

Maine Quality Forum



A service of Dirigo Health

In a Heartbeat Status Report

December 2006

Prepared by the Maine Quality Forum of the Dirigo Health Agency
Funded by the Maine Health Access Foundation and the Bingham Program

Summary

Nationally, approximately one third of acute heart attack victims do not receive the care they need, when they need it, to save heart muscle and reduce the death rate. As discussed in the ACC/AHA *Practice Guidelines*, certain kinds of acute myocardial infarction (ST elevation AMI, STEMI) are very likely to have a clot block to critical arteries to the heart (“coronary thrombus occluding the infarct artery”) and these patients respond well to new clot busting treatments. These treatments, referred to as reperfusion therapies, include clot busting drugs (thrombolytics) and catheter procedures (percutaneous coronary intervention: PCI). Clot busting drugs can be given by most medical personnel and are available in all of Maine’s hospital emergency departments. Clot busting catheter treatments are provided, in emergency situations, by three referral PCI programs (located in Bangor, Lewiston and Portland) and one community PCI program (located in York). Because damage to the heart can occur within 15 minutes of occlusion and progresses rapidly, the more quickly the appropriate care can be provided the more likely the patient is to survive and the more likely damage to the heart muscle is reduced. Timely treatment of ST elevation AMIs requires early recognition, quick treatment decisions, and efficient patient transport systems. Because the care of patients experiencing a STEMI may occur across multiple care settings, efficient coordination of that care is critical to improving patient outcomes.

In recognition of the need for effective coordination of care, the Maine State Health Plan asked the Maine Quality Forum/Dirigo Health Agency to initiate a coordination effort. Dr. Costas “Gus” Lambrew agreed to serve as the Medical Director for the project. In April of 2006, a multi-stakeholder conference was held to introduce the idea of a coordinated care model for STEMI in Maine and explore the critical goals of the project. Following that session the following goals were established:

- To establish a consensus care pathway based upon treatment guidelines established by the American College of Cardiologists and the American Heart Association.
- To establish regionally appropriate treatment plans for using the consensus pathway.
- To establish critical metrics, data collection and analysis methods, and actionable reporting processes.
- To establish an Executive Committee, comprised of individuals representing: emergency department physicians, cardiologists, nurses, basic/advanced life support, dispatch, data selection/collection, hospital administration, and public awareness/action to provide oversight and long-term guidance to the project.
- To establish workgroups to address topics associated with: medical response and treatment, metrics and data, and community engagement.
- To maintain a connection to the larger multi-stakeholder group to report out and receive feedback on project efforts and decisions.

With the collaboration of varied stakeholders this coordination effort, known as *In a Heartbeat* (IHB), has, over the course of eight months, developed a model for

coordinating the care of ST Elevation AMI patients across the state. Presented here is a summary report on the status of the project. The Maine Quality Forum thanks the many dedicated individuals who gave their time and knowledge to this effort and remain committed to its continuation.

Leadership

Strong and committed leadership has been, and will continue to be, central to the success of the project. In addition to the guidance provided by Dr. Lambrew, Dr. Dennis Shubert, Director of the Maine Quality Forum, served as an initiator, catalyst and convener. Leadership also included:

- An Executive Committee of 11 members representing all levels in the chain of care and health outreach/educators.
- Three workgroups:
 - AMI Community Engagement (ACE)
 - Heartbeat AMI Response & Treatment (HART)
 - Metrics & Data
- A list of members with affiliations included with this report on page 8.
- Maine Quality Forum staff

Stakeholders

Stakeholders include a broad spectrum of providers involved in the chain of care for STEMI patients, and community outreach/education specialists. Specific categories include:

Direct Care Providers

- Dispatchers
- First Responders
- EMT, EMT Intermediate, EMT Paramedic
- Physician Assistants
- Nurse Practitioners
- Nurses, Nurse Administrators
- Physicians: Cardiologists, Emergency Medicine

Other Interested Parties

- Payers:
 - Insurance companies
 - Employers
- Public
- Government and Legislators
- State and community based organizations
- Individuals
- Health care delivery organizations (i.e. hospitals, medical practices, transport)

In a Heartbeat Goals

The goals of the *In a Heartbeat* Project are to improve the care, quality of life and survival of people in Maine who experience acute myocardial infarction (AMI). Each patient in Maine suspected of having an acute myocardial infarction will receive necessary care, at the right time, given Maine's limitations of geography, healthcare infrastructure and transportation. All providers of care will follow an agreed upon flexible system of care – to maximize the effectiveness of each patient's treatment through minimization of time to treatment and maximization of appropriateness of treatment.

The purpose of the project is to develop metrics of process and outcome that support evidence of achievement of common goals regardless of local chain of care decisions. Indicators of process and outcome will be followed sufficient to continually maximize the quality (safe, timely, effective, efficient, equitable, and patient centered) of the process.

Status

The IHB project is a multi-year process, consisting of a planning phase, an implementation /evaluation phase. Each is described below:

Planning Phase (March-November, 2006)

In the planning phase, the Maine Quality Forum responded to concerns expressed by medical providers, including emergency medical services and others regarding the best way to meet best practice guidelines for diagnosing, treating and transporting patients experiencing ST elevated myocardial infarction (STEMI). In response, the Maine Quality Forum convened interested stakeholders representing those in the chain of care in April of 2006. The stakeholders approved a process that included establishing an Executive Committee and workgroups to develop goals, identify barriers and challenges, and develop strategies to improve survival and quality of life after STEMI. The Executive Committee established the aforementioned project goals and convened three workgroups: AMI Community Engagement, Heartbeat AMI Response and Treatment (which already existed and had been meeting as the Cardiac Advisory Committee of Maine Emergency Services), and Metrics and Data. From April to November these committees convened as follows:

Group	Frequency of Meetings
Stakeholders	2 meetings (April and November)
Executive Committee	7 meetings
AMI Community Engagement (ACE)	5 meetings
Heartbeat AMI Response and Treatment (HART)	3 meetings (additional meetings were previously held as the Cardiac Advisory Committee for Maine Emergency Services)
Metrics & Data	4 meetings of the full committee and numerous meetings of the protocol subcommittee

The Maine Quality Forum established a listserv for each group, and also developed and maintained a website which included meeting notice agendas and materials. The

website also includes references and links. (See www.mainequalityforum.gov, *In a Heartbeat* pages). Outreach included media coverage, project updates to interested parties through email and regular MQF newsletters, and a five-site videoconferenced stakeholder meeting in November. Participants in the November stakeholder meeting could receive continuing education credits through the American Nurses Association-Maine, Maine Emergency Medical Services, National Association for Healthcare Quality, Maine Medical Association, Maine Osteopathic Association and National Commission for Health Education Credentialing.

Products of the planning phase include commonly accepted:

- Goal statement, including establishing the current AHA/ACC guidelines as the current best practice standard, while acknowledging rapidly changing science and the need to regularly evaluate and recalibrate as new information becomes available.
- STEMI Treatment Protocol and Data Collection Manual, which includes:
 - Principles of organization for the IHB Project going into the future.
 - Clinical Data Plan, including a distinction between data that will be collected and aggregated for state policy purposes. The plan also specifically identifies a private vendor to collect, aggregate and report data in a manner that complies with HIPAA.
 - Treatment Pathway.
 - Data dictionary, including data elements, a relational map, and metrics by provider of care
 - Draft Emergency Medical Service (EMS) QI Tool.
 - Draft Transfer Protocol.
 - Draft Emergency dispatch coaching instructions, including advice to take aspirin unless contraindicated.
- Training Curriculum for 12-lead ECG for EMS staff.
- Request for Proposal for vendor to collect data and design and implement a reporting and feedback system.
- Draft wall chart for use in emergency rooms.
- A strategy for community engagement and activation with initial seed funding from the state's three emergency PCI centers.

Funding was provided by the Maine Quality Forum, the Maine Health Access Foundation, and The Bingham Program.

Implementation/Evaluation Phase (2007 and beyond)

In the implementation/evaluation phase, practitioners at every level in the chain of care will operationalize these standards and protocols, and submit appropriate data to the selected vendor on a continuous basis. The vendor will provide regular feedback to each reporting unit for quality control purposes, and will aggregate and report data to the IHB Executive Committee, Metrics and Data Workgroup, and Maine Quality Forum.

The Executive Committee and Workgroups will convene on at least an annual basis.

The Executive Committee will evaluate performance against metrics, provide oversight and evaluate process success, including outcome and individual and population based outcomes. The committee will also: integrate the activities and findings of the workgroups, oversee periodic communications with stakeholders, and serve as advocates for the IHB initiative. As articulated in the Principles of Organization, these groups will function as follows:

The Metrics and Data Workgroup will design a template for quarterly data reports, analyze the data, assess the validity, accuracy, and usability of the data, and make recommendations to the Executive Committee to provide the data to *In a Heartbeat* participants and stakeholders once it has been vetted for stability and accuracy.

The Heartbeat AMI Response and Treatment (HART) Workgroup will continue as the Emergency Medical Services committee that shares responsibility for coordinating dispatch, initial response and transfer, including appropriate field data and protocols.

The AMI Community Engagement (ACE) Workgroup will design, implement and evaluate strategies to eliminate the known gap in the public's knowledge and actions to seek timely care for AMI through the 9-1-1 system.

The lifespan of IHB will be determined by the evolution of the science of care of STEMI and the consensus of the participants as to the need for statewide, rapid cycle quality improvement. The project will become inherently self-correcting based on the common definition metrics of process and outcome. The success of the project will be gauged by process and outcome measures that ultimately impact mortality and morbidity after a STEMI occurrence.

Short Range Targets

Metrics and Data

Maine Quality Forum will select a vendor for IHB data collection in January 2007, with contract negotiations completed in February. From March to August, the data collection and compilation system will be built. The Metrics and Data Workgroup will work with MQF and the contractor to complete the details of how the data submission system will work, and the contractor and MQF will familiarize likely data submitters with the data submission system. After data submission begins, the contractor and MQF will work with providers to debug the data system. In late 2007 Metrics and Data will provide direction to the IHB Executive Committee as to when to bring together stakeholders for a protocol and data update.

Community Engagement (ACE)

In early 2007, the ACE group will finalize the short and long term plans and present them to the IHB Executive Committee for approval and support. The implementation will begin by March, utilizing the \$10,000 committed by each of the following: MaineHealth, Central Maine Medical Center, and Eastern Maine Medical Center.

HART (EMS)

The HART group will continue its monthly schedule determined by its EMS obligations and update the IHB executive committee on the 12-lead ECG program. IHB groups will work with HART to support its 12-lead ECG implementation and quality improvement program. The HART group will need direct support from all members of the chain of care.

In a Heartbeat Workgroup Members as of 12/31/06

Executive Committee (EC):

Gus Lambrew, MD, MACC (EC Chair), IHB Project Medical Director
Steve Diaz, MD (HART Workgroup Chair), Maine EMS & MaineGeneral Medical Center
Darlene Glover, RN, Stephens Memorial Hospital
Larry Hopperstead, MD, Central Maine Medical Center
Deborah Carey Johnson, RN, Eastern Maine Medical Center
Mirle Kellett, MD, FACC (Metrics & Data Workgroup Chair), Maine Medical Center
William Phillips, MD, Central Maine Medical Center
Guy Raymond, MD, Northern Maine Medical Center
Dennis Shubert, MD, Maine Quality Forum
Kim Tierney, RN, Maine Medical Center
Paul vom Eigen, MD, Northeast Cardiology Associates
Debra Wigand, MEd, CHES (ACE Workgroup Chair), Maine CDC Cardiovascular Health Program

AMI Community Engagement (ACE) Workgroup:

Debra Wigand, MEd, CHES (Chair), Maine CDC Cardiovascular Health Program
Carol Bell, Partnership for a Healthy Community
Dona Forke, Healthy Options Together
Chuck Gill, Central Maine Medical Center
Danielle Louder, Maine CDC Cardiovascular Health Program
Cynthia Pernice, MaineHealth
Connie Putnam, Knox County Community Health Coalition
Kelly Roderick, Maine EMS for Children, Kennebec Valley EMS
Dennise Whitley, MHA, American Heart Association

Metrics & Data Workgroup:

Mirle Kellett, MD, FACC (Chair), Maine Medical Center
Richard Chandler, MD, Penobscot Bay Medical Center
Darlene Glover, RN, MSN, Stephens Memorial Hospital
Susan Horton, RN, MSN, Central Maine Heart & Vascular Institute
H. Joel Johnson, RN, CCM, ACS, NovaHealth
Sandra Parker, Esq., Maine Hospital Association
Kim Tierney, RN, Maine Medical Center
Peter Ver Lee, MD, FACC, Eastern Maine Medical Center
Paul vom Eigen, MD, FACC, Northeast Cardiology Associates
David White, CCEMT-P, United Ambulance

Heartbeat AMI Response & Treatment (HART) Workgroup:

Steve Diaz, MD (Chair), Maine EMS & MaineGeneral Medical Center
John Alexander, MD, Maine Medical Center
Alan Azzara, JD, EMT-P, North East Mobile Health Services
Dan Batsie, NREMT-P, Northeastern Maine EMS
Jay Bradshaw, EMT-P, Maine EMS
Mary Harkins Becker, MD, MaineHealth
Donnell Carroll, Southern Maine EMS
Rebecca Chagrasulis, MD, Stephens Memorial Hospital
Richard (Pat) Cochran, MD, FACS, Central Maine Medical Center
Joshua Cutler, MD, FACC, Maine Heart Center (Maine Medical Center)
Norman Dinerman, MD, Eastern Maine Medical Center
David Dumont, MD, Penobscot Valley Hospital
David Ettinger, MD, Penobscot Bay Medical Center
Michael Gibbs, MD, FACEP, Maine Medical Center
Chuck Gill, Central Maine Medical Center
Mark Foure, MD, Miles Memorial Hospital
Larry Hopperstead, MD, Central Maine Medical Center
Susan Horton, RN, MSN, Central Maine Heart & Vascular Institute
Mirle Kellett, MD, FACC, Maine Medical Center
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David Kingdon, MPH, NREMT-P, Maine EMS
Joanne LeBrun, MEd, EMT, Tri-County EMS
Paul Liebow, MD, Northeastern Maine EMS
Chris McCarthy, MA, Maine Quality Forum
Kim McGraw, RN, CCEMT-P, FP-C, LifeFlight of Maine
David McKelway, DO, Inland Hospital & Kennebec Valley EMS
Thomas Mockus, RN, Mount Desert Island Hospital
Rick Petrie, EMT-P, Kennebec Valley EMS & Northeastern Maine EMS
George Petropoulos, MD, FACC, Maine Cardiology Associates
Paul Potvin, MD, Northern Maine Medical Center
Jay Reynolds, MD, The Aroostook Medical Center & Aroostook EMS
J. Matthew Sholl, MD, Maine Medical Center
Eliot Smith, MD, York Hospital & Southern Maine EMS
Scott Smith, RN, NREMT-P, Maine EMS
Peter Ver Lee, MD, FACC, Eastern Maine Medical Center
David White, CCEMT-P, United Ambulance
Debra Wigand, M Ed, CHES, Maine Cardiovascular Health Program
Francis (Bill) Zito, Mid-Coast Maine EMS