**HEALTH REFORM**

**Patient-Centered Outcomes Research Institute: The Intersection of Science and Health Care**

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The Patient Protection and Affordable Care Act created the Patient-Centered Outcomes Research Institute (PCORI), a nonprofit corporation that is neither an agency nor an establishment of the U.S. government. PCORI’s mission is to support the production of well-validated scientific evidence to assist the nation in making informed decisions about a broad range of health care–related issues. In this Commentary, the directors of the Agency for Healthcare Research and Quality and the National Institutes of Health discuss PCORI’s opportunities to contribute to a robust portfolio of scientific inquiry that builds on their agencies’ investment in comparative effectiveness research.

**SERVING THE NATION**

On 3 March 1863, President Abraham Lincoln signed an act that established an independent corporation to “investigate, examine, experiment, and report upon any subject of science or art,” whenever asked to do so by the federal government (1). And so, in the midst of the Civil War, the National Academy of Sciences (NAS) was born, a distinguished body that has served our nation well. More than a century later, on 23 March 2010, President Barack Obama signed a landmark health care reform bill that, among many other things, created another nonprofit corporation—the Patient-Centered Outcomes Research Institute (PCORI)—to carry out a much more narrowly focused, but crucial, scientific mission (Table 1).

As stated in Section 6301 of the Patient Protection and Affordable Care Act (2), PCORI’s purpose is “to assist patients, clinicians, purchasers, and policy-makers in making informed health decisions by using the best clinical technology, techniques, and medications in existence, as determined by the best available research evidence.”

PCORI’s ultimate goal is to improve patient outcomes by using the best clinical technology, techniques, and medications in existence, as determined by the best available research evidence.

Table 1. PCORI at a glance.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Provisions</th>
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<tr>
<td><strong>Purpose</strong></td>
<td>To assist patients, clinicians, purchasers, and policy-makers in making informed health decisions by identifying and analyzing:</td>
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<td></td>
<td>- National research priorities</td>
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<td>- New clinical evidence and evidentiary gaps</td>
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<td>- Relevance of evidence and economic effects</td>
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<td><strong>Organization</strong></td>
<td>- Nonprofit corporation</td>
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<td></td>
<td>- Not an agency or establishment of the U.S. government</td>
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<tr>
<td><strong>Funding</strong></td>
<td>FYs 2010–2012: Direct appropriations of $10 million, $50 million, and $150 million per year, respectively</td>
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<td>FYs 2013–2019: Trust fund with annual inflow of $150 million in appropriations plus annual per-capita charges per enrollee from Medicare, health insurance, and self-insured health plans</td>
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<td>After FY 2019: No funds available from trust fund</td>
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<td><strong>Oversight</strong></td>
<td>- Public/private board of governors; 19 members include AHRQ and NIH designees</td>
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<td>- Standing committee to develop and update science-based methodological standards; includes AHRQ and NIH</td>
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<td><strong>Research</strong></td>
<td>- Will award contracts for peer-reviewed research</td>
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<td>- Authorized to enter into contracts with outside entities to manage funding and conduct research. Preference given to AHRQ and NIH, if research is authorized by their governing statutes</td>
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<tr>
<td><strong>Dissemination and transparency</strong></td>
<td>- Make research findings publicly available within 90 days</td>
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<td>- AHRQ, in consultation with NIH, will broadly disseminate research findings</td>
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<td></td>
<td>- Provide public comment periods on major actions</td>
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<td></td>
<td>- Establish publicly available resource database</td>
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**IMPROVING PATIENT OUTCOMES**

The Agency for Healthcare Research and Quality (AHRQ) and the National Institutes of Health (NIH) embrace the establishment of PCORI, which will build on our agencies’ longstanding investment in comparative effectiveness research (CER) to provide well-validated evidence-based approaches to medical care that can improve patient outcomes (3). CER is designed to inform health care decisions by providing evidence related to the effectiveness, benefits, and harms of different treatment options for a given condition, including subgroups within that condition. The evidence is generated through research that compares drugs, medical devices, tests, surgeries, or methods to deliver health care.

Historically, NIH and AHRQ have played complementary roles in this field. AHRQ specializes in systematic reviews, comprehensive meta-analyses, secondary data analyses, pragmatic clinical and health systems studies, and innovative dissemination and translation of CER findings. NIH is a recognized leader in supporting CER studies that develop primary evidence of effectiveness, including comparative clinical
trials and support for accelerating the path
toward personalized medicine.

Together, NIH and AHRQ are uniquely
positioned to draw on decades of research ex-
perience to help PCORI establish its organi-
sational structure, formulate its methodologi-
cal standards, and develop research priorities
and processes. These will be no small tasks,
given the extensive scope and pioneering na-
ture of this new institute, coupled with the
urgent need for CER to respond to decision-
makers’ demands for clinical information
and to adapt to the rapidly changing land-
scapes of biomedical technology and health
care delivery. As the directors of AHRQ and
NIH, we are eager to take advantage of this
unprecedented opportunity to shape CER’s
future through our contributions as mem-
ers of PCORI’s Board of Governors and its
Methodology Committee.

RESEARCH FOCUSED ON PATIENT
OUTCOMES

Although many details of PCORI remain to be
worked out, one thing is certain: AHRQ and
NIH will help to ensure that this new entity
lives up to its name as a research in-
stitute (4). PCORI can draw on the exper-
ience and expertise within AHRQ, NIH, and
other federal research agencies to support
robust, well-executed scientific research that
will ultimately yield improved patient out-
comes. Together, these agencies will work
with PCORI’s leaders to forge an institute
renowned for its balanced agenda and sci-
entific rigor.

The Institute of Medicine (IOM) recently
issued a report identifying the nation’s top
100 priorities for CER (5), which may serve
to inform PCORI’s ongoing efforts to prior-
itize CER needs and opportunities. Once
PCORI produces its list of CER priorities,
the law states that the institute will develop
an agenda for initiating research projects
aimed at those priorities. AHRQ and NIH
will participate in the fashioning of a robust
portfolio of scientific inquiry that builds on
current and prior federal research and that
remains focused on improving the end re-
sults for patients (6).

METHODOLOGY MATTERS

An important tool for guiding the scientific
vision of PCORI-supported research will be
the institute’s standing Methodology Com-
mittee. The law states that this committee—
which comprises no more than 15 scientific
experts, including designees of the AHRQ
and NIH directors, in fields ranging from
omics to health services research—will
“work to develop and improve the science
and methods of comparative clinical effec-
tiveness research” by establishing “method-
ological standards for research.”

Among the many areas likely to fall
within the purview of the Methodology
Committee are clinical outcome measures,
research designs, modeling, risk-adjustment
parameters, statistical protocols, quality of
data and evidence, and the conduct of
studies. Because CER draws on many
cross-cutting fields that employ different
assumptions, study methods, standards of
evidence, and degrees of empirical rigor,
we have before us an unprecedented op-
portunity to refine the precision of select-
ing the best methodological approach for
a specific question, and to encourage con-
tinued methodological innovations. We
believe, however, that it may be most use-
ful for this committee to provide the field
with general guidance, rather than taking a
highly prescriptive approach.

POWER OF PEER REVIEW

Just as peer review plays a pivotal role for
AHRQ and NIH, peer review must form
the scientific heart of PCORI. The law states
that PCORI shall ensure that there is a peer-
review process for all primary research that
it funds. According to the language of the
statute, the review will include experts in the
scientific field relevant to the research be-
ing evaluated and will be designed to avoid
bias and conflicts of interest on the part of
reviewers.

More precision will ultimately be needed
in the peer-review plan for PCORI. For ex-
ample, the current language would allow
peer review to be conducted by for-profit
research enterprises or by medical journals.
As most researchers can attest, there is broad
variability in the quality of peer-review
processes among journal editorial boards,
as well as among for-profit research enter-
prises. High-quality review processes can-
not be guaranteed without the inclusion of
objective criteria, appropriate infrastructure,
and other essential elements of adequate
peer review. To flesh out the law’s current
bare-bones framework for peer review, we
suggest that PCORI consider making use
of AHRQ’s or NIH’s highly regarded peer-
review system (7). How to structure and im-
plement the peer-review process, including
issues pertaining to reviewers’ compensation
and workload, will be among the many chal-
lenges facing PCORI as it moves forward.

At present, the questions to be pursued
in PCORI’s peer-reviewed CER projects are
extensive, with possibilities running the
gamut from drugs to medical devices
to prevention strategies. In the past, most
CER studies have focused on the compari-
sion of two or more interventions aimed at
addressing a particular medical condition
in a relevant population. However, recent
advances in our understanding of the basic
mechanisms of diseases and individual dif-
fences have created new opportunities for
CER to identify subsets of patients within a
relevant population and match them with
the therapies most likely to be safe and effec-
tive for them. Moreover, both the IOM and
the Federal Coordinating Council for CER
concluded that CER includes “care-delivery
interventions,” such as disease or care man-
gement, hospital discharge planning, and
patient self-management for chronic illness.

Although health services researchers have
addressed these issues for decades, doing so
in a comparative framework offers exciting
and unexplored opportunities. Other CER
challenges include addressing the needs of
patients with multiple co-morbidities and
incorporating new insights on multifactor-
able disease etiology.

FUNDING FACTS

PCORI will be funded through the Patient-
Centered Outcomes Research Trust Fund,
which will receive money from a variety of
funding streams, the mix of which will
change over the course of time. For fiscal
years (FYs) 2010–2012, the trust fund will
receive only direct appropriations from gen-
eral federal revenues. For FYs 2013–2019,
the funding will come from $150 million in
annual appropriations, along with an annual
per-capita charge per enrollee from Medi-
care and other health insurance plans. The
per-capita charge, which will start at $1 and
rise to $2, is expected to raise approximately
$2.6 billion through FY 2019, according to
the Congressional Budget Office (8). That
would place PCORI’s annual funding level
in the realm of $500 million or more.

As for how the money will be used, the
new institute will have the authority to en-
ter into contracts to manage funding and
conduct research. Such contracts may be
awarded to federal agencies, academic in-
stitutions, or the private sector. However,
AHRQ and NIH will receive preference if
the research to be conducted or managed
under such a contract is authorized by our
governing statutes.
SPREADING THE WORD
Once the results of CER studies are published by PCORI, AHRQ's Office of Communication and Knowledge Transfer, in consultation with NIH, will broadly disseminate the research findings. One way AHRQ will accomplish this is by producing informational tools for physicians, health care providers, patients, payers, and policymakers. In addition, AHRQ will develop a publicly available database of evidence and findings from published, government-funded CER.

The importance of effective dissemination cannot be overestimated. As AHRQ's annual reports to Congress on the state of quality of care and disparities in care document in great detail, the gap between the best possible care and that which is routinely delivered remains substantial (9).

SCIENCE FOR SOCIETY
The section of the Affordable Care Act that created PCORI accounts for just 43 of the act's more than 2400 pages. However, as the slim bill that established NAS proves, legislative length is not always a good yardstick of a research organization's potential impact on society. Just as it took a dedicated band of scientists to form what evolved into a venerable academy to advise the United States on matters of science, our country today stands in need of researchers willing to devote their time and energy to advising on issues that are absolutely vital to Americans' personal health care decisions.

The General Accountability Office is accepting Letters of Nomination from the scientific community as well as from health care providers, insurers, the biomedical industry, and health care consumers for the PCORI Board of Governors through 30 June 2010. We look forward to the research community's participation in the first of what are likely to be many opportunities to serve the nation in the name of the science of health reform (10).

REFERENCES AND NOTES
11. Competing interests: The authors have no conflicts of interest to report.
