

# Comparative Effectiveness Research

## Charting a New Path for Health Care Efficacy and Results

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A report released by the U.S. Institute of Medicine on June 30, 2009, recommended a broad-based portfolio of 100 study topics for the Department of Health and Human Services (DHHS) to consider as it implements a new agenda for comparative effectiveness research (CER). These 100 priority topics cover a wide range of diseases, research methods, and care models that are important to the health of the U.S. population.

This is an important step forward for the U.S. health care system and one that is likely to continue receiving considerable public and media attention, as well as being the source of much scrutiny and debate. The purpose of this Leadership Briefing is to provide a summary of this report and to begin exploring its implications for the health care industry, providers, and consumers.

### Background

The comparative effectiveness research report from the Institute of Medicine was developed to provide recommendations on health topics that should receive priority attention and funding to identify which health care services work best. It also details the actions and resources needed to sustain this initiative on an ongoing basis and to ensure that the results will be put into clinical practice.

The list of priority topics was developed at the request of Congress as part of a \$1.1 billion effort to improve the quality and efficiency of health care through comparative effectiveness research outlined in the American Recovery and Reinvestment Act (ARRA) of 2009. The committee's report provides independent guidance, informed by public input, on how to spend \$400 million on research to compare health services and approaches to care.

Health experts and policy makers have cited that the United States currently spends more on health care than any industrialized nation (\$2.4 trillion in 2008) yet still lags behind other countries on many key measures of health. These experts have championed that comparative effectiveness research will enable our U.S. health care system to achieve better outcomes and better value—a hypothesis very consistent with the evidence-based approach taken by National Imaging Associates (NIA).

By evaluating the benefits and risks of various ways to prevent, diagnose, treat, and/or monitor specific medical conditions, we are better able to determine which solutions work best for particular types of patients (allowing for variability in settings, circumstances, etc.). With the results of these studies to inform health care decisions, we can ultimately improve health care outcomes and the process by which this care is delivered.

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### Key Priorities for Comparative Effectiveness Research

The list of 100 initial priority topics identified by the Institute of Medicine for comparative effectiveness research includes 14 topics relevant to diagnostic imaging and NIA. These key priorities are listed below, reflecting the assigned quartiles. *Note: those in the first quartiles have the highest priority, but a topic's position within the quartile does not reflect its priority rank.*

#### FIRST QUARTILE

1. Compare the effectiveness of management strategies for localized prostate cancer (e.g., active surveillance, radical prostatectomy [conventional, robotic, and laparoscopic], and radiotherapy [conformal, brachytherapy, proton-beam, and intensity-modulated radiotherapy]) on survival, recurrence, side effects, quality of life, and costs.
2. Compare the effectiveness of management strategies for ductal carcinoma in situ (DCIS).

In this report, the panel concluded that “the most important priority of all should be the building of a broad and supportive infrastructure to carry out a sustainable national CER strategy” and that Congress and the secretary of health and human services “must take concerted steps to establish a robust CER enterprise.”

It is also worth noting that of the 100 research priorities published by the IOM, 14 have a direct correlation to radiology, diagnostic imaging, and NIA’s clinical decision support services (see sidebar). This is a clear sign of the IOM committee’s emphasis on the clinical effectiveness of care, especially within the realm of advanced diagnostics. Additionally, nearly one-half of the recommended primary research areas compare some aspect of the health care delivery system.

Explaining this emphasis, the report says: “The prominence of health care delivery systems in the portfolio primarily reflects the interest of the public...as well as the committee’s belief that an early investment in CER should focus on learning how to make services more effective.”

### What is Comparative Effectiveness Research (CER)?

The IOM Committee on Comparative Effectiveness Research Prioritization defines comparative effectiveness research as:

*“The generation and synthesis of evidence that compares the benefits and harms of alternative methods to prevent, diagnose, treat, and monitor a clinical condition or to improve the delivery of care. The purpose of CER is to assist consumers, clinicians, purchasers, and policy makers to make informed decisions that will improve health care at both the individual and population levels.”*

The committee identified the key elements of this definition as the direct comparison of effective interventions, the study of patients in typical day-to-day clinical care, and the aim of tailoring decisions to the needs of individual patients. All too often, the information needed for providers and patients to make informed medical decisions is incomplete or completely unavailable, resulting in care being delivered without clear evidence of effectiveness. This uncertainty contributes to great variability in care delivery, with tremendous variability in costs and outcomes throughout the country.

This is especially true within the arena of advanced diagnostic imaging, with independent research studies suggesting that as many as one in three examinations is clinically unnecessary and fails to contribute to a physician’s understanding of the patient’s condition. At NIA, we are hopeful that this renewed focus on CER and evidence-based decision making will heighten general awareness of the importance of making informed decisions that are predicated on best practice. This is a key imperative within the health care reform landscape as it will seek to ensure the best possible clinical outcomes and to safeguard the fiscal solvency of our health care system by making good use of our available resources.

3. Compare the effectiveness of imaging technologies in diagnosing, staging, and monitoring patients with cancer including positron emission tomography (PET), magnetic resonance imaging (MRI), and computed tomography (CT).
4. Compare the effectiveness of genetic and biomarker testing and usual care in preventing and treating breast, colorectal, prostate, lung, and ovarian cancer, and possibly other clinical conditions for which promising biomarkers exist.

### SECOND QUARTILE

5. Compare the effectiveness of patient decision support tools on informing diagnostic and treatment decisions (e.g., treatment choice, knowledge acquisition, treatment-preference concordance, decisional conflict) for elective surgical and nonsurgical procedures—especially in patients with limited English-language proficiency, limited education, hearing or visual impairments, or mental health problems.
6. Compare the effectiveness of film-screen or digital mammography alone and mammography plus magnetic resonance imaging (MRI) in community practice-based screening for breast cancer in high-risk women of different ages, risk factors, and race or ethnicity.
7. Compare the effectiveness of new screening technologies (such as fecal immunochemical tests and computed tomography [CT] colonography) and usual care (fecal occult blood tests and colonoscopy) in preventing colorectal cancer.
8. Compare the effectiveness and outcomes of care with obstetric ultrasound studies and care without the use of ultrasound in normal pregnancies.

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## How Were These Priorities Selected?

The 100 priority areas identified within the IOM report reflect the feedback of health care professionals, consumer advocates, and policy analysts. The committee received 1,268 unique topic suggestions, which it narrowed to 100 based on detailed criteria. The final list reflects a range of clinical categories, populations to be studied, categories of interventions, and research methodologies.

## What Does This Mean for Patients?

In health care, one size does not fit all, and treatments that are good for one patient aren't necessarily right for another. This message was highlighted in President Obama's recent remarks to the American Medical Association, as he commented on a health care model that "rewards the quantity of care rather than the quality of care" and that gives "every incentive to order that extra MRI or EKG, even if it's not truly necessary."

As a nation, we need to enact reform strategies with proven track records of success that seek to protect the best interests of patients. Comparative effectiveness research will help all the members of our health care system—especially patients and their doctors—to determine the best options in treating or managing an illness. After all, medicine is performed best when doctors and patients together make choices based on the best available information.

## What Happens Next?

In passing the American Recovery and Reinvestment Act (ARRA) of 2009, Congress allocated \$1.1 billion in funding to bolster comparative effectiveness research to identify what health care technologies and practices work best under which circumstances. This report from the IOM is a major step in this direction as it identifies national priorities for this funding. Over the next 20 months, the Department of Health and Human Services (DHHS), the Agency for Healthcare Research and Quality (AHRQ), and the National Institute of Health (NIH) will work to allocate this funding.

At NIA, we will continue to engage with policymakers (as well as with our customers and providers across the country) to voice our support of comparative effectiveness research and to provide guidance on the best ways to drive outcomes that effect meaningful and positive change within our industry.

In the meantime, we also will continue our efforts to safeguard the rights of all patients to receive the right care in the right place at the right time. After all, this is the best way to ensure the right outcomes for each individual patient and for the future of our health care system.

*For more information on NIA and our evidence-based approach to achieve quality, safety, and cost outcomes, call 1-877-NIA-9762.*

## THIRD QUARTILE

9. Compare the effectiveness of traditional risk stratification for coronary heart disease (CHD) and noninvasive imaging (using coronary artery calcium, carotid intima media thickness, and other approaches) on CHD outcomes.
10. Compare the effectiveness of alternative redesign strategies—using decision support capabilities, electronic health records, and personal health records—for increasing health professionals' compliance with evidence-based guidelines and patients' adherence to guideline-based regimens for chronic disease care.
11. Compare the effectiveness of adding information about new biomarkers (including genetic information) with standard care in motivating behavior change and improving clinical outcomes.
12. Compare the effectiveness of traditional and newer imaging modalities (e.g., routine imaging, magnetic resonance imaging [MRI], computed tomography [CT], positron emission tomography [PET]) when ordered for neurological and orthopedic indications by primary care practitioners, emergency department physicians, and specialists.

## FOURTH QUARTILE

13. Compare the effectiveness of computed tomography (CT) angiography and conventional angiography in assessing coronary stenosis in patients at moderate pretest risk of coronary artery disease.
14. Compare the effectiveness of diagnostic imaging performed by non-radiologists and radiologists.