
Focus on research/drafting language: Year 2
Proposal: fourth quarter, Year 2
Support activities for review and possible implementation: Years 3 and 4

Activities on all of the Key Performance Measures previously listed will support PM 80.

Other Activities that support Program mission and performance measures:

In addition to the goals and objectives listed, the Program Manager and FAN Representative will attend the required Annual Program Meetings in Years 1 and 3. The Program Manager, FAN Rep and Advisory Board Physician will attend Program Meetings in Years 2 and 4.The Program Manager will attend one NEDARC workshop in each of the four grant years.

Goal V Provide continued support to stakeholders by promoting injury prevention activities.

Objective 1: Assist with planning and delivery of one statewide Child Fatality Review Conference in each Grant Year.

The Program Manager will:

Assist the Child Fatality Review Coordinator and key stakeholders in planning the annual CFRT Conference for state and local team members.
Attend quarterly state CFRT meetings.
Provide subject matter expertise as requested.
Provide EMSC Data Sheets when developed for availability at conference.
Assist Injury Epidemiologist in preparing presentations, fact sheets for CFRT.

Timeline: Third and Fourth Quarters each year

Objective 2: Collaborate with the School Nurse program in supporting School Emergency Medical Response Plans as required by statute.

The Program Manager will:

Consult with School Health Program to assist in developing drill scenarios for school nurses.
Provide outreach to school nurses in forging connections with their EMS agencies.
Coordinate pilot trainings of Pediatric Emergency Assessment, Recognition and Stabilization (PEARS) classes for school nurses and EMTs from their local agencies.
Collaborate with contracted School Nurses to develop self-paced training unit for EMTs on School Emergencies

The FAN Rep will:

Review materials to ensure medical emergency response plans efficiently address the needs of medically complex children.

Timeline: Ongoing

Other Activities that support childhood injury prevention

MDPH Infant Safe Sleep Task Force: The Program Manager attends monthly meetings of this multidisciplinary working group, with members from Maternal Child-Health, Injury Prevention, Department of Children and Families, Office of the Child Advocate and the SIDS Center.

Governor's Task Force on Pediatric Disaster Preparedness: The Program Manager attends scheduled meetings of the Task Force, and participates in monthly meetings/conference calls of the Medical Subcommittee, which is chaired by EMSC Advisory Board member/EMSC Targeted Issues Grantee Sarita Chung, MD.

V. RESOLUTION OF CHALLENGES

The Program can identify several specific challenges that may impact the timelines or full implementation of some EMSC activities.

The most significant challenge is the lingering impact of the financial downturn. State government is still feeling the effects of significant budget cuts over the last three years. MPDH, in particular, as an Executive Branch agency, is vulnerable to unilateral mid-year budget cuts issued by the Governor's office in the form of spending cuts, elimination or consolidation of staff positions, elimination of services, and hiring freezes. The Department has experienced the equivalent of several million dollars in cuts in the past three years, and the impact is felt in both small and large ways. Delays in filling an administrative assistant position means that Injury Prevention Program staff, such as EMSC, must allow time to do operational activities such as creating and printing labels, assembling mailings or completing required staff documents. Staff cutbacks mean slight delays in all areas. Budget cuts have most recently seriously impacted the Bureau of Health Care Safety & Quality, which houses our stakeholder partner, OEMS. The regulatory agency has experienced significant staff cuts that have forced remaining staff to take on additional duties. As a result, activities around critical subcommittee meetings which lead to policy changes have slowed or temporarily halted.

In 2010 and 2011, an EMT recertification scandal swept the state. OEMS discovered that approximately 200 EMTs (representing about 1% of the certified EMTs in the state) had participated to varying degrees in falsification of recertification documents, such as failing to attend training programs or forging signatures on training documents. The Attorney General's office became involved to investigate fraud-related issues and several individuals and ambulance services have received criminal penalties and fines in the on-going investigations. In June 2012 the Director of OEMS, who also served as co-Project Investigator on the EMSC Grant, resigned in response to the events of 2010/2011. EMSC lost a staunch and knowledgeable pediatric advocate with that resignation. OEMS is in the process of hiring an as-yet-unnamed Director and is under the leadership of the Healthcare Quality Director of Policy & Planning, who is being assisted by a consultant with prior EMS experience. The loss of a long-term Director and the need to bring a new Director up to speed on EMS issues in general may impact EMSC progress while we re-build a relationship and educate the new Director on pediatric issues of concern. A positive outcome is that in response to the loss of the Director and budget cuts, OEMS is undergoing strategic planning for future streamlined and more effective oversight and operations. Processes such as E-Licensing are nearly ready to be implemented which will result in more efficient operations. OEMS is developing a strategy to certify new Paramedics through the National Registry of EMTs, a process that will relieve some of the burden of testing and Training Institution accreditation oversight. The Program Manager met in August with the acting Directors and received assurances that pediatric issues will remain on the priority list and that the rich collaborative history that we have enjoyed will continue once the Director position has stabilized. The delay these significant changes will have on the EMSC goals for this grant cycle, in particular for efforts towards expanded mandatory pediatric education for EMT recertification, and updating the mandatory ambulance equipment list is at this point uncertain, but we have taken concrete steps to address these challenges.

An additional challenge related to the fall-out from the recertification scandal is the reluctance of many EMTs and agencies to interact with MDPH staff, including the EMSC Program Manager, who is not a part of the regulatory team. We believe that this is one explanation for the low EMS response rate during the 2011 Needs Assessment. The leadership shift at OEMS and rumors of planned strategic changes has resulted in widespread speculation and concern, which is typical

when a major change occurs in any organization. Over time these fears will abate; however, a temporary loss of our connection with EMTs may possibly slow our progress.

VI EVALUATION AND TECHNICAL SUPPORT CAPACITY

As described in the Work Plan, Grant Years 1 and 3 will include needs assessment activities to evaluate the status of PMs 71, 72, 73, 76 and 77. The Program has previously conducted needs assessments on these performance measures by using the NEDARC on-line assessments and works closely with NEDARC data staff in all phases of the process. The ability to participate in the NEDARC process will ensure that the Massachusetts data can be effectively compared to other states' data in painting a picture of our performance measure status. The Program Manager has participated in two prior NEDARC Workshops that provided training in fundamental data cleaning and analysis for the project. The 2.5-day workshops presented lecture and hands-on practice opportunities with NEDARC staff. Initial cleaning and analysis will be done by the Program Manager with back-up from the state's NEDARC representative for final assurances of accurate information. Additionally the Program Manager will have the opportunity to review the wording of the needs assessment questions during the final preparatory phase, to ensure that language and phrasing is consistent with the terminology used in Massachusetts. This will contribute to more accurate responses by participants. It is very important to collect useable data in order to have an effective evaluation. The Program Manager has established working relationships with many EMS agencies that should contribute to completion of assessment activities within a 3 month time frame.

The Program will use another strategy to collect useable data, which will include distributing information about the needs assessment questions ahead of time, so that the person completing the online assessment is able to have the answers available. Additional resources for dissemination of information include the EMSC National Resource Center, which provides fact sheets and other documents that explain the importance of the performance measures, especially related to essential equipment.

Peds Ready:
PMs 76/77 will be evaluated as part of the needs assessment activities within the National Pediatric Readiness Project. This method of data collection has not been previously used in Massachusetts. The Program will work closely with NEDARC Staff, the HRSA Grant Project Officer and the EMSC National Resource Center to assure an effective response rate. NEDARC will host the assessment and provide all related data analysis. Questions are consistent for all hospitals nationally, meaning the data collected can be confidently compared across regions and states. The Program will use the aggregate data to develop Fact Sheets in conjunction with the Advisory Board. Massachusetts plans to use the information collected to identify strategies that will lead to eventual hospital pediatric medical emergency designation. Any strategies identified and implemented may be reflected in the Year 3 needs assessment for PMs 7/77 as well as a review of any movement by the hospital organizations or regulatory agency towards designation. The Advisory Committee anticipates a ten-year process.

Injury Prevention Activities

The Injury Prevention & Control Program is supported by an Injury Epidemiologist, who is also a physician, within MDPH. MDPH has strict policies on ensuring data cleaning and confidentiality. IPCP staff do not analyze data. General information on injuries and deaths is available upon request. The Injury Surveillance Program periodically produces expanded data reports for specific topics, such as Suicide and workplace injuries The Program Manager also works with the Injury Surveillance staff to gather information for the State Child Fatality Review team and its annual report. The systems that support the collection of information are gradually being upgraded, which will result in greater efficiency. For example, MDPH and the Office of the Medical Examiner are moving towards full implementation of an electronic death certificate system, which will permit timely access to specific data.

OEMS Support

The Office of Emergency Medical Services has implemented a mandatory electronic data collection system for EMS agencies. The system (MATRIS) is approximately 75% operational in terms of agency participation and accuracy of data submitted. Prior to implementation of the MATRIS, it was not possible to extrapolate accurate data about the types of medical and trauma calls that occur in Massachusetts. This system will need more time to reach a point of 90% accuracy; however, the information already available for pediatric care has been presented at two pediatric workshops in 2012 and was of great interest to EMTs.

VII. OGANIZATONAL INFORMATION

EMSC is a vital component of the Injury Prevention & Control Program (IPCP) at the Massachusetts Department of Public Health (MDPH). Other Programs in the IPCP include Suicide Prevention, Transportation Safety, Regional Center for Poison Control, Residential Fire Safety Program and Falls Prevention, as well as the State Child Fatality Review Coordinator. The IPCP also houses and supports the MA Prevent Injuries Now Network (MASS PINN) a coalition of injury-prevention stakeholders.

The mission of the Injury Prevention and Control Program (IPCP) is "…to reduce the rates of injuries at home, at school, in the community, on the road, and at play, and to improve emergency medical services for children. The program covers unintentional injury and suicide. We conduct research, develop policies and programs, and provide services to communities, groups, and individuals by offering training and health education; data collection, analysis, and reports; coalition and task force leadership; program development assistance; and public information materials."

EMSC in Massachusetts began in 1993 and has always been located in IPCP at MDPH. There is one staff person, the full-time Program Manager. IPCP staff have access to an administrative assistant for task support. Division and Bureau epidemiologists are available to support data inquiries and reviews. The IPCP is located within the Division of Violence & Injury Prevention, Bureau of Community Health and Prevention. Key EMSC partners, such as the FAN Representative, OEMS, Emergency Preparedness, Injury Surveillance and Maternal-Child

Health are also situated at MDPH, although in different Bureaus. This permits an ease of access for greater collaboration.

Members of the EMSC Advisory Committee are drawn from around the state and include all required positions. The Chair of the Advisory Committee is Mary Chris Bailey, MD, emergency department chief at Newton Wellesley Hospital pediatric emergency department. She also serves as the person 'representing the unique needs of children' by statute on the Emergency Medical Services Committee Advisory Board (EMCAB). In addition to the required EMSC Advisory Committee positions, active membership includes an injury epidemiologist, the five EMS Regional Directors, a trauma center coordinator, an EMS educator and a representative of the Safe Kids Program. The State EMS Medical Director, Jon Burstein, MD, is an active member of the Advisory Committee which enables an awareness of needs and activities for both agencies. FAN Representative Suzanne Gottlieb assists with setting the meeting agendas and also attends other EMSC-related meetings as necessary, as well as assisting with training EMTs on children with special healthcare needs. Suzanne has been a valuable resource for EMSC for over 7 years. Through her oversight of family programs in her Division she is able to disseminate information about emergency medical services for children to her network of family advocates. Her biosketch is available in Attachment 2.

Deborah Clapp, EMT-P, BA, I/C has been the Program Manager since 2007. For the upcoming grant she will also serve as the Project Director. She has extensive experience as a paramedic, ambulance service administrator, paramedic program instructor, college program administrator and public educator. These experiences bring strength and credibility to the EMSC Program. Her biosketch with qualifications and work history is available in Attachment 2. She supervises the 0.5 FTE Child Fatality Review Coordinator, and she reports to Carlene Pavlos, the Director of the Division of Violence and Injury Prevention. The Program Manager travels around the state to attend necessary EMS and injury prevention meetings, including Child Fatality Review Team sessions, and to conduct trainings on EMS-related topics. A detailed description of job responsibilities is found in Attachment 1.

The strategic location of EMSC in MDPH IPCP and the participation of the Program Manager in Department and Bureau –related programs and activities ensures that EMSC has access to other MDPH staff or contracted services who can support financial expenditures and record-keeping, health equity, culturally competent education and health literacy through the various programs at the Department. The Program has access to Department data on children and adolescents that is collected, analyzed and interpreted by our epidemiologists, such as death data, emergency department and hospital data, violent death reporting data, birth/prematurity data, etc. The Departmental support system provides EMSC with a position of strength and permanence.