



Daniel J. Berry, MD
Chair, Mayo Clinic
Department of
Orthopedic Surgery

Mayo Clinic's Daniel J. Berry, MD, To Begin AAOS Presidency in February

Daniel J. Berry, MD, chairman of the Mayo Clinic Department of Orthopedic Surgery, will begin his 1-year term as president of the American Academy of Orthopaedic Surgeons (AAOS) February 19 at the close of the AAOS annual meeting in San Diego. A hip specialist, Dr Berry was chosen for the post in 2009 and has served as first vice president for the past year.

About AAOS

Founded in 1933, AAOS is the preeminent continuing medical education organization in the world for orthopedic surgeons and others concerned with promoting the highest quality musculoskeletal health. Today, the academy has approximately 36,000 members in more than 100 countries. Dr Berry is the fifth academy president from Mayo Clinic Orthopedics. "I am tremendously honored to have this opportunity to serve and to give back to this vital organization. It is especially gratifying because of my commitment to the mission of the AAOS, with its distinct emphasis on education," says Dr Berry, who in 1993-1994 was named Mayo Clinic Teacher of the Year in Orthopedic Surgery.

"Dr Berry brings the academy's mission—of extraordinary continuing education—into each discussion we have about the business of running this association. His priority in the coming year is to help us stretch and innovate as we work to enhance the content, context and relevance of our orthopedic and continuing education," said AAOS CEO Karen Hackett, FACHE, CAE.

Leadership Legacy

Dr Berry will build on several important trajectories

established by recent AAOS presidents. "Dr Joseph Zuckerman ('09) did just a phenomenal job using technology and communication for the good of our membership. I would like to see further leveraging of technology, especially for physician education," Dr Berry explains. Dr Berry also draws inspiration from the inclusive leadership style of current president Dr John Callaghan ('10). "He was always thinking of how every decision might affect the various specialties and subspecialties within our membership, and that to me is a vital part of unity and effectiveness that should continue. The key message here is: 'Unity in the house of orthopedics,'" Dr Berry says.

Presidential Priorities

While he is eager to hear members' ideas for a maximally effective AAOS, Dr Berry brings a working slate of presidential priorities for addressing issues facing orthopedic surgeons. A partial listing includes:

- Advocacy for orthopedic surgeons in the context of changing health care reform legislation. "The legislation is written, but how the regulations are translated into practice and interpreted is key. AAOS will be there to work on that," Dr Berry explains. He adds that the act did little to address medical liability issues, an area that can benefit from AAOS input.
- Improving the evidence base for practice guidelines and appropriate-use criteria.
- In education, developing new applications for mobile devices; using the next generation of the Internet to teach and transfer targeted knowledge rapidly; improving visualization through 3D and surgical simulations.

"We really have before us the opportunity to transform learning in our profession," Dr Berry says. "It's not far off in the distance. The opportunities are here, now, and AAOS is in a position to see that all of our members benefit."

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Left to right: Daniel J. Berry, MD, 2011 incoming president of AAOS; Joseph D. Zuckerman, MD, immediate past president; and John J. Callaghan, MD, current president.

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MeTeOR Study

Comparing Arthroscopy to Nonoperative Therapy for Meniscal Tears in Patients with Osteoarthritis of the Knee

Each year in the U.S. more than 300,000 knee arthroscopies are performed for patients who have both a meniscal tear and osteoarthritis in the same compartment of the knee. Yet the frequency with which this treatment is performed belies significant uncertainty surrounding outcomes associated with its use.

Ambiguity and Arthroscopy

Mayo orthopedic surgeon Bruce A. Levy, MD, explains that the challenge starts in the consult room, when a patient presents with, for example, medial-sided knee pain. “But if they have a medial meniscus tear and concomitant medial compartment osteoarthritis, it is almost impossible to figure out what is generating the pain,” Dr Levy says. “Is it the meniscal tear? Or is it the osteoarthritis in the medial compartment?”

This ambiguity over the identity of pain origin and generation is problematic because meniscal tears and osteoarthritis tend to respond differently to arthroscopy. Data show that arthroscopy is very effective in treating meniscal tears without osteoarthritis—and highly ineffective for treating advanced osteoarthritis of the knee.



Mayo Clinic MeTeOR investigators, left to right: Bruce A. Levy, MD, Diane L. Dahm, MD, Michael J. Stuart, MD

MeTeOR to Clarify Treatment

But what is the best course of treatment when both conditions are present? Currently physicians tell this subset of patients who are contemplating treatment that knee arthroscopy is unpredictable in the setting of meniscal tear and concomitant osteoarthritis. However, a new federal study is generating comparative effectiveness research (CER) data that will help answer the question. Notes Diane L. Dahm, MD, one of Dr Levy’s Mayo co-investigators in the Meniscal Tear with Osteoarthritis Research (MeTeOR) study: “That is why we are so excited to be one of 7 advanced orthopedic specialty centers in the U.S. involved in MeTeOR. The data will clarify indications for arthroscopy versus nonoperative treatment in this subset of patients by giving us the highest quality of evidence from a large, randomized, multicenter trial sponsored by the National Institutes of Health (NIH).” Adds Dr Levy: “At the end of the day, we expect to be able to identify which knee symptoms, clinical and intra-operative variables are predictors of bad outcomes from arthroscopy, and which are predictors of good outcomes in the form of improvement of functional status.” (Figure 1).

About MeTeOR

MeTeOR is the first study of its size to evaluate patients who have both a symptomatic meniscal tear characterized by mechanical symptoms such as knee catching, locking or buckling, as well as mild to moderate osteoarthritis. Arthritic pain is typically described in non-mechanical terms, such as “dull” and “achy.” But those distinctions are also problematic. Says Dr Levy: “Patients often report both types of pain, so that is part of what we need clarified by MeTeOR as well.”

MeTeOR aims to enroll 340 patients > 45 years old with these 2 knee comorbidities who are otherwise healthy. It randomizes them to 1 of 2 arms of the trial to evaluate effects of arthroscopy compared to nonoperative treatment such as standard physical therapy. To eliminate bias, specialists

Table 1. MeTeOR At A Glance

Enrollment Goal: 340 by February 2011
Mayo Clinic Contribution to Total Enrollment: ~80 patients
Centers Involved: 7 U.S. advanced orthopedic centers, sponsored by NIH
Principal Investigator: Jeffrey N. Katz, MD, MS, Brigham and Women's Hospital, Boston
Mayo Clinic Investigators: Bruce A. Levy, MD, Diane L. Dahm, MD, Michael J. Stuart, MD
Randomized to 2 Arms: Arthroscopy vs. Nonoperative Treatments. These may include physical therapy, use of anti-inflammatory drugs, intra-articular cortisone injections, activity modification, braces.
Main Inclusion Criteria: > age 45 <ul style="list-style-type: none"> • Presence of symptomatic meniscal tear with mechanical indicators such as locking, buckling, catching • Presence of mild to moderate osteoarthritis on MRI • No comorbidities, not pregnant
Main Exclusion Criteria: < age 45 <ul style="list-style-type: none"> • Presence of advanced osteoarthritis on MRI • Chronically locked knee • Previous knee surgery, recent vicosupplementation injection • Poor health, pregnant
Crossover Option Available? In selected cases, after 6 months of nonoperative participation patients may be allowed to cross over to the surgical arm.
To Refer Patients for Mayo Enrollment: blanchard.charlene@mayo.edu
Next Steps: Working on a 3-year extension to original 2-year grant and subanalysis of data
For More Information: http://clinicaltrials.gov/ct2/show/NCT00597012



Figure 1A. Standing X-ray showing medial compartment joint space narrowing (medial osteoarthritis).



Figure 1B. MRI showing medial meniscal tear and cartilage thinning of the femoral condyle.

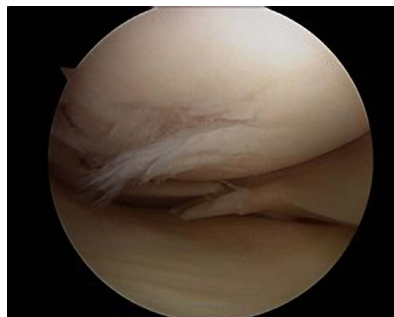


Figure 1C. Intraoperative scope image of large cartilage flap and large meniscal tear.

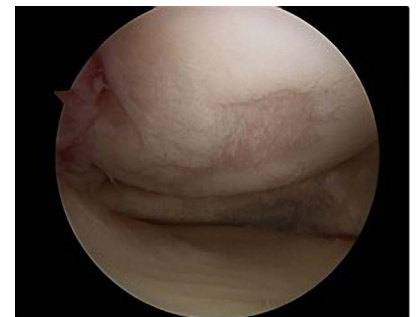


Figure 1D. Intraoperative scope picture of cartilage débrided, and meniscal tear resected.

follow a strict and standard protocol at the 7 participating centers, which is led by principal investigator Jeffrey N. Katz, MD, MS at Brigham and Women's Hospital, Boston. (Table 1).

Mayo Clinic's 3 investigators, Drs Levy, Dahm and Michael J. Stuart, are excited and optimistic about the potential of MeTeOR to improve patient care. Says Dr Levy: "This is the type of trial that will change clinical practice because of the sheer volume of the procedures done for this particular problem, and the fact that it has never been studied this effectively."

Ice Hockey Concussion Summit Sparks New Strategies For Protecting Athletes



Michael J. Stuart, MD

In response to the prevalence and consequences of concussion at all levels of play in ice hockey, Mayo Clinic’s Sports Medicine Center convened an Ice Hockey Concussion Summit in October. The broad-based strategic collaboration consisted of neurotrauma scientists, athletic trainers, hockey coaches, team physicians, sports psychologists, officials and manufacturers from across the United States and Canada.

Concussions Rising

Each year, Americans experience nearly 4 million sports- and recreation-related concussions, according to epidemiological estimates. A recent Canadian study of 16- to 21-year-old hockey players reported incidence of concussion significantly higher than any other study in the literature: 17 players had 21 concussions during a 52-game season.

Recommendations from the Summit included requiring concussion education for coaches, parents and student athletes that includes symptom recognition. (Figure 1). Experts also called for strict enforcement of current rules against aggressively forceful and illegal head or body blows that produce the rapid head movement leading to concussion. They also suggest refining clinical criteria for return-to-



Aynsley M. Smith, RN, PhD

play decisions, and mandating player behavior training based on the science of aggression to eliminate dangerous acts on the ice.

Power Play for Safety

“To improve player safety and reduce concussion risk, severity and consequences, we need this kind of ‘power play’—a collaborative effort from physicians, sports scientists, coaches, officials, sports psychologists and community partners,” explains Mayo Clinic orthopedic surgeon Michael J. Stuart, MD. Dr Stuart is the Chief Medical Officer for USA Hockey and the Olympic Team Physician. He has won several national awards for his work on safety in hockey.

Dr Stuart co-directed the summit with his Mayo colleague, Aynsley M. Smith, RN, PhD, sport psychology consultant and research director in the Mayo Clinic Sports Medicine Center, who has served as performance enhancement consultant to ice hockey teams at all levels of participation including the National Hockey League (NHL). Adds Dr Smith: “The recommendations emerging from the summit’s expert discussions should help everyone involved in the game—players, family members, coaches and team physicians—without reducing the fun, excitement or athleticism of play.”

Signs and Symptoms

Symptoms Reported by Athlete

- Headache or “pressure” in head
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light
- Sensitivity to noise
- Feeling sluggish, hazy, foggy or groggy
- Concentration or memory problems
- Confusion
- Does not “feel right”

Signs Observed by Coaching Staff

- Appears dazed or stunned
- Is confused about assignment or position
- Forgets sports plays
- Is unsure of game, score or opponent
- Moves clumsily
- Answers questions slowly
- Loses consciousness (even briefly)
- Shows behavior or personality changes
- Can’t recall events prior to hit or fall
- Can’t recall events after hit or fall

Figure 1. Recommendations from the Mayo Concussion Summit include mandatory education for coaches, parents and student players on concussion prevention and identification. Mastery of tables of symptoms like this could be one knowledge requirement.

6 PRIORITY ACTION AREAS

FORMULATED AT MAYO CONCUSSION SUMMIT 2010

DATABASES AND METRICS

- Develop consistent definition
- Base recommendations on data
- Partner with pending legislation

EQUIPMENT AND ARENAS

- Communicate protective role equipment plays
- Share pros and cons of all helmets
- Support research for all equipment

EDUCATION AND PREVENTION

- Mandate concussion education for coaches, officials, players and parents
- Charge hockey organizations with delivering existing educational content
- Educate for behavioral and cultural change



DIAGNOSE, MANAGE

- Mandate education
- Remove players suspected of concussion
- No return to play until cleared by health care provider

RULE RECOMMENDATIONS

- Enforce head and body contact rules
- Create curriculum to teach body control for legal checking (No checking until age 13)
- Ban fighting at all levels

COMMUNICATION

- Mandate pre-season meetings
- Deliver unified, consistent message
- Develop a multi-media package

Recommendations

Recommendations for improving athletes' safety fall into 6 action areas—databases and metrics, equipment and arenas, education and prevention, diagnosis and management, proposed rule recommendations and communication. (Figure 2). They address such issues as return-to-play guidelines, protective equipment research, enforcement of existing rules, sportsmanship, regulations for delaying legal body checking in games and the need to teach young skaters body control skills.

According to Dr Stuart, the next steps are to take the messages forward and implement the action items. Dissemination of the messages is occurring through broad circulation of the position statement; publication of evidence-based scientific articles; creating a book for players, coaches, officials and parents; posting information on Internet websites and by partnering with committed media. Topic-focused committees will implement ideas that emanated from the breakout sessions at the summit.

Collaboration and Support

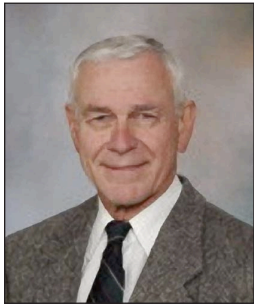
In addition to the Mayo Clinic Sport's Medicine Center, the summit was sponsored by USA Hockey, the International Ice Hockey Federation, the Ontario Neurotrauma Foundation, the Hockey Equipment Certification Council and supported by Team Wendy and the Johansson-Gund Endowment.

Figure 2. Action Areas for Improving Safety. The expert panel identified 6 areas for action to improve player safety that will be forwarded to leading hockey organizations for consideration and possible implementation.

Hot Topics of Summit Discussion

- **Invisible injury.** Concussions often are regarded as “invisible injuries” and typically are not suspected if the player remains conscious. This places athletes at risk of returning to play with concussion.
- **Gender effects.** Research is needed to explain gender effects because concussion outcomes are worse in women.
- **Collision prevention.** Education programs for young players should focus on technical control and collision prevention, particularly high rotational acceleration.
- **Metabolic cascade.** Repetitive concussion within a vulnerable metabolic time window may result in prolonged/incomplete recovery.
- **Mid-life morbidity.** A diffuse neurodegenerative syndrome that affects the brain and spinal cord is associated with repeated concussions. This condition has distinct pathological changes and presents in mid-life, usually after a long latent period between concussion and symptom onset

A Century of Innovation and Excellence in the Mayo Clinic Department of Orthopedic Surgery



Bernard F. Morrey, MD

To honor the continuing achievements of the Mayo Clinic Department of Orthopedic Surgery in its first 100 years, approximately 200 alumni and guests gathered in Rochester in September. (Figure 1). Focusing on Mayo Orthopedics' legacy of innovation and patient-centered excellence, presentations addressed the latest in scientific surgery, clinical care, education and research. Topics ranged from genetic variation in pathology profiles to the etiology of hip arthritis to expanding the limits of elbow arthroscopy to the emergence of cementless fixation for total knee arthroplasty.

In each, the historic imprint of the department's founding vision was clearly visible. Then as now, Mayo Orthopedics' staff members strive to develop robust data; teach and practice meticulous technique; commit fully to the needs of the patient; create value through responsible innovation and collaboration to improve outcomes. (Figure 2). Says Mayo emeritus orthopedic surgeon Bernard F. Morrey, MD, course co-director: "Historically, the department has always combined an emphasis on exemplary technique and medical knowledge with an imaginative sense of what is possible and best for the patient. And that has helped

Mayo make some of its biggest contributions to orthopedics."

These include:

- First bone graft at Mayo, performed in the old Cooke Hotel, 1911
- Development of the DCP plate, 1950
- Implantation of the first total hip arthroplasty approved by the U.S. Food and Drug Administration, 1969
- Development of rigorous registry-based follow-up for arthroplasties, with 100,000 procedures of all joints entered in the database from 1969-2010
- Continual commitment to integrated patient



Figure 2. Past: Early 20th century surgical and research collaboration at Mayo is a tradition that continues today and is regarded as a major source of innovation and excellence in its Department of Orthopedics.

care, culminating in the 2010 opening of the new W. Hall Wendel Jr Musculoskeletal Center that maximizes convenience and efficiency by concentrating multiple services in one location. (Figure 3).

Culture of Innovation

From the beginning, the Mayo brothers grounded the clinic in a culture of innovative excellence. They refined such breakthroughs of the time as antiseptic surgery and controlled anesthesia.



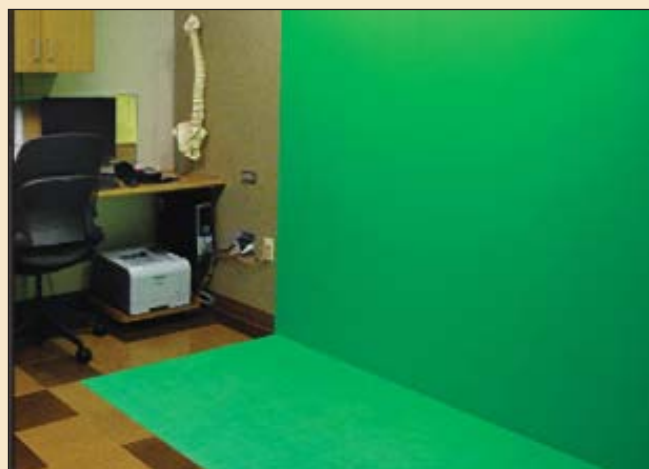
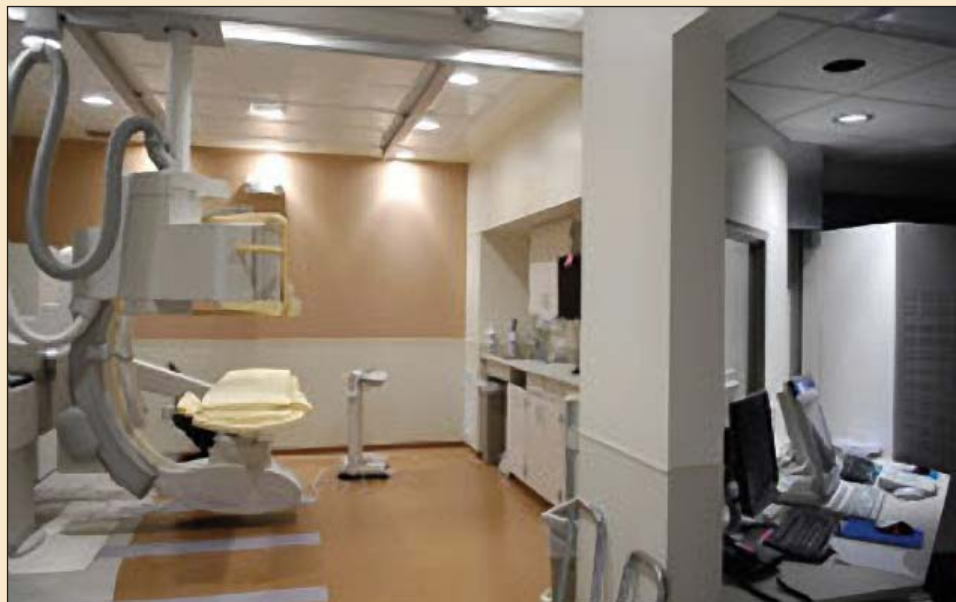
Figure 1. Former President George H.W. Bush and his wife, Barbara P. Bush, an emeritus Mayo Clinic Board member, were among the more than 200 Mayo alumni and friends celebrating 100 years of service, excellence and innovation for Mayo Clinic's Department of Orthopedic Surgery in September 2010. John Noseworthy, MD, President and CEO of Mayo Clinic, delivered an address in appreciation of their support and leadership.

Unlike the majority of early 20th century colleagues who kept the art and science of medical practice a personal, private attribute in solo, home-based practices, the Mayo brothers boldly collaborated. As a group practice, they opened clinic doors so colleagues from around the world could observe, discuss, engage theory and work together to advance medicine.

In 1910, the Mayos further demonstrated their comfort with bold and worthy ideas when they accepted the novel suggestion of a newly graduated physician, Melvin S. Henderson, MD, to create a Mayo Department of Orthopedic Surgery independent from the department of surgery. A separate department was needed, Dr Henderson argued, to best meet orthopedic patients' needs by moving their treatments beyond bracing bone deformities and injuries

Figure 3. Present. One-stop comprehensive orthopedic care is now available at Mayo Clinic's new state-of-the-art 245,000-square-foot W. Hall Wendel Jr. Musculoskeletal Center, which opened in stages from December 2007 to February 2010. Its integrated design optimizes care, convenience, privacy and patient education, as well as fully supports fast-track referrals to orthopedic specialists. Features include:

- **Top right.** Multiple on-site radiographic imaging stations, with 15 radiology suites and 1 ultrasound room.
- **Bottom, left to right.** Rehabilitation tools such as green screen virtual motion training, and simulated living and work stations for regaining mastery of daily functioning.



to more robust—and demanding—surgical solutions.

Specialized Education, Training and Research

Orthopedic surgical specialization gave rise to an educational and training focus at Mayo that has created a collegial corps of Mayo-trained orthopedic surgeons around the world. A rigorous research program also evolved to support the new surgical specialization. “Mayo Orthopedics has always recognized the role of basic research in improving patient care, and attracted talent to the field because of it,” explains emeritus orthopedic surgeon Anthony J. Bianco, MD. Mayo Orthopedics’ translational research is distinguished for its advances in

biomechanics, bone morphology, infection control, cancer therapies, sports medicine and contributions to the development of new biomaterials such as highly porous metals.

Combined with continual improvement in clinical care, the commitment of Mayo’s Department of Orthopedic Surgery to research and training has helped it rank consistently among the top orthopedic practices in U.S. News & World Report. The future will build on this legacy. Explains Department Chair Daniel J. Berry, MD: “We recognize the tremendous value of the contributions of our founders and mentors, and we are acutely aware of the obligation to expand and improve on this legacy—and we will.”

Mayo Clinic Orthopedic Update

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CME Opportunities

6th Mayo Clinic Spine Symposium

March 20-24, 2011
Key West Marriott Beachside Hotel, Key West, Florida
Available credits: 26.5

In a dynamic, highly interactive program, Mayo orthopedic surgeons and course directors Paul M. Huddleston, MD, and Michael J. Yaszemski, MD, PhD, will place special emphasis on spinal deformity in coursework designed for surgeons and non-operative clinicians treating patients who suffer from a range of spinal disorders.

Additional topics to be covered include examination of current health quality measures and focus on minimally invasive surgical techniques. Using didactic lectures, expert panel discussions, vigorous debate and case presentations, course directors will engage participants in lively discussions enriched by an audience response system.

Contact: cme@mayo.edu.

Shoulder Arthroscopy

April 29-30, 2011
Mayo Clinic Rochester, Minnesota

This is an advanced course designed for orthopedic surgeons who treat disorders of the shoulder. The multiplatform learning experience offers didactic lectures, live video case presentations and demonstrations, as well as laboratory sessions using cadaver specimens to help participants master new shoulder arthroscopy applications and techniques.

This course will teach the principles, practice and advanced techniques for optimal management of rotator cuff tears, SLAP lesions, instability and arthritis.

Contact: cme@mayo.edu

2011 Mayo Clinic Alumni Association International CME Conference

May 23 - 26, 2011
Electra Palace Hotel, Athens, Greece

In response to requests from previous attendees, the 2011 Mayo Clinic Alumni Association International CME Conference will offer breadth and depth in a variety of topics related to core competencies and medical knowledge in education, research and clinical practice, including systems-based practice. Through lecture and interactive speaker panels, internationally renowned faculty will present on topics of interest to both general practice physicians and specialists. Emphasis will be placed on physician leadership, professionalism; implementing management systems to improve patient care and increase safety, quality control and physician development. Faculty members will be available during the breaks to answer questions and to elaborate on discussion topics with course participants.

Contact: cme@mayo.edu

To view all Mayo Clinic CME offerings visit www.mayo.edu/cme/



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