



**National Heart Attack Alert Program
Coordinating Committee
and Subcommittees**

**MEETING
SUMMARY
REPORTS**

**June 23–24, 2003
Bethesda Hyatt
Bethesda, Maryland**



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NATIONAL HEART ATTACK ALERT PROGRAM

COORDINATING COMMITTEE MEETING

HIGHLIGHTS

JUNE 24, 2003

BETHESDA, MARYLAND

- Ms. Mary Hand welcomed the participants and introduced new Coordinating Committee representatives.
- Dr. James Atkins reported on the Executive Committee meeting held earlier in the morning, and subcommittee chairs provided reports for their meetings that took place yesterday.
- Drs. Daniel Stryer, Marcel Salive, and Martha Radford addressed the need to implement research-based guidelines to improve quality of care and outcomes for AMI patients. They described the status of the field, challenges to implementing quality care, and opportunities for improvement using multicomponent interventions targeting providers and systems. A panel discussion focused on related issues.
- Dr. Robert Zalenski and Mr. Harry Teter reviewed the issue of caring for survivors of patients who suffer sudden death from cardiovascular disease. The American Trauma Society's "Second Trauma" program was described.
- Dr. Joseph Ornato provided an update for time-to-treatment recommendations and reperfusion algorithms in the revised ACC/AHA Guidelines for the Management of Patients with ST-Elevation MI.
- Dr. Jeanette Guyton-Krishnan provided an update on the U.S. Public Health Service's Healthy People 2010 objectives for the Nation that are related to heart attack, and she reviewed the status of the four NHAAP-specific objectives.
- Ms. Hand provided a progress report on the NHLBI's "Act in Time to Heart Attack Signs" campaign. Dr. Christine Crumlish asked members to share their organizations' activities for implementing the campaign.

National Heart Attack Alert Program

**Coordinating
Committee Meeting**

**June 24, 2003
Bethesda Hyatt
Bethesda, Maryland**

**NATIONAL HEART, LUNG, AND BLOOD INSTITUTE
NATIONAL HEART ATTACK ALERT PROGRAM
COORDINATING COMMITTEE**

**Meeting Summary
June 24, 2003**

**WELCOME AND INTRODUCTIONS
(Ms. Mary Hand)**

Ms. Hand welcomed the participants on behalf of the National Heart, Lung, and Blood Institute (NHLBI) Director, Dr. Claude Lenfant, who was unable to attend the meeting. She introduced the following new Coordinating Committee organization representatives: Dr. Andrea Gelzer, representing the American Association of Health Plans; Ms. Nancy Foster, representing the American Hospital Association; Dr. Richard Levinson, representing the American Public Health Association; Dr. T.G. Patel, representing the Department of Veterans Affairs (VA); and Mr. Drew Dawson, representing the National Highway Traffic Safety Administration. In addition, the following substitutes were present: Dr. Mark Antman, representing the American Medical Association; Mr. Donald Vardell, representing the American Red Cross; and Ms. Carole Carey, representing the Food and Drug Administration. Ms. Hand also reviewed the agenda for the meeting and the contents of the meeting packets. (See Attachments A and B for the participant list and meeting agenda, respectively.)

**EXECUTIVE COMMITTEE/SUBCOMMITTEE REPORTS
(Dr. James Atkins)**

Dr. Atkins reported on the Executive Committee meeting held earlier in the morning, and he introduced subcommittee chairs, who gave reports from their meetings that took place the previous day.

Education Subcommittee. Dr. Christine Crumlish said that the Education Subcommittee meeting focused on an update by Ms. Jill Arvanitis on the dissemination of “Act in Time to Heart Attack Signs” materials, which include a new Spanish edition of the lesson plan, an easy-to-read illustrated handout, and a Spanish-language video (that was viewed by the Subcommittee). The Subcommittee heard a presentation by Ms. Matilde Alvarado on the Salud para su Corazón (Your Heart, Your Life) program, the NHLBI’s 10-year, train-the-trainer effort that educates lay workers as “promotores,” who then provide education on heart-healthy behaviors to family and friends in the community. This successful program is now being adopted in Native American and African American communities.

Health Systems Subcommittee. Dr. Bruce MacLeod reported that two writing groups were established. One will produce a document calling for more research to solve the problem that less than 50 percent of patients with acute myocardial infarction (AMI) call 9–1–1. A stakeholders meeting, planned for October 2004, will discuss new ideas for meeting the needs of these patients. The second writing group, formed after a conference call on March 2003, will produce a manuscript exploring the evidence-based technologies that are currently underutilized,

and will call for the use of prehospital 12-lead electrocardiogram (ECG) by all emergency medical services (EMS) systems. Both writing groups hope to have their papers ready for review at the next Coordinating Committee meeting.

Dr. MacLeod also reported that the Subcommittee heard a presentation on quality improvement by Dr. Daniel Stryer, who discussed the challenges of gathering evidence and data. Dr. Stryer reviewed the “National Healthcare Quality Report” and the work of the Quality Interagency Coordinating Task Force (QuIC). The Subcommittee also discussed efforts to work with national credentialing organizations to get them to adopt variables for care of patients with acute coronary syndromes (ACS).

Science Base Subcommittee. Dr. Joseph Ornato reported on several discussions and presentations heard by the Science Base Subcommittee. First, there was followup discussion of the March conference call to update evidence for the use of technology to diagnose ACS, and the Subcommittee affirmed its strong support for the use of the 12-lead ECG. There was also discussion on a proposal to set up a procedure for evidence-based review of guidelines related to the Subcommittee’s goals. A task group made up of Drs. Harry Selker, Robert Zalenski, and Stephen Cantrill will pursue this proposal.

The Subcommittee also heard the following presentations:

- Dr. Rob Christenson described the effort of the National Academy of Clinical Biochemistry (NACB) to update the laboratory medical practice guidelines for ACS markers such as troponin. A document on this subject will be discussed at the Consensus Conference on Guidelines for ACS and Heart Failure, to be held May 21–22, 2004, in Boston, MA. The NACB would like input from the National Heart Attack Alert Program (NHAAP) members. Ms. Hand will help develop a vehicle for identifying contacts at member organizations.
- The Subcommittee heard two presentations on projects of the Centers for Disease Control and Prevention (CDC). Dr. Dan Pollack of the National Electronic Disease Surveillance (NEDS) system discussed a long-term project with great potential for collecting data from hospitals and emergency departments (EDs) to establish disease surveillance systems. Dr. Wayne Giles discussed the Paul Coverdell Stroke Registry on the care and treatment of patients hospitalized for stroke. This national registry has grown from four to eight centers.
- Two final presentations provided updates on the status of two research efforts. Dr. Ornato reported that the Public Access Defibrillation (PAD) trial will complete data collection at the end of September, and it is hoped that results of the trial can be presented at the November meeting of the American Heart Association (AHA). Dr. George Sopko reported that the Post-Resuscitation and Initial Utility in Life-Saving Efforts (PULSE) initiative is close to putting out requests for applications (RFAs) to establish a resuscitation network.

In response to a question about whether the PAD trial will look at long-term outcomes as well as short-term survival, Dr. Ornato said that the primary outcome is hospital discharge, but

important substudies will provide economic analyses of survivors over time to determine whether the PAD strategy results in meaningful survival.

RESEARCH IMPLEMENTATION ISSUES IN IMPROVING AMI PATIENT QUALITY OF CARE AND OUTCOMES

Ms. Hand noted that while research has provided us with a wealth of information about how to prevent and treat heart disease, this information is not being applied systematically. She introduced three speakers who presented various aspects of research implementation for improving quality of care and outcomes for patients with AMI, followed by a panel discussion.

Overview of Research Implementation: State of the Field (Dr. Stryer)

Dr. Stryer called attention to the report from the Institute of Medicine (IOM) entitled “Crossing the Quality Chasm: A New Health System for the 21st Century,” which focuses on the gap between what is known and what is done. He said that he would focus on the reasons behind the gap and what we know about how to implement research findings. Dr. Stryer made the following points:

- Several opportunities for improvement are identified by data on State rates for quality indicators in 2000–2001 (Jencks et al., 2003). The median rates were 45 minutes for thrombolysis and 107 minutes for percutaneous transluminal coronary angioplasty (PTCA); 79 percent of patients received beta-blockers (BBs) at discharge, 74 percent received angiotensin-converting enzyme inhibitors (ACEIs) for reduced left ventricular ejection fraction (LVEF), and 43 percent received smoking cessation counseling.
- Dr. E. Andrew Balas (of the University of Missouri-Columbia) identified several reasons research does not get implemented in clinical practice: studies that are not completed (18 percent), manuscripts that are not accepted (46 percent), inadequate numbers of patients in studies (35 percent), inconsistent indexing (50 percent), and delays in citation in other publications (6–13 years) and in implementation (6 years).
- Supply-side research, improved packaging, guidelines, and performance measures can be helpful but will not alone change practice. Components of Jonathan Lomas’ “Push, Pull, and Partner” model include involving change agents from the onset; giving attention to dissemination and receptor capacity; recognizing that research and decisions are processes that evolve over time; identifying what decision makers want to know (e.g., costs) and the types of evidence they need; and promoting the role for translators who are credible knowledge brokers. Another challenge is having the foresight to know what issues and needs *will* be important after the research is over in 3–5 years.
- Strategies used to implement research are addressed in a review by Bero et al. (1998), who found that educational materials and didactic educational meetings have essentially no effect; audit and feedback have inconsistent effect; and local opinion leaders have variable effect. Reminders, multifaceted interventions, and interactive

educational meetings are more effective. Little is known about the effectiveness and cost effectiveness of interventions to change practice. The Agency for Healthcare Research and Quality (AHRQ) and the National Institutes of Health (NIH) have become interested in this issue. A knowledge base is being developed, but more work is needed.

Dr. Stryer said that implementation is not easy because of the need to deal with tradeoffs between internal validity, feasibility, and generalizability. There are three challenges: developing new knowledge, developing the tools and talent so that the knowledge can be implemented, and translating the research into practice. He asked members to think about what they or their contacts can do to accelerate the translation of research to practice.

Evidence that AMI Guideline Adherence Can Be Improved (Dr. Marcel Salive)

Dr. Marcel Salive, from the Clinical Applications and Prevention Group within the NHLBI's Division of Epidemiology and Clinical Applications, discussed the variation in AMI care in the United States and suggested how improvements are possible with multicomponent interventions targeting providers and systems. To begin, he reviewed the therapeutic development and translation cycle, which moves from concept to clinical trials, guidelines, performance indicators, performance, and outcomes—which, in turn, produce new ideas that then influence the next concept for research. He summarized the following reports (See slides in Attachment C for details):

- Grilli et al. (2000) reported on 431 guidelines from specialty societies from 1988 to 1998 and found that 28 percent were in the field of cardiology.
- Cabana et al. (1999) reported on internal and external barriers that explain why physicians don't follow clinical practice guidelines. Internal barriers include lack of awareness, familiarity, agreement, self-efficacy, and outcome expectancy, as well as the inertia of previous practice. External barriers include guidelines that are not easy to use; patient preference issues; lack of reminder systems, materials, staff time, and consultant support; and barriers related to the reimbursement system, practice costs, and liability.
- A panel (Spertus et al., 2003) discussed ideal performance measures—i.e., those that are meaningful (linked to health outcome and evidence based), that make possible reliable and valid measurement, that can account for patient severity of illness and be attributable to care delivered, that can be modified through the health care system, and that are feasible and affordable. Seven current clinical performance measures for AMI meet these criteria; for *acute* care, these include early aspirin, early use of BBs, and timely reperfusion; for *discharge* care, they include aspirin, BBs, ACEI for low LVEF, and smoking cessation counseling. Except for smoking cessation counseling, the AMI measures are all supported by evidence from randomized controlled trials (RCTs) plus effectiveness data linking treatment to health outcome. The measures have good reliability and validity. All practices can be changed (with a range of low to high difficulty), and data can be reasonably collected with moderate burden (except for reperfusion, which has a moderately high burden). Materials in the meeting

packet from the Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcomes With Early Implementation of the ACC/AHA Guidelines (CRUSADE) trial, a national quality improvement initiative, indicate how the data are collected.

- Dr. Eric Peterson presented data from the fourth National Registry of Myocardial Infarction (NRFMI 4) on variation in AMI care in 1,247 U.S. hospitals and 250,000 AMI patients (2000–2002). Fifteen performance indicators were used (the eight mentioned in the previous bullet plus seven others with less strong evidence). This study demonstrated a large and persistent gap between the guidelines and current community AMI care, as well as wide variability in care between the “leading” and “lagging” U.S. hospitals. The data showed that hospitals’ level of overall adherence to AMI guidelines is strongly correlated with patient outcomes.

Dr. Salive then focused on approaches to changing clinical practice for AMI. Continuing medical education (CME) and passive dissemination of guidelines are ineffective approaches, but the following approaches work:

- **Academic detailing** provides one-on-one educational outreach and is sometimes combined with local medical “opinion leaders.” An RCT in Minnesota (1998) found that academic detailing increased the use of aspirin and BBs by 17 percent and 30 percent, respectively.
- **The critical pathways approach** was supported by an NHAAP review (“American Heart Journal,” 2002) that suggests its promise for increasing the use of guideline-recommended medications, better targeting of cardiac procedures, and reducing length of hospital inpatient stay. However, effectiveness has not yet been demonstrated.
- **Performance audit and feedback** was reported in data from the National Committee for Quality Assurance (NCQA) that showed a 30 percent increase in the use of BBs from 1996 to 2001 (up to 92.5 percent). The Medicare rate was close to the private health care system rates.
- **Computerized physician reminder and drug ordering systems** were shown effective in a study by Dexter et al. (2001). A computerized reminder system resulted in aspirin use at discharge in 80 percent of AMI patients.
- **Quality improvement projects** include the Acute Myocardial Infarction Guidelines Applied in Practice (AMI GAP) project for the treatment of AMI, an American College of Cardiology (ACC) project that has been conducted in 10 acute-care hospitals in Southeast Michigan in 1998–2001 (Mehta et al., 2002). This project examined pre- and postintervention measurement of 11 key performance indicators. The results indicated that implementation of guideline-based tools for AMI facilitates quality improvement, and also demonstrated the potential to change practice for AMI care. Intervention components included kickoff presentations, rapid cycle implementation, a tool kit, identification and utilization of nurse and physician

opinion leaders, and followup grand rounds and site visits. Those providers who used the tools (especially the template order form) had very high adherence to most of the performance indicators.

Dr. Salive mentioned the following challenges to changing clinical care for AMI: the labor-intensive process of maintaining evidence-based guidelines, inadequate computer systems for reminders (in both inpatient and outpatient settings), inadequate patient databases, and lack of data on long-term adherence.

The NHLBI has begun a translational research program by issuing an RFA for Trials Assessing Innovative Strategies to Improve Clinical Practice Through Guidelines. This program supports studies in two phases: (1) needs assessment, and (2) an RCT of multimodal interventions to address two or more barriers to implementation in practice settings, with an emphasis on the provider/system level. The primary outcome is change in practice. Nine grants have been funded to date.

Gaps and Challenges to Implementing Quality Care for Patients with Acute Myocardial Infarction (AMI) (Dr. Martha Radford)

Dr. Radford, system director, clinical quality, Yale New Haven Health System (YNHHS), noted that quality reporting in the past involved providers and patients, but today it involves conversations among different stakeholders: payers, providers, patients, family and friends, accreditors, employers, and graders. She reviewed the history of national health quality performance measurement (both in general and for AMI care), which began in 1987 with the Health Care Financing Administration's (HCFA's) hospital mortality reports and which now involves HCFA's successor, the Centers for Medicare and Medicaid Services (CMS), and private-sector organizations such as the IOM, Joint Commission on Accreditation of Healthcare Organizations (JCAHO), NCQA, Leapfrog Initiative, and National Quality Forum (NQF). The IOM has issued a call for transparency and accountability of medical care, and 20 States now have laws requiring quality and safety reporting. Health care providers are being held accountable to practice evidence-based medicine; when quality is not optimal, they are called upon to improve it. (See slides in Attachment D.)

Dr. Radford noted that the seven AMI quality measures (for acute care: aspirin, BBs, and acute reperfusion; for secondary prevention: aspirin, BBs, ACEI, and smoking counseling) were distilled from the ACC/AHA's "Guidelines for the Management of Patients With Acute Myocardial Infarction." Five of the measures will be on a public "report card" beginning in 2004.

To answer the question about whether quality improvement makes a difference, Dr. Radford reviewed Medicare data from all States for 1998–2001 and from four pilot States taking part in the Cooperative Cardiovascular Project (CCP) for 1993–2001. Changes in performance were not impressive, except for a drop in mortality in the CCP pilot states that was significantly greater than in the nonpilot States (though it is not known if this resulted from quality improvement efforts). She also noted that the reduction in 30-day AMI mortality in Medicare patients flattened during the time of increased attention to quality improvement. A

review by Davis et al. (1995) indicates that patient-mediated interventions and physician reminders help to change performance.

Dr. Radford is participating in the Beta Blocker Use After Hospitalization for AMI (BBAMI) study, which is designed to identify the organizational characteristics most important for improvement. The study is using the NDMI database (1996–99) to understand temporal trends in care at the hospital level (e.g., BB use at discharge). The study has both qualitative and quantitative phases. The qualitative study is taking place in eight hospitals with varying improvement experience. In-depth, open-ended interviews are conducted with multiple informants, the interviews are recorded and transcribed, and domains are elicited using appropriate software and qualitative research techniques. The taxonomy for improvement includes six domains: (1) goals, (2) administrative support, (3) clinical support, (4) types and style of performance improvement initiatives, (5) how the organization uses data (validity, timeliness, and benchmarking), and (6) contextual factors (e.g., hospital size, system affiliation, ownership type, financial constraint, and organizational turbulence).

Dr. Radford provided examples of how this framework has helped her in her work to ensure that the YNHHS provides the highest quality care. For the three YNHHS hospitals, median time to acute reperfusion is a specific business plan goal, and integration of clinical performance into the business plan ensures attention from senior leadership. Emergency and cardiology physicians agree with the goal and work together. Many interventions are tried, and data are collected on each case. Successes are celebrated, and cases where there is less success are investigated.

Dr. Radford also discussed AMI care in the VA system. Peterson et al. (2003) reported that the VA is underutilizing cardiac catheterization in AMI patients compared with the fee-for-service (FFS) system; however, 1-year mortality adjustment was not different. Three other papers (Jha et al., 2003; O'Connor et al., 1999; Jencks et al., 2003) provide data from a multiyear VA initiative to improve quality of care in patients age 65 and older. Results indicated that care was better for patients in the VA system compared with the FFS system. Dr. Radford noted that the VA has had a major quality improvement focus since 1995. This effort is helped by the VA's central organization, salaried physicians, and unique opportunity to use information technology for data collection and system change.

Dr. Radford identified the following needs:

- We need more quality measures—e.g., measures for the quality of EMS, the quality of evaluation of possible ischemic syndromes, and the quality of outpatient care. We should urge funding for this. An infrastructure is lacking for the development of new quality measures. (We had been dependent on HCFA for this, but the CMS is not continuing the effort.)
- We need to know more about effectiveness in understudied cohorts, patients with multiple comorbidities, and the effectiveness of new therapies. For example, Medicare's frail cohort makes up 64 percent of the AMI cohort, but only a small proportion of this cohort is ideal for therapies such as BBs or aspirin.

- We need more research about organizational dynamics—how incentives throughout the health care system can be aligned to foster high-quality care; how we can learn from organizations that excel (e.g., the VA, Indian Health Service, certain private hospitals); and how we can sustain positive change.

Dr. Radford ended her presentation by stating, “All good process improvements eventually become structure improvements.”

Panel Discussion

Dr. Stryer moderated the panel to discuss what the NHAAP Coordinating Committee can do to implement guidelines/research to improve quality of care and outcomes for AMI patients. The following issues were discussed (grouped here by topic).

Failure to Treat

- Dr. Lawrence Jones described the case of a 49-year-old man who had a 5-year history of chest pressure and pain and who ultimately died due to poor diagnosis and treatment. This case illustrates that there is a big difference between what we know and what we do.
- Dr. Selker noted that an AHRQ-funded study showed that the percentage of people with acute ischemia being sent home varied from none to 11 percent. In NRMI 4, he asked participants if they knew what the rate of missed MIs was at their hospital and found that they did not know this. An electronic database might help identify who is affected.
- Dr. Radford mentioned an unpublished study that examines readmissions for ACS within a period of time after being sent home from an ED visit. An all-payer database in Connecticut can look at the data and lead to reports on variability by hospital. This quality measure needs to be validated before being used.
- Dr. Charles Curry suggested that patients should know enough to say, “I’m not going home.” Patient education is needed.

Sustainability

- Dr. Salive said that evaluation criteria on sustainability are part of a study in a county health department in California. The project deals with cardiovascular disease (CVD) risk-factor modification and is designed to sustain the intervention in the clinics after the research study.
- Dr. Stryer added that it is challenging enough to achieve improvement—but even more so to achieve sustainability. The intervention needs to be institutionalized; incentives are needed, and the business implications must be addressed.
- Dr. Atkins said that the fact that the mortality curve for AMI has stayed flat (given that one-third of cases are in patients ages 75 and older) indicates that we may be

doing better than we thought. Dr. Radford agreed that it is likely that we are seeing patients with higher risks of mortality.

Systems That Excel

- Dr. Atkins pointed out that we collect data on the size and location of hospitals but not the systems. He suggested that intervention projects in medical centers could help diffuse change in their regions. A HCFA study showed that a regional effect in different use of BBs and calcium channel blockers was associated with the influence of a medical center. Dr. Stryer added that there may be “opinion leader institutions.”
- Dr. Radford noted that New England is the region that excels in quality of care. This area is marked by greater use of BBs, and lower mortality and use of invasive procedures. We need to study institutions that excel and determine what they are doing differently.

Effectiveness of Therapy

- Dr. Radford noted that we have known about the effectiveness of BBs for 30 years; a literature review (Freemantle, 1999) shows continued effectiveness, even though other therapies have been introduced.
- We need to continually check the effectiveness of therapies as medicine evolves. This is more important now with potentially invasive therapies and procedures. Investigators in a VA study that showed lower utilization of basic procedures for myocardial infarction (MI) attempted to assess appropriateness and to provide interventions for patients with indications for an invasive procedure. There are problems doing that—we may see overutilization of procedures in some groups; we need to specify which patients should get the procedures.

Quality Measures

- Dr. Bruce MacLeod noted that the NCQA’s Health Plan Employer Data and Information Set (HEDIS) has the power to set standards. HEDIS measures bring action because that is where the money is.
- We must agree on a common set of measures: How can we do this? The NQF is trying to promote this. The Department of Health and Human Services’ (DHHS) “National Health Care Quality Report” will push quality measurement and drive consensus around certain measures.

Demonstration Projects

- Demonstration projects should give incentives for providers who give better care (e.g., for BB prescriptions). Ms. Foster added that there are different opinions about whether payment incentives work. Some payers think they are already paying for delivery of quality care.

- Dr. Gelzer noted that pay-for-performance quality initiatives are not yet backed by evidence. In California, a consortium of health plans provides a 5–10 percent quality bonus. In Massachusetts, there is a diabetes physician recognition program. If you pay the providers in the top quartile more, what will you do about those in the bottom quartile? Will you take money away?
- Dr. Radford added that demonstration projects provide reimbursement for quality achievement within the private insurance section (e.g., an Anthem Blue Cross/Blue Shield project in Virginia).
- Ms. Foster said that the CMS will soon announce a demonstration project using pay-for-performance with BBs, aspirin, etc.
- Dr. Salive added that the NHLBI funds demonstration projects under the R18 (Demonstration Project Grants) mechanism. He can provide advice on the requirements involved.

Effective Interventions

- Dr. MacLeod noted that critical pathways could fail if they are locally developed because medical staff politics are interjected; they would be more likely to work if the NHLBI tells them to do it. Dr. Cantrill added that the results of key clinical pathways are mixed; it depends on skill and team-building efforts to get everyone on board. Directives from a national organization carry more weight.
- Many interventions are designed to help busy, overworked clinicians remember to do the right thing. Patient safety literature indicates that integrating technology is more effective for consistent performance than trying to get clinicians to remember. What other interventions (e.g., a change in orders) would be effective?
- Dr. Salive noted that stopping a behavior is harder than starting it. In a study to reduce the use of lidocaine for AMI, there was a 50 percent reduction in both the control group and the intervention opinion leader group. Writing a prescription is relatively simple, but other behaviors are more complicated and challenging.
- Dr. Sopko noted that it is NHLBI policy that every trial should include dissemination of results. He also pointed out that the Women’s Health Initiative (WHI) received a lot of press coverage and influenced practice.

Information Technology

- Dr. Stryer said that a public/private partnership is trying to develop standards for information technology (IT) systems, which are becoming prevalent in hospitals. We now have the experience to know which directions are worth pursuing. A challenge is getting the systems to talk to one another. There is incredible potential to increase quality of care, but IT systems will introduce their own challenges.

- Dr. Salive said that health care providers with computer entry systems show a net gain, though there are some problems. Physician order entry is just now coming into its own, but it needs more work.
- Dr. Cantrill noted that a hospital on the west coast just cancelled a system that cost \$7 million to develop. Poorly designed systems are a disaster; all care comes to a halt.

Guidelines

- Dr. Curry stated said that one way to deal with racial/ethnic disparities in health care is to get providers to follow guidelines. Guidelines should be taught in medical schools and training programs, and should be included in Board exams. Dr. Stryer added that there is an opportunity to instill in the new generations of health care workers the need to assess quality of care and then take steps to produce improvement.
- Dr. Radford noted that AMI care was one of the first areas measured because there were authoritative guidelines (from the ACC/AHA). Over the last 25 years there has been an evolution to encourage guideline writers to identify the default mode—the care that should be given to all. Minimum standards should be stated and clearly elucidated.

THE FAMILY BECOMES THE PATIENT: CARING FOR THE SURVIVORS OF PATIENTS WHO HAVE SUDDEN DEATH FROM CARDIOVASCULAR CAUSES (Dr. Zalenski and Mr. Harry Teter)

Dr. Zalenski, representing the Society for Academic Emergency Medicine, reviewed an issue he had introduced at the last Coordinating Committee meeting—the importance of communicating bad news and comforting the families of persons who die suddenly from cardiac arrest. At that time, Dr. Richard Gillum brought attention to the fact that these family members are at increased risk of sudden death from CVD and suggested interventions. In all cases where a patient has died, is dying, or has permanent disabilities, there is a family that has been devastated. The care of families has been neglected, though this is a very important aspect of the quality of care delivered.

At the last meeting, next steps were identified, including linking with other organizations concerned with this issue, such as the American Trauma Society's (ATS) Second Trauma program, death disclosure efforts of the Society for Academic Emergency Medicine, and other efforts in the military and paramedic programs. Additional next steps were to convene a group to review the literature to understand the potential modifiable risks of stressful sudden death disclosure on persons already at risk for CVD; to examine outcomes of a telephone survey of families of cardiac sudden-death victims that is in the planning stage at Wayne State University; and to plan for an observational study to measure risk and an intervention study, if feasible. A study by Quest et al. (2002) examined the procedural competency model to teach death disclosure at Emory University Medical School. Of the 16 residents trained, 75 percent had no

prior didactic or interactive training in death disclosure. After training, 80–95 percent of residents were judged competent by standardized patients and faculty.

Mr. Teter, executive director of the ATS, described how the ATS developed its Second Trauma program. He began by describing his own experience of getting a phone call telling him that his father had suffered a massive heart attack and was “resting.” He flew home quickly, hoping to see his father, but his father had died. When he became involved in the trauma field, he realized that family care was not taught in medical schools. News telling was often done curtly by a drained caregiver who was often just out of the operating room. A survey of 1,500 trauma centers indicated that caregivers are under enormous stress, including the stress associated with dealing with families. Surgeons are choosing not to do trauma work, partly because of lifestyle issues and stress.

Mr. Teter met staff from the Hartford Hospital Trauma Center, which had started a program to sensitize staff to the needs of families. Followup evaluations with the families showed that they had positive experiences. After examining the literature, the ATS brought together a group of surgeons, nurses, social workers, ministers, and families to talk about what the needs were. The Second Trauma program was established to address the trauma experienced by families of trauma patients. The program includes best practices—how to make the telephone call, what to say, how to tell families the outcome, how to express compassion, how to establish trust, and where to talk to the family. Staff members are taught to manage the family in three possible scenarios: (1) death, (2) a patient lingering in the intensive care unit, and (3) a surviving but disabled patient.

The ATS developed a team to give lectures at hospitals and seminars. The information will soon be available on a DVD and in a manual. Mr. Teter referred to an “At-a-Glance” version of the Second Trauma program, with tips for helping the family if trauma or life-threatening, sudden illness strikes. He said that the ideal is one-on-one training with a trainer. Facilities are realizing the importance of this training, because families who are cared for properly are extremely appreciative and cooperative, helping to work for the care of the patient and reducing the patient’s hospital time. While facilities cannot bill for this service, it is good public relations. Mr. Teter said that he welcomed the opportunity to work with NHAAP members.

Dr. Zalenski concluded that, with the NHAAP’s continued support, the program will establish goals and objectives and use Coordinating Committee member strengths to promote sudden-death notification training, and to collaborate to better understand the impact of sudden death on overt CVD among family survivors. Dr. Zalenski said that he would get together with Ms. Hand, Dr. Gillum, and others after the meeting to talk about implementing these goals.

**REVISED TIME-TO-TREATMENT REPERFUSION ALGORITHMS FROM THE ACC/AHA GUIDELINES FOR MANAGEMENT OF PATIENTS WITH ST-ELEVATION MYOCARDIAL INFARCTION
(Dr. Ornato)**

Dr. Ornato provided an update of the time-to-treatment recommendations and corresponding reperfusion algorithms in the revised version of the ACC/AHA “Guidelines for

Management of Patients With ST-Elevation MI (STEMI).” The guidelines will be going out shortly for external review, with anticipated publication in November 2003. These guidelines follow seven other sets of ACS guidelines that have been developed since 1990. Both Dr. Ornato and Ms. Hand serve on the committee that is developing the new guidelines.

Dr. Ornato showed slides from the current draft of the guidelines, which focuses only on STEMI patients; he highlighted the following new recommendations, which are classified by level of evidence. (See slides in Attachment E.)

- Give patients with established angina instructions to take one nitroglycerin tablet in response to chest discomfort, but to call 9–1–1 if symptoms are not relieved 5 minutes later. Previous instructions were to take three doses of nitroglycerin and then call 9–1–1, but this leads to a 15–20 minute delay. There is no compelling evidence for the use of three doses.
- Encourage EMS systems to include a protocol for giving aspirin while the patient is en route to the ED (if the patient is not allergic to aspirin).
- Establish time-to-treatment goals for fibrinolytic and percutaneous coronary intervention (PCI) therapy. NRMI 4 data show that door-to-balloon time for STEMI patients is 198 minutes, and a goal is to decrease this time. Berger et al. (1999) showed that 30-day mortality increases with each progressive time interval to PCI, and is highest when the interval is >90 minutes. Patients with no PCI had the highest mortality. Nallamothu and Bates (1993) looked at PCI-related time delay and mortality. The goal is to provide lytics within 30 minutes and PCI within 90 minutes of arrival in the ED—with the total ischemic time from symptom onset being less than 120 minutes.
- Establish targets for prehospital therapy and triage. The optimal goal is to set targets for each step, starting with the patient—for example, nitroglycerin within 5 minutes; 1 minute to process the 9–1–1 call; door-to-needle time or prehospital lytics 30 minutes or less; and PCI <90 minutes from door-to-balloon inflation. Some facilities may be able to bring the patient directly to the catheterization lab (as in Europe).

Dr. Ornato said that new guidelines are in the final stages of review and will then undergo peer review. He noted that the evidence level for some recommendations dropped with more review because the evidence was not there. In these cases, we must give our best guess. When Dr. Ornato asked members for their feedback, the following issues were raised:

- Dr. Ornato said that PCI is not recommended in all cases. Details about each patient’s case drive the choice of therapy. The guidelines provide benchmarks to allow clinicians and systems to evaluate performance on each option.
- Dr. Selker said that a Boston registry has noted a tendency to send people with STEMI to the catheterization lab, leading to a number of false positives. The skill set for making treatment decisions requires a lot of work.

- Dr. Stryer expressed concern about the footnotes and caveats in the guidelines, which would make them difficult to follow, and make it hard to assess whether they are being followed. Dr. Ornato said that the approach is an imperfect compromise. Most patients would be easy to track, but others would be highly variable; it depends on comorbid factors and features of the infarction.
- Dr. J. Lee Garvey asked how the patient identifiers and data would be consistent from prehospital to in-hospital care. Dr. Ornato said that a few communities have solved the problem—Seattle is an example. The Health Insurance Portability and Accountability Act (HIPAA) of 1996 has complicated the issue, but provides the tools to help lawfully bridge information exchanges. Patients may be able to give consent to facilitate data exchange. One problem is that the EMS may send STEMI patients to PCI-capable hospitals, causing hospitals that are not PCI-capable to lose patients. It helps to have a neutral entity to track data (e.g., the New England Medical Center).
- Dr. Atkins noted that the use of nitroglycerin began 33 years ago as part of the AHA’s “Early Signs of Heart Attack” campaign. At that time, the only ways to prevent sudden death were sedation and pain relief. The major cause of treatable mortality was myocardial rupture (because of the high incidence of hypertension).

**HEALTHY PEOPLE 2010 DATA SOURCES: UPDATE
(Dr. Jeanette Guyton-Krishnan)**

Dr. Guyton-Krishnan provided an update on the U.S. Public Health Service’s Healthy People 2010 (HP 2010) objectives for the Nation that are related to heart attack. She reviewed the status of the four NHAAP-specific objectives. (See slides in Attachment F.) Baseline data are available for two of the objectives, which are measurable:

- Objective 12-2—Knowledge of heart attack symptoms and the importance of calling 9–1–1: the new baseline is 46 percent, representing people who answered yes to all five warning signs and yes to knowing to call 9–1–1. Dr. Giles noted that the CDC’s Behavioral Risk Factor Surveillance System (BRFSS) has State-level data for this objective. The BRFSS includes a dummy question that people would have to answer “no” to, and this resulted in a slightly lower prevalence estimate.
- Objective 12-4—Adults who call 9–1–1 and administer cardiopulmonary resuscitation (CPR) when witnessing an out-of-hospital cardiac arrest: the new baseline is 8 percent, representing CPR course completion within the last year and knowing to call 9–1–1. (The National Center for Health Statistics decided to go with the proxy measure of CPR training because of difficulty with some previous questions that were somewhat similar.) The wording of the objective needs to be modified because the baseline data reflect CPR training, not actual bystander response, or the questions should be revised.

The following objectives are still developmental (there are no baseline data):

- Objective 12-3—Eligible patients with heart attacks who receive artery-opening therapy within an hour of symptom onset: data are available from the NRMI.
- Objective 12-5—First therapeutic electric shock for out-of-hospital cardiac arrest: potential data sources include the Phoenix Survey, which is currently fielding its 2003 survey—data are expected in 2004.

Dr. Guyton-Krishnan reported that a progress review was held on April 23, 2003, for Focus Area 12: Heart Disease and Stroke. These reviews briefed the Surgeon General and Assistant Secretary for Health on progress-to-date for all the objectives.

The next step for HP 2010 is a midcourse review for the overall progress on all 28 objectives. This review determines how many objectives have data sources and how many will be retained or eliminated due to lack of data; it also assesses the status of HP 2010's two overarching goals. The CDC and NIH are now reviewing heart disease and stroke objectives and deciding what needs to be done in terms of baselines and data sources. The midcourse review also reviews the wording of the objectives. Participants are invited to send comments on the objectives to either Dr. Guyton-Krishnan or Ms. Hand.

“ACT IN TIME TO HEART ATTACK SIGNS” PROGRESS REPORT ON CAMPAIGN (Ms. Hand and Dr. Crumlish)

Ms. Hand provided a progress report on the “Act in Time to Heart Attack Signs” campaign. (See slides in Attachment G.) This campaign was based on the results of the Rapid Early Action for Coronary Treatment (REACT) research program. Even though REACT did not result in a reduction in delay time from symptom onset to hospital arrival over the 18 months of the study, there was a statistically significant increase in the use of EMS in intervention communities. REACT surveys and focus groups also provided a great deal of information that has enhanced the science base.

The NHAAP took the information from REACT and produced the “Act in Time” materials for patients, the public, and providers. One of the Education Subcommittee's priorities is the widespread dissemination of the “Act in Time” materials and their use by member organizations.

Ms. Hand reported the following progress made since the campaign was launched in September 2001:

- Used direct mail to reach more than 117,000 health professionals, including office-based cardiologists, patient educators in physician offices, home health managers, and hospital-based educators. Reached 100,000 health professionals by e-mail to make them aware of the campaign.
- Contacted more than 200 editors of key specialist journals and trade publications and offered free announcements and ads to run on a space available basis.

- Launched a Web site where print materials can be downloaded, a video can be viewed, and other resources can be found. On the Google search engine, the Web site is number one when “heart attack” is the search term.
- Offered a PalmOS program to help providers talk with patients about heart attack survival. This program is based on the laminated quick-reference card and talking points about symptoms and action steps. The program has been downloaded more than 36,400 times.
- Disseminated more than 380,000 materials. There has been a 20 percent increase in dissemination since the last NHAAP meeting in October 2002.
- Won nine awards from our peers. Most recently, “Act in Time” won the 2003 Web Excellence Award for best content from Medicine on the Net.
- Produced new materials, including an easy-to-read English and Spanish version of the core symptoms and action steps, and a Spanish-language video. A new chapter on heart attack survival was produced for the NHLBI’s Salud program, which provides a heart-healthy education program delivered by lay health workers or promotores. A Special Population Kit for Hispanic audiences will be disseminated through the promotores network.

An excerpt of the Spanish version of the video was shown to the group.

Ms. Hand asked members to use the NHAAP’s materials in their organizations. Tools include PowerPoint slides, drop-in articles, a camera-ready public service announcement, Web link text, buttons, banners, HTML, and text e-mail templates. She also asked members for ideas for advocating “Act in Time,” as well as news about what they are doing so that this information can be recorded in a database.

FOCUS ON IMPLEMENTATION BY THE ORGANIZATIONS (Dr. Crumlish)

Dr. Crumlish asked members to share their organizations’ activities for implementing the “Act in Time” campaign and if any difficulties had been encountered. The following comments were made:

- Dr. Garvey reported that the “Act in Time” materials were displayed at the 5th Congress of the Society of Chest Pain Centers and Providers. The Society considers community outreach as one of the criteria for accreditation of chest pain centers, and the materials will be useful to these centers.
- Mr. John McGinnity reported that a seminar on heart disease was held at the meeting of the American Academy of Physician Assistants in May 2003.

- Ms. Carol Cunningham Base reported that the American Association of Occupational Health Nurses, Inc., used the “Act in Time” information in its newsletter and has a link to the NHAAP on its Web site.
- Dr. Selker reported that the Society of General Internal Medicine and the American College of Physicians agreed to send a mailing to office-based physicians, but have not yet done so.
- Mr. David Simmons, Jr., reported that the National Black Nurses Association (NBNA) has mailed the information to its members. It will provide a booth on NHAAP at the organization’s meeting in New Orleans, LA.
- Dr. Atkins reported that the ACC’s Web page has links to the “Act in Time Web” site. The ACC also has an electronic newsletter. He noted that getting things in print is more of an obstacle because of different review processes for Web and print products.
- Ms. Hand added that “Act in Time” content, such as the provider's counseling card, has been added to the ACC/AHA guidelines presented by Dr. Ornato.
- Dr. Gillum of the CDC reported that he highlighted the “Act in Time” campaign in a piece he wrote for “Circulation” on care for families of heart attack victims. The “Act in Time” materials can be given to elderly spouses of sudden-death victims.
- Mr. Vardell reported that the national office of the American Red Cross has ensured that all the materials are distributed to all its almost 1,000 chapters. A lesson plan that combines the “Act in Time” materials with an existing cardiovascular health module has been added to the American Red Cross’ first aid and CPR course. Data on the success of this effort will be available at the end of the fiscal year.
- Dr. Diane Carroll of the American Association of Clinical Care Nurses (AACCN) said she presented a poster on “Act in Time” at a meeting in May. The AACCN links to the NHAAP Web site.
- Ms. Julie Bracken reported that the Emergency Nurses Association has a link on its Web site to the NHAAP site, and it also has included information on “Act in Time” in its electronic newsletter.
- Dr. Crumlish said that the Spanish-language video and the Salud package are now available. The video cannot yet be viewed on the Internet.
- Dr. Giles suggested that the organizations for Hispanic physicians and nurses should be made aware of the Spanish-language materials. Ms. Hand said that she would contact them.

- Member organizations can provide feedback on their activities by contacting Ms. Hand or the support contract staff—Ms. Arvanitis or Mr. Win Morgan (see the last page of the meeting roster for contact information).

FINAL COMMENTS/ADJOURNMENT

(Ms. Hand)

Ms. Hand asked participants to send their suggestions for future meetings. She said that the next meeting of the Coordinating Committee would be held in March 2004. There are tentative plans to hold the meeting on the NIH campus in the Natcher Building, with lodging in Bethesda. The date of the conference will be confirmed as the time gets closer.

Ms. Hand noted that she had mentioned at the last meeting that the NHAAP was considering converting to an electronic registration process for Coordinating Committee meetings, via the Internet. However, there was not enough interest in this among some other NHLBI committees, so the usual registration procedures will be continued for now.

Ms. Hand thanked the Coordinating Committee members for their participation and adjourned the meeting.



National Heart Attack Alert Program

Executive Committee Meeting

**June 24, 2003
Bethesda Hyatt
Bethesda, Maryland**

**NATIONAL HEART ATTACK ALERT PROGRAM
EXECUTIVE COMMITTEE**

**Meeting Summary
June 24, 2003**

Subcommittee Members

James M. Atkins, M.D., F.A.C.C. (Chair)
Christine M. Crumlish, Ph.D., R.N.
Charles L. Curry, M.D.
Bruce A. MacLeod, M.D., F.A.C.E.P.
Mary Beth Michos, R.N.
Joseph P. Ornato, M.D., F.A.C.P., F.A.C.C.,
F.A.C.E.P.
Harry P. Selker, M.D., M.S.P.H.
David E. Simmons, Jr., M.S.N., R.N.,
C.N.N.
Robert J. Zalenski, M.D., M.A.

Other Coordinating Committee Members

Lawrence Jones, M.D.
National Heart, Lung, and Blood Institute

(NHLBI) Staff

Mary M. Hand, M.S.P.H., R.N.
George Sopko, M.D.

Contract Staff

Jill K. Arvanitis, M.P.H., C.H.E.S.
Judith Estrin, M.A.

WELCOME AND INTRODUCTIONS

Ms. Hand welcomed the participants.

**DISCUSSION ON PAPER SUMMARIZING KEY ISSUES FOR THE FIELD BASED ON
PROGRAM PRIORITY AREAS
(Dr. Atkins)**

Ms. Hand presented a proposal to convene a group of about 8–10 individuals familiar with Program issues—both internal and external to the National Heart Attack Alert Program (NHAAP) Coordinating Committee—to revisit and update the issues put forth by the 60 Minutes to Treatment Working Group. A major part of this proposed process would involve bringing together, in one document, several of the current subcommittee priority areas (i.e., where specific papers are proposed). The question is whether these issues might be better disseminated by being “bundled” as a major Program paper rather than as individual, more focused papers submitted to several journals. The priority areas that would be highlighted could include:

- Where we stand on approaches to reducing patient delay after the Rapid Early Action for Coronary Treatment (REACT) study (conceptual framework for behavioral change: Education Subcommittee priority area)

- Emergency medical services (EMS) utilization—etiologies for underuse and optimal use of EMS by patients with acute coronary syndromes (ACS) (Health Systems Subcommittee priority area)
- Use of evidence-based technologies by health care systems—technologies and strategies that are currently underutilized that positively affect the outcomes of patients with ACS (Health Systems Subcommittee priority area)
- Technologies and protocols for management of patients with ACS—identifying technologies and protocols that assist in risk stratification, diagnosis, and early treatment of ACS patients, and those that have a time dependence to ACS diagnosis and treatment based on clinical trial and technology reviews (Science Base Subcommittee priority area)
- Also include “Urgent Need for a Systems Approach,” to care for the ACS patient (American Heart Association [AHA] 2003 plenary session)

The paper then would synthesize these issues into one document to maximize the impact on the field (similar to the impact made by the 60 Minutes to Treatment Working Group report that focused on reducing time-to-treatment in the emergency department (ED), within the context of overall delay; and the state-of-the-field related to the three acute myocardial infarction (AMI) action phases—patient/bystander, prehospital, and hospital identification and treatment). Within the context of the aforementioned focus areas, the updated paper would highlight the key areas that keep us from being successful. Dr. MacLeod expressed concern that if we bundle these priority areas, we could lose focus.

Dr. MacLeod explained that the Health Systems Subcommittee plans on preparing two papers related to their current priority areas: one on barriers to the use of access to EMS and the benefits of EMS, and another that will promote the use of technologies with the strongest evidence (e.g., the use of prehospital 12-lead electrocardiogram [ECG]). A stakeholders meeting will be held in October 2004 to examine different ways to increase the use of EMS for ACS, and this may lead to demonstration projects. Dr. Sopko suggested that data from the REACT study might indicate problems that could be addressed, and there may be other data from existing studies and EMS programs. Dr. MacLeod noted that REACT focus groups indicated some issues as to why people did not call 9–1–1. There may be hospital-based information as well.

Members suggested that the NHAAP consider a second REACT study to focus on prehospital care, ED issues, and patient issues. Patient education to reduce delay time is still needed, but the scientific basis for it remains insufficient. Data from the first REACT study should be examined carefully. Further, the group discussed the general message of calling 9–1–1. It considered whether the Committee should be explicit about the small group of patients who may not need to call 9–1–1 (e.g., patients who live close to the hospital). It was noted that REACT did not explore the role of the physician enough. Physicians may not understand or like EMS because of a perceived loss of control of their patients. REACT indicated that persons who call their physicians are less likely to call EMS.

Other suggestions were that the NHLBI consider a request for applications (RFA) for system solutions, focus more on ways to change patient behavior, and consider barriers in the transportation system (e.g., overresponse, with many vehicles coming to the scene).

Dr. Atkins suggested several options for writing a paper: deal with a few focused papers, write an overview article, and identify the need for specialized research. The overview article might be more widely disseminated and it could double as a white paper for the NHAAP. Ms. Hand said that the writing group could bring in outside people to help. Dr. Curry suggested writing three short papers to appear as a supplement (like a recent supplement to “Circulation” on thromboembolic disease). Dr. Atkins said that journals might be more apt to publish a supplement if the cost is underwritten. Dr. Sopko suggested that the papers be published in journals such as the “Journal of the American Medical Association,” because ED physicians do not read “Circulation.”

The participants were polled for consensus about three possible directions: (1) writing a targeted paper in a few months, (2) writing a review paper in about 1 year, and (3) initiating a second REACT study. A majority of the members voted for the second REACT study. The Science Base Subcommittee will have a conference call to discuss this, with participation of someone from the REACT, such as Dr. Russell Luepker. It was noted that the NHAAP should not repeat REACT; we need to be more innovative. We should also recognize that there are different solutions for different systems; one size may not fit all.

Next steps will include analyzing the current REACT data and reviewing the draft paper on EMS utilization, which is 60 percent done. Ms. Hand will e-mail the draft to the Executive Committee, along with an annotated bibliography of the REACT study.

The Executive Committee will report to the full Coordinating Committee for direction on the topics discussed.

REPORTS ON SUBCOMMITTEE MEETINGS AND ISSUES (Chairs/Vice Chairs)

Education Subcommittee (Dr. Crumlish)

Dr. Crumlish reported that after the Education Subcommittee reviewed its priority areas, it heard a presentation by Ms. Arvanitis on the “Act in Time to Heart Attack Signs” campaign, followed by a presentation by Ms. Matilde Alvarado on the NHLBI’s Salud para su Corazón program, which trains lay educators, known as promotores, to reach the Hispanic community. This train-the-trainer program has been extended to other minority groups. The group also saw the Spanish-language video from the “Act in Time to Heart Attack Signs” program. Dr. Crumlish noted that the Salud program is moving to Web-based information for train-the-trainer activities.

Science Base Subcommittee (Dr. Ornato)

Dr. Ornato reported that a conference call was held in mid-May to discuss updating the evidence-based technologies for ACS. A decision was made not to require NHAAP to redo the evidence-based review. There was strong support for the prehospital 12-lead ECG.

Dr. Ornato noted that the existence of so many guidelines presents a challenge. He reported that Drs. Selker and Zalenski, and Dr. Stephen Cantrill will form a group to propose a method to review recent guidelines and highlight differences and conflicts among the guidelines.

The Executive Committee discussed a proposal that all guidelines associated with ACS and related syndromes should be sent to the Science Base Subcommittee, which would decide which are important and point out conflicts among the recommendations. An outside methodologist could provide input, but a budget would be needed for this. Several examples were given of cases where the Committee could comment on guidelines. Another issue discussed was whether the NHAAP would seem to be competing with other organizations and criticizing them. Dr. Ornato said that we do not have enough resources to serve as the “police,” and other groups may have more expertise in certain areas. However, the idea has merit. Perhaps we can proactively help organizations realize they need a methodologist in the middle of the process. We must not lose focus on the NHAAP’s mission. Is review of guidelines a priority? If not, call for a consensus that the program is more about dissemination of the evidence. Recommendations on this issue are needed.

Health Systems Subcommittee (Dr. MacLeod)

Dr. MacLeod reported that the group discussed the following issues:

- The issue of underuse of EMS will lead to an article and possibly to an RFA.
- Followup from the evidence-based report evaluating technologies for identifying ACS in the ED will lead to an article on the use of prehospital 12-lead ECG. This report will be presented at the next meeting.
- A stakeholders meeting, planned for October 2004, will explore issues related to improving EMS utilization.
- Dr. Stryer presented reports on two quality improvement efforts—the National Healthcare Quality Report and the Quality Interagency Coordination Task Force.
- The Subcommittee will work with the National Committee for Quality Assurance (NCQA) to incorporate performance measures related to AMI. Dr. Joachim Roski of the NCQA has been contacted.

COORDINATOR’S REPORT (Ms. Hand)

Ms. Hand said that the next meeting will be held in March 2004. Because the support contract ends at the end of January 2004, the exact date of the meeting is not known at this time. A tentative date is March 22–23. Members were asked to report conflicts for the month of March. The principal investigators of the National Library of Medicine informatics projects for the NHAAP will make presentations at this meeting.

Update on NHAAP Member Organizations

Ms. Hand reported several new representatives on the Coordinating Committee: Dr. Andrea Gelzer, representing the American Association of Health Plans; Dr. T.G. Patel, representing the Department of Veterans Affairs; Mr. Drew Dawson, representing the National Highway Traffic Safety Administration; Ms. Nancy Foster, representing the American Hospital Association; and Dr. Richard Levinson representing the American Public Health Association.

Since the last meeting, the American Academy of Family Physicians has informed Dr. Claude Lenfant that it would no longer be participating in the NHAAP. Dr. Curry said we should convince this organization to rejoin. Dr. Atkins said that he will speak to Dr. James Puffer, who serves on the Family Practice Certification Board, about this matter.

AHA Plenary

Ms. Hand said that the preliminary program for the AHA Scientific Sessions, to be held in November in Orlando, includes a presentation on ACS and the urgent need for a systems approach. She suggested the Committee should be aware of this because it suggests discussion of issues closely akin to those of the NHAAP.

Review of the NHAAP Coordinating Committee Agenda

Ms. Hand reviewed the Coordinating Committee agenda.

ADJOURNMENT

Dr. Atkins adjourned the meeting.



National Heart Attack Alert Program

Education Subcommittee Meeting

**June 23, 2003
Bethesda Hyatt
Bethesda, Maryland**

**NATIONAL HEART ATTACK ALERT PROGRAM
EDUCATION SUBCOMMITTEE**

**Meeting Summary
June 23, 2003**

Subcommittee Members

Christine M. Crumlish, Ph.D., R.N. (Chair)
David E. Simmons, Jr., M.S.N., R.N.
(Vice Chair)
Angelo A. Alonzo, Ph.D.
Carol Cunningham Base, M.S., B.S.N.,
C.O.H.N.-S
Julie Bracken, R.N., M.S., C.E.N.
Allan Braslow, Ph.D.
Emmett B. Ferguson, M.D., M.P.H.
M. Ray Holt, Pharm.D.
Don K. Vardell, M.S. (Substitute for Pat
Bonifer-Tiedt, Sc.M., M.S.)

Carol C. Carey, R.N., B.S.E.E., M.Eng.
(Substitute for Arthur A. Ciarkowski,
M.S.E., M.B.A., M.P.A.)
Bruce A. MacLeod, M.D., F.A.C.E.P.

NHLBI Staff

Matilde M. Alvarado, M.S.N., R.N.
Mary Hand, M.S.P.H., R.N.

Contract Staff

Jill Arvanitis, M.P.H., C.H.E.S.
Judith Estrin, M.A.

Other Coordinating Committee Members

Christopher P. Cebollero, M.S., N.R.E.M.T.P.
Stephen V. Cantrill, M.D., M.P.H.

**WELCOME AND INTRODUCTIONS
(Dr. Crumlish and Mr. Simmons)**

Mr. Simmons welcomed the participants and asked them to introduce themselves.
(Dr. Crumlish's arrival was delayed.)

**NATIONAL HEART ATTACK ALERT PROGRAM (NHAAP) PROFESSIONAL
EDUCATIONAL MATERIALS: KEEPING THINGS CURRENT
(Ms. Hand)**

Ms. Hand reported that the NHLBI's Office of Prevention, Education, and Control (OPEC) has started a new process to ensure that the educational materials in the warehouse, catalog, and Web site are up to date. She reviewed how the updating fits in with the objectives of the Education Subcommittee, which are as follows:

- Address professional education needs related to rapid identification and treatment of patients with symptoms and signs of acute coronary syndromes (ACS), including sudden cardiac arrest.

- Recommend and/or organize professional education interventions/strategies for implementation by the NHAAP Coordinating Committee organizations.
- Recommend effective vehicles for dissemination of information to patients and the public.
- Review proposed mass media messages and target populations, based on the NHAAP science base and the program objectives.
- Review educational materials developed for professionals, patients, and the public by other groups (e.g., the Rapid Early Action for Coronary Treatment [REACT] study), and make recommendations for tailoring the products and their distribution to appropriate audiences.

Ms. Hand reviewed NHAAP reports from 1991–1995, noting that the NHAAP did not produce materials for patients and the public until the “Act in Time” campaign was launched in September 2001. Key professional materials included five papers with the subtitle “Rapid Identification and Treatment of Acute Myocardial Infarction.” These had the following main titles (1) “Patient Bystander Recognition and Action” (this was also published in “Social Science and Medicine”), (2) “9–1–1” (an overview paper), (3) “Emergency Medical Dispatching,” (4) “Staffing and Equipping Emergency Medical Services Systems,” and (5) “Emergency Departments” (also published in “Annals of Emergency Medicine”).

After these initial program publications, the following publications were produced (after the first 5 years of the Program):

- “Educational Strategies To Prevent Prehospital Delay in Patients at High Risk for Acute Myocardial Infarction.” This grew out of a working group that made recommendations for providers to prevent prehospital delay in high-risk patients with coronary disease. This paper was also published in “Annals of Internal Medicine” in 1997.
- “An Evaluation of Technologies for Identifying Acute Cardiac Ischemia in the Emergency Department.” Drs. Harry Selker and Robert Zalenski cochaired this paper, which reviewed 17 technologies, including the prehospital 12-lead electrocardiogram. This was published in January 1997 in “Annals of Emergency Medicine.”
- “Access to Timely and Optimal Care of Patients With Acute Coronary Syndromes: Community Planning Considerations.” This was produced by the Access to Care Subcommittee (the precursor of the Health Systems Subcommittee), chaired by Dr. James Atkins. It was published in 1998 in the “Journal of Thrombosis and Thrombolysis.”
- “New Information Technology and the National Heart Attack Alert Program: Setting a 5-Year Agenda.” These were the proceedings of a May 1998 symposium held with

the National Library of Medicine and the Agency for Healthcare Quality and Research (AHQR), published in September 1999.

- “NHAAP Position Paper: Chest Pain Centers and Programs for the Evaluation of Acute Cardiac Ischemia.” This was published in “Annals of Emergency Medicine” in May 2000.
- “Evaluation of Emergency Department Technologies—Evidence Report. AHRQ Technology Assessment No. 16.” This report, published in 2001, was based on a systematic literature review of evidence-based technologies to diagnose patients with acute cardiac ischemia.
- “Critical Pathways Paper for Management of Acute Coronary Syndromes.” This paper by Cannon et al. was published in the “American Heart Journal” in 2002.
- The most recent publications are the “Act in Time to Heart Attack Signs” campaign materials.

Ms. Hand reviewed the process for dealing with outdated publications. She noted that the new print catalog will include only the most current materials—e.g., the 2001 evidence report on emergency department technologies and “Act in Time” materials. The NHLBI is looking at three options for dealing with outdated materials:

1. **Discontinue and archive.** In this option, three copies are retained in numbered boxes grouped by topic at the warehouse. The item is entered into a publication archives database. Any available negatives, program files, and/or original artwork are kept in a separate archive and listed in a section of the archives database. The item no longer appears in the online catalog, and links to the NHLBI Web page are removed. Copies remaining in the warehouse are recycled.
2. **Send to the National Technical Information Service (NTIS).** In this option, NHLBI submits the document to the NTIS when it is considered outdated. The NTIS processes it and enters it into its system at no charge. The NTIS promotes the service and availability of items via its Web site, mailing lists, etc. The document can be reproduced in virtually any format requested by the customer. For example, it can be ordered in electronic form for approximately \$18.
3. **Update and reprint.** In this option, after 3 years, publications are reviewed by program coordinators and other staff, and a decision is made to extend for another year “as is,” to revise/reprint, or to extend for up to 2 more years. After a total of 5 years, most items are deactivated and archived and sent to NTIS, if appropriate.

A participant suggested keeping PDF files in a special “archive” area on the NHLBI Web site. The site would inform users that the publications are not up to date, and documents printed by the Government Printing Office would be downloaded as PDF files. Ms. Hand said that this suggestion would be considered as the decisions are made. She noted that because the field is moving so rapidly, publications quickly become outdated. Dr. MacLeod added that, because

they are not based on original research, most of the publications are out of date as soon as they are printed.

**“ACT IN TIME TO HEART ATTACK SIGNS” CAMPAIGN
(Ms. Arvanitis)**

Ms. Arvanitis said that a current Education Subcommittee priority is widespread dissemination of the “Act in Time” campaign materials and their integration into member organization programs. The campaign was started in September 2001, and the following progress has been made since the campaign was launched.

- Reached more than 117,566 health professionals, including cardiologists, patient educators, home health managers, hospital-based educators, senior health specialists, community health workers, and managed care managers.
- Reached more than 100,000 health professionals by e-mail. An example is an e-mail message offering a drop-in article for member organizations’ newsletters.
- Placed announcements in health care provider journals. Contacted more than 200 editors of key specialists journals and trade publications offering free announcements and ads.
- Launched the “Act in Time” Web site, where materials can be downloaded and a video can be viewed.
- Received the Medicine on the Net Web Excellence Award for Best Content in 2003. Also won four other awards, including the National Institutes of Health Plain Language Award for the English-language brochure.
- Placed number one in 2.6 million searches for “heart attack” on the Google search engine.
- Offered a PalmOS program that can be downloaded at no cost to help physicians talk with patients about heart attack survival.
- Disseminated more than 380,000 materials, a 20 percent increase since October 2002. The English-language brochure and wallet card were reprinted. The products are cobranded by the American Heart Association (AHA), American Red Cross (ARC), and National Council on the Aging (NCOA). The NHLBI Distribution Center tracks whether the materials were provided free of charge or were paid for.

Ms. Arvanitis asked the members to tell what they are doing, or considering, in terms of program promotion, integration, advocacy, press and publicity, advertising, and presentations.

- Ms. Cunningham Base said that the American Association of Occupational Health Nurses provides a link to the NHAAP Web site and has published information on the

“Act in Time” materials in its newsletter. Occupational health nurses have the opportunity to provide this information in the workplace.

- Dr. Diane Carroll reported that the American Association of Critical Care Nurses presented a poster on “Act in Time” at its annual meeting in May in San Antonio, TX. The Association also links to the NHAAP Web site.
- Mr. Simmons said that the National Black Nurses Association has mailed information on the “Act in Time” campaign to its members. The NHAAP will provide an exhibit and “Act in Time” materials at the Association’s conference in New Orleans, LA this summer.
- Ms. Bracken reported that the Emergency Nurses Association Web site has a link to the “Act in Time” Web site and will provide a drop-in article for electronic newsletters.
- Mr. Vardell said that the ARC works to get “Act in Time” materials to all 1,000 ARC chapters. Approximately 1,200 people were reached in the first year; data for fiscal year 2002 will be available at the next meeting. The ARC’s Web site includes “Act in Time” information, and it is building capacity to deliver Spanish-language materials.
- Mr. Cebollero reported that selected members of the National Association of Emergency Medical Technicians bring educational materials with them when they go on house calls. Efforts are being made to provide continuing education about heart attack awareness at the community level, notably in his State, Texas.
- Dr. Ferguson said that the American College of Occupational and Environmental Medicine distributed “Act in Time” information at its State of the Art Conference last fall. The Florida College of Emergency Physicians published and distributed information at a disaster conference.

Ms. Arvanitis also discussed what is on the horizon. Several new materials are in final clearance. The meeting packet includes samples of the current draft of an illustrated, easy-to-read handout on heart attack warning signs (both English and Spanish versions). This piece will appeal to those with higher reading levels as well. Additions to the Salud para su Corazón (Your Heart, Your Life) program include a Spanish version of the lesson plan on heart attack.

Ms. Arvanitis stressed the importance of member organizations using the NHAAP publications and materials—including the slides, drop-in article and announcement, camera-ready public service announcement, Web link text, and HTML and text e-mail templates—and ideas for advocating the “Act in Time” program. She asked them to report their activities so that they can be recorded in the database. She also urged members to call if they need help. Contact information for Ms. Arvanitis or Mr. Win Morgan is found on the meeting roster.

SALUD PARA SU CORAZON: RELEASING THE POWER WITHIN TO ACHIEVE HEALTHIER LATINO COMMUNITIES

(Ms. Alvarado)

Ms. Alvarado reported on the NHLBI's Salud program, which offers the opportunity to promote healthy behavior in 35 million Latinos who make up 30 percent of the U.S. population. (See slides in Attachment H.) Trained lay health workers, known as promotores, who are trusted and respected leaders that serve as role models and champions of heart health deliver the 10-year-old program. Promotores have a passion for improving the health of their community and are trained by their peers as outreach workers. This approach is based on the network of family and friend linkages that exist in the Latino community.

Synergy and cooperation is created by links with other organizations. The National Promotores Network was established to facilitate coordination and training. The Network holds an annual conference, and the sixth conference will be held August 19–21, 2003, in San Francisco, CA. Over the last 5 years, the NHLBI has been involved in training more than 400 promotores. The NHLBI also works closely with the National Council of La Raza, which has adopted Salud as its outreach model. The Metropolitan Life Foundation has provided funding for this collaboration for the past 3 years, and the NHLBI provides the educational materials. Salud is also working with the Health Resources and Services Administration (HRSA) to expand the program to low-income areas near the border in Southern Texas. The NHLBI-funded Cardiovascular Disease Enhanced Dissemination and Utilization Center (CVD EDUC) at the University of North Texas, School of Public Health in Fort Worth features a Salud program. In addition, the Salud program has expanded nationwide and overseas, including training 40 promotores from Central America.

The train-the-trainer model works by training lead promotores, who then train local teams in their communities, who train individuals, families, patients, and the community. Training consists of 32 hours over 10 sessions. The training utilizes hands-on role playing and skill-building activities. Each year, 50 promotores receive training at the National Promotores Network Conference.

NHLBI provides the tools and materials for promotores to use in family-based education. These include a manual, easy-to-read materials and cards, a recipe book, and a video that teaches CVD risk factors and encourages healthy lifestyle behavior change. The "Act in Time" Spanish and English materials include an easy-to-read illustrated handout on warning signs of a heart attack, a lesson plan in Spanish with an English translation (which is an add-on to the existing Salud program), and a video.

An evaluation of the Salud program is under way. In a pre- and postsurvey of 190 families, there were reports of increases in physical activity, efforts to control weight, cooking with less fat, and using less salt. A survey of 223 families showed that they shared the heart-health information with friends and relatives in their neighborhood and other cities in the United States, as well as with contacts in their country of birth and with people at work. The Salud program is moving across cultures, being shared with Native American and Alaska Native communities at a 4-day train-the-trainer program. Manuals and sessions have been developed for Native American and African American communities and have tested well.

Ms. Alvarado showed an illustration (via video) of the Salud model, with lay health workers in the center, interacting with the cultural context, the message (educational materials), recipients (community members), and partners (collaborations with other organizations). In the future, a promotores Web-based plaza will be created to enhance learning, skills, and competencies; exchange information; and facilitate dissemination. The Salud manual will be Web-based as well. Ms. Alvarado said that the program would be presented shortly at the Pan American Health Organization.

When asked if there is a target audience, Ms. Alvarado said that the primary prevention program works through the promotores network. However, at the EDUC in Fort Worth, the program also targets people in nine neighborhoods, and in El Paso, it targets people who have high blood pressure or are overweight. The focus is on families—with members of all ages. People make pledges about what behavior they will change, and there are graduation ceremonies.

When asked about measures for the program, Ms. Alvarado said that the project is working to establish measures for weight, body mass index (BMI), blood pressure, and cholesterol. The “Tell Me About It” evaluation component will be developed into a session for promotores who can document and monitor progress. Addressing the question of callback/followup by promotores, Ms. Alvarado said that there is a home visit after 6 months to see how families are doing and to identify barriers. The Web could provide booster sessions for promotores’ retooling.

Ms. Hand recognized all the work Ms. Alvarado has done to build the minority programs at NHLBI. People can call Ms. Alvarado to find out additional information regarding this worthwhile program.

“ACT IN TIME TO HEART ATTACK SIGNS” SPANISH LESSON PLAN AND VIDEO (Ms. Arvanitis)

Ms. Arvanitis introduced the Spanish-language video and the accompanying lesson plan in Spanish with translation into English. The video features Dr. Enrique Africano, a physician in the Washington, DC area, and it includes testimonials by actual heart attack survivors from the Hispanic community. The video is cosponsored by the AHA, ARC, and NCOA. Related materials include an illustrated handout on heart attack warning signs and the core brochure in Spanish. Ms. Arvanitis told members that they will get a packet and letter asking for their support in promoting these materials. There will be a marketing flyer and order form for the Spanish materials. The program will be exhibited at meetings of La Raza and at meetings of member organizations.

ADJOURNMENT (Dr. Crumlish and Mr. Simmons)

Ms. Simmons recapped the sessions that had been presented and adjourned the meeting.



National Heart Attack Alert Program

Health Systems Subcommittee Meeting

**June 23, 2003
Bethesda Hyatt
Bethesda, Maryland**

**NATIONAL HEART ATTACK ALERT PROGRAM
HEALTH SYSTEMS SUBCOMMITTEE**

**Meeting Summary
June 23, 2003**

Subcommittee Members

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Christopher P. Cebollero, M.S., N.R.E.M.T.-P.
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Andrea Gelzer, M.D., M.S., F.A.C.P.
Wayne H. Giles, M.D., M.S.
Lawrence D. Jones, M.D.
Bruce MacLeod, M.D., F.A.C.E.P. (Chair)
Mary Beth Michos, R.N. (Vice Chair)
Jay Merchant, M.H.A.
Jonathan Moore (substitute for Lori Moore,
Dr.P.H., M.P.H., E.M.T.-P.)
Jimm Murray
Daniel Stryer, M.D.

Other Coordinating Committee Members

Allan Braslow, Ph.D.
Stephen V. Cantrill, M.D.
Carol C. Carey, R.N., B.S.E.E., M.Eng.
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M.B.A., M.P.A.)
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EMERGENCY MEDICAL SERVICES (EMS) SYSTEM UTILIZATION (PRIORITY AREA #1)

Dr. MacLeod welcomed the participants and asked them to introduce themselves. He congratulated Ms. Michos for being presented with the James O. Page Award for leadership and achievement in EMS. He then called attention to several of the materials in the meeting packet, some of which would be discussed during the meeting.

Review of Draft Paper on Etiologies for Underuse/Optimal Use of EMS by Patients With Acute Coronary Syndromes (ACS) (Dr. MacLeod)

Dr. MacLeod called attention to the draft paper, "Use of Emergency Medical Services (EMS) by Patients With Acute Coronary Syndrome Symptoms: Overview and Future Directions," which was based on an earlier annotated bibliography of EMS utilization until 2001. The final paper will summarize the current status of EMS and provide future directions for addressing barriers to calling 9-1-1. Dr. MacLeod asked for volunteers to participate in a workgroup to finalize the paper within 8 months. Drs. Alonzo, Cantrill, and Jones volunteered to serve on this workgroup.

Participants made the following comments:

- More education is needed about the role of EMS. Some people view EMS as providing transportation only. A major selling point for EMS is that you get faster service in the hospital if you arrive by ambulance. EMS provides triage before arrival in the emergency department (ED).
- Patients who come by ambulance are generally sicker, but there is still a large proportion of people who drive themselves to the ED. Some people say they would use EMS for someone else but not themselves. Even two members of the Health Systems Subcommittee did not use EMS, even though they know more than the average individual about the importance of EMS use in the event of a heart attack.
- A focus group on why people avoid EMS turned up many reasons, such as bother, inconvenience, embarrassment, or thinking they are not sick enough. We must minimize the barriers to calling 9–1–1.
- It might be difficult to raise the number coming by ambulance higher than 50 percent, and there will be some who will always drive. In this case, more work is needed to improve the triage system in the ED.
- Many EMS providers don't know the number of people who are not using their service; they think they are serving all those in need. Some health plans insist on private ambulances, which can be expensive. More often, private ambulance companies are contracted to run a city's EMS. Only 11 percent of the Rapid Early Action for Coronary Treatment cohort thought that cost was a major issue in using EMS.
- Practices within the fire system—such as sending multiple vehicles—can act as deterrents to people calling 9–1–1. Dispatchers could ask callers if they would object to lights and sirens.
- More training is needed for emergency medical dispatch (EMD). In Wyoming, interest in training dispatchers has peaked and then declined over 3–4 years. Are there current data to see if this is a national problem? Has EMD increased or decreased since 1991?
- The target audience for the paper is not just those who manage EMS systems—it should be broader to include legislators, policymakers, etc. The paper should take a stand on EMS use for ACS. A media breakout session might help to gain attention. Public service announcements could be developed.
- The role of health care providers should be mentioned earlier in the paper. There is evidence that calling a physician first reduces a person's chance of calling EMS. This suggests the need to educate physicians with high-risk patients. There is the idea that the physician knows the patient and can assess him/her better. Managed care uses EMS more. Dr. Alonzo can provide the literature for this topic.

- Dr. MacLeod suggested that external people review the paper to ensure that we have not missed anything.

Dr. MacLeod asked members to give their comments on the draft paper to Ms. Hand.

Review of Draft Agenda for EMS Stakeholders October 2004 Meeting to Problem Solve Around Issues Related to Improving EMS Utilization by ACS Patients (Ms. Michos)

Ms. Michos said that she met with Ms. Hand and Ms. Arvanitis in March to plan the EMS stakeholders' meeting for brainstorming innovative ideas on how to increase the utilization of EMS for ACS. The meeting will review the benefits of EMS and the factors that may serve as barriers/facilitators to its use. Meeting goals are to identify the optimal target (where the impact could be greatest), develop action plans for prehospital care, and decide how to monitor results. At the 2-day meeting, group activities will include presentations, followed by breakouts for workgroups that would develop action plans for each area. The NHAAP will fund the meeting, and there are proposals for additional support from the organizations like the EMS programs of the International Association of Fire Chiefs and the U.S. Fire Administration. The following issues were raised.

- Ms. Michos noted that there are no data on differences in outcomes with single vs. multiple response units. A recommendation might be the need for prehospital research in this area. Demonstration projects could help provide the information needed.
- Calling the physician is a barrier. Some health care providers' phone messages say go to the ED when it should say call 9-1-1. All people with chest pain should come by ambulance. If we say this is what we need, the resources will become available.
- Physicians know what to do; they do not take action due to perceptions, barriers, and previous experience. Primary care physicians should be especially targeted. The Committee needs to "push" the EMS system.
- Another issue is the patient's perception of who is coming. Some patients want a doctor, not a fireman, to help them.
- Triage nurses are trained to give persons with chest pain an electrocardiogram (ECG) within 10 minutes, but not everyone with an acute myocardial infarction (AMI) has chest pain.
- Dissemination of the message should be broad enough to reach all the entry points: physicians' offices, the ED, EMS, and police.

Ms. Hand asked the Subcommittee members to e-mail her the names of other organizations that might be invited to the stakeholders' meeting. These groups would have to pay their own way unless there was additional funding—e.g., from the Robert Wood Johnson Foundation (RWJF). It was suggested that Dr. Jeffrey Michael of the National Highway Traffic Safety Administration be contacted because he was in contact with the RWJF last year.

Dr. Giles mentioned that the Centers for Disease Control and Prevention (CDC) awards conference grants of \$25,000 to \$30,000. One member suggested holding a 1½-day format for the stakeholders' meeting.

EVIDENCE-BASED TECHNOLOGIES (PRIORITY AREA #2)

Report on Priority Area to Identify Technologies/Strategies Positively Affecting the Outcomes of ACS Patients That Are Underutilized (Dr. MacLeod)

Dr. MacLeod said that a conference call held May 16, 2003, discussed the findings of the Agency for Healthcare Research and Quality's (AHRQ's) evidence report that evaluated ED technologies for identifying acute cardiac ischemia in the ED. The first author was Dr. Joseph Lau, principal investigator at the New England Medical Center's Evidence-Based Practice Center. The summary of the conference call (in the meeting packet) includes a chart with key findings and conclusions. The conference call participants identified two technologies as being supported by the literature but underutilized: (1) the use of prehospital 12-lead ECG, and (2) the Acute Cardiac Ischemia-Time Insensitive Predictive Instrument (ACI-TIPI) for ECGs. Dr. Garvey was asked to prepare a report that summarizes the data.

Dr. Garvey discussed a proposed statement advocating prehospital 12-lead ECG as an integral component of the care of patients with symptoms of acute cardiac ischemia, and one that should be included as part of the evaluation and management strategies by providers of advanced life support (ALS). Dr. Garvey said that our job is to make a bold statement about need—not to say how the recommendation should be implemented. He proposed that the NHAAP produce a position paper that would include an introduction based on the evidence report, followed by the evidence base. More information is needed on the current status of 12-lead ECG use and baseline data. The paper might also include identification of barriers (e.g., cost, equipment, and training).

The group discussed whether the Subcommittee should advocate for the use of prehospital 12-lead ECG for ALS and made the following comments:

- Dr. Stryer said he would need to see the evidence and costs involved before supporting the proposal.
- The draft paper on the use of EMS by patients with ACS symptoms states that prehospital ECG increases time from symptom onset until hospital arrival by about 60 minutes. However, once in the hospital, the prehospital ECG group receives interventions quicker. Mr. Cebollero noted that, with experience, the time difference is not great.
- Mentioned the need to get the right patient to the right hospital. (Not every hospital has a catheterization laboratory.) Some ED physicians might complain about taking patients to hospitals with catheterization laboratories without specific protocols to do this (they might lose patients). Some patients drive themselves to make sure that they go to a facility equipped with a catheterization laboratory.

- The participants guessed that less than 50 percent of EMS systems have the 12-lead ECG capacity and that relevant prehospital providers' organizations could conduct surveys within States.
- If the paper makes a recommendation that is costly, it will be controversial. Mr. Cebollero added that some EMSs will go out of business due to the cost of portable 12-lead ECGs, and that grant funding might be needed. Others said that this is not an emerging technology, and there should be ways to pay for it. A suggestion was to have group purchasing within States, with a training package to decrease the price. However, it is important to tread carefully with regard to Stark (legal) issues.
- Other issues are training, recertification, quality, and interpretation. Paramedics differ in their training and education, such as on the proper placement of leads. Some studies address diagnostic accuracy. Mr. Cebollero said that new staff receive 16 hours of training on how to place, read, interpret, and treat. Training is important for any new system.
- Data sources that could be used include the following: the number of services that currently use 12-lead ECG, patient data from National Registry of Myocardial Infarction, manufacturers' data (which they may be reluctant to share), and data from the State EMS directors. A Web-based survey of Fire Services might identify impediments. The American Ambulance Association also might conduct a survey.
- Dr. Harry Selker plans to look at the combination of ACI-TIPI and prehospital 12-lead ECG.

Dr. MacLeod asked for help on developing the Subcommittee's position on the 12-lead ECG technology issue. Mr. Cebollero, Dr. Cantrill, Dr. Garvey, and Ms. Michos volunteered. The plan is to develop a document for further discussion by the Subcommittee and then move it to the Coordinating Committee for adoption.

Dr. MacLeod called attention to the document "EMS-Related Publications From the Rapid Early Action for Coronary Treatment (REACT) Research Program" (in the meeting packet). Ms. Hand added that most of these papers have been cited in the current draft of the EMS utilization paper.

QUALITY IMPROVEMENT (PRIORITY AREA #3)

"Agency for Healthcare Research and Quality Report" (Dr. Stryer)

Dr. Stryer reported on the "National Healthcare Quality Report" (NHQR) and its companion report, the "National Healthcare Disparities Report." Congress mandated these reports because of growing concerns about the quality of care. The reports will be delivered to Congress at the end of September 2003. They took 3 years to prepare, and second iterations are in progress.

The objectives of the NHQR are to focus attention on quality of care in a comprehensive way. The report was built around the Institute of Medicine's (IOM's) six dimensions of quality of care: effectiveness, safety, timeliness, patient-centeredness, equity, and efficiency. The dimensions are viewed across the major health care needs: staying healthy, getting better, living with illness or disability, and end-of-life care. The equity issue is addressed in the "National Healthcare Disparities Report," which is looking at disparities along various dimensions: racial, ethnic, socioeconomic, geographic, age, gender, and people with special health care needs. This report will be more complicated, addressing all the measures for each of the subgroups.

Dr. Stryer said that the reports are expected to give more attention to quality, drive greater consensus around measures, make the data available, stimulate greater public demand for information on quality, and serve as national benchmarks. In developing the reports, there were limits on what measures could be used because nationally representative data are limited, and not many measures have been developed or are validated (measures for heart attack and myocardial infarction management are the exceptions). The report will include best practices to stimulate more demand for measures. Quality of care is worse than it could be, but high-quality care is all around us and could be replicated.

Dr. Stryer said that the report gives the big picture. Some data are available at the State level but not at the city or hospital levels. It was suggested that the report include data for cities (the Behavioral Risk Factor Surveillance System includes data for 110 cities). The report is limited to measures for which data are available and there is consensus. Measures for AMI are hospital-based because that is where the data are available. There are problems using data from the National Committee for Quality Assurance (NCQA) because these data are not nationally representative.

Dr. Stryer said that the report will include 140 measures of quality and deal with various diseases. The measure set was derived in consultation with other Federal partners—such as the CDC, National Institutes of Health, Health Resources and Services Administration, Food and Drug Administration, and Indian Health Service—and it was put out for public comment. The report will be updated annually.

Participants noted that the report includes nothing on cardiac arrest. (There are no national data on this topic.) Many people with cardiac arrest die before arriving at the hospital. Dr. Sopko mentioned an effort in Dallas to triage cardiac arrest patients to the best care, sending the closest vehicles through the use of global positioning system locators. He said the future for ACS care is at the prehospital level. Dr. Stryer acknowledged that we cannot assess parts of the health care system.

Quality Interagency Coordination Task Force (QuIC)

Dr. Stryer then discussed the QuIC, which was started during the Clinton administration to bring together Federal agencies involved in health care delivery, assessment, and research, such as the Department of Health and Human Services, Department of Defense, Department of Veterans Affairs (VA), Federal Bureau of Prisons, etc. This group meets quarterly to discuss common issues in health care. There has been turnover in leadership during the Bush administration, but the QuIC is building momentum in the following three areas:

- **Development of Information Technology Standards.** Standards are needed to allow systems to talk to each other and to outpatients. Eight workgroups are meeting to develop standards in different areas, such as pharmacies, laboratories, and medical records. QuIC discusses and ensures that the Federal agencies will buy into the 17 standards. The VA is a leader in this area.
- **Patient Safety.** This effort was a Federal response to the IOM report, “To Err is Human: Building a Safer Health System,” which set a goal to reduce errors by 50 percent within 5 years. The QuIC developed a response and research directions as a roadmap for the AHRQ. A patient safety research summit, to be held in November 2003, will look at status of the effort.
- **Quality Measurement.** The QuIC is involved with the NHQR effort to collect measures and the evidence behind them, and to develop a compendium of measures. A goal is to push quality measures faster. The National Quality Forum is a standards-setting body that will be asked to take the measures and try to develop consensus around them.

Dr. Stryer added that the QuIC has two workgroups—one on patient and consumer information and one on quality measures. Asked if there is an opportunity to interface with the NHAAP, Dr. Stryer said that the QuIC generally focuses on macro issues, but within the patient safety, quality measurement, and information technology areas, there will be items of interest to the NHAAP. Dr. Stryer will communicate these to Ms. Hand.

National Committee for Quality Assurance (Dr. MacLeod)

Dr. MacLeod reported that the NHAAP has talked with Dr. Joachim Roski, assistant vice president for quality measurement, NCQA, about working with the NCQA on performance measures related to AMI. Dr. Roski indicated that NCQA measures need to be cost effective and defensible. He noted that, for AMI, health plans might not have enough patients younger than age 65.

The NHAAP proposed the following suggestions for measures of quality in health plans:

- Consider an education intervention about chest pain for high-risk patients. This has not been validated, and it would be costly to do chart reviews.
- Look at patients admitted to the hospital with ICD-9 code for ACS to see how many had charges for prehospital care.
- Identify barriers in health care systems to the ultimate diagnosis of ACS/AMI.

The group discussed possible measures for the last suggestion. Could it be the number of visits and tests before an MI? This might be feasible if patients get care within the same system (e.g., Kaiser, the Military). Other issues are reimbursement, the number of people with angina without positive markers, the number of people in the plan who are younger than age 65, the use

of beta blockers in the hospital, and whether a nurse case manager gave patient counseling (this would require chart review). Ms. Hand noted that time to reperfusion is another measure.

American College of Cardiology (ACC)/American Heart Association (AHA) Performance Measures Committee

Ms. Hand said that NHAAP continues to work with organizations that set quality measures. Dr. Christopher Cannon recommended the need for quality measures for patients with AMI or unstable angina prior to discharge from the hospital. This high-risk group should receive discharge instructions or counseling about action steps. He suggested that the NHAAP contact Dr. Harlan Krumholz, chair of the ACC/AHA AMI Performance Measure Writing Group.

Ms. Hand wrote Dr. Krumholz a long letter (in the meeting packet) proposing the anticipatory counseling measure. In his response, Dr. Krumholz said that this was a great idea but it was not considered as a performance measure because it was not in the last iteration of the ACC/AHA guidelines as a level 1 recommendation (indicating consensus). He said that the measure might be considered in the next iteration of the document. Ms. Hand said that we can pursue this in the future. Dr. Diane Carroll added that discussion of, and prescription for, the use of sublingual nitroglycerin before discharge could be a surrogate for counseling.

ADJOURNMENT

Dr. MacLeod thanked the group for its participation and adjourned the meeting.



National Heart Attack Alert Program

**Science Base
Subcommittee Meeting**

**June 23, 2003
Bethesda Hyatt
Bethesda, Maryland**

**NATIONAL HEART ATTACK ALERT PROGRAM
SCIENCE BASE SUBCOMMITTEE**

**Meeting Summary
June 23, 2003**

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Dr. Robert J. Zalenski, M.D., M.A.
(Vice Chair)
Robert H. Christenson, Ph.D.
Stephen V. Cantrill, M.D.
Charles L. Curry, M.D.
Gerald DeVaughn, M.D., F.A.C.C
Bruce A. MacLeod, M.D., F.A.C.E.P.
John G. McGinnity, M.S., P.A.-C.
Harry P. Selker, M.D., M.S.P.H.

Other Coordinating Committee Members

Emmett B. Ferguson, M.D., M.P.H.
Wayne H. Giles, M.D., M.S.

Guests

Martha Radford, M.D.
Dan Pollack, M.D. (via conference call)

NHLBI Staff

Mary M. Hand, M.S.P.H., R.N.
Teri Manolio, M.D., Ph.D.
Marcel Salive, M.D.
George Sopko, M.D.

Contract Staff

Jill K. Arvanitis, M.P.H., C.H.E.S.
Judith Estrin, M.A.

WELCOME AND INTRODUCTIONS (Dr. Ornato and Dr. Zalenski)

Dr. Ornato welcomed the participants and asked them to introduce themselves.

SUMMARY OF CONFERENCE CALL ON UPDATING EVIDENCE FOR USE OF TECHNOLOGIES IN DIAGNOSIS OF ACUTE CORONARY SYNDROMES (ACS) (Drs. Ornato and Zalenski)

Dr. Ornato said that a conference call on May 16, 2003, dealt with technologies in the diagnosis of ACS. The Science Base Subcommittee and the National Heart Attack Alert Program (NHAAP) Coordinating Committee had produced a technology review and then commissioned the New England Medical Center's Evidence-Based Practice Center to produce an evidence-based review of technologies in the diagnosis of ACS.

Dr. Zalenski added that the purpose of the call was to revisit this evidence-based review, which was published in May 2001 by Dr. Joseph Lau, principal investigator, and his colleagues. Two issues were discussed. One was the importance of troponins as markers compared with other biomarkers. The evidence-based review focused on limitations of troponin, but the conference call participants acknowledged that 99 percent of hospitals now use troponin. The

group supported the evidence-based review’s recommendation that a single test is of little value and that serial testing is very important.

The second issue was where to go next with the highly recommended technologies—prehospital 12-lead electrocardiogram (ECG) and the Acute Cardiac Ischemia Time-Insensitive Predictive Instrument. The conference call did not produce a clear direction or recommendations for this. One conclusion was to look at national guidelines about diagnostic technologies from groups such as the American College of Cardiology (ACC), American Heart Association (AHA), and the American College of Physicians (ACP).

Participants made the following comments:

- The Health System Subcommittee is preparing a paper that will advocate the use of 12-lead ECG for advanced life support (ALS), based on the strong evidence for its use summarized in the technologies report.
- Of a list of 50 articles on troponin and other biomarkers, there are no prospective trials on their use as interventions. There is a lack of understanding on how to use troponin. A clinical trial may be needed, and we need to clearly articulate how to use markers.
- Dr. Lau has looked at evidence in the emergency department (ED), but most other studies of troponins were based on clinical trials in the hospital setting. A meta-analysis (P.A. Heidenreich, et al. “Journal of the American College of Cardiology,” 2001) noted different diagnostic performance of troponins in clinical trials compared with cohort studies. Participants mentioned several other studies—one on unstable angina patients and one on the rate of missed myocardial infarctions (MIs).
- An article entitled “Guideline Chaos: Conflict in Recommendations for Preoperative Cardiac Assessment” (“American Journal of Cardiology,” 2003) points out differences between the ACC/AHA guidelines and those of the ACP.
- Dr. Zalenski said that the New England Medical Center showed that lives were saved when thrombolytics were used for treatment in the field. We propose speeding the time to definitive therapy. There have been 10–12 observational studies about reductions in door-to-drug time.
- European trials have tested a strategy of prehospital triage to percutaneous coronary intervention (PCI) centers. The 12-lead ECG is a necessary part of the strategy to determine who goes to a PCI center versus use of thrombolytics at the nearest hospital.

Following Dr. Zalenski’s presentation, the group then discussed the role of the Subcommittee in evaluating guidelines for the use of technologies in the diagnosis of ACS. Should it set up a mechanism to evaluate the guidelines efficiently and at low cost? Would a methods expert be needed? Is the role of the Subcommittee to tackle and resolve all the issues or

to coordinate the exchange of information? Is it our role to determine if recent guidelines conflict or need to be supplemented?

Dr. Selker said that our role should be to improve guidelines, perhaps through the creation of a methods panel. One option is to send the guidelines to someone like Dr. Lau and ask for comments/suggestions. Dr. Ornato raised practical issues of budget and resources. Should review of guidelines be a high-priority mission? Dr. Cantrill suggested that only the evidence base should be reviewed (not consensus-based guidelines).

A motion was made to set up a process to identify, highlight, and discuss guidelines that are most useful to the NHAAP's mission to improve care for acute myocardial infarction (AMI) and ACS, and to point out to members differences and weaknesses in the guidelines. The Executive Committee should vote on this motion. It was noted that the audience for NHAAP is not only member organizations but also the public. Drs. Selker and Cantrill will head this effort and will make a recommendation at the next meeting.

**NATIONAL ASSOCIATION OF CLINICAL BIOCHEMISTRY (NACB) COMMITTEE
TO UPDATE THE LABORATORY MEDICINE PRACTICE GUIDELINES FOR
BIOCHEMICAL MARKERS FOR ACS
(Dr. Christenson)**

Dr. Christenson reviewed the work of the NACB, its partners, and its initiatives. (See slides in Attachment I.) One initiative is research, education, and professional development, including the development of laboratory medicine practice guidelines (LMPGs). The NACB serves as the “academy” and has produced nine sets of LMPGs since 1994; six more are in progress, including one on biochemical markers for ACS and heart failure.

Dr. Christenson described the grades for the weight of evidence, noting that only about half of the cardiology guidelines are based on expert consensus. The process of updating the guidelines over the last 3–4 years has used classes of recommendation from class I (intervention is useful and effective) through IIa, IIb, and III (intervention is not useful/effective and may be harmful).

Dr. Christenson said, “When troponin is increased, think heart.” However, elevation of troponin does not necessarily mean ACS—it can be caused by many other conditions. The sensitivity/specificity for troponin is highest 24 hours after an MI. A 1999 recommendation for two decision limits (one for guidance for treatment and one for diagnosis) was later abandoned. Appropriate testing for ACS includes troponin T, troponin I, creatine kinase-MB (CK-MB), myoglobin, and a combination of tests (“Circulation,” 2001).

Troponin. Dr. Christenson mentioned the following studies of troponin:

- **What testing is appropriate?** The Chest Pain Evaluation by Creatine Kinase-MB, Myoglobin, and Troponin I (CHECKMATE) Study (Newby et al., 2001) compared the use of a multimarker strategy testing for several markers of myocardial necrosis with different time-to-positivity profiles to local laboratory results, which were a

- single marker approach. All three markers showed significant association with death at 30 days (but there were few deaths in the study).
- **Troponin for risk stratification.** A meta-analysis (P.A. Heidenreich et al., 2001) found that patients with non-ST elevation ACS who were positive for troponin had a risk of death that was 3–8 times higher than those who were troponin-negative.
 - **What is a safe blood concentration of troponin T or I?** A paper from the Second Platelet IIb and IIIa Antagonism for the Reduction of Acute Coronary Syndrome Events in a Global Organization Network (PARAGON-B) investigators (2003) showed that there is no safe concentration of troponin T or I in patients with well-defined ACS. Even a subtle increase of troponin T was associated with a three-fold higher death and recurrent MI at 6 months.
 - **Troponins and diagnosis of AMI.** A consensus document of the Joint European Society of Cardiology and the ACC (Thygesen et al., 2000) concluded that troponin I or T are surrogates for myocardial necrosis in the setting of cardiac ischemia. These markers exceeded the decision limit in the 99th percentile of the reference control group on at least one occasion during the first 24 hours. The paper also states criteria for acute, evolving, or recent MI—including a typical rise and gradual fall in troponin level.
 - **Troponin I predicts adverse composite outcomes.** The Thrombolysis in Myocardial Infarction (TIMI) IIB group (Morrow et al., 2000) found that three troponin I assays predicted risk of death or MI at 43 days, but there was variability among the assays.
 - **Not all troponin methods are created equal.** Venge et al. (2002) showed that a sensitive troponin assay was able to predict death at 1 year, while another assay was less able to do this.
 - There is a need to work on low-end precision. A study by the International Federation of Clinical Chemistry (IFCC) showed that some assays have good reliability while others do not.
 - It was noted that inhospital mortality for the non-ST-elevation patients has stayed constant over the past 20 years.
 - A meta-analysis of major randomized controlled trials (RCTs) of glycoprotein (GP) IIb/IIIa inhibitors (“Lancet,” 2002) showed a treatment benefit, with 45 percent having a troponin-positive baseline result. A new type 1A recommendation (“Circulation,” 2002) indicates that elevated troponin levels (0.1 ng/mL) provide superior predictive capability in high-risk patients.

Dr. Christenson said that biochemical markers are only one of many things clinicians use. We need the help of many partners to produce good guidelines. He noted that troponin values vary by 30-fold. We have not done a good job in standardization; we need a high-sensitivity

designation and manufacturers need to improve their assays. He also said that there is a body of literature supporting the use of a 10 percent coefficient of variability, but he prefers an evidence-based cutoff.

Other markers. Dr. Christenson then discussed brain natriuretic peptide (BNP) and N-terminal pro-brain natriuretic peptide (NTproBNP), which are new assays that have a big difference in half-life. An evaluation of BNP for risk assessment in 1,676 high-risk patients (Morrow et al., 2003) found that BNP levels have a significant ability to predict heart failure and death—but not MI—at 6 months. In troponin-negative patients at risk, BNP increases the ability to predict death by six times and risk of death and MI by 3.5 times. However, the levels of increase were subtle, and further study is needed. C-reactive protein (CRP) is another potential marker. One study (“Circulation,” 2003) examined whether CRP is a risk marker or a risk factor and found that CRP plays a role in the disease process. Newer markers include ischemia-modified albumin (IMA), which has been cleared by the Food and Drug Administration, but is based on preliminary data only.

Next steps. Dr. Christenson said that the guidelines document will also address analytic issues, logistics, clinical trials, and other etiologies. This is a big task, and the help of other organizations, such as the NHAAP, will be needed. The goal is to develop the data and evidence for use of biochemical markers in guidelines for ACS and heart failure, and to present this at the 2004 Arnold O. Beckman Conference in Boston, MA, where the pros and cons of the evidence will be discussed. In 2005, the draft document will be placed on the Internet for public comment, and it will then be presented at the meeting of the IFCC in Orlando, FL.

Discussion

The following points were raised during the discussion:

- Dr. Selker suggested that a methodologist (e.g., Dr. Lau) should review the guidelines—someone with no vested interest in the technology or clinical care.
- Dr. Cantrill suggested publishing the paper in clinical journals to reach practicing clinicians. Copublication is an option. For example, an executive summary could be published in a journal like “Emergency Medicine,” with reference to the primary publication.
- More research is needed on the significance of elevated troponin in hypertensive patients. Are these patients at risk of a worse outcome? It was noted that the use of home troponin tests has fallen from favor because of inaccuracy.

Dr. Christenson asked who he could contact in member organizations for review of the guidelines document. He would like feedback that is relevant to their organizations. This will be mentioned at the Coordinating Committee meeting tomorrow. Ms. Hand will provide the contact information that is available, and member organizations might want to suggest additional contacts.

ESTABLISHMENT OF AN ACS PATIENT SURVEILLANCE DATABASE USING DATA REPORTED BY EDS

(Dr. Ornato)

Dr. Ornato said that patient surveillance databases are where public health is likely to go post-September 11. Linking with other organizations concerned with national databases will help us identify parallel systems that are being set up and create opportunities for cooperation. A conference call on this issue was held, and two emerging efforts were identified.

Electronic Disease Surveillance System (Dr. Pollack)

Dr. Daniel Pollack, medical epidemiologist at the Centers for Disease Control and Prevention (CDC) (attending the meeting via telephone) described the CDC's National Electronic Disease Surveillance System (NEDSS). This initiative focuses on upgrading and streamlining public health reporting from laboratories and clinical sites, public health agencies at the State and local level, and other State and local entities that receive electronic reports or paper ones that are converted to electronic form. The goal is to move forward to a standard approach for systems, such as those that report notifiable infectious disease conditions to State health authorities. The NEDSS uses parts of existing systems, and it is investing in an infrastructure that will allow electronic communication to draw on data in clinical/laboratory systems and be shipped via secure server-to-server communications to provide more timely and comprehensive information.

The CDC now has the MedBase software system; this has been used in Nebraska and will be deployed to several other States. This system allows States to receive electronic communication, to store information at the patient level, and to generate outbound electronic messages to the CDC.

Asked if the system will be "painless" (i.e., require no manpower on the part of participating institutions), Dr. Pollack replied that NEDSS uses a standard format and a set of IT components that allow transmission to other places—whether for public health, quality-of-care monitoring, or reimbursement. These standards help to reduce "pain" and cost.

Asked how the system deals with data definitions, Dr. Pollack said that the data elements are being defined in a collaborative effort involving experts in data management, State epidemiologists and IT staff, and CDC program staff. These people identify requirements and develop modules to be incorporated into a common system. They develop disease registries, use what is common (e.g., demographic data), and then look at program requirements for data elements. There is a process for rounding up the information, making decisions, and documenting them.

Dr. Selker said that this is an exciting opportunity to assess and improve care. However, he has concern about the high cost of using data systems for a quality improvement system, and he asked if there are resources to deal with a massive effort. Dr. Pollack responded that it will not happen overnight. More progress has been made in some areas than in others. It was noted that the Institute of Medicine's (IOM's) third report asked the Government to step up to the plate to do what the CDC is doing. In response to a question from Dr. MacLeod, Dr. Pollack noted

that he had discussions with Dr. Michael Wagner and the group at the University of Pittsburgh who are involved in biomedical surveillance software.

Paul Coverdell Stroke Registry: Overview (Dr. Giles)

Dr. Giles described the Paul Coverdell National Acute Stroke Registry, which is designed to improve the quality of care for stroke. (Senator Coverdell spent 48 hours complaining of a severe headache before he went to an ED.) In 2001, Congress appropriated \$4.5 million to CDC to track and improve the delivery of care for patients with acute stroke. Congress asked the CDC to consult with stroke organizations in developing scientific data elements and to design and pilot test stroke prototype registries. In February 2001, an expert panel on data elements met with representatives from the Brain Attack Coalition and from Federal agencies such as the National Institute of Neurological Disorders and Stroke (NINDS). Results of the report were published in “Stroke” earlier this year.

In 2001, CDC issued a program announcement asking mostly academic institutions to design prototypes that measure the delivery of care for patients with acute stroke. These would be tested in a statewide sample of urban and rural hospitals. In September 2001, Wave I was initiated at four sites: Emory University in Georgia, a Massachusetts peer-review organization, Michigan State University, and the University of Cincinnati. These sites established consensus on case definitions and inclusion criteria and came up with a set of 78 core elements that the registries would measure, and individual sites included additional elements. The original intent was to measure care in realtime, but most of the measurement had occurred after care.

Case definitions included hospitalized adult patients only (excluding in-hospital stroke). Data elements categories included prehospital patient demographics (transport information, response times, time from symptom onset to arrival in the ED); ED evaluation and treatment; in-hospital evaluation and treatment; and discharge information.

Prototype activities included recruiting a state-wide sample of hospitals to develop data collection mechanisms and establish an advisory committee. The sites develop, plan, and use registry information to improve the delivery of care. An independent contractor, MACRO, conducts evaluation of the data elements. Public education messages on signs and symptoms are designed to ensure that stroke victims receive thrombolytic therapy. Quality improvement is measured by time from symptom onset to ED arrival, time from ED to initiation of thrombolytic therapy, and discharge on medications and counseling for secondary prevention. Individual hospitals receive feedback on how well they are doing.

Last year Congress appropriated another \$4.5 million to continue the stroke registry. Wave I institutions received cost extensions, and four additional organizations were named stroke prototypes in Illinois, North Carolina, Oregon, and California.

Short-term objectives are to evaluate components of the prototype and establish a model that can be adopted by State health departments. Long-term objectives are to have an ongoing registry sample in all the states and nation-wide. Stroke will be one of the first chronic conditions to be rolled into the NEDSS. It is hoped that ACS, hypertension, and heart failure will also be included.

In answer to questions, Dr. Giles said the cost per case for data acquisition is variable. Realtime activities cost less than those using abstractors. He said that there will be different levels of data ownership; State health departments will probably own data on hospitals, while CDC will own more aggregate data.

UPDATES

Subcommittee's Sudden Cardiac Death Priority Area (Dr. Ornato)

Dr. Ornato said that data collection on the Public Access Defibrillation trial is scheduled to end in September. An abstract has been written and will be submitted to the AHA Scientific Sessions as a late breaking trial; it is hoped the information can be publicly shared at the AHA meetings in November 2003.

PULSE Steering Committee Report

Dr. Ornato said that Dr. Selker will be the NHAAP representative to the Post-Resuscitation and Initial Utility in Life Saving Efforts (PULSE) Steering Committee. Dr. Sopko reported that two request for applications (RFAs) have been issued, one on global ischemia and one on hypolemia. A major recommendation is to establish a consortium network to facilitate the conduct of clinical trials. An RFA in the near future will be to establish a clinical consortium on resuscitation (not limited to cardiac resuscitation). Dr. Sopko added that PULSE works closely with the NINDS, Department of Defense, and CDC.

Asked if the NHAAP has a position on home access to defibrillation, Dr. Ornato said that there is an NHLBI-sponsored clinical trial on this topic, with Dr. Gust Bardy as principal investigator.

Science Base Subcommittee Literature Search: Review of Consolidated Topics and Inclusion of Priority Area One (Ms. Hand)

Ms. Hand called attention to the handout on the Science Base Subcommittee literature review rationale for consolidation. For every other Subcommittee meeting, there is a literature search covering patient/bystander, prehospital, hospital, and crosscutting aspects and actions. Each member is assigned a topic to review. Ms. Hand reported that these topics have been consolidated to make the process easier. For example, emergency medical dispatching will be an emergency medical services configuration. Ms. Hand asked the participants to review the rationale for consolidation of old topics, as well as the new consolidated topics/categories, and to let her know if there are problems or suggestions. The literature review will be presented at the next meeting of the Coordinating Committee.

ADJOURNMENT (Dr. Ornato)

Dr. Ornato thanked the members for their participation and adjourned the meeting.



National Heart Attack Alert Program

Attachments

**June 23–24, 2003
Bethesda Hyatt
Bethesda, Maryland**

ATTACHMENT A
LIST OF ATTENDEES

National Heart Attack Alert Program
Coordinating Committee Meeting

Participants

June 24, 2002

Organization	Representative
Agency for Healthcare Research and Quality	Daniel Stryer, M.D.
American Academy of Insurance Medicine	Lawrence D. Jones, M.D.
American Academy of Physician Assistants	John McGinnity, M.S., P.A.-C
American Association for Clinical Chemistry, Inc.	Robert H. Christenson, Ph.D.
American Association of Critical Care Nurses	Diane L. Carroll, R.N., Ph.D.
American Association of Health Plans	Andrea G. Gelzer, M.D.
American Association of Occupational Health Nurses	Carol Cunningham Base, R.N., M.S., B.S.N., COHN-S
American College of Cardiology	James M. Atkins, M.D., F.A.C.C.
American College of Emergency Physicians	Stephen V. Cantrill, M.D.
American College of Occupational and Environmental Medicine	Emmett B. Ferguson, M.D., M.P.H.
American Heart Association	Joseph P. Ornato, M.D., F.A.C.C., F.A.C.E.P.
American Hospital Association	Nancy E. Foster
American Medical Association	Mark S. Antman, D.D.S., M.B.A.
American National Red Cross	Don K. Vardell, M.S. (Substitute for Pat Bonifer-Tiedt, Sc.M., M.S.)
American Nurses Association, Inc.	Christine M. Crumlish, Ph.D., R.N.
American Pharmacists Association	M. Ray Holt, Pharm.D.
Association of Black Cardiologists	Gerald DeVaughn, M.D., F.A.C.C.

Centers for Disease Control and Prevention	Wayne H. Giles, M.D., M.P.H.
Centers for Medicare and Medicaid Services	Jay Merchant, M.H.A.
Emergency Nurses Association	Julie Bracken, R.N., M.S., C.E.N., A.P.N.
Food and Drug Administration	Carole Carey, M.S.E., R.N. (Substitute for Arthur A. Ciarkowski, M.S.E., M.B.A., M.P.A.)
International Association of Fire Chiefs	Mary Beth Michos, R.N.
International Association of Fire Fighters	Jonathan Moore (Substitute for Lori Morre, Dr.P.H., M.P.H., N.R.E.M.T.-P.)
National Association of Emergency Medical Technicians	Christopher Cebollero, M.S., N.R.E.M.T.-P.
National Association of EMS Physicians	Bruce MacLeod, M.D., F.A.C.E.P.
National Association of State Emergency Medical Services Directors	Jimm Murray
National Black Nurses Association	David E. Simmons, Jr., M.S.N., R.N., C.N.N.
National Center for Health Statistics	Richard Gillum, M.D., F.A.C.C.
National Highway Traffic Safety Administration	Drew E. Dawson
National Medical Association	Charles L. Curry, M.D.
Society for Academic Emergency Medicine	Robert J. Zalenski, M.D., M.A.
Society of Chest Pain Centers and Providers	J. Lee Garvey, M.D.
Society of General Internal Medicine	Harry P. Selker, M.D., M.S.P.H.
[Absent]	
Advisor	Christopher Cannon, M.D., F.C.C.P.
American College of Physicians	Robert A. McNutt, M.D., F.A.C.P.
American College of Preventive Medicine	George K. Anderson, M.D., M.P.H., F.A.C.P.M.

American Public Health Association
Department of Defense, Health Affairs
Department of Veterans Affairs
Health Resources and Services Administration
National Heart, Lung, and Blood Institute
The American Association of Health Plans

Richard Levinson, M.D., D.P.A.
Thomas M. Wiley, M.D., LTC, MC, USA
Thakor G. Patel, M.D.
David B. Snyder, R.Ph., D.D.S.
Claude Lenfant, M.D.
Arthur Dresdale, M.D.

[Vacant]

American College of Chest Physicians

Invited Speakers

Martha Radford, M.D.

Harry Teter

American Trauma Society

NIH and NHLBI Staff

Jeanette Guyton-Krishnan, Ph.D., M.S.

Mary M. Hand, M.S.P.H., R.N.

Nancy A. Hart, M.A.

Terry Long

Teri Manolio, M.D., Ph.D.

Marcel E. Salive, M.D., M.P.H.

George Sopko, M.D.

Guests

Robert J. McNellis, M.P.H., PA-C

American Academy of Physician Assistants

Deanna Simmons, R.N.

National Black Nurses Association

Contract Staff (Prospect Associates)

Jill K. Arvanitis, M.P.H., C.H.E.S.

Judy Estrin, M.A.

ATTACHMENT B
COORDINATING COMMITTEE AGENDA

**National Heart Attack Alert Program (NHAAP)
Coordinating Committee Meeting**

**June 24, 2003
9:00 a.m.–1:00 p.m.**

**Hyatt Regency Bethesda
One Bethesda Metro Center
Bethesda, Maryland**

Agenda

- | | | |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 9:00 a.m. | Welcome and Introductions | Dr. Claude Lenfant |
| 9:15 | Executive Committee/Subcommittee Reports | Dr. James Atkins |
| | <ul style="list-style-type: none">• Education Subcommittee• Health Systems Subcommittee• Science Base Subcommittee | Dr. Christine Crumlish
Dr. Bruce MacLeod
Dr. Joseph Ornato |
| 10:00 | Research Implementation Issues in Improving Acute Myocardial Infarction (MI) Patient Quality of Care and Outcomes | |
| | <ul style="list-style-type: none">• Introductory Remarks on Importance of Research Implementation• Overview of Research Implementation: State of the Field• Evidence that Acute MI Guideline Adherence Can Be Improved• Gaps and Challenges to Implementing Quality Care for Patients with Acute MI• Panel: What Can the NHAAP Coordinating Committee Do to Implement Guidelines/ Research to Improve Quality of Care and Outcomes for Acute MI Patients? | Dr. Claude Lenfant

Dr. Daniel Stryer

Dr. Marcel Salive

Dr. Martha Radford

Dr. Stryer (Moderator) |
| 11:15 | BREAK | |

11:30	When the Family Becomes the Patient: Caring For the <i>Survivors</i> of Patients Who Have Sudden Death from Cardiovascular Causes	Dr. Robert Zalenski
	<ul style="list-style-type: none"> • Introduction/Review of Issue • The American Trauma Society's Second Trauma Program 	Dr. Zalenski Mr. Harry Teter
12:00 p.m.	Revised Time-to-Treatment Reperfusion Algorithms From the ACC*/AHA# Guidelines for Management of Patients with ST-Elevation Myocardial Infarction	Dr. Ornato
12:15	Healthy People 2010 Data Sources: Update	Dr. Jeanette Guyton-Krishnan
12:30	<i>Act in Time to Heart Attack Signs</i> Progress Report on Campaign Focus on Implementation by Organizations	Ms. Mary Hand Dr. Crumlish
12:45	Other Organization Announcements/Reports	Committee
1:00	Final Comments/Adjournment	Dr. Lenfant

*=American College of Cardiology
#=American Heart Association

ATTACHMENT C

DR. SALIVE'S PRESENTATION SLIDES

ATTACHMENT D

DR. RADFORD'S PRESENTATION SLIDES

ATTACHMENT E

DR. ORNATO'S PRESENTATION SLIDES

ATTACHMENT F

DR. GUYTON-KRISHNAN'S PRESENTATION SLIDES

ATTACHMENT G

MS. HAND'S PRESENTATION SLIDES

ATTACHMENT H

DR. ALVARADO'S PRESENTATION SLIDES

ATTACHMENT I

DR. CHRISTENSON'S PRESENTATION SLIDES